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MAIN APPROACHES TO THE SYSTEMATIZATION OF LEGISLATIVE AND REGULATORY DOCUMENTS OF CIVIL AVIATION

ОСНОВНЫЕ ПОДХОДЫ К СИСТЕМАТИЗАЦИИ ЗАКОНОДАТЕЛЬНЫХ И НОРМАТИВНО-ПРАВОВЫХ ДОКУМЕНТОВ ГРАЖДАНСКОЙ АВИАЦИИ

АЗАМАТТЫҚ АВИАЦИЯНЫҢ ЗАҢНАМАЛЫҚ ЖӘНЕ НОРМАТИВТІК-ҚҰҚЫҚТЫҚ ҚҰЖАТТАРЫН ЖҮЙЕЛЕУДІҢ НЕГІЗГІ ТӘСІЛДЕРІ

Abstract. The article deals with the systematization of legislative and regulatory documents of civil aviation, as well as withthe structural and functional formalization of the electronic educational complex of legislative and regulatory documents. PThe results of the study of the issues of systematization of legislative and regulatory documents, mathematical structural and functional formalization of the information field of these documents showed that the existing approaches to systematization of legislative and regulatory documents of HA used for educational purposes sufficiently reflect their status, purpose and boundaries of use, have commonality when taking into account priority and areas of application. use in the GA, which gives grounds to take them as the basis for constructing the concept of the EOC information field.

Keywords: systematization, CA documents, legislative, regulatory, documents, air traffic controllers.

Аннотация. В статье рассмотрены систематизации законодательных и нормативно-правовых документов гражданской авиации, а также структурно-функциональная формализация электронно-образовательного комплекса законодательным и нормативно-правовым документам. Результатов исследования вопросов систематизации законодательных и нормативно-правовых документов, математической структурно-функциональной формализации информационного поля этих документов показало, что существующий подходы в систематизации законодательных и нормативно-правовых документов ГА, используемые в учебных целях, в достаточной мере отражают их статус, назначение и границы использования, обладают общностью при учете приоритетности и сфер использования в ГА, что дает основание принять их за основу для построения концепции информационного поля ЭОК.

Ключевые слова: систематизации, документов ГА, законодательных, нормативно-правовых, документов, авиадиспетчеров.

Аңдатпа. Мақалада Азаматтық авиацияның заңнамалық және нормативтік-құқықтық құжаттарын жүйелеу, сондай-ақ заңнамалық және нормативтік-құқықтық құжаттарға Электрондық білім беру кешенін құрылымдық-функционалдық ресімдеу қарастырылған. Заңнамалық және нормативтік-құқықтық құжаттарды жүйелеу, осы құжаттардың ақпараттық өрісін математикалық құрылымдық-функционалдық ресімдеу мәселелерін зерттеу нәтижелері

оқу мақсаттарында пайдаланылатын ГА заңнамалық және нормативтік-құқықтық құжаттарын жүйелеудегі қолданыстағы тәсілдер олардың мәртебесін, мақсаты мен пайдалану шекараларын жеткілікті дәрежеде көрсететінін, пайдаланудың басымдығы мен салаларын есепке алу кезінде ортақтыққа ие екенін көрсетті the ГА, бұл оларды ЕОС ақпараттық өрісі тұжырымдамасын құру үшін негіз ретінде қабылдауға негіз береді.

Түйін сөздер: жүйелеу, АА құжаттары, заңнамалық, нормативтік-құқықтық, құжаттар, авиадиспетчерлер.

Introduction. The problems of training personnel for the aviation system on a global scale are given great attention by the International Civil Aviation Organization (ICAO) at the UN. One of the main requirements of the time is that staff training should be based on advanced technologies. In this regard, the digitalization of educational and methodological support is of great importance. In connection with this problem, the teaching methods of some leading universities were studied. The analysis showed that the work to improve and develop the educational process in aviation higher educational institutions in the USA, Russia, the Czech Republic and the Republic of Belarus is carried out on the basis of the widespread use of simulators. However, it turned out that there are no special electronic educational and methodological aids for training air traffic controllers with the necessary legislative and regulatory documents. Although there are strict requirements for knowledge in the context of aviation documents. In this regard, the development and implementation of a special electronic educational complex (EEC) into the educational process for teaching students, future air traffic controllers, legislative and regulatory documents (ZiNPD) necessary for their future professional activities was recognized as an urgent scientific and technical task.

The fact that the importance of a scientific topic is seen in the example of leading aviation universities emphasizes one of the aspects of the relevance of the problem.

The main part. Problems and issues related to global civil aviation are within the scope of ICAO. One of the 10 principles outlined in the Global Aviation Safety Plan, DOC10004 [1-3] states: “Safety performance goals and instruments are fundamental pillars of the global aviation safety plan, and it should be noted that they will continue to evolve as more work is done to refine and update their content and as further development of relevant regulations, supporting material and *methods of personnel training* ”.

Today, in open scientific and technical sources, much attention is paid to digitalization in the development of science and education, and digitalization is seen as a driving force.

On the basis of the achievements in this area, new electronic means and visual surveillance are being introduced into the air traffic control system. Most importantly, smart simulators are being implemented in the world's leading airlines and educational institutions. Currently, there are simulators in every air traffic control structure. On them, specialists take an exam and pass certification. To pass the test in such structures, specialists must thoroughly know the legislative and regulatory documents. Why prepare in the traditional way - they use a large number and volume of paper documents. For comprehensive knowledge, perfect and modern electronic teaching aids are needed. The results of the analysis showed that in order to train air traffic controllers in accordance with modern requirements, it is necessary to develop and implement the necessary electronic training systems. In this regard, within the framework of the research topic, the development of a special electronic educational complex for teaching students and civil aviation specialists about aviation documents was recognized as an urgent scientific and practical task. In this regard, it is important to note that leading countries, such as the United States, have introduced a new “Learning Management System” (LMS) - a learning management system. The main task of this system is the development, management and distribution of e-learning products. The LMS market is experiencing explosive growth. In the US, the LMS market was $163 billion in 2015, growing to $180 billion by 2017 and projected to reach $240 billion by 2023. It is appropriate to recognize that the LMS market extends to all educational areas of the economy.

The Action Strategy for the Further Development of the Republic of Uzbekistan defines important tasks, including "... accelerating the creation of national e-learning resources, organizing the translation of foreign e-learning resources ...". To implement these tasks in the educational process, it is necessary to create and implement electronic teaching aids. It is known that today mainly traditional methods and means are used. The use of computer technology is limited to the simple display and sounding of information using a projector. When using electronic tools, educational materials can be provided to students in various effective methodological options, including the preparation and use of computer tasks with multiple choice answers to assess their knowledge. E-learning tools are not limited to the classroom, they are also used in distance learning.

The study of the educational process for the training of air traffic controllers within the framework of methodological and technical support gives reason to conclude that it is necessary to develop and introduce new training technologies. Promising from the point of view of efficiency, efficiency, accessibility and wide possibilities of visualization of educational materials is the digitalization of the educational and methodological base. Naturally, at the same time, it is necessary to observe the rational boundaries of its implementation, because the excessive digitalization can lead to a weakening of the emotional and psychological relationship between the teacher and the student.

Based on the state of the research area, the work formulated the goal and set the tasks - the development of an electronic educational resource for the training of air traffic controllers based on the digitalization of the process of studying legislative and regulatory documents of civil aviation.

Main goals:

1) identification of key approaches to the development of the educational process for the training of air traffic controllers based on a comparative analysis of foreign educational and methodological experience and theoretical work in the field of training specialists in the organization and maintenance of air traffic;

2) study of legislative and regulatory documents of civil aviation, determination of the basic principles and systematization on their basis:

3) selection and justification of an approach to the formation of a structural and functional concept of an electronic educational complex based on a system of legislative and regulatory documents, selection and justification of mathematical methods and formalization methodology;

4) on the basis of research and identification of the basic principles, to select and justify the model of systematization and storage of data in the electronic educational complex;

5) development of a set of algorithms and programs, practical testing and implementation of an electronic educational complex in the educational process of training personnel for the organization and maintenance of air traffic.

In general, the achievement of the formulated goal and the solution of the research tasks set can be represented by a sequence of blocks of actions, presented in the form of a diagram in Fig. 1.

The tasks of blocks 1 and 2 are the selection and justification of the subject area of the educational process, where improvement is carried out, i.e. they play the role of an evidence base that determines the choice and justification of decisions for improvement. Block-3 is the final stage of work, the result of which is the development and testing of a computer system for teaching students about the legislative and regulatory documents of the Civil Aviation. It is this part that determines and confirms the relevance of the work performed.

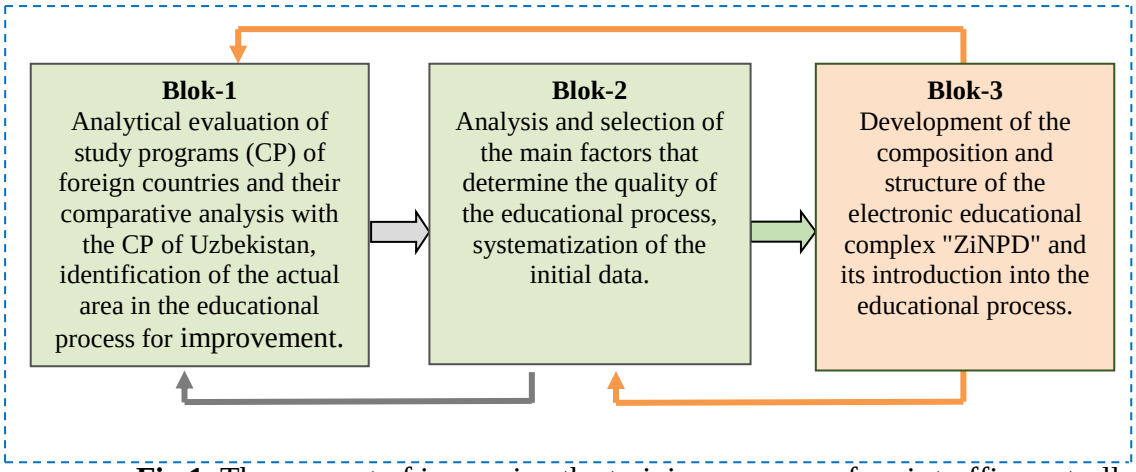
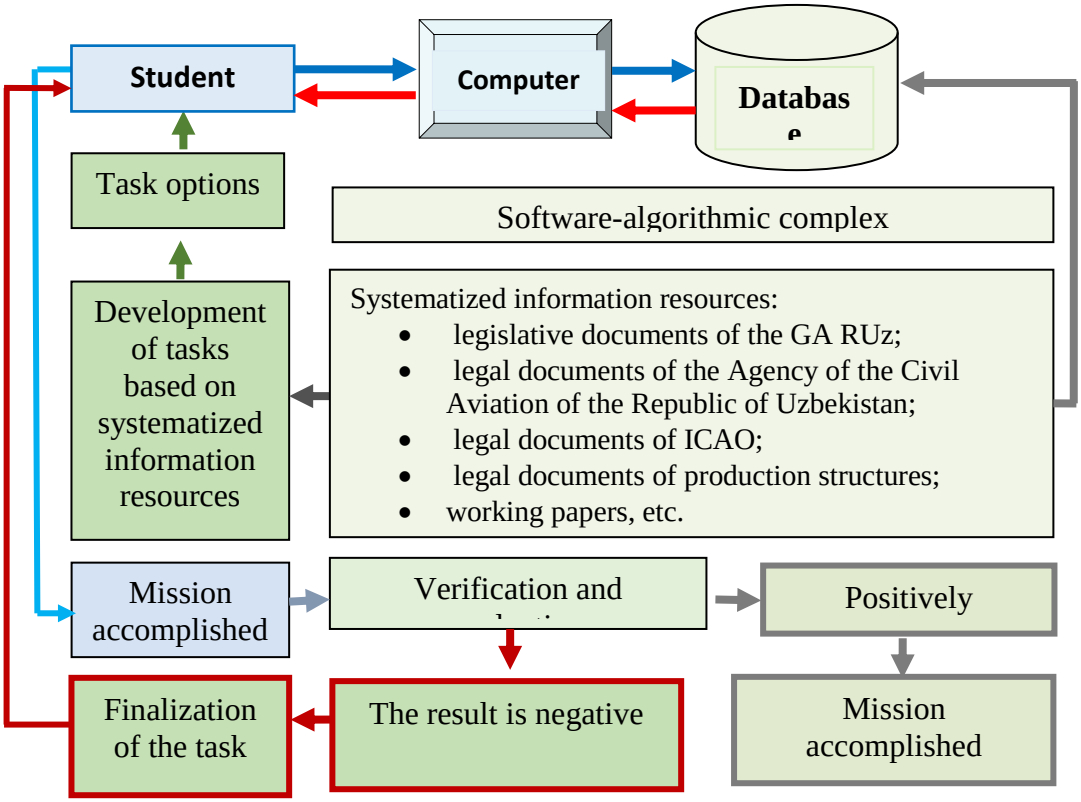


Fig.1. The concept of improving the training processes for air traffic controllers

In the context of Block-1, a thorough analysis of the curricula of foreign universities for the training of air traffic controllers was carried out, appropriate conclusions were made about the degree of their compliance with modern requirements within the framework of ICAO documents. Further, a comparative analysis of the TSTU curriculum was carried out, on the basis of which the most rational approach is chosen to improve the educational process of TSTU.

According to Block-2, based on the analytical data of existing technologies for training air traffic controllers, the main factors that determine the effectiveness of training are identified, information resources are systematized, necessary for the development and application of an electronic training complex for legislative and regulatory documents (ELC "ZiNPD").



Rice. 2. The concept of developing an e-learning complex for legislative and regulatory documents of the Civil Aviation

In the final Block-3, work is carried out on compiling a technological environment with the designation of the boundaries of the use of computer technology for conducting classes at a virtual level, for example, according to the “Pilot-Air Traffic Controller” model. This part of the work has its own characteristics associated with the establishment of rational boundaries between the forms of traditional classes and forms based on the widespread use of computer technology. Along with this block of tasks, modeling of the structure of the EOC is carried out with the establishment of functional tasks, the solution of which allows you to interactively search for data, form task options, solve tasks in an interactive mode and check the completed task by the teacher, without referring to the EOC, and in his environment.

Due to the fact that Block-3 is decisive, to perform work within its framework, a concept of the EOC structure has been developed, which is shown in Fig. 2.

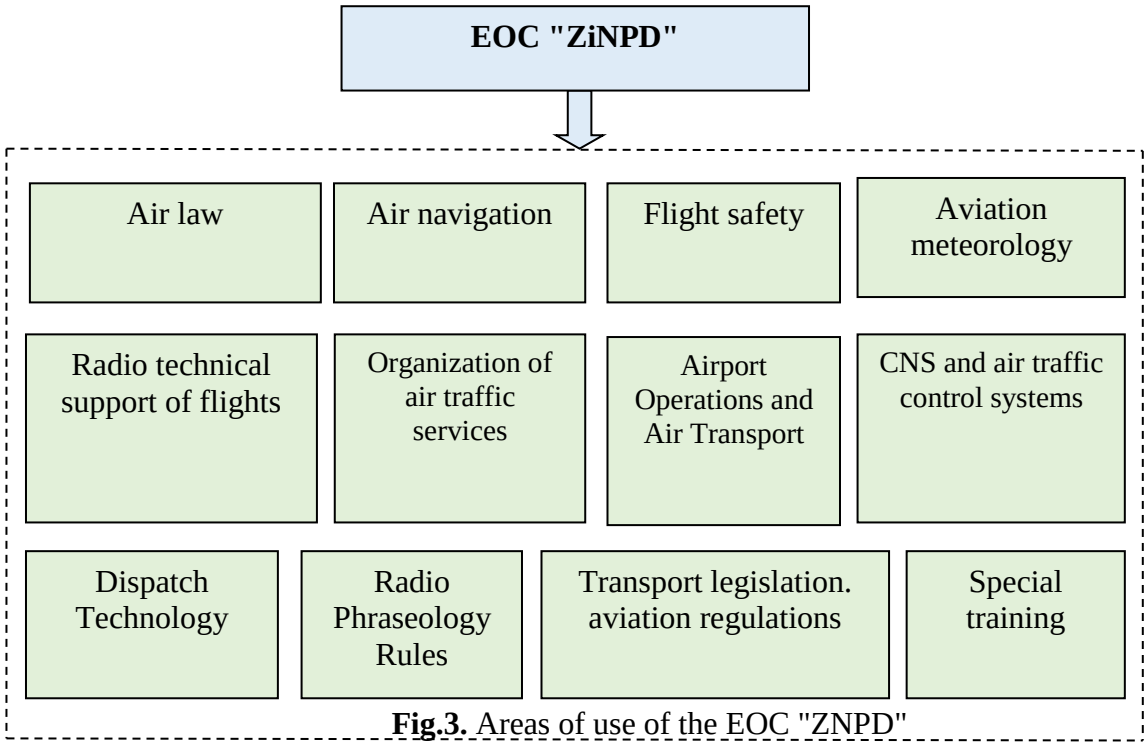


Fig.3. Areas of use of the EOC "ZNPD"

The EOC should provide training in legislative and regulatory documents within the framework of the steadily dominant academic disciplines (Fig. 3).

It is obvious that for each profile academic discipline the development of an EOC is not obligatory, it is enough to create a common EOC for all profile disciplines of the EOC "ZiNPD" GA.

Conclusions and Suggestions. Analytical data made it possible to develop a concept for the development of the EOC " ZiNPD ", the basic components of which are the systematization of legislative and regulatory documents of the GA, the formation of a database on its basis, the development of the composition of the functional tasks of the system, structural modeling of the complex and the development of appropriate software and algorithmic support.

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