

**PROBLEMS OF TRAINING SPECIALISTS IN AVIATION  
LOGISTICS AND THE MAIN CHALLENGES ON THE WAY TO  
THE DEVELOPMENT OF AVIATION LOGISTICS**

*Yakovenko Y.S., Pozniak O.V.  
National Aviation University*

**Abstract.** *The main challenges in the development of aviation logistics, special requirements for the training of aviation logistics specialists and their problems are highlighted and discussed in detail. Based on the opinions and experience of experts in the field of aviation logistics, practical recommendations for solving the identified problems were summarized and proposed.*

The modern world is constantly evolving, including the growth of air transport volumes and the growing importance of air logistics in the global supply chain. Aviation logistics has become a key element in the efficient functioning of the modern economy, and its development not only reflects global trends in trade and logistics, but also brings its own challenges and prospects. In this context, the problems of development of aviation logistics and the key problems associated with the training of specialists in this important area require detailed analysis and consideration.

One of the key challenges facing this industry is the lack of skilled and competent personnel. The lack of qualified personnel in the field of aviation logistics is a serious and urgent problem that affects the efficiency and continuity of air transportation and threatens the development of the industry. The main aspects of this problem should be considered in more detail.

Start with the fact that the volume of air transportation is growing: the world's volume of air transportation is constantly growing due to the increased need for global logistics solutions. Under such circumstances, the demand for qualified logistics specialists in the field of aviation is increasing sharply. For example, the International Air Transport Association (IATA) improved its forecast of the aviation industry's profit in 2023 by two times - from 4.7 billion dollars to 9.8 billion dollars. The aviation industry's net income is expected to reach \$9.8 billion in 2023, more than double the previous December forecast of \$4.7 billion. The total revenues of the industry will grow by 9.7% annually to 803 billion dollars. This is the first time since 2019 (\$838 billion) that industry revenues will exceed the \$800 billion mark. Passenger traffic is also recovering, with about 4.35 billion

people traveling by air this year, on pace for 4.54 billion in 2019. Instead, the volume of freight transportation is expected at the level of 57.8 million tons - below the 61.5 million tons transported in 2019, which is due to a sharp slowdown in the volume of international trade.

According to the point of view of IATA CEO Willie Walsh, there are several positive developments contributing to profitability growth. China lifted restrictions due to COVID-19 earlier than expected. Freight revenues remain above pre-pandemic levels, although volumes have not increased. On the cost side, there is some relief. Aviation fuel prices, although remain high, decreased in the first half of the year [1].

The next challenge is the specificity of logistics in aviation. In the field of aviation logistics, there are numerous international standards and rules that regulate the transportation of goods by air transport. These include international treaties, such as the Montreal Convention and the Warsaw Convention, which regulate the rights and obligations of carriers and consignors. This requires aviation logistics specialists to have a deep understanding of these standards.

Inexperienced air logistics workers can lead to wasted resources and losses due to errors in routing, scheduling and cargo operations. Here are some of the possible consequences of inexperience of employees:

- ✓ Routing errors: Inexperienced workers can make mistakes in choosing a route for cargo, which can lead to delays, additional fuel costs and other losses. For example, an incorrectly chosen route can increase the distance or expose the cargo to the risk of deterioration of transportation conditions.

- ✓ Planning and Coordination: Inexperienced workers may not have sufficient experience in planning and coordinating logistics operations. This can cause conflicts between different stages of the logistics process and delays in delivery.

- ✓ Mistakes in cargo operations: Improper loading, placement or unloading of cargo can lead to damage to goods or even aircraft accidents. Inexperienced workers may not know all the rules and procedures for safe cargo handling.

- ✓ Damage or loss of goods: Inexperienced workers may not follow the rules of packing and securing goods, which can lead to damage or loss during transportation.

- ✓ Increased costs: Errors and delays caused by inexperience can lead to additional costs for fuel, labor and other logistics services. This may affect the profitability of operations.

Modern technologies such as autonomous drones, blockchain, and artificial intelligence are changing the landscape of aviation logistics.

Specialists must be ready to use and integrate these innovations. So let's take a look at some of the changes and opportunities that these technologies bring to the aviation logistics industry. The use of autonomous drones in freight transportation can significantly improve delivery efficiency and reduce costs. Logistics professionals must be prepared to manage and monitor drones, as well as to address legal and regulatory issues related to their use. Blockchain technology can provide greater transparency and security in the management of logistics operations, including tracking the origin of goods, managing inventory, and automating financial transactions, so knowing how to integrate blockchain into logistics processes is critical. AI can help predict demand, optimize routes, detect anomalies, and automate routine tasks. Specialists should be ready to develop and implement AI algorithms in logistics systems. Also, IoT sensors can be used to track the condition of goods and equipment in real-time, which allows timely detection of problems and improved inventory management. However large volumes of data require analysis and extraction of valuable information, so skills in working with analytical tools and the ability to use data to make decisions are no less influential. Finally, the growing use of digital technologies requires cybersecurity measures to protect critical data and infrastructure.

Of course, all the challenges of training specialists in the field of air transportation have their own logical solutions. Overcoming the problem of the lack of qualified personnel in the field of aviation logistics may include specialized training programs and courses that are adapted to the requirements of aviation logistics, created and expanded in universities and colleges; providing opportunities for internships and practical training for young specialists in large aviation companies; cooperation with educational institutions to develop relevant educational programs and provide practical experience; creation of attractive working conditions, high wages, opportunities for career development and support in the training of specialists.

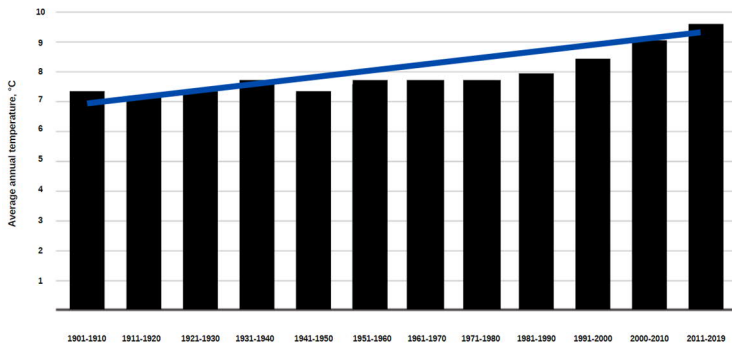
As the Pro 8 School of Logistics is a logistics training platform based on a logistics company that provides training programs in logistics in which the maximum is invested. They guarantee only up-to-date and practical information. Logistics training is available at any convenient time. The methods of their training are recording video lessons, individual support of the curator, practical tasks, testing, webinars, methodical materials, and + a bonus — a certificate of completed training [2].

The implementation of these measures can contribute to overcoming the problem of the lack of qualified personnel in the field of aviation logistics and improve the functioning of the industry as a whole.

The growth of transportation volumes in the field of aviation logistics is a positive signal for the economy and development prospects, but it also leads to an increase in environmental challenges, so it is necessary to pay attention to this issue in the development of this field.

Aviation consumes a significant amount of fuel, which emits a large amount of CO<sub>2</sub> and other harmful substances into the atmosphere. An increase in the number of flights and freight transport leads to an increase in air pollution and contributes to climate change. To reduce the impact on the environment, it is necessary to implement more environmentally friendly technologies that would allow reducing fuel consumption and emissions. The harmful consequences of global climate change and how closely they are interconnected with logistics activities can be seen in the example of information from the Ministry of Environmental Protection and Natural Resources of Ukraine, where there is a constant trend of increasing average and maximum temperatures in Ukraine. As a result of the large concentration of greenhouse gas emission sources and the growth of heat-absorbing surfaces in cities, the increase in temperature is felt faster, especially in summer and winter maxima.

The research data of A.O. Bogushenko and I.A. Khomenko on the vulnerability of four cities of Ukraine (Kyiv, Odesa, Uzhgorod) show that all cities have become more vulnerable to temperature rise over the past twenty years [3] (fig. 1).



*Figure 1 - Increase in average annual temperature*

The development of aviation logistics requires a significant amount of aviation fuel, which leads to a significant environmental impact. One of the ways to reduce this impact is the development and use of more economical and environmentally friendly types of fuel, in particular, biofuel. Aviation biofuels are fuels that are produced from organic plant materials, such as biomass, biodiesel, or bioethanol. One of the advantages of using biofuels is

that they can be produced from renewable sources, such as agriculture or the forestry sector, which helps to reduce dependence on petroleum products and reduce greenhouse gas emissions. The use of biofuels in aviation can be an important step in reducing the environmental impact of this industry. It allows to reduce the amount of emissions of CO<sub>2</sub> and other harmful substances into the air and reduce the negative impact on the climate. In addition, biofuels can help conserve natural resources and reduce ecosystem degradation. However, there are certain challenges and limitations regarding the use of biofuels in aviation, such as limited resources for growing biofuel feedstocks, high production costs, and issues of competition with food production. Therefore, for the successful introduction of biofuel in aviation, it is necessary to conduct research and develop technologies that would make its production more efficient and affordable. In the future, the development of biofuels and other environmentally friendly technologies will be an important step in reducing the environmental impact of aviation logistics and will contribute to the creation of a more sustainable and environmentally responsible transportation industry.

Expansion of air travel may worsen this problem. To reduce noise pollution, it is important to improve the technology of motors and the location of airports, as well as to develop more effective zoning strategies.

Infrastructure and transport networks play an important role in modern aviation logistics. Developing more efficient transport networks and infrastructure is a key challenge to ensure route optimization and reduce time spent on the ground. This, in turn, leads to a reduction in fuel costs and emissions, which has a positive impact on the environment and profitability of airlines. Effective infrastructure includes airports, terminals, taxiways, railways and highways that keep freight and passengers moving. Modernization and development of these facilities can improve their performance and ensure more efficient use of resources. Optimization of transport networks also includes the development and implementation of new technologies and traffic management systems that allow determining optimal routes, avoiding traffic jams and reducing delays. Using modern GPS, routing and monitoring systems helps airlines plan and execute their flights more efficiently. In addition, the development of intermodal transport, which combines air, rail and road transport, contributes to increasing efficiency and reducing costs in the logistics chain. This allows for fast and reliable delivery of goods to their destination.

The next challenge on the way to the development of aviation logistics is the issue of changes in regulatory and customs policy in different countries.

Changes in customs regulations and tariffs can lead to increased costs and delays at borders. To solve this problem, it is important to maintain a

constant dialogue with the customs services of the countries and actively monitor changes in customs regulations. The possibility of using special customs regimes or simplification arrangements to reduce difficulties may also be considered. It is worth remembering that different countries may set different safety requirements and technical standards for passenger and cargo transportation. It is important to study and adapt to these rules, ensuring compliance with each country's requirements. Obtaining the necessary licenses and registrations can be an expensive and complicated process. To reduce costs and simplify this process, you may consider using agents or consultants who are experienced in handling administrative issues. The development and implementation of standardized procedures for air logistics can simplify interactions with different countries and customs services. Most importantly, it is important to systematically monitor and analyze changes in the regulatory and customs policy of different countries. This will allow aviation logistics companies to be ready for changes and quickly respond to them.

### **Conclusions**

In aviation logistics, personnel are the main resource that creates competitive advantages for companies. Aviation logistics is an innovative field of activity, therefore specialists who work in it must constantly improve their skills in order to adequately respond to the challenges that constantly arise, creating conditions for the sustainable development of aviation supply chain entities.

### **References**

1. *Економічна правда: Цивільна авіація у світі відновлюється: IATA вдвічі покращила прогноз.* URL: <https://www.epravda.com.ua/news/2023/06/5/700812/>
2. *Провідна Школа логістики PRO 8: Навчальні програми з логістики.* URL: <https://pro8.com.ua/>
3. *Кліматична (не)справедливість: Розділ 2. Основні наслідки зміни клімату в містах України.* URL: <https://ua.boell.org/>