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POLICE AVIATION IN UKRAINE

Abstract. *The purpose of the research* is to describe the stages of creation and development of police aviation in Ukraine, cover basic concepts and terms, determine the directions of its further advancement.

Research methods. The paper is executed by applying general research and special methods of scientific cognition.

Results. The basic approaches to understanding “police aviation” in Ukraine, its origin and development are analyzed, and its role for effective detection and investigation of crimes is proved. The research establishes that during the restructuring of the economy of the newly created Ukrainian state, after the collapse of the Soviet Union, the aviation industry in law enforcement declined. Only in 2017, the first steps towards the reconstruction of the former police aviation, or rather, the creation of new police aviation in Ukraine, have begun. With the support of the Ministry of Internal Affairs, in 2020, the National Police established the Department of Air and Water Police equipped with specialized helicopters of domestic and European standard and unmanned aerial vehicles designed to perform a wide range of tasks in law enforcement, medical and other public activities. Since 2019, the National Police has trained external operators of unmanned aerial vehicles and improved the skills of police officers who use Class I unmanned aerial vehicles to perform police tasks. In November 2020, Ukrainian State Air Traffic Services Enterprise handed over to the National Police of Ukraine the Kanev (Pekari) Helicopter Platform heliport located in Cherkasy Oblast and suitable for all types of helicopters weighing up to 13 tons, which meet the technical characteristics of Class 1 or Class 2 and are certified by Category A or Small Rotorcraft, by visual and instrument flight rules. At the initiative of the Ministry of Internal Affairs and the Ministry of Health, a Single Aeromedical Space has been created in 2021.

Conclusions. However, despite significant gains, police aviation is still in its infancy and needs to be essentially developed and implemented in the National Police of Ukraine.

Key words: unmanned aircraft, police helicopter, external operator of unmanned aerial vehicle, Unified System of Aviation Security and Civil Protection of the Ministry of Internal Affairs, police aviation.

1. Introduction

The earliest recorded use of an unmanned aerial vehicle (hereinafter – UAV) occurred in July 1849. Oddly enough, it happened in the military realm when Austrian troops floated unmanned balloons in Venice, which was under siege, for its bombing (State Aviation Museum of the National Aviation University). In due course, with the rapid development of science in electricity and radio, other industries, drone-type devices became more widespread and were used as a means of performing tasks that are unattainable or dangerous to humans. An unmanned device could be any vehicle

(including maritime, aerial, railway, etc.). Before using remote-controlled naval anti-surface ship torpedoes, they were also guided by divers or suicide pilots. With the development of new information technologies, the automation of almost all spheres of our life, robotics, unmanned vehicles (devices) have evolved into a device sized from a space station to a matchbox. Today, our children play with one that originated as a means of destroying the enemy's manpower and infrastructure. Many of us even do not realize how deeply UAVs have penetrated our lives. Anyone can buy a UAV in a modern gadget store or even a toy

store and use it for one's own, and unfortunately not always legitimate, purposes. We cannot ignore the fact that, as well as several centuries ago, unmanned devices are used as a weapon both by state armed forces and armed criminal groups, petty offenders, etc. Unfortunately, there are currently no thorough scientific studies in the area concerned that could be implemented in combating crime. This issue has been considered by Ye.I. Bakutin, V.V. Bilous, Yu.V. Hnusov, V.A. Korshenko, S.M. Lozova, V.K. Myronenko, M.V. Mordvyntsev, S.I. Perlin, V.A. Svitlychnyi V.V. Chumak and other.

Therefore, a scientific assessment of the status, capabilities, and development prospects of the involvement of UAVs in the National Police of Ukraine becomes relevant and essential for further practical use. According to the authors, as never before, it is high time to "arm" state law enforcement agencies with UAVs to allow them to perform their tasks and functions vested by the state. This concerns both ensuring public security and peace across Ukraine as well as guarantees of the constitutional rights of its citizens.

2. Police aviation: basic approaches to understanding

Unfortunately, during the 30-year history of independent Ukraine, the use of aircraft in the official activity, later the National Police, has not become widespread. Helicopters of other bodies of the Ministry of Internal Affairs (hereinafter – MIA) or the Armed Forces of Ukraine, usually the Mi-8 variants, have been often used in critical and resonant situations. By comparison, in European countries and the United States, the police have long had their own air units to support ground operations, maintain fire accompaniment, rapid transfer of forces and supplies, transportation of victims and wounded, keep surveillance and reconnaissance, etc.

During the Soviet era, law enforcement agencies had some aviation assets, such as Mi-2, for the needs of the State Automobile Inspectorate, etc. However, after the breakup of the Soviet Union, the young state Ukraine had more important tasks of reforming and establishing a democratic system. Therefore, police aviation has long been ignored, including due to a lack of funds – especially in those days when 10 liters of gasoline per day were allocated for task vehicle of the district police station. What kind of aviation could be discussed under such conditions?

It was not until 2017 that the Order of the National Police of Ukraine dated July 21, 2017 № 744 "On Institutional and Staffing Changes in the National Police" established the Department of Air and Water Police in

the structure of the Central Police Office. The main tasks of the Department embrace organization, coordination, methodological support and control of official activities of police units on the water and provision of the units of the National Police of Ukraine with air support.

In 2018, the Ukrainian Interior Minister, Arsen Avakov, and the Minister for Europe and Foreign Affairs of France, Jean-Yves Le Drian, signed a government-to-government memorandum of intent on bilateral cooperation. Within the framework of the memorandum, the MIA of Ukraine procured French H125, H145 and H225 helicopters to equip the State Emergency Service, the National Guard, the National Police and the State Border Guard Service of Ukraine. The main tasks of the helicopter units comprise rescue operations, support of public security, criminal investigations, anti-terrorist and special missions, protection of state borders, and road safety (Today's newspaper, 2018).

It is interesting to note that the word "helicopter" is often considered synonymous with the word "vertolit". According to explanatory dictionaries, a vertolit is: 1) a helicopter, a rotor-winged aircraft; an aircraft heavier-than-air, which can rise into the air without running and land vertically, as well as stay in one position in the air (Yaremenko, Slipushko, 2001, p. 182); 2) from the Greek. Helix – spiral, whirl; pteron – wing – helicopter (Petrov, 1989, p. 117).

The media language has almost quit using the word vertolit by replacing it with a helicopter (English: helicopter; the opposite substitution in the course of consistent purism in modern Croatian: vrtolet instead of a helicopter) and a hvyntokryl (rotor-winged aircraft) (although the word is considered a Ukrainian unit, it was borrowed from the Russian language during the Soviet era ("vintokryl") but with another meaning – an aircraft with the characteristics of both a helicopter and an airplane) (Taranenko, 2008, p. 162).

As practice shows, linguistics is not an exact science. Authors of explanatory dictionaries are sometimes conditionally divided into groups and assert their point of view by relying on their knowledge. There are cases when a borrowed word is so popular among the population that, over time, it becomes conventional and correct in a particular area. However, the views of linguists concur in the issue under consideration. They suggest differentiating terms *helicopter* (implicit differential feature – "lack of wings") and *hvyntokryl* (*rotor-winged aircraft*) (differential feature – "wing").

The term of *hvyntokryl* is synonymous with a combined helicopter (synonymization based on the common features of “wing” and “propeller”). The terms of helicopter and *vertolit* are considered absolute synonyms (synonymization based on the feature “propeller”) (Khalinovska, 2013, p. 63). Thus, you can use both “helicopter” and “*vertolit*” – they mean the same thing.

3. Admission to operation (adoption) in the bodies and units of the National Police of Ukraine of unmanned aerial vehicles

After the beginning of the armed conflict in eastern Ukraine, the Armed Forces of Ukraine and the Ministry of Internal Affairs of Ukraine have widely used combat aircraft, in addition to ground combat equipment. Air umbrella and support in some combat situations are much needed and indispensable. However, any war implies human and equipment losses, and unfortunately, such losses occurred. Combat aircraft and helicopters became the prey of enemy air combat means, and thus the airspace of some areas of hostilities was closed to further use of air force.

As the state could not afford further losses of pilots and fairly expensive aircraft, the number of flights was reduced. At the same time, land forces could not be deprived of aerial reconnaissance. Civilian volunteers, who had had the experience of controlling UAVs in peacetime, came to the rescue. Using serial quadcopters and DIY-model aircraft, they began to modify and equip them following the needs of combat conditions. Most often, vehicles were equipped with surveillance cameras with additional functions of infrared and night vision to locate enemy forces. UAVs could hover in the air for hours, move at low altitudes, be inconspicuous due to their small size and a tricky target for small arms.

Under paragraph 23 of Article 1 of the Air Code of Ukraine, an unmanned aerial vehicle is an aircraft designed to accomplish flight without a pilot on board, which is controlled and manipulated via a special control station unit located out of the aircraft (Verkhovna Rada of Ukraine, 2011, p. 536).

The best practices of using UAVs in the area of the Joint Forces Operation have drawn the attention of executives of the Armed Forces of Ukraine and the Ministry of Internal Affairs. Nowadays, the issue of providing military and law enforcement units with UAVs is addressed within public procurement.

The advantages of UAVs over manned aircraft are apparent: they can be small in size, up to several centimeters – they are difficult to shoot down; they can fly at maximally low altitudes; visually inconspicuous; have a low noise level of engines and propellers;

can monitor a target from a distance of one kilometer; mobile (launch is carried out from any point with an area of 10 centimeters); can perform tasks in both controlled and offline modes; can be equipped with both internal and electric combustion engines; economical in construction, cost price, and operation (due to the small size and lack of space and equipment for the pilot); zero human losses come before everything; depending on the model, they are easy manageable (controlled from a smartphone); can carry a combat payload similar to aircraft, have jet propulsion, and be controlled remotely thousands of miles away, etc.

However, this does not mean that the era of manned aircraft has come to an end. On the contrary, it appeared a gap in the activity of the armed forces and law enforcement agencies, and UAVs filled the niche promptly. As before, there is still a need to transport people, bulky cargo, conduct high-rise assembly and disassembly under emergency recovery, rescue operations in mountainous and under extreme weather and temperature conditions. In other words, the need for the pilot's presence remains in all cases, which require “surgical” accuracy and mastery, immediate response, fast decision-making, full situation awareness, contact with crew members and passengers, the ability to handle an on-site emergency, etc. The impact of the human factor on the situation, especially the failure of machinery and its equipment, should never be excluded.

Technologies are making progress. With the advent of drones, the means to combat them originated, in particular, means for suppressing and intercepting the control signal of the device. However, it is worth mentioning that similar systems began to be used on manned combat aircraft as a means of radar combat (attack and defense) with other aircraft. They are used to deactivate control, navigation, and other tracking systems that make the plane or helicopter sitting a target – it is a guaranteed loss for a drone. In a manned aircraft, the pilot can, at least, maintain explicit control of the situation and aircraft operation.

In other words, the authors emphasize that manned and unmanned aerial vehicles are different classes of aviation equipment, which are designed to address a narrow and, in particular cases, related range of missions of the armed forces and law enforcement agencies, and cannot substitute for each other in full.

The Order of the National Police of Ukraine dated February 27, 2019 № 196 “On Release to Service (Service Introduction) in Bodies and Units of the National Police of Ukraine of Unmanned Aerial Vehicles” authorized

the Department of Air and Water Police to be a body governing unmanned aviation of the National Police of Ukraine.

In 2020, in order to ensure the operation of the Unified System of Aviation Security and Civil Protection of MIA of Ukraine, the State Institution "Lviv Specialized Center for Training of Police Officers" was renamed in the State Institution "National Police Center of Air Support of Ukraine" by the Order of Head of the National Police of Ukraine, Police General of the third rank Ihor Klymenko dated June 17, 2020 № 470.

In the same year, the Order of the National Police of Ukraine dated 19.06.2020 № 482 "On Amendments to the Structure of the National Police" established and integrated the "Department of Air and Aviation Police" into the Structure of the National Police approved on November 6, 2015.

According to the Order of the Ministry of Defense of Ukraine № 2-2015, the Order of the Ministry of Defense of Ukraine № 367-2015, after theoretical retraining, internship and control test, the Order of the Department of Water and Air Police dated August 16, 2019 № 17 admitted employees of the Department of Aviation of Unmanned Aerial Vehicle of the National Police Ukraine to the management of flights of I-class UAVs from the work area of flight manager.

Having acquired all the necessary documents, the Department for the first time in the National Police of Ukraine began a training course for external operators of UAVs, as well as advanced training of police officers who use Class I unmanned aerial systems to perform police tasks, based on developed and approved training programs for level I qualification. Police officers' training was held in the State Institution "Lviv Specialized Police Training Center". Police officers, who completed the program, received certificates and flight books (National Police of Ukraine, 2019).

A UAV external pilot is an individual who is authorized by an operator to perform the necessary duties of operating a UAV flight and who manipulates the relevant flight controls in the air (Ministry of Defense of Ukraine, 2015).

On July 13, 2020, the State Institution "National Police Center of Air Support of Ukraine" was established in Lviv Specialized Police Training Center.

In November 2020, Ukrainian State Air Traffic Services Enterprise (hereinafter – UkSATSE), which is a base of the national Air Navigation System and the Joint Civil-Military Air Traffic Management System of Ukraine and affiliates with the Ministry of Infrastructure

of Ukraine, gratuitously handed over to the National Police of Ukraine the Kanev (Pekari) Helicopter Platform heliport located in Cherkasy Oblast. It is suitable for all types of helicopters weighing up to 13 tons, which meet the technical characteristics of Class 1 or Class 2 and are certified by Category A or Small Rotorcraft, by visual and instrument flight rules (UkSATSE, 2020).

As part of the development of the Unified System of Aviation Security and Civil Protection of MIA in 2020, in addition to granted Airbus helicopters H145, our technical experts were re-trained in Airbus Helicopters Deutschland and obtained certificates of instructors, pilots and 4 engineers of the National Police (Cherkasy Regional State Administration, 2021).

Moreover, at the initiative of the Ministry of Internal Affairs and the Ministry of Health, a Single Aeromedical Space was created in 2021. It provides for the integration of the aeromedical evacuation system and air transportation of anatomical materials of recipients. On April 1, in Lviv region (there are 7 region: Lviv, Zakarpattia, Ivano-Frankivsk, Volyn, Rivne, Ternopil and Chernivtsi), the MIA aviation took up the permanent duty. On May 1, the same duty was introduced in Kyiv region (Kyiv, Vinnytsia, Zhytomyr, Kirovohrad, Poltava, Sumy, Chernihiv oblasts and the city of Kyiv). Now, Cherkasy and the east of the country are joining a Single Aeromedical Space. There are plans to establish such points across the country by the fall. In addition to the flight crew, medics will constantly be on duty at the bases. Young pilots, who have already passed or are undergoing training, will navigate helicopters and aircraft of the Aviation Security System of the Ministry of Internal Affairs.

4. Conclusions

Thus, the authors draw attention to the fact that police aviation has already originated in Ukraine and begun to take "its first steps" in fulfilling the tasks of the National Police, the Ministry of Internal Affairs, and other government agencies, including, the Ministry of Health. The police aircraft fleet is not yet fully equipped, and not all departments in regional centers have air support. However, this is just the beginning of the history of Ukrainian police aviation. We hope, in the next few years, all district police departments of Ukraine will be equipped with UAVs and relevant units, and every main department, depending on the population, will have a minimum of one helicopter for air support. In addition to significant improvement of police efficiency, this is required by today's realities and the rapid development of world technology. Therefore, the National Police should not lag, as it is the principal law enforcement body of Ukraine.

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ПОЛІЦЕЙСЬКА АВІАЦІЯ В УКРАЇНІ

Анотація. Метою статті є висвітлення етапів створення та розвитку поліцейської авіації в Україні, а також розкриття основних понять і термінів, визначення напряму подальшої її розбудови.

Методи дослідження. Роботу виконано на підставі загальнонаукових та спеціальних методів наукового пізнання.

Результати. Проаналізовано основні підходи до розуміння «поліцейської авіації» в Україні, її зародження й розвитку, доведено її роль в ефективному розкритті та розслідуванні злочинів. Встановлено, що в часи перебудови економіки новоствореної української держави (після розпаду Радянського Союзу) авіаційна галузь у правоохоронній діяльності переживала занепад. З'ясовано, що лише у 2017 р. почали робити перші кроки в напрямі створення поліцейської авіації в Україні. За підтримки Міністерства внутрішніх справ України у 2020 р. в Національній поліції України створено Управління авіації та поліції на воді, укомплектоване спеціалізованими вертольотами вітчизняного та європейського зразка, а також безпілотними літальними комплексами, призначеними для виконання широкого спектру завдань у правоохоронній, медичній та інших сферах забезпечення державної діяльності. З 2019 р. Національна поліція України готує зовнішніх операторів безпілотних літальних апаратів, а також підвищує кваліфікацію співробітників підрозділів поліції, які використовують безпілотні авіаційні комплекси I класу для виконання поліцейських завдань. У листопаді 2019 р. «Украерорух» передав Національній поліції України вертодром «Гелікоптерна площадка Канев (Пекарі)», розташований у Черкаській області та придатний до виконання польотів усіх типів гелікоптерів масою до 13 т, що відповідають технічним характеристикам «Клас 1» або «Клас 2» та сертифіковані за Category A або B Small Rotorcraft, за правилами візуальних польотів і правилами польотів за приладами. За ініціативи Міністерства внутрішніх справ України та Міністерства охорони здоров'я України у 2021 р. створено Єдиний аеромедичний простір.

Висновки. Проте, незважаючи на значні здобутки, поліцейська авіація поки що перебуває на початковому етапі свого розвитку та потребує суттєвої розбудови і впровадження в діяльність Національної поліції України.

Ключові слова: безпілотне повітряне судно, поліцейський вертоліт, зовнішній оператор безпілотного літального апарату, Єдина система авіаційної безпеки та цивільного захисту Міністерства внутрішніх справ, поліцейська авіація.

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