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IMPROVING AIR TRANSPORT INFRASTRUCTURE MANAGEMENT

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Formulation of the problem. The organizers of the ground infrastructure of civil aviation and its current state are comprehensively analyzed and assessed, unresolved problems are identified. *The purpose of the article* is to develop the transport system as a whole and air transport, which is an important area, which is a prerequisite for the implementation of the innovative model of economic growth in Azerbaijan, as well as an important factor in improving the well-being of the population and the economy as a whole. *The object of the research* is the service infrastructure that uses the existing advantages of increasing the competitiveness of the national economy (fast delivery of passengers and cargo, no road construction, the ability to get to any point, etc.). *The research method* is modern methods and technologies of scientific knowledge, methods and techniques for conducting scientific research, tools for system, complex, economic analysis, principles of transport system management, which allow revising existing approaches in modern economic conditions. *The hypothesis of the research* was the assumption of the possibility of determining the logic of cognition of the process of managing transport potential in modern conditions. *The statement of basic materials.* It is proven that air transport is used in the study purposefully. It is confirmed that the importance of air transport infrastructure in the implementation of the innovative model of economic growth of Azerbaijan is very important given the preservation of the integrity and security of the country's territory in order to improve the quality of life of the population. In conclusion, proposals were made in the direction of improving the management of air transport infrastructure. *The originality and practical significance of the study* is confirmed by the stated priority of air transport development. *Conclusions and prospects for further research* consist in the implementation of a radical increase in competitiveness compared to other modes of transport, and for this reason, improving the management of air transport infrastructure has now become very relevant. Therefore, the formation of an effective development of special programs for the management of air transport infrastructure is a priority of the national economy. Further research will be aimed at developing special programs for the management of air transport infrastructure, based on the scope of their regional location.

Keywords:

infrastructure, ground infrastructure, public-private partnership, air transport, owners and managers.

УЛУЧШЕНИЕ УПРАВЛЕНИЯ ИНФРАСТРУКТУРОЙ ВОЗДУШНОГО ТРАНСПОРТА

Постановка проблеми. Всебічно проаналізовано та оцінено організаторів наземної інфраструктури цивільної авіації та її поточний стан, виявлено невирішені проблеми. *Метою дослідження* є розвиток транспортної системи в цілому та повітряного транспорту, який є важливою сферою, яка є передумовою для впровадження інноваційної моделі економічного зростання в Азербайджані, а також важливим фактором у вдосконаленні добробуту населення та економіки в цілому. *Об'єктом дослідження* є сервісна інфраструктура, яка використовує наявні переваги підвищення конкурентоспроможності національної економіки (швидка доставка пасажирів і вантажів, відсутність доріг, можливість дістатися в будь-яку точку тощо). *Методом дослідження* є сучасні методи та технології наукового пізнання, методи та методика проведення наукових досліджень, засоби системного, комплексного, економічного аналізу, принципи управління транспортною системою, які дозволяють переглянути існуючі підходи в сучасних економічних умовах. *Гіпотезою дослідження* було припущення про можливість визначення логіки пізнання процесу управління транспортним потенціалом у сучасних умовах. *Виклад основних матеріалів.* Доведено, що повітряний транспорт використовується в дослідженні цілеспрямовано. Підтверджено, що важливість інфраструктури повітряного транс-

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порту в реалізації інноваційної моделі економічного зростання Азербайджану є дуже важливою з огляду на збереження цілісності та безпеки території країни з метою підвищення якості життя населення. На завершення були внесені пропозиції в напрямку вдосконалення управління інфраструктурою повітряного транспорту. *Оригінальність і практична значущість дослідження* підтверджується заявленим пріоритетом розвитку авіаційного транспорту. *Висновки та перспективи подальших досліджень* полягають у здійсненні радикального підвищення конкурентоспроможності в порівнянні з іншими видами транспорту, у зв'язку з чим удосконалення управління інфраструктурою повітряного транспорту набуло нині великої актуальності. Тому формування ефективної розробки спеціальних програм управління інфраструктурою авіаційного транспорту є пріоритетним напрямком національної економіки. Подальші дослідження будуть спрямовані на розробку спеціальних програм управління інфраструктурою повітряного транспорту, виходячи з масштабів їх регіонального розташування.

Ключові слова:

інфраструктура, наземна інфраструктура, державно-приватне партнерство, повітряний транспорт, власники та менеджери.

Formulation of the problem. In modern times, transport infrastructure is not limited to supporting functions in the production and service sector, but is becoming an area of independent entrepreneurial activity.

Stable and efficient operation of transport, which is an important component of the production infrastructure, is a prerequisite for maintaining high rates of economic growth in the country, ensuring territorial integrity and security, and improving the quality of life of the population. That is why the pace of development and modernization of transport infrastructure in our country, as well as its technical and economic level, are always in the spotlight. Insufficient development of transport infrastructure is manifested in the discrepancy between the efficiency and quality of the transport industry and the growing demand for transport services of the economy and society.

Analysis of recent research and publications. At present, the transport policy implemented in our country is aimed at sustainable and sustainable development of the transport industry as a single complex. Until recently, this policy was based on the principle of an exclusive sectoral (sub-sectoral) approach, that is, in the case of a single transport complex, it did not provide for the balanced development of its individual sectors, but independent development. From these fields, which means the ability to transport goods and passengers between different modes of transport, there are large differences in the coverage area and other parameters in the country. However, the development and modernization of the economy of Azerbaijan have led to an increase in demand for all types of transport services, which, in turn, has led to the dynamic development of transport infrastructure.

Similar program documents and concepts adopted earlier show that for Azerbaijan, given its geopolitical and geographical position, the development of all types of transport is not only an economic issue, but also a task of ensuring the integrity and security of the country. None of the types of transport can independently solve the problem under consideration. On the other hand, it should be taken into account that the implementation of an effective transport policy is directly related to a comprehensive solution to complex and important problems of interaction between different types of transport. This reveals the need to create equal opportunities for the operation and development of various types of transport within the country, as well as the formation of a regulatory framework regulating uniform approaches and agreements between these types and ensuring the implementation of a single state policy in the field of transport. In order to eliminate all the above-mentioned problems, the President of the Republic of Azerbaijan Mr. I. Aliyev issued a Decree dated November 7, 2024 "On the establishment of the Azerbaijan Transport and Communications Holding and the solution of some related issues". "Azerbaijan Transport and Communications Holding (AZCON)" by creating a public legal entity, state transport institutions - Azerbaijan Hava Yollari CJSC for air transport, Azerbaijan Demir Yollari CJSC for rail transport, Azerbaijan Khazar Deniz for water transport. The management of this holding was transferred to Shipping CJSC, Baku International Sea Trade Port CJSC and Baku Shipyard, Baku Metro CJSC for underground transport, as well as BakuBus LLC and Baku Taxi Service LLC in the field of road transport. As stated in the resolution, AZCON will ensure the management of these state-owned

enterprises on uniform principles, approve their income and expenditure estimates and manage the funds received from their activities. From this we can conclude that the President of the Republic of Azerbaijan Mr. I. Aliyev with this decision once again confirmed the importance of developing the transport system in a single comprehensive form for the economy of our country. the country has increased enormously against the backdrop of geostrategic changes taking place in the region. This reveals the need to analyze the current state of each of the main modes of transport that form the country's transport system and, at the next stage, comprehensively determine the directions for the development of both domestic and international transportation, as well as the possibilities of increasing the profitability of its activities. It is known that air transport plays an important role in the sustainable development of the economy of Azerbaijan and increasing its competitiveness as an important means of ensuring automobile passenger and freight transportation over long, medium and short distances. Air transport not only performs an important economic and social function, but also acts as a powerful tool for protecting the political and territorial integrity of the state. The competitiveness of air transport is determined by the ratio of economically justified average airfare rates and the solvency of passengers in the domestic market, the compliance of aviation equipment used in international transport with international environmental and economic market standards, as well as the quality of services provided [1].

The purpose of the article is to develop the transport system as a whole and air transport, which is an important area, which is a prerequisite for the implementation of the innovative model of economic growth in Azerbaijan, as well as an important factor in improving the well-being of the population and the economy as a whole.

Presentation of the main material. From this we can conclude that the President of the Republic of Azerbaijan Mr. I. Aliyev with this decision once again confirmed the importance of developing the transport system in a single comprehensive form for the economy of our country. the country has increased enormously against the backdrop of geostrategic changes taking place in the region. This reveals the need to analyze the current state of each of the main modes of transport that form the country's transport system and, at the next stage, comprehensively deter-

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In recent years, the dynamic development of the passenger and cargo air transportation market necessitates solving problems related to the rapid modernization of the air transport infrastructure. Failure to equip airports, especially air terminals and cargo terminals with modern equipment leads to disruption of technological processes of cargo transportation, a decrease in the level of comfort and quality of services provided to passengers, and violation of the terms of storage and delivery of goods. The experience of individual countries shows that the main reasons for the inability of the current state of the air transport infrastructure to meet growing needs are the lack of investment in this area and the absence of effective mechanisms for managing airport complexes and elements of their infrastructure. It is clear that it is possible to achieve innovative development of air transport and turn it into a competitive sphere only by creating favorable conditions for attracting special investments, applying market mechanisms for the use of resources and funds. In addition, ensuring the availability of air transport services is one of the important parameters for increasing the economic efficiency of these services, the quality of life of the population and the level of development of the national economy. Modern practice shows that through the balanced development of a network of regional airfields (land or water area that is not an airport, but has buildings, structures and equipment necessary for take-off, turning and stopping of aircraft) in the form of a network of auxiliary airports, people can gain access to civil





aviation services, it is possible to ensure their availability. In our opinion, the creation of a national support network of airfields can play an important role in increasing the efficiency of this transport, as a special direction of modernization of the ground infrastructure of air transport. Support airports operating in unison with the network of regional airfields ensure the concentration and distribution of passenger and cargo flows, which allows optimizing the route network when organizing air transportation, increases the efficiency of transportation, creates conditions for specialization. airports. Thus, international airports and local airfields can form a nodal scheme of air transportation throughout the country. Currently, in the field of air transport in Azerbaijan, the process of reconstruction of the civil aviation infrastructure is carried out through the modernization of existing and construction of new facilities. At the same time, the entire infrastructure of air transport is involved: ground handling; fuel supply of aircraft; repair and maintenance of these aircraft; aviation flight servicing; metrological support; aerospace rescue; flight medical services; non-aviation business system at airfields, etc. Ensuring balanced development is an important issue. It should be noted that the air transport infrastructure itself is a complex complex, including airports, airfields, air traffic management system facilities, aircraft flight control centers and stations, stations for receiving, storing and processing information in the field of aviation activities, and storing aviation equipment. means, flights include equipment and personnel training centers, other equipment and technology used in the implementation of aviation activities [3].

Although airport operations, which are considered to be the main element of aviation infrastructure, have nowadays become a high-tech and diversified business area, the main goal of which is to obtain maximum profit, one of the important tasks of this activity is to maintain and develop the airport infrastructure, which is a necessary element of flight safety. That is why there is constant state control over the condition and development of this infrastructure. Owners and managers of enterprises managing the airport complex must take this fact into account when solving economic and commercial issues. In turn, business development in this area requires improving the airport management system, using innovative technologies and modern equipment, finding ways to reduce costs and increase revenues by attracting professional per-

sonnel and efficient use of resources. In terms of services provided by air transport infrastructure, airport services are of particular importance. An airport (airport infrastructure) is a complex facility that includes an airfield, an airfield, premises for receiving and taking off aircraft, as well as other equipment designed to provide air transportation services. In addition to obtaining maximum profit, the goals of the airport include ensuring the efficient use of air transport and flight safety; elimination of illegal interference in the operation of the airport; this also includes the creation of favorable conditions for the safety of the lifestyle, health and property of the population, environmental protection, and the protection of the interests of the state, society and its citizens.

On the one hand, the airport infrastructure should provide the material and technical resources for the normal operation of business entities, and on the other hand, create favorable conditions for entrepreneurial activity in services that meet the needs of the population. In our opinion, it is appropriate to consider the airport not only as a type of transport infrastructure that performs an auxiliary function in the provision of services, but also as an independent area of entrepreneurial activity. The fundamentals of air transport management and its infrastructure in our country were formed during the development of the national economic complex of the former USSR as an integral part of this complex. The collapse of the USSR in 1991 and the associated economic crisis led to radical changes in the air transport management system. In the early 90s of the last century, due to the deepening economic crisis in the independent Azerbaijan Republic, the weakening of economic ties between the union republics that were part of the former USSR, as well as changes in ownership and other factors, the volume of air transportation sharply decreased. One of the main reasons for the decline in air travel was the division of the former USSR state aviation enterprise Aeroflot into many airlines with different forms of ownership, and airports began to operate either as part of these companies or as independent economic entities. These changes began to include not only the main costs of the enterprise (fuel, materials, depreciation charges, wage costs and other costs), but also the costs of using infrastructure facilities, such as the point of departure, the point of departure and the point of destination. The cost of transportation increased several times, and avia-

tion services became available only to certain segments of the population [4].

In the post-crisis period, passenger transportation by air transport has intensified, airlines have begun to independently control the formation of prices in a competitive environment, and the newly formed states on the territory of the former USSR have begun to pursue a policy of supporting airlines with subsidies in a competitive environment. In order to reduce the cost of air tickets. Despite all this, although the potential for the development of the air transportation market is great, the unsatisfactory state of the air transport infrastructure complicates the situation and does not allow this potential to be effectively used. In order to overcome this problem, the formation of a modern civil aviation infrastructure in Azerbaijan was included in the priority projects of economic development of the state, and in less than 20 years, not only 8 international airports were built and put into operation in the country. the fleet of the national airline, that is, JSC "AZAL", was radically updated. At the same time, a comparative analysis of the increase in passenger air traffic and the number of airports (as well as their occupancy potential) in our country shows that there is a certain discrepancy between the current state of the ground infrastructure of air transport and the dynamics of the air transport market, as well as insufficient occupancy of infrastructure facilities built and modernized at the expense of large sums, in the future may reduce the efficiency of civil aviation. In order to increase the occupancy rate of airports located in the regions of Azerbaijan and create optimism about their business attractiveness in the near future, it is necessary to carry out large-scale, broad-based work. It is known that private capital (business) is looking for investment projects that pay off quickly and with high profitability. Here, the presence of a multiplicative profit in the form of an investment guarantee should appear, that is, for the effective occupancy of the mentioned airports, it is necessary to create an economic environment that will attract long-term investments.

As can be seen, the trend of airport development in Azerbaijan shows that the problems of increasing the commercial efficiency of existing airports and more fully realizing their market potential are coming to the fore. That is why the issue of simultaneously ensuring both production indicators, primarily the airport occupancy rate, and financial indicators, i.e. growth of profits and profitability, has become very relevant in the activities of airports. In other words, it has become a real need to consider the work of the airport in all areas as an effective business area. On the other hand, considering the activities of airports as a business

area, the main goal of which is to obtain maximum profit, does not mean the elimination of state control over these facilities. Of course, this feature complicates the implementation of their commercial goals by the owners and managers of the enterprises that form the airport complex. However, in any case, it should be taken into account that it is possible to solve business issues, i.e. reduce costs and increase revenues, achieve maximum profits only through the use of innovative technologies and modern equipment, attracting competent specialists. personnel and other resources necessary for business development. This is due to a favorable business environment, the interest of investors in the proposed area, effective management decisions, etc. requires its existence. In such conditions, in our opinion, the use of the public-private partnership (PPP) mechanism may become the most correct and effective way to solve the above problems. PPP is considered one of the most universal mechanisms that will take on additional financing for the development of airport infrastructure, and also replace them in the absence of state institutions with the necessary technical and other capabilities for the effective operation of this infrastructure. In developed countries, the PPP institution, based on the balance of public and commercial interests, is recognized as an effective means of attracting off-budget sources of financing for airport infrastructure facilities, as well as managing these facilities with high profits [5].

During the implementation of the PPP mechanism, a corresponding investment agreement is concluded between the state and private commercial companies. The agreement provides for the division of risks, obligations, powers, costs and income in the process of creating and operating the airport as a whole or its individual infrastructure facilities. The public-private partnership mechanism allows the state to transfer the authority to manage the property of the airport complex to private business and, in return, impose on it the responsibility to improve the quality of airport services, use professional knowledge and skills, and attract investment. In turn, private business receives income from its participation in the project, gains access to broader financial markets in the case of implementing international projects and can transfer part of the risks of project implementation to the state. At this time, despite the loss of the management function, the state retains a certain part of its powers and responsibilities (for example, tariff policy, obtaining the necessary permits in an administrative manner, providing equipment, customs operations, police control, etc.), which greatly affects the profitability of operations, in cases where the partnership is not implemented on a mu-



tually beneficial basis. Therefore, a clear definition of the obligations of each party in the partnership agreement, a transparent procedure for mutually beneficial cooperation, as well as the establishment of principles that ensure equality between state enterprises and private investors are extremely important for both the state and private investors. private business [6].

The main objects of application of the PPP mechanism in civil aviation are the construction or operation of an airport complex, the maintenance and operation of runways, as well as the development of airport infrastructure elements. Regardless of the application options, the PPP model (partial privatization, concession, etc.) can be used for a network, etc.

Current practice shows that the most common form of PPP at airports is concession. Concession, being an effective form of partnership in the sphere of production and service infrastructure, significantly surpasses other forms in the number of objects covered and the volume of investments. In this form, the concession agreement assumes the involvement of the private sector in the management of state property or provision of services, as well as the creation of mutually beneficial conditions for the state to fulfill the terms of the agreement. In other words, according to this agreement, the concessionaire, that is, the state, transfers the right to operate its infrastructure facilities and equipment to the concessionaire, that is, a private enterprise, and in return receives from the concessionaire a reward or periodic reward in various ways. In our opinion, the concession form of PPP can play an exceptional role in increasing the load factor of international airports in our country.

Conclusion and prospects for further research. In connection with the prospective development of the transport system, the implementation of priority measures, including the reconstruction of runways and the replacement of lighting and signaling equipment, for the phased development of airports and their ground infrastructure facilities, as well as the implementation of effective transport services and means to meet the needs of the population and business entities in air transportation. In order to modernize the existing forces, it is important to implement:

- the creation of local airfields and the formation of a network to support them;
- expansion and further modernization of ground infrastructure facilities of existing airports in order to provide transport services by new-generation aircraft;
- attracting the private sector based on special cooperation models in order to provide additional financial resources for the development of airport ground infrastructure facilities and the effective management of these facilities;
- deepening partnerships between airlines and private businesses to meet the demand for high-tech and long-term investments in airport infrastructure.

Since airport activities are both a multi-industry and high-tech transport business, and also include state responsibilities for the maintenance and development of airport infrastructure, it is necessary to exercise strict state control over the condition and development of airport infrastructure. This should be taken into account when solving economic and commercial issues facing their owners and managers.

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