

### **International production cooperation in the field of aircraft construction**

*The purpose of the research is to study the specifics of international production cooperation in the field of aircraft construction. It has been established that the specifics of the application of mechanisms of international production cooperation in the field of aircraft construction depend on the legal system of countries, market conditions, production technologies, etc.*

Nowadays, the issues of meeting the needs of large-scale production in many sectors of the economy, the growing demand for capital, the increase in the cost of scientific research, the expansion of sales markets, the further development of the international division of labor, long-term trends in shortages and rising prices of labor, raw materials and energy, environmental protection in the context of industrial development are particularly relevant. Therefore, in order to adapt to the changing conditions of competition and increase efficiency, market-oriented business structures establish long-term international economic cooperation, expanding the network of their partnership relations.

Strategic partnership and deepening of cooperative relations is also natural for the aerospace sector, one of the drivers of the international movement of technologies and global competitiveness of countries. However, not all integration associations are able to fully realize their cooperative potential, therefore, the study of the specifics of cooperative relations in the aviation sector in order to identify the best practices of organizing production cooperation is relevant.

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In international practice, the following types of cooperative relations of enterprises are distinguished:

- contractual cooperation based on the supply or exchange of component products between counterparties for the purpose of further assembly of the final product at the enterprise of one of the partners or at the enterprises of each of them;
- cooperation on the basis of joint production, when the resources of the participants of the production process are combined for the purpose of implementing a specific program for the creation and release of a new single final product;
- cooperation of corporations for joint production of complex complexes and organization of sales.

In international economic relations, cooperation agreements are concluded at different levels. For example, at the government level, agreements on cooperation between sovereign states are concluded, at the enterprise level - production cooperation between companies. At the level of non-commercial research institutions, scientific cooperation in the field of joint research between research institutes and institutions of higher education is also widespread [6]. Therefore, it is important to

note that relevant enterprises, governments, and scientific institutions play a significant role in the formation and development of industrial cooperative relations.

The advantages of international production cooperation are widely used in aircraft construction. After all, today no country in the world is able to provide a full cycle of aircraft production that would meet all safety requirements. As an example, we can cite the experience of the Boeing aircraft construction concern, which cooperates with more than 5,200 suppliers of components and parts from more than 100 countries of the world. Boeing has manufacturing cooperative relations with such companies as Hawker de Havilland (Australia), Smiths Aerospace (Great Britain), Rolls-Royce, Alenia Aeronautica (Italy), Messier-Dowty (Canada), Zodiac (France), SR Technics (Switzerland), Mitsubishi Heavy Industries, Kawasaki Heavy Industries, Fuji Heavy Industries (Japan) [1] etc.

The peculiarities of international production cooperation in the field of aircraft construction are that aircraft components and parts are manufactured under the terms of cooperation according to the technical tasks and requirements of customers, and foreign trade contracts for the production and supply of these products are carried out under contract manufacturing conditions [3]. The conclusion of cooperative agreements involves long-term cooperation. Within the scope of the agreements, the terms of production and supply of units and aggregates may be provided according to the customer's technical documentation or according to specific samples. Suppliers can manufacture products from their own materials or from the customer's raw materials, but the suppliers are responsible for the quality of the performance of the terms of the contract.

In aircraft construction, contract manufacturing is the most convenient and often used form of cooperative relations and involves a clear division of labor between suppliers and the customer.

The experience of the Boeing company, as well as Airbus [7], Bombardier [2] and Embraer [5], shows that in the conditions of globalization of the world economy, more and more volumes of the production cycle of aircraft construction are transferred to third-party suppliers. Today, the key aircraft manufacturing companies do not provide a full cycle of aircraft manufacturing, but are engaged only in aircraft design, final product assembly, testing, sales and after-sales service.

The main reasons why aircraft construction concerns transfer certain types of work and services to contractors are the following: reducing production costs, saving time, attracting professional performers and using their experience, sharing financial risks, access to a larger number of international markets [4]. At the same time, contract manufacturing carries certain risks and threats, such as loss of confidentiality and security, problems of communication and coordination of projects, unforeseen costs due to delays and the need for rescheduling, maintaining high quality standards, loss of full control over the business, etc.

## **Conclusion**

Thus, international production cooperation in the field of aircraft construction is a separate form of international economic relations and activities that arise as a result of long-term contracts between partners belonging to different economic systems and go beyond the direct sale or purchase of goods and services, including a

set of complementary or mutually coordinated aircraft production operations, technology development and transfer, etc. And to this day, the establishment and development of international production cooperative relations of air transport enterprises is an important factor in the formation of their foreign economic potential, increasing competitive positions in international aviation markets.

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