

PROBLEMS OF LEGAL REGULATION OF ISSUANCE OF AN AIR OPERATOR CERTIFICATE WHEN USING UNMANNED AERIAL VEHICLE**

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Subject. The subject of the study is the legal problems of obtaining permission to operate aircraft (operator's certificate) in the field of unmanned aviation.

Purpose. The purpose of the article is to confirm or refute the hypothesis of incomplete compliance of the existing practice of issuing an operator's certificate with the principle of proportionality of mandatory requirements and risks in relation to the use of unmanned aircraft, to develop recommendations for improving the norms governing the process of issuing an operator's certificate when using unmanned aerial vehicles (UAVs).

Methods. The research methods included an analysis of the current state of the existing legal norms governing the process of issuing an operator's certificate when using UAVs, an analysis practices and problems of their application.

Conclusions. According to the results of the study, the authors identify a number of legal problems that hinder the development of the aviation industry with UAVs and create certain risks for the performers of such work:

(1) The presence of norms that are not applicable to the UAV operator (for example, the use of airports, the choice of alternate airfields, the creation of an aviation security service for the operator, the development of an aviation security program, requirements for aviation personnel, etc.);

(2) Legal uncertainty regarding the confirmation of the qualification level of an employee or a person engaged under a civil law contract engaged in work in unmanned aviation;

(3) Limited applicability to unmanned aviation of the forms of documents provided for in Appendix 2 to the Order of the Ministry of Transport dated November 19, 2020 No. 494 (the need to specify the details of certificates of aviation specialists, data on medical examination, information on engineering and technical personnel);

In the end, the authors of the article consider it appropriate to amend the rules for obtaining an operator's certificate for UAV operators with a maximum take-off weight of up to 30 kg.

(4)

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1. Introduction

The widespread use of new digital technologies necessitates the development of an adequate regulatory system for the relationships that arise in this regard. At the same time, it is important to consider issues of ensuring the safety of individuals, society, and the state in the context of their application, which, as several legal scholars rightly point out, can have both positive and negative consequences [1, p. 291; 2, pp. 228–229].

The transformation of legal regulation in the context of the digitalization of the economy and society is the subject of research by Russian scientists, including S.A. Ivanova [3]; P.P. Lang [4]; V.N. Lopatin [5]; S.V. Miroshnik [6]; D.A. Petrov [7]; N.E. Savenko [8]; V.N. Sinyukov [9]; Yu.A. Tikhomirov et al. [10]; S.G. Trifonov et al. [11]; I.I. Shchennikova [12]; as well as the works of several foreign authors, including M. Bogdan [13]; R. Reier Forradellas, L. Garay Gallastegu [14]; R. Funta, D. Buttler [15]; K. Mania [16], and others. Nevertheless, the study of digital law and legal regulation in the context of the application of digital technologies is generally at an early stage, and many relevant topics require further research.

In particular, the use of unmanned aerial vehicles (UAVs) is actively developing to solve various tasks of the digital economy. They allow for the rapid and relatively low-cost acquisition of objective, high-quality information for creating digital twins of various management objects, such as agricultural lands, construction sites, mining enterprises, linear infrastructure, and urban development [17, 18]. Information from UAVs can be used in big data technologies, predictive analytics, artificial intelligence, neural networks, virtual reality, augmented reality, and others [19]. As part of the implementation of the comprehensive scientific and technical program of the full innovation cycle «Clean Coal – Green Kuzbass» (approved by Order of the Government of

the Russian Federation of May 11, 2022, No. 1144-r), the authors of this work are conducting aerial surveys of coal industry facilities, construction sites, and agricultural land plots. Therefore, studying the issue of obtaining an air operator certificate in the field of unmanned aviation was one of the sub-tasks required for implementation this year.

The most important advantages of unmanned aviation are the comparatively low costs, the virtual absence of the need for airport and other infrastructure, significantly greater ease and accessibility of use compared to traditional manned aviation, and a significant reduction in risks due to the absence of people on board and the low weight of UAVs. These features, in our opinion, should imply certain specificities of legal regulation of UAV operation compared to traditional airplanes and helicopters (in particular, differentiation of mandatory requirements and conditions for issuing permits for activities in this area).

It should be noted that the practice of legally transporting goods and, especially, people using UAVs is practically non-existent in Russia. In the vast majority of cases, they are used for aerial photography and aerovisual flights, i.e., for collecting information for creating digital twins, monitoring, and control. Therefore, it is necessary not only to improve the regulation of relations arising from unmanned transportation of passengers and goods, as rightly written by Yu.N. Boyarskaya [20, p. 60], N.S. Zorina, and D.N. Zorin [21, p. 73]. It is also necessary to improve the norms and law enforcement practice in the field of issuing permits for the operation of UAVs and the performance of aviation work with their help that is not related to transportation. However, these issues remain understudied in legal science. A number of Russian legal scholars consider the widespread use of UAVs primarily in the context of new risks and security threats, which implies the construction of certain legal restrictions and mechanisms for imposing liability for harm caused

[22, 23, 24, 25].

This aspect of research is certainly important (although certain norms of responsibility for violations of established rules and procedures in the field of UAV use, as shown in [26], already exist and are applied). However, even more important and promising, in the authors' opinion, is the improvement of legal regulation and law enforcement in the provision of permits for the operation of UAVs and the performance of aviation work in the context of the letter and spirit of the current legislation. In particular, Federal Law No. 247 of July 31, 2020, «On Mandatory Requirements in the Russian Federation», assumes ensuring proportionality, balance, and commensurability between possible risks arising in the course of entrepreneurial activity and the complexity and cost of fulfilling mandatory requirements.

Based on this, the authors assume that the significantly lower risks of unmanned aviation justify the need to refine and adapt the legal norms regulating the provision of permits for the use of UAVs and the performance of aviation work (in particular, the issuance of an air operator certificate). The research hypothesis is that the existing rules for issuing an air operator certificate and the practice of their application are oriented toward traditional aviation with a pilot on board the aircraft and do not take into account the specific characteristics of UAV use, imposing excessive burdens and costs on unmanned aviation operators, and indirectly on the country's economy as a whole, which are disproportionate to the risks.

To confirm this hypothesis, an analysis was conducted of the current state of norms regulating the issuance of an air operator certificate when using UAVs, the practice and problems of their application, and, on this basis, recommendations were developed for improving these norms. The study is limited to the analysis of issues of legal use of UAVs in the civilian sphere.

2. Existing Norms Regulating Obtaining an Air Operator Certificate in Aviation

In accordance with existing legislation and bylaws, virtually all work actually performed using aircraft, including UAVs, falls into the category of aviation work in the understanding of Article 114 of the Air Code (AC) of the Russian Federation. The list of this work is fixed in Appendix 1 to Order No. 494 of the Ministry of Transport (Mintrans) of the Russian Federation dated November 19, 2020.

Article 115 of the Air Code of the Russian Federation provides for the performance of aviation work on the basis of a relevant agreement between the customer interested in its performance and the contractor (operator). At the same time, not only an aviation enterprise for which it is the main activity (Article 61 of the Air Code of the Russian Federation) can be a contractor under an agreement for the performance of aviation work, but also any operator of aircraft.

In this case, aviation legislation provides for the legal status of the operator and certain mandatory requirements for it. The operator, in accordance with subparagraph 3 of Article 61 of the Air Code of the Russian Federation, is «a citizen or legal entity that owns an aircraft by right of ownership, under a lease agreement, or on another legal basis, using the specified aircraft for flights and having an operator's certificate (certificate)». In addition, the operator is obliged to comply with federal aviation regulations. Consequently, an organization that is not an aviation enterprise but plans to perform aviation work for external customers is obliged to have the status of an operator, which requires both the availability of the aircraft itself and obtaining a certificate. It should be noted that when using UAVs for aviation work instead of traditional manned aviation, the norms cited above assume virtually no deviations from the general rules.

The conditions for obtaining an air operator certificate and the procedure for its issuance are

provided for by federal aviation rules, approved by the aforementioned Order No. 494 of the Ministry of Transport of the Russian Federation dated November 19, 2020. At the same time, this Order contains a significant number of blanket norms that also practically do not take into account the specifics of unmanned aviation. An analysis of both Order No. 494 of the Ministry of Transport of the Russian Federation dated November 19, 2020, and several dozen regulatory documents to which it refers showed that the main requirements for obtaining an air operator certificate currently include:

1. The availability of equipped aircraft and other property necessary for aviation work, which the operator owns by right of ownership or another legal basis.

2. Maintaining airworthiness, complying with all requirements for ground and technical maintenance, preparing and performing flights in accordance with federal aviation regulations.

3. The specificity of conducting aviation work using UAVs with a maximum take-off weight (MTOW) of up to 30 kg within the framework of Order No. 494 of the Ministry of Transport of the Russian Federation dated November 19, 2020, is reflected only in the requirement to hire or attract, under a civil law contract, persons whose qualifications meet the established requirements, organize their training and qualification control, and, if necessary, take measures to maintain qualifications.

4. Ensuring mandatory insurance in accordance with Articles 131 and 135 of the Air Code of the Russian Federation, liability to third parties, as well as liability for damage that may be caused during the performance of work.

5. Development and approval of a number of internal documents – flight operations manual (FOM), flight safety management manual (FSMM), and monitoring their compliance. Order No. 494 of the Ministry of Transport of the Russian Federation dated November 19, 2020, notes that the FSMM

«must correspond to the scope and complexity of flight operations». This theoretically allows for some relaxation of the requirements for the UAV operator. There is no such reservation with respect to the FOM. It is also required to develop an aviation security program that meets the requirements of Chapter XII of the Air Code of the Russian Federation (in particular, to provide for preventing unauthorized access to unmanned aviation systems).

6. Establishing a formalized procedure for providing meteorological and aviation information to crew members. This requirement also applies to external UAV pilots, who are members of its crew in accordance with paragraph 1.1 of Article 56 of the Air Code of the Russian Federation.

7. Developing and approving an internal organizational structure, including the formation of UAV crews. It is also necessary to establish and regulate procedures for familiarizing personnel with the necessary information.

In addition, there are a number of requirements related to the performance of aviation work outside the Russian Federation, which are de facto practically inapplicable to unmanned aviation.

3. Legal Problems of Obtaining an Air Operator Certificate by UAV Operators

The analysis of bylaws detailing the requirements for the UAV operator, as well as the authors' personal experience in using unmanned aviation for solving various scientific, technical, and applied tasks, made it possible to identify a number of legal problems that, to a certain extent, hinder the development of the industry and create risks. First of all, we will highlight the practically impossible, in our opinion, norms that are inapplicable to the UAV operator.

1. When developing an aviation security program, it is necessary, among other things, to be guided by the requirements of Order of the Ministry of Transport of the Russian Federation dated February 16, 2011 «On the Procedure for Informing Transport Infrastructure Entities and Carriers about

Threats of Commission and Commission of Acts of Illegal Interference at Transport Infrastructure Facilities and Vehicles», as well as the federal aviation rules «Aviation Security Requirements for Airports» (approved by Order No. 142 of the Ministry of Transport of the Russian Federation dated November 28, 2005).

However, as noted above, unmanned aviation is practically not used as a means of transport. In addition, UAVs with MTOW up to 30 kg do not actually use such transport infrastructure facilities as airports. At the same time, control charts contain questions about the availability of agreements for ground handling at airports, as well as plans (instructions) to counter acts of illegal interference.

2. A number of requirements of the federal aviation rules «Preparation and Performance of Flights in Civil Aviation of the Russian Federation» are also impossible to fulfill. In particular, these are the obligations to choose an alternate aerodrome in accordance with certain requirements for the distance to it, meteorological conditions, and a number of rules for landing outside the aerodrome (for example, a visual inspection of the area by the aircraft commander from a height of at least 50 m, which is impossible to carry out when using a number of UAVs).

3. The control card contains points related to the requirements for aviation personnel. At the same time, some UAV operators may not have aviation personnel in practice: according to Order No. 419 of the Ministry of Transport of the Russian Federation dated October 19, 2022 «On Approval of the List of Specialists of Aviation Personnel of Civil Aviation of the Russian Federation», external pilots belong to such a category of aviation personnel as «Specialists included in the crew of unmanned civil aircraft, with the exception of unmanned civil aircraft with a maximum take-off weight of 30 kilograms or less». Thus, external pilots of UAVs with MTOW up to 30 kg, who usually carry out their

control and maintenance, do not belong to aviation personnel.

4. Control card item 5.1.1 assumes the development of an aviation security program (ASP), the creation of an aviation security service (ASS) at the operator's premises, the availability of agreements with airports for ensuring aviation security, as well as control of certificates of legal entities providing aviation security at airports. Along with the fact that airports are not used during UAV operation, the cost of resources for creating the ASS in unmanned aviation is clearly disproportionate to the risks.

An example from the authors' personal practice: the organization where the authors of the article work, when trying to obtain an air operator certificate, proceeded from the fact that the ASS in terms of scale and resources should correspond to the specifics of unmanned aviation. Therefore, aviation security tasks and the functionality of the flight director were assigned to the head of the responsible structural unit – the head of the aerial photography sector. During the approval process of the ASP, Rosaviatsia did not object to this approach in principle, but pointed to the need for the flight director to undergo additional training at an aviation training center (although, as noted above, he does not belong to aviation personnel).

These regulatory restrictions can in principle be overcome, since there is the possibility of substantiating the inapplicability of certain requirements and questions of control charts to UAV operating conditions. Nevertheless, the implementation of this opportunity in practice can be problematic, since in the absence of clear rules, the justification for inapplicability remains at the discretion of Rosaviatsia employees. However, there was or is a number of norms that directly relate to the operation of UAVs with MTOW up to 30 kg.

Thus, the first edition of Order No. 494 of the Ministry of Transport of the Russian Federation dated November 19, 2020, contained a requirement

(and it was planned to enter into force on March 1, 2022) that the UAV operator with MTOW less than 30 kg «must hire or attract to perform work under a civil law contract person who have undergone training (preparation) under training programs» that are subject to approval by Rosaviatsia. At the same time, these programs were never approved, which made it impossible to fulfill the corresponding requirement, and, accordingly, led to Rosaviatsia's refusal to issue an air operator certificate. The situation remained unchanged until the amendments to the specified Order were made on October 19, 2022, which came into force on March 1, 2023.

The current version of the Order (clause 2.7) contains a requirement, when operating UAVs with MTOW up to 30 kg, to hire or attract, under a civil law contract, persons whose qualifications meet the requirements of federal aviation rules, as well as the operator itself. Moreover, in control card 2.1.1, the requirement of the previous, invalid version of Order No. 494 of the Ministry of Transport of the Russian Federation dated November 19, 2020, is still reproduced.

This leads to the fact that Rosaviatsia employees, guided by Order No. 101-p of February 20, 2021, must, strictly speaking, check for the presence of certificates of aviation specialists, which external pilots of UAVs with MTOW up to 30 kg, as already noted above, are not. Consequently, legal uncertainty remains regarding what documents confirm the necessary level of qualification for working in unmanned aviation.

The application of clause 2.11 of the federal aviation rules, approved by Order No. 494 of the Ministry of Transport of the Russian Federation dated November 19, 2020, is also difficult. With regard to the mandatory insurance of the life and health of crew members, it is fundamentally possible to substantiate the inapplicability of this norm to unmanned aviation, since the requirements of Article 132 of the Air Code of the

Russian Federation apply only to aircraft with a pilot on board. However, it is objectively necessary to insure the operator's liability and liability to third parties; this requirement cannot be considered excessive.

According to the FGIS «Register of Operators and Aircraft», out of 287 legal entities and individuals that have a certificate for performing aviation work, only 55 organizations belong to unmanned aviation operators. This clearly does not correspond to the real scale of UAV use for performing aviation work in the country, and indicates excessive administrative burdens for unmanned aviation operators, making it difficult to work within the legal field. Therefore, with significant administrative barriers and costs, the active use of UAVs for aviation work is carried out without obtaining an air operator certificate.

Current legislation does not establish an institution of direct responsibility for performing aviation work using UAVs without an air operator certificate. However, there is a practice of sending requests regarding the purpose of the UAV flight by the Federal Service for Supervision of Transport (Rostransnadzor) to those organizations that received permits to use airspace from the bodies of the Unified System of Air Traffic Management of the Russian Federation. It should be noted that the fact of obtaining such a permit indicates the desire of unmanned aviation operators to minimize risks and duly take into account the legitimate rights and interests of third parties.

Nevertheless, when receiving a response with a wording that allows the purpose of the UAV flight to be interpreted as aviation work, Rostransnadzor issues a warning about the inadmissibility of violating mandatory requirements (in accordance with Article 49 of Federal Law No. 248 of July 31, 2020, «On State Control (Supervision) and Municipal Control in the Russian Federation») indicating the need to obtain an air operator certificate. Accordingly, if information on the fulfillment of the requirements specified in the

warning is not submitted in a timely manner, legal entities may be held administratively liable.

Under Article 19.7 of the Code of Administrative Offenses of the Russian Federation (CAO RF) «Failure to Provide Information (Information)», a fine ranging from 3 to 5 thousand rubles may be imposed on a legal entity, which, of course, is difficult to consider a tangible punishment. However, failure to comply with the requirements specified in the warning may serve as the basis for an audit of the organization, during which, if violations are detected (including the performance of aviation work without an air operator certificate), it is possible to bring to responsibility already under Article 11.4 of the CAO RF «Violation of the Rules for the Use of Airspace». It implies, among other things, suspension of activities for a period of up to 90 days. Consequently, in the absence of an air operator certificate, unmanned aviation operators and organizations are exposed to significant legal risks that may threaten their activities.

4. Prospects for the Development of the Institute of Obtaining an Air Operator Certificate in Unmanned Aviation

The study allowed us to generally confirm the hypothesis about the incomplete compliance of the existing practice of issuing an air operator certificate with the principle of proportionality of mandatory requirements and risks in relation to the use of unmanned aviation.

The conditions for obtaining an air operator certificate are oriented towards minimizing the likelihood of the most significant risk that arises during aviation work – the crash of an aircraft with human casualties and large economic damage. Since aviation work using UAVs with MTOW up to 30 kg is much safer, the conditions for obtaining an air operator certificate for unmanned aviation operators, in the authors' opinion, should be significantly relaxed. This will create favorable

conditions for unmanned aviation, taking into account its strategic importance for the development of the economy and ensuring the security of the country without significantly increasing risks. It seems appropriate to make the following changes to the rules for obtaining an air operator certificate for UAV operators with MTOW up to 30 kg:

1. Develop and approve specific unified requirements for the personnel of UAV operator organizations, in particular, for flight directors, form and approve at the Rosaviatsia level a uniform program of additional professional education. Depending on the specifics of work activity and the degree of responsibility for safety, this may be an additional professional program or a professional retraining program. Their completion should be a necessary and sufficient condition for recognizing the compliance of the operator's personnel qualifications with the requirements of clause 2.7 of Order No. 494 of the Ministry of Transport of the Russian Federation dated November 9, 2020.

2. Exclude for UAV operators the requirements related to the use of airports and airfields, the requirements for the availability of agreements with them, and make appropriate changes to the control cards. At the same time, it is advisable to retain the norm obliging operators to exclude unauthorized access to UAVs and their control.

3. Exclude for UAV operators the requirements of clause 2.11 of Order No. 494 of the Ministry of Transport of the Russian Federation dated November 9, 2020, in the part providing for mandatory insurance of the life and health of crew members.

Along with this, in the future, a comprehensive analysis of the norms regulating the issuance of an air operator certificate is advisable in relation to unmanned aviation operators, taking into account all their significant features.

5. Conclusion

The norms and rules for issuing an air operator certificate for the legal performance of aviation work should ensure a balance and proportionality between administrative barriers, costs, and risks reduced through mandatory requirements. The existing norms create an excessive administrative burden, making it difficult for operators to obtain certificates – UAV operators with MTOW up to 30 kg, the risks of using which are fundamentally lower compared to traditional manned aviation. As a result, such a strategically important technology for the development of the country as unmanned aviation is actively used outside the legal field. The study developed a number of recommendations for changing the requirements of federal aviation rules and other bylaws, creating favorable conditions for the legal use of UAVs for aviation work.

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