SUBORBITAL AND COSMIC SPACES LEGISLATIVE DIVISION PROBLEM
IN INTERNATIONAL AIRSPACE LAW (GEORGIA - UKRAINE)

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Purpose: the purpose of the scientific article is to reveal the main problems associated with the legal regulation of suborbital space. Attention is paid to the problem of suborbital flight organization and the legal regime of air and space international navigation. Methods: to achieve a certain goal were used general and special scientific (special) methods: analysis, synthesis, induction, deduction, abstraction, concretization, generalization, etc. Results: it is important to consolidate the international legal treaty on the delimitation of air, space and suborbital spaces, which will contribute, in particular, to the progressive development of international space law, as well as to ensure proper international space law. Space borders are as untouchable as land and sea borders. Each state gains the right to defend its air space from the illegal irruption of the other countries’ aircrafts. The issue of the delimitation of borders between the air space (sovereign and international) and cosmic space is discussed in the UN Organizations committee. Discussion: today the issue of regulating the provisions of international law, which would legalize the existence and separation of space tourists from astronauts, define them as space tourists, regulate the legal status and general features of the legal regime of their activities. Keywords: space suborbital flight; legal regime of air and space international navigation; space tourism.
international contract or there is a special allow of the interested state [1, p. 364]. Based on the above mentioned the regulation of the airspace legislative regime is quite easy, as it works within the national legislation frames. More difficult is to legislatively regulate the cosmic space. The suborbital space plays the mediatory function having different legislative regulations and norms. The convention of international civil aviation of 1994 and two contracts about the international transit air space crossing regulated many things. “International aviation organization” ICAO has been created playing enormous role in strengthening the international flies and the terms of international flies regulations between states in order to strengthen the security and conditions of passengers and board personal.

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Analysis of recent research and publications. Some aspects of the central problem were looked at by their ancestors in the history of foreign and foreign sciences, in the international and national space law, in the law in the general public, such as A.Kh. Abashidze, I.P. Andrushko, L.P. Anufriyeva, O.V. Begliy, K.A. Bekyashev, Yu.S. Shemshuchenko, V.V. Semenyaka, Sh.Hobe, L. Aleksidze, A. Travnikov, G. Zhukov, P. Kapustin, E. Kamenetskaia, V. Vereshein and ect. G. Zhvania has dedicated the scientific work to the international airspace principles where the peculiarities of the cosmic space legislative regime were underlined unlike the airspace legislative regulation.

Main material. Cosmic space legislative principles its peaceful exploitation principles are defined in the resolution of 1968, December 20 based on the declaration 1963, December 6 “about states’ activities basic principles, cosmic space exploitation and research” adopted in the assembly of 1963, December 6. Based on this and other airspace cosmic law sources in May 2005, ICAO session 175, the conception of the suborbital flies were discussed. Under the patronage of ICAO the adoption of this regulation was connected to some American and western European company (for example, “Virgin Galax”) plan that took into consideration the suborbital aircraft all park establishment including the aims to use them with the commercial aim, to pass the passengers through the airspace way. In the international cosmic law the important role plays the ordinary law norms differentiating the air and cosmic spaces taking into account the lower level that has enormous importance in relation of the aircrafts and airspaces taking into consideration the states’ territorial princip. Suborbital fly is an aircraft fly of 100 120 kilometers of apogee with the rocket engine without its moving to the upper ground orbit with the next movement on the earth in the air-dynamic regime “with air-interaction”. Based on this definition we can conclude that the suborbital aircraft must be qualified as a racket and aircraft. Such dissonance makes some difficulties in putting into exploitation the suborbital aircrafts and with this target only the civil aircrafts are used, based on the Chicago Convention 31 article certified (Chicago Convention 1994 about international civil aviation. Such aircrafts must be registered in the public register based on the Chicago Convention article 17 and must be managed by the proper persons (article 32) Commercial Space Launch Act of 1984, Pub. L. No. 98-575, 49 U.S.C. § 70102(20) (2009) [2].

Today the obligatory rule of the suborbital aircraft certification and registration and the demands towards the board staff are not defined based on the national normative acts and are not standardized by the CAO documents. Besides, the specialists and researchers of the mentioned branch including A. Travnikov, G. Zhukov, P. Kapustin, E. Kamenetskaia, V. Vereshein and others talk about those technical difficulties that are connected to the suborbital flies organization and realization connected to the enormous financial expenditure and is not compensated on the commercial basis, also those juridical problems are defined according to the passengers undistinguished juridical conditions.

Based on the above mentioned we can observe the following: the suborbital aviation aircrafts’ implementation is less possible for the international civil aviation targets. In the contract of 1967 about cosmos the international cosmic law principles are strengthened from its commercialization standpoint.
Based on it we can claim that this opportunity may be used for rich touristic flies, who will be ready to take risks connected to all the details of the space journey, as it is defined based on the American legislation “Commercial Cosmic Flies Participants”. As it was printed in the press such touristic voyages will be paid not less than 20 million American dollars and the mentioned fly has already been realized. More perspective in future are modernized aircrafts in the air space research branch, for example, Shatli and Burani able to realize flies both in the airspace and cosmic space as a ballistic racket. Such instruments must possess technical characteristics that freeze the rackets on the upper orbit of the earth and in the far cosmos not using the racket mechanisms.

Based on the A. Travnikov and others in the air spacecrafts’ legislative regulation is the following: on such crafts some (definite international airspace law and international cosmic law norms) are spread and the national law during crossing the air apace of the states’ territories borders. In order to define different law activities frames, during the flies with different aircrafts it is necessary to define space borders under different legislative status. In the horizontal direction the borders in the sovereign airspace are discussed. The international airspace crosses the imaginative vertical direction established on the sea borders of the coastal states [3, p. 82].

Since 1962 the issue of the delimitation of airspace and cosmic laws (sovereign and international) has been discussed in the UN Committee (the cosmic space exploitation with peaceful targets – UNCOPHOS). But as it has already been mentioned the final conclusion is not made yet. Many scientists share so called normative-legislative and natural-legislative approaches. Based on them the legislative-international habit the border between air and cosmic spaces are crossed on the orbits of the earth distance from the ocean lower level is 110 kilometers [1, p. 370].

In the international airspace basically we come across the “fly freedom” principle adopted by the UN convention about navigation law of 1982. There is a notion that in the international airspace law the custom of exploitation the airspace “freedom exploitation” does not only aim the aircrafts flies but also for the other legislative activities [4, p. 37].

As the basic subjects of the international cosmic law are states and interstate organizations the possibilities of the legislative subjectivities are unlimited and are spread on the upper layers of the space that we cannot say about the interstate peculiarities as their legislative subjectivity is limited. It is based on the principles of the interstate principles, contracts of cosmic space research and use (including the moon and other planets), signed in 1967. The contract about cosmos is also available for states. Based on this principle, flies’ freedom means that it is not necessary to have a right for flies. The states are not obliged, to receive from the other state or the international interstate organizations the right to fly in the international airspace. In the international airspace the rule of flies is defined based on the international, legislative norms (Chicago convention article 12). These rules are the principles of ICAO, though they only work towards the civil aircrafts. The international – legislative time-limit works towards the national aircrafts including other air cosmic mechanisms. Also there are not international – legislative regulations in any part of space. Above the state territory in the space there is a special sovereign principle based on the Chicago convention article 1. According to this principle the states establish independently the private sovereign air space legislative regime, including allowing rules, flying rules, air movement management. Though such formation must be fulfilled by the stated taking into consideration the international law principles and norms. G. Tunkin formulates his view in the following way: “when talking about the state’s sovereign we don’t mean the absolute sovereign situation, but the sovereign within the international frames [5, p. 3].

Unlike the international air and cosmic space legislative regime the rule giving the power is put in the sovereign legislative space regime basis, including the right of the international flies. Though based on G. Zhukov and A. Solncev together with A. Travnikov and he says that we must definitely take into account that crossing the foreign states air space by the aircraft has the right for the “safe” movement, as such right is not defined based on the international contracts [6, p. 92-93]. According to the scientists based on the well adopted custom suitable
for the national legislations of the most states and the cosmic aircrafts flies are fulfilled successfully. For this target the special rules of the sovereign air space organization and exploitation are established. The part of the other states does not establish such rules. According to the above mentioned cosmic and air space is discussed and the legislative regimes do not consider the definite fly rule of the space aircrafts. Such conditions do not guarantee air and cosmic navigation safety, the crush possibility of the aircrafts with the cosmic mechanisms. The world co-society took this reality into consideration in 1972, when adopting the convention about the international responsibility for the injure put by the cosmic aircrafts (Convention article 11).

The farther development of the air cosmic space needs aircrafts’ flies international legislative time limit [7].

The issue was raised by the professor Haanapel offering his personal version of solving the problem. We must discuss each aircraft independently and we must consider it as an aircraft and in the other case as a cosmic mechanism. As for the aviation-cosmic system we may describe it as a hybrid system which includes both cosmic and air space [8, p. 341]. So the problem is not completely solved and the specialists still work upon its solution. Based on the specialists the air flies rules must be the same for any space status (international and sovereign space). It is extremely important to adopt these rules with the air space exploitation rules, first of all ICAO standards resolutions and recommended practice. We must take into consideration also the fact that the falling sentence “cosmic movement management rules establishment and implementation” is actively used. It is desirable to adopt such rules together with the air cosmic flies rules. Formally the air flies rules spread up to the 100 kilometers height. Their practical exploitation is made on the level of 30 kilometers (this is a military and experimental or pilotless air-stat flies’ maximum speed. The aircrafts absolute majority is realized on the level of 12-15 height).

In order to organize aircrafts international flies ICAO has divided the earth’s whole airspace into the states fly information regions that is made by their powered organs despite the states’ belongings. The movement control in the airspace is fulfilled differently. The cosmic and air cosmic mechanisms state under which property they belong. (According to the mechanism’s state’s registration) with interaction of the flies powered centers). Though it operates such aircrafts both in air and cosmic space (international and sovereign) including the foreign states and cannot be qualified differently and not as the jurisdictions illegal action on the foreign territory. The aircrafts flies’ security is guaranteed by the special organs, though such organs activities are not fulfilled by the time limited international law norms. Their time limit is made according to the custom that is under formation. It is connected to the definite difficulties, the practices of implementation the definite norms prohibitions of the aircrafts’ flies are spread towards the cosmic rackets episode flies. Based on the specialist, the air cosmic crafts’ flies receive the systematic character. The latest practice will cause the enormous loss of the air-companies’ finances [3, p. 98]. The specialists concluded that it must be regulated by the legislative norms of the air cosmic flies organization in proper time from the side of the states. The international-legislative regime established with this target must be based on the so called functional approach when that law will be adopted towards these flies which (international cosmic or international air) that will be available despite the aircraft being in the formally defined cosmic or air space. In such conditions when the airspace border is not strictly defined, the air space management must be fulfilled by the air flies management center (or the air movement organ). It is defined that the height from 35 up to 50 kilometers air navigation and above earth technical possibilities must be taken into consideration. It also means observation, management, navigation and control possibilities. In case if the air cosmic craft is under the air movement management it will be influenced by the air space law norms [9].

The international air navigation establishment and development history shows us that on any stage of the mentioned history the norms formation initiative belonged to those states which based on the personal military – political and commercial interests used its national legislative base according to the Paris Convention of 1919. The researchers interested with the Georgian history say that the Georgian navigators
and researchers of this field have made the maximum in comparison with other states’ researchers. The first Georgian air-constructo Besarion Keburia made lots of changes in the aircrafts constructions. The first generation representative of the Georgian aviation is Valeri Shukhashvili. He has constructed the first aircraft with wings called “Ilkhvi”. He projected and tested the airplane’s innovational parts. Also the famous constructor and researcher was Giorgi Beriashvili (Beriaev), also Robert Kinosashvili, Robert Kinosashvili – the author of the modernized airplane engine. As for Mikheil Grigolashvili – he made much in the Russian aviation.

In Georgia the founders of the national aviation are the following: Mikheil Machavariani, Aleksi Shiuashvili and Shalva Chankotadze. Based on the researchers these three scientists together with Besarion Keburia are the founders of the Georgian aviation [10]. Today there are many aerrals that are explored by the Georgian scientists and help to spread the information in all over the world and the Georgian sing “Chakrulo” is played in the cosmic space. May be someday the Georgian aircrafts and cosmonauts will be seen as well. The Georgian air constructors made enormous steps in the aviation development. The international aviation development has its personal history and it still continuous as an institute of the international air cosmic law.

As for the relations between the Ukraine and Georgia it has a long and rich history but in the latest period it is specifically underlined in the aviation sphere. The famous political figure and the USA president’s former adviser in the national issues Bzignev Bzhezinski in his book “Big Board of chadraki” [11] strictly underlines the issue of the Ukraine’s rich natural resources and military potential. The Ukraine’s defense ministry establishes those activities that are connected to the state’s security and defense. It is responsible for those technologies’ establishment and exploitation that is connected to the cosmic space. In June 15 of 1997, the Ukraine’s cabinet of ministers the 788 resolutions were adopted, dividing from each other the defense and national agency competences. According to the Bzhezhinski the Ukraine has enough power to become the part of the Europe without Russia and as for Russia, it may realize it only together with the Ukraine. Without the Ukraine the empery becomes more Asian and is far from the Europe. In may 2007 the authorities of the USA after Poland and Czech have made two day long consultations in Kiev with the Ukrainian authorities the anti racket defense agency director Henry Obering led the USA delegation. He met the Ukraine’s national cosmic agency director among other authorities. The Ukraine’s national cosmic agency is a special organ of the authority which was established on the basis of the resolution № 117 of February 29, 2002 and its basic function is the public policy realization connected to the cosmic space. Also it is said about the coordination and control of those organs that are related with the cosmos. The Ukraine’s potential and possibilities in the cosmic space exploitation is also its one of the main targets. As the Ukraine is one of the main countries where the air cosmic crafts are constructed and explored under its rich staff.

Among the former post soviet countries the Ukraine is the third state in the air space exploitation. After receiving the independence based on the contracts and negotiation with other countries under the exploitation of the Ukrainian rackets many activities about 120 facts of testing the rackets on the orbit took place.

The Ukraine is more than 100 international organizations’ member including the UN Mission solving the space peaceful exploitation as the Ukraine has a deep potential of using the space innovatively. We must mention the fact that based on part 5, article 62 of the Ukrainian constitution the issues of the cosmic space are regulated with the Ukrainian law about “cosmic space exploitation”. It was adopted by the supreme Ukrainian Parliament and regulates the cosmic law according to it. In the mentioned law the main principles are mentioned that deal with the principles of the farther regulation and development of the legislation [12, p. 140].

The problem is the division and distinguishing of air and cosmic fly spaces as the both part of spaces are perspective segments on the market demands phone [13, p. 12]. The ICAO supports the corresponding norms of the establishing sub-orbital conception as this is the space where together with the rest of the states the Ukraine may demand the air
cosmic space exploitation rights together with Georgia.

No international agreement has definitively defined the line of demarcation between air, space and suborbital spaces. Since the beginning of space exploration, states and the United Nations have failed to agree on a boundary between airspace and outer space. For decades, the UN Committee on the Peaceful Uses of Outer Space has been trying to continue negotiations on the delimitation of airspace and outer space. Therefore, the issue of delimitation of devices for different types of flights (space, suborbital and air) is increasingly being lobbied for. According to Professor Stefan Hobe, the determining factor for choosing legislation in this area is rationae materiae. Indeed, if an airplane is a "device capable of sustaining itself in the atmosphere due to air reactions," rockets that use their engines only for vertical thrust are space objects, which means that space law applies. Astrium Space Transportation, a subsidiary of EADS, is developing a suborbital device that will be in the aircraft category. Its private jet will run on traditional aircraft engines, and for the space lift phase - a rocket engine, which remains attached to the fuselage. This is a hybrid vehicle and its classification in the category of "aircraft" is very approximate, as more than 90 percent of flights are performed in the air at an altitude similar to airliners.

As for the legislation, we can take as an example the US Law on Amendments to the Space Commercialization Act of 2004, which defines a suborbital device in paragraph 19 as follows: on a suborbital trajectory, and the thrust of which is greater than its rise for most of the rocket part of its rise. Paragraph 17 of the same law defines a "space flight participant" as "a person who is not a crew being carried in a launch vehicle or re-entry ship." [14]

To date, space tourism has become a reality. Thus, on July 11, 2021, British billionaire Richard Branson and five members of his crew climbed on a rocket plane 86 km above sea level, reaching the limit of outer space, and successfully returned to Earth. At the time, Bezos Blue Origin said that unlike Branson Unity’s high-altitude aircraft, their New Shepard would fly above the Karman line, a 100 km altitude that most scientists consider to be the boundary of space, which happened on July 20, 2021 – Jeff Bezos made the first suborbital flight for his space company Blue Origin, which lasted 10 minutes and 22 seconds. Both Jeff Bezos and Richard Branson plan to develop suborbital space tourism. The company of the last Virgin Galactic plans to conduct two more test flights, and in 2022 to start commercial activities [15] These events should significantly accelerate the solution of the problem of delimitation of air and space. As for Ukraine, in recent years, space legislation has also been gradually improved. Thus, the Law "On Amendments to the Law of Ukraine" On Amendments to Certain Laws of Ukraine on State Regulation of Space Activities № 143-IX, was adopted by Parliament on October 2, 2019. The law creates conditions for the development of the domestic space industry, increasing its investment attractiveness, the formation of a competitive environment for space entities of various forms of ownership [16]. Thus, the document stipulates that the subjects of space activities can be enterprises, institutions and organizations of any form of ownership and organizational and legal form.

Conclusions. The adoption of this law is a significant step forward in bringing our space legislation in line with the requirements of the times. If Ukraine wants to develop private space tourism, we should create a single body on this issue (for example, the Office of Private Space Activities) and adopt legislation on private space traffic, mining on the moon and other objects and approve the principles of space cybersecurity. Today, the first priority is to develop a universal international legal instrument under the auspices of the United Nations or another international organization, which would comprehensively regulate issues related to suborbital flights. Thus, it is worth starting to develop international legal regulation of suborbital flights, as scientific and technological progress is not standing still and the frequency of suborbital aircraft is beginning to grow. This will directly affect the process of regulating aerospace navigation and the security of state sovereignty.
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Гіві Лобжанідзе, Вікторія Череватюк

ПРОБЛЕМИ РОЗМЕЖУВАННЯ СУБОРБІТАЛЬНОГО ТА КОСМІЧНОГО ПРОСТОРІВ У МІЖНАРОДНІМУ ПРАВІ (ГРУЗІЯ – УКРАЇНА)

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Мета дослідження: розкриття основних проблем, пов’язаних із правовим регулюванням суборбітального простору. При цьому приділяється увага проблемі організації суборбітального польоту і правового режиму повітряно-космічної міжнародної навігації. Методи: для досягнення визначені мети були використані загальні та спеціальні наукові (спеціальні) методи: аналіз, синтез, індукція, дедукція, абстрагування, конкретизація, узагальнення та ін. Результати: важливим залишається закріплення міжнародно-правової договірної норми щодо делімітації повітряного, космічного та суборбітального просторів, що сприятиме, зокрема, прогресивному розвитку міжнародного космічного права, а також забезпеченню належного міжнародного космічного правопорядку. Обговорення: сьогодні загострюється питання щодо регулювання нормами міжнародного права положень, якими було легалізовано наявність та відмежування категорії космічних туристів від космонавтів, необхідне визначення їх як космічних туристів, варто регламентувати особливості їх правового статусу та визначити загальні ознаки правового режиму їх діяльності.

Жодна міжнародна угода остаточно не визначила лінію розмежування між повітряним, космічним та суборбітальним просторами. З початку досліджень космічного простору держави та ООН не змогли домовитися про межу між повітряним простором і космічним простором. Протягом декількох десятиліть Комітет ООН з мирного використання космічного простору намагається продовжити переговори щодо розмежування повітряного простору та космічного простору. Тому все частіше лобіюється питання щодо розмежування пристроїв для різного виду польотів (космічного, суборбітального та повітряного).

Щодо України, то за останні роки тут теж поступово удосконалюється космічне законодавство. Так Закон «Про внесення змін до Закону України «Про внесення змін до деяких законів України щодо державного регулювання космічної діяльності» № 143-ІХ, був ухвалений парламентом 2 жовтня 2019 року.

Прийняття даного закону – це значний крок уперед для того, щоб привести наше космічне законодавство у відповідність із вимогами часу. Якщо ж Україна хоче розвивати приватний космічний туризм, нам варто створити єдиний орган з цього питання (наприклад, Управління космічної приватної діяльності) та прийняти законодавство щодо приватного космічного руху, видобутку корисних копалин на Місяці та інших об’єктах та затвердити принципи космічної кібербезпеки.

Сьогодні першочергово варто розробити універсальний міжнародно-правовий документ під егідою ООН чи іншої міжнародної організації, який вичерпно регулював би питання, що стосуються суборбітальних польотів. Таким чином, вже заробляється визнаць правовий режим суборбітальних польотів, оскільки науково-технічний прогрес не стоїть на місці і вже частота суборбітальних літальних апаратів починає зростати. Це безпосередньо вплине на процес регулювання аерокосмічної навігації і безпеку суверенітетів держав.

Ключові слова: суборбітальний простір; суборбітальний політ; правовий режим повітряно-космічної міжнародної навігації; космічний туризм.