

The Problem of Legal Regulation of Archival Information Resources in the Field of Research on the Development of the Rocket and Space Industry

Liliya Popova

Doctor of Law, Kharkiv National University of Civil Engineering and Architecture
(Kharkiv, Ukraine)

E-mail: liliyapopovamay@gmail.com

<https://orcid.org/0000-0001-8255-8363>

Anatolii Khromov

Ph.D. in Historical Sciences, State Archival Service of Ukraine (Kyiv, Ukraine)

E-mail: a.khromov@arch.gov.ua

<https://orcid.org/0000-0002-9546-7089>

Marat Balyshev

Ph.D. in Historical Sciences, Central State Scientific and Technical Archive of Ukraine
(Kharkiv, Ukraine)

E-mail: m.balyshev.cdntau@arch.gov.ua

<https://orcid.org/0000-0001-5211-3208>

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The article notes that in the maelstrom of military events on the territory of Ukraine, where the Russian Federation fired thousands of ballistic and cruise missiles, killing thousands of Ukrainians, interest in the topic of rocket and space technology has grown significantly. The interest of the Ukrainian population in information about the development of the rocket and space industry in Ukraine and its position in the world market of space services has especially grown. One of the fundamental problems in the study

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of the historical development of the rocket and space industry is the closeness of archival information resources due to the fact that the vast majority of these material media have access restrictions and are stored in the archival divisions of development organizations, while other documents that lose their technical relevance are destroyed. The article provides information that the list of topics, the scientific and technical documentation of which is subject to attribution to the National Archival Fund and transfer to state storage, contains little information on rocket and space topics. An important source in the field of rocket and space activities are the funds of museums of organizations where certain equipment was developed and produced. Another important source of information is interviews with direct participants in the creation of rocket technology, that is, oral sources of information. The authors considered the possibility of granting such oral sources of information the status of an official document. The necessity of conducting a verification of the reliability of the information obtained from the interview, which occurs due to the examination of the value of such information, is noted. In addition, the authors propose in the legal field to approve oral sources of information in the field of rocket and space activities to unique documents after conducting an appropriate examination to establish exceptional cultural value and importance for the formation of the national identity of the Ukrainian people, as well as extraordinary value in the military defense industry. countries. In addition, the need for guaranteed preservation of oral sources of information about rocket and space activities in the archives of Ukraine and ensuring their availability for use by the population and future generations was noted.

Keywords: rocket, space activity, legal regulation, oral sources of information, expertise, unique document, accessibility.

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Introduction

Both the general public and the expert-analytical community have always been interested in the development of the rocket and space industry and its position in the world market of space services due to the connection of rocket and space activities with international trade and politics, global markets, international competition, standardization, etc. Today, rocket and space activities integrate and use the achievements of such important high-tech industries as computer software, electronics, communication, biotechnology, and the creation of new materials. And rocket and space technologies provide communication and navigation, increase the effectiveness of intelligence, and guarantee not only technological and military, but also scientific, economic and political advantages.

In recent years, interest in rocket and space activities has grown in connection with the withdrawal of Russia, and then the United States, from the Treaty on the Elimination of Medium- and Short-Range Missiles (the so-called agreement on the real reduction of existing weapons), which was signed by M. Gorbachev and by R. Reagan in Washington on December 8, 1987. Then, during the Soviet-American summit, the treaty participants undertook not to produce, test, and deploy medium (1,000 – 5,500 km) and short (500 – 1,000 km) land-based ballistic and cruise missiles, and also had within 3 years to destroy all launchers and land-based missiles with a range of 500-5500 km, including missiles in both the European and Asian parts of the USSR (Treaty, 1987). In addition, significant interest in the field of rocket and space activities had increased in connection with the full-scale invasion of Russia on the territory of Ukraine on February 24, 2022, when the Russian aggressor launched thousands of cruise and ballistic missiles both at military and civilian objects of Ukraine (Pagulic et al., 2022; Lyman, 2022).

A direct connection can be traced between Russia's withdrawal from the Intermediate-Range Nuclear Forces Treaty and the cynical attack on Ukraine, which points to Russia's long-standing strategic plans to expand "imperial Russia" at the expense of Ukrainian territories, calling it a "special military operation."

In light of the outlined events, there is interest in the development of the rocket and space industry in Ukraine and its position in the world market of space services. However, one of the fundamental problems of researching the historical development of the rocket and space industry is the closed nature of archival information resources. The majority of this physical media has access restrictions and is stored in archival divisions of developer organizations. Other documents that lose their technical relevance are destroyed.

Profile archival institution containing materials related to the historical development of the rocket and space industry

The Central State Scientific and Technical Archive of Ukraine (CSSTA of Ukraine) is the archival institution that contains materials related to the historical development of the rocket and space industry of our country, although it is not much. The resources of the specified archival institution contain scientific and technical documentation (STD) for objects of capital construction and industrial production, technological processes and scientific developments of organizations and enterprises of the leading branches of the national economy of Ukraine for more than a century. It is worth noting that scientific and technical documents are extremely informative, but quite difficult to process and describe from their original source, since design and technological documentation, which is in the archive funds, is stored only in the form of graphic STD and does not contain the necessary social and management component.

The analysis of the supervisory files of more than 200 legal entities (sources of the formation of the National Archival Fund (NAF) of the CSSTA of Ukraine shows that the Lists of problems (topics), the scientific and technical documentation of which is subject to being assigned to the NAF and transferred to state storage, do not include documented rocket and space topics. Seemingly, the only exception is the documentation of the R-50 fund (Fund R-50, 2021), which was transferred to the state storage of Ukraine in 1977 from the Novokramatorsk Machine-Building Plant. There is documentation pertaining to the nomenclature of rocket equipment used at the Kapustin Yar missile range. The specified equipment is represented by the design documentation of the 8U2 (FR-50, 1951-1958) and 8U24 (FR-50, 1952-1960) ground gun carriages (installers), as well as the 8U25 (FR-50, 1956-1962) gantry type installer, which was installed on the chassis of the YaAZ-210 truck. This equipment was used to transfer the first Soviet R-1 ballistic missile, created under the leadership of S. P. Korolev, from the engineering base to the launch position, as well as its installation on the launch pad of the launch complex. Also, the specified archival fund presents an improved model of the 8U24 ground carriage (developed on the basis of the 8U22) and the 8T21 gantry crane (FR-50, 1951-1958), which were intended to service the second Soviet R-2 ballistic missile. Later, on the basis of the 8U24, the 8U25 portal-type installer and the K-1 cross-border trolley (8T130 unit) (FR-50, 1953-1958) were created for the R-5, R-5M, and R-12 series of missiles, which is the first Soviet base of strategic purpose.

Materials prepared on the basis of oral sources of information for control systems of rocket and space technology

An important source of many studies, including in the field of rocket and space activities, are the funds of museums of organizations where certain equipment was developed and produced. In addition, important sources of information are the memories of engineers, scientists, designers, who can be accredited as direct participants in the creation of such equipment. Not all of them note down important information and then print it, making it possible for researchers to get acquainted with this type of information. Therefore, it is very important to learn the details of the formation and development of rocket and space technology from “the source” as long as there is such an opportunity, that means relying on “oral sources of information.” Often this type of information is obtained in historiography; however, in the absence of a sufficient amount of data in other areas, similar measures are also resorted to. Subjective perception and presentation on the sequence of events, directly related to oral language practices, gradually become a necessary component of any research: events and their details, which were previously insignificant, quickly gain importance. This trend is especially characteristic and relevant for research in the field of research on the peculiarities of the development of technology.

In 2017, materials prepared on the basis of oral sources testifying to the activities of the Kharkiv scientific and industrial complex in the field of control systems of rocket and space technology were sent to the CSSTA of Ukraine. The application of innovative forms of archival work was initiated in connection with the need to preserve invaluable data presented in new formats. For this purpose, a new archive was created in the CSSTA of Ukraine, which was assigned the single name “Oral-historical documents on the history of science and technology in Ukraine” (F. 251, 1951-2015) and a new group of scientific and technical documents called “Oral-historical documentation” (STD group No. 5). The specified materials were received from the National Technical University “Kharkiv Polytechnic Institute” in the form of phonorecordings of interviews with the knowledge and experience of the developing scientists and other, direct participants of the events, with documented confirmation of the authors regarding the authenticity of the information presented and consent to its further academic and educational use (generally the volume of recordings is more than 5.5 hours).

The mentioned interviews present the recollections of the leading experts of the “Hartron-Arkos” Research and Production Enterprise (formerly “Elektroprivladobuduvannya” Design Bureau (DBE), which in the 1960s was the leader in the field of development of control systems for rocket and space technology (CS RST) in the former USSR (Fund 251, 2017).

During the process of studying the issues of including an oral account into an official document, two priority areas of work were identified, the possibility of publishing work shared with the author, which contains a historical account, or the creation of an archival document. In the first case, a publication with memoirs can be perceived as accounts that does not have the status of an official source. In the second case, the document receives the official archival status, which affects the credibility of its content. Moreover, the archival document is stored for a sufficiently long period (sometimes forever), which corresponds to the purpose of such an interview, namely the preservation of information. To check the reliability of the information obtained from the interview, it is necessary to carry out an examination of the value of such information. This process is multifaceted. After the transcript of the interview, the voiced data is subject to thorough verification and comparison with official sources, after which the

signed document is certified either by a notary or with a production seal and is handed over to specialists of the archival expert verification commission. The specified source search method is especially relevant for subjects whose scientific and technical documentation is not available to research scientists. It should also be understood that documents that have lost their technical relevance are usually destroyed without being made public.

Thanks to interviews with leading engineers and scientists of the “Hartron-Arkos” Research and Production Enterprise, it became possible to obtain information about the important components of the process of creating control systems for intercontinental ballistic missiles and spacecraft. This made it possible to obtain more complete information about the events of those days and to assess in more detail the conditions under which the state’s nuclear missile shield was created (Fund 251, 2017). With the help of interviews, it was also possible to restore the history of the creation of the on-board digital computer, intended for the equipment of combat ballistic missiles and launch vehicles, as well as the system for checking the equipment of the “Electronic Launch” missile. In particular, it was possible to do this thanks to an interview with the head of the combat equipment complex and the chief designer of on-board computer systems A.I. Krivonosov, who managed not only the development of the first on-board digital computer in the USSR, but also the computer complex of a number of IBM (Intercontinental Ballistic Missiles), including a powerful missile R-36M2, listed in the Guinness Book of Records, as well as powerful “Energy” and “Zyklon” launch vehicles (Gorelova, 2009).

Among the missile specialists whose interviews have enriched the National Archive Fund, the following are represented: 1) V. O. Uralov, chief designer of missile control systems 15A30 (UR-100N), 15A35 (UR-100NU), 15A18M (R-362M), deputy chief designer of strategic missile control systems of “Elektroprivlادobuduvannya” Design Bureau; 2) V. G. Sukhorebry, head of stabilization laboratory 311 of “Elektroprivlادobuduvannya” Design Bureau; 3) A. M. Kalnoguz, chief designer of “Hartron-Arkos” Research and Production Enterprise; 4) O. Ya. Makarenko, head of the bureau of “Hartron-Arkos” Research and Production Enterprise, Honored Inventor of Ukraine; 5) Yu. O. Kuznetsov, head of the sector of the theoretical department for the development of spacecraft control systems, head of “Hartron-Arkos” Research and Production Enterprise (Fund 251, 2017).

The global space market is a significant segment of the global high-tech market. In each state, the space industry is one of the most competitive, because it includes a large number of high-tech enterprises that represent the state on the world market. It is important to note, states that have a national space strategy and a rocket and space industry are entering a new level of development. The space industry occupies a special place in the military-industrial complex, becoming an increasingly powerful stimulus and effective tool for the growth of the economic, scientific, technical, and military potential of the world’s states. The development of space technologies, which are based on high, critically important, mostly dual technologies, makes a significant contribution to ensuring strategic stability and security at all levels. So, for example, in China, India and Japan, a breakthrough in the space industry is an important factor in the transformation of the national military-industrial complexes of these countries, which contributes to the deep modernization of their armed forces and the increase of military-economic power, creating a new situation from the point of view of regional and global security. It is the space industry that is an important factor in ensuring national security, it directly contributes to solving a number of socio-economic, scientific and technical problems, plays a certain role in ensuring innovative development and international prestige of the state. The

sphere of space activity is associated with large-scale opportunities and significant economic advantages; the use of space means in developed countries can already be considered a global trend.

State-sponsored space science and research will also be important drivers for a range of scientific research and development. In addition, the ability to carry out space activities will heighten the country's prestige.

Legal regulation of oral sources of information in national legislation

The principle of legal certainty belongs to the general principles of law, which should guarantee sufficient ease of perception, clarification of the content of the law, and the possibility to use it if necessary. Weaknesses in the wording, and inconsistencies in the interpretation of legal norms lead to problems of legal understanding, which are further aggravated at the stage of law enforcement. Legal certainty as a principle of law and as a requirement of law should prevent such problems. The ultimate goal of rulemaking should be the unity of legal understanding, the absence of a double, situational interpretation of the content of a legal norm (Popova & Khromov, 2021a; Popova L. et al., 2021).

In addition, the international community sets quite high requirements for the quality of laws, clarity of their wording, correct interpretation, and correct application (Popova et al., 2021). The Venice Commission in its report dated April 4, 2011, "The Rule of Law" indicated that legal certainty is an element of the rule of law (Rule, 2011).

Oral sources of information are important in the field of rocket and space activities. Since verbal historical documents are very specific, their classification as unique is innovative (including taking into account the existing Procedure and Methodology). This makes sense, since, as mentioned earlier, there are only a handful of publications on the historical development of missile control systems and spacecraft. Moreover, these publications are not organized. At the same time, it is obvious that control systems are the most important component of rocket and space technology, which requires careful attention and legal certainty and protection.

Thus, Article 1 of the Law of Ukraine "On the National Archive Fund and Archive Institutions" establishes that a unique document is a document of the National Archive Fund (NAF), which has an exceptional cultural value and is important for the formation of the national self-awareness of the Ukrainian people, and also defines its contribution into the world cultural heritage (About, 1993). In turn, the same law defines that a document of the National Archive Fund (NAF) is an archival document, the cultural value of which is recognized by an appropriate examination and which is subject to state accounting and storage (About, 1993). That is, the legislator supported the possibility for the existence of particularly valuable documents among other important articles according to the criterion of uniqueness.

The State Archive Service of Ukraine, in accordance with Regulation (On the approval, 2015), organizes the work related to classifying NAF documents as unique and including them in the State Register of National Cultural Heritage.

Classification of NAF documents as unique is carried out by identifying them, carrying out a value examination, describing them, and entering them into the State Register (On conducting, 2007). The final decision on recognition of a document as unique and its inclusion in the State Register is made by the Central expert verification commission, which functions under the State Archives Service of Ukraine, based on applications submitted by expert verification commissions of state archives (Popova & Khromov, 2021).

The archival legislation also established that the criteria for classifying NAF documents as unique are the origin, content, and external features of the document. Each criterion covers a certain set of characteristics of the document, the presence of which is the basis for its classification as unique:

- a) origin – the functional purpose of a legal entity or the importance of a natural person (founders) in the life of society (the scale and significance of the activity of this person in the state administration system, their role in social, political, cultural life, etc.), time of creation (any original document created before the 16th century), the place and historical conditions of the creation of the document (for example, documents created under extreme circumstances).
- b) content – the significance of the information contained in the document (uniqueness and typicality);
- c) external features – form of fixation and transfer of content, peculiarities of document design (Popova & Khromov, 2021).

An important issue regarding the preservation of oral sources of information in the field of rocket and space activities is the issue of their legal regulation, granting the status of official documents to individual oral sources of information in cases defined by legislation, and in addition – providing access to them to modern researchers, scientists, as well as future generations.

Access to the documents of the National Archive Fund is regulated by the legislation of Ukraine, in particular the laws of Ukraine “On Culture,” “On Information,” “On the National Archive Fund and Archive Institutions.” Thus, the Law of Ukraine “On Culture” guarantees citizens the right to access cultural values by using, in particular, documents of the National Archive Fund of Ukraine or their copies (Chapter II, Article 8 “The right to access cultural values and cultural assets”). This same guarantee is confirmed by the Law of Ukraine “On Information,” which states that the right to information is ensured by the free access of subjects of information relations to archival funds. At the same time, the Law contains instructions on the possibility of limiting this access in the interests of national security, territorial integrity, or public order, in order to prevent riots or criminal offenses, to protect public health, to protect the reputation or rights of other people, to prevent the disclosure of information received confidential, or for the maintenance and impartiality of justice (Chapter I, Article 6 “Guarantees of the right to information”). Everyone is provided with free access to information that concerns him personally (Chapter II, Article 11 “Information about a natural person”). The Law of Ukraine “On the National Archive Fund and Archive Institutions” guarantees the provision of access to archival documents from the moment they are received by the archival institution and the right to use NAF documents of citizens of Ukraine (Chapter V, Article 15 “Access to documents of the National Archive Fund”) (Access, 2022).

Solving the issue of access to archival information, in particular in the field of rocket and space activities, is urgent in the archival industry and needs to be resolved in the near future. At the current functioning stage of state archives, the documents that reach them do not fully reflect all the information in the variety of resources created by modern society. Access to archival information can be provided subject to the fulfillment of certain conditions, namely: with proper storage, formation, completion of archives, their accounting and use of information (Khromov, 2021a; Popova & Khromov, 2021b).

Conclusions

Rocket and space technologies guarantee technological, military, scientific, political and economic advantages, increase the effectiveness of intelligence, provide communication and navigation, etc. Therefore, there is no doubt that the investment of the world's countries in the development of the rocket and space industry is a relevant and important issue for ensuring the effective development of this high-tech segment, which in the conditions of globalization is able to provide the prerequisites for long-term strategic growth and technological leadership. In addition, the rocket and space industry occupies a special place in the military-industrial complex, becoming an increasingly powerful stimulus and effective tool for the growth of the economic, scientific-technical and military potential of the countries of the world, and, accordingly, plays a significant role in the country's military and defense industry. The development of rocket and space technologies, which are based on high, critically important, mainly dual technologies, makes a significant contribution to ensuring strategic stability and security at all levels.

At the same time, oral sources of information, which are sometimes the only sources of information in this field, are of great importance in the study of the development of the rocket and space industry. Therefore, having studied the significance of oral sources of information and trying to prove their uniqueness, the authors propose to legally approve oral sources of information in the field of rocket and space activities as unique documents, since they represent not only an exceptional cultural value and huge importance for the formation of the national self-awareness of the Ukrainian people, but also have extraordinary value in the country's military and defense industry. In addition, it is advisable to focus attention on the need to guarantee the preservation of oral sources of information about rocket and space activities and to ensure their availability for use by the population and future generations. The practical implementation of the availability of information in the field of rocket and space activity provides an opportunity not only for familiarization the needs of the development of this vast industry, but also in the educational and cognitive aspects of public education.

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