

рів, що й зумовлює безперервні коливання в тенденціях розвитку ринку. Все це викликає зацікавленість у його подальших теоретико-методологічних дослідженнях, аналізі та прогнозуванні розвитку.

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PROVIDING OF THE CONDITIONS FOR EFFICIENT DEVELOPMENT OF THE AIRCRAFT CONSTRUCTION SPHERE OF UKRAINE

ЗАБЕЗПЕЧЕННЯ УМОВ ЕФЕКТИВНОГО РОЗВИТКУ АВІАБУДІВНОЇ СФЕРИ УКРАЇНИ

The article presents the suggestions of providing the innovative development of the aircraft manufacturing sphere of Ukraine. It was defined the goals, objectives and stages of implementation of complex solutions for development of aircraft manufacturing industry of Ukraine, outlines the contents of the main activities for the development of aircraft manufacturing industry of Ukraine. It's done the forecast of positive effects for the innovative development of aircraft manufacturing sphere of Ukraine from implementation of the proposed activities.

Key words: aviation industry, aircraft construction, aircraft manufacturing complex, industrial potential

В статті наводяться пропозиції щодо інноваційного розвитку авіабудівної сфери України. Визначаються цілі, завдання та етапи реалізації комплексу рішень з розвитку сфери літакобудування України, викладається зміст основних заходів з розвитку літакобудування України, визначаються показники (індикатори) досягнення цілей і вирішення

завдань розвитку літакобудування. У висновках робиться прогноз позитивних ефектів щодо інноваційного розвитку авіабудівної сфери України від впровадженні запропонованих заходів.

Ключові слова: Авіаційна промисловість, літакобудування, авіабудівний комплекс, промисловий потенціал.

В статті приводяться пропозиції по забезпеченню інноваційного розвитку авіастроїтельної сфери України. Определяются цели, задачи и этапы реализации комплекса решений по развитию сферы самолетостроения Украины, излагается содержание основных мероприятий по развитию самолетостроения Украины. Делается прогноз положительных эффектов для инновационного развития авиационной сферы Украины от внедрения предложенных мероприятий.

Ключевые слова: авиационная промышленность, самолетостроение, авиационный комплекс, промышленный потенциал.

УДК 629.73:338.45(477)(045)

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Statement of the problem. Modern depression state of aircraft industry requires the development of a set of measures which will provide its output at a high international level. The scientific objective of the development of this complex is to define the goals and objectives for the development of Ukrainian aviation industry, development in accordance with these objectives, specific activities, indicators of achievement and objectives.

Analysis of recent researches and publications. Problems of innovative development of the aviation industry of Ukraine is a subject of many publications in which it is possible to trace the evolution of views on its role and place in the development of the state, and ways to ensure progress in its structural organization and methods of work. Problems of development of aviation industry of Ukraine were investigated by such experts as V. Androsova, СТ.

Boguslaev, Burchinsky, S. Goncharov, V. Gorbulin, V. Zagorulko, S. Short, A. Kachan, D. Kiva, G. Krivov, J. Kulaev, N. Pechorin, C. Pedraza, I. Sokoly, A. Shevtsov, etc

Definition of the unsolved questions. The main question of scientific problems is the development of complex organizational and economic activities, which provide conditions for development of aircraft industry of Ukraine, taking into consideration the factor of globalization and challenging economic conditions.

The scope of the article. The scope of this work is to develop a set of measures that will provide conditions for effective development of the aircraft construction sphere of Ukraine. These goals include:

– to define goals, tasks and stages of implementation of complex solutions for development of aircraft industry of Ukraine,

- to develop and justify the main activities for the aircraft manufacturing of Ukraine
- to define the criteria (indicators) of achievement of the goals and objectives of the development of the aircraft industry.
- to predict positive effects in terms of innovative development of the aircraft manufacturing sector from the introduction of the proposed measures

Main part. Taking into consideration the priorities of development of the industry aircraft industry of Ukraine [1,2] the main goal is to create a competitive aircraft industry of the world level.

The achievement of this goal is expected to provide the following scientific principles:

- consistent expansion of market presence;
- concentration of resources;
- focus on manufacture of families of an aircraft and unification;
- focus on lifecycle management of substation.

Ensuring the leading role of domestic enterprises in aircraft industry in the world market be implemented gradually and sequentially: the achievements realized in controlled, relatively easy to enter market segments with subsequent transition to new, more complex.

In order to make the most effective use of scarce intellectual, industrial and financial resources, we offer a phased implementation of projects. Every next major project, providing access into adjacent segments and expand the product line, will be implemented on the basis of the stated competencies and reputation. In addition to a potential expansion of market presence, new products should strengthen the existing supply due to the high degree of commonality with existing products that reduces the cost of their establishment and development in the production and operation. In addition, new products must be resourced adequately: their implementation must not weaken or close the current program.

Thus, the first priority of the Russian aircraft industry in the civilian sector is the successful implementation of ongoing projects, primarily the completion of sales and efficient after-sales service of aircraft An-140 and An-148. The failure of the project of An-140\148 may lead to a twofold reduction in demand for PS the following domestic projects (primarily the An-70).

Further, the results of the consolidation of Ukrainian producers in the segment of regional aircraft, it will be necessary to finalize and implement the launch of new PS in the first place, heavy military transport aircraft An-70. Finally, in the case of the successful entry of classes and segments of the regional and military transport aviation, as well as the achievement of positive results of research and negotiations in the field of international cooperation, it will be possible to plan the entrance in the segment of wide-body aircraft.

When drafting new enterprises of aircraft industry focus should be on the creation of families of aircrafts and maximum uniformity within each family and between them.

It is necessary to fundamentally change the way in which the attention of the manufacturer and the state focuses only on the stages of the project the aircraft prior to its certification, and completion of aircraft after the start of serial production, market promotion, creation of a network of service underestimated. It's necessary to make the transition to the lifecycle management of substation from the moment of formation of the concept of the future aircraft to the disposal of the last of the aircraft.

On this basis, the key developments in aircraft construction are:

1. Restructuring of enterprises in the industry of aircraft construction.
2. The increased presence of companies in the industry of aircraft in the market.
3. The development of a global service network and after-sales service system.

With the above priorities in the segment of small aircraft and ultra-light aviation (ULA) main goal is to organize a stable production of aviation equipment of small aviation for the solution of transport problems in transportation of passengers and cargo on local and regional routes, as well as perform the aviation activities.

To achieve this objective in the area of small aircraft and NLA requires the following tasks:

1. Modernization, development and manufacturing of aircraft and small aircraft of ULA;
2. Making the best conditions for leasing companies in the acquisition of a small aviation aircraft, including aircraft for agricultural purposes.

The complex of measures on development of the aircraft is implemented in three stages. At the first stage the emphasis is on completion of the aircraft an-140 and an-148 and expanding their sales on the world market, as well as developing a military transport plane an-70. Also at this stage to achieve the purpose of leadthrough of restructuring of enterprises of the industry of aircraft construction».

In the segment of small aircraft at the first stage the emphasis is on the solution of the following purposes:

- To perform R & d for improvement of existing or development of new substation in accordance with modern requirements and the operating conditions of the internal market of Ukraine.
- To provide subsidies for companies for the certification of the aircraft for local and regional air lines, as well as training and certification of production aircraft small aircraft and ULA.

The second stage solves the problem of the objective «the Development of a global service network and after-sales service system». In addition, there is

the output of Ukrainian aircraft manufacturers in the segment of military transport aircraft. Finally formed a global service network and through the successful sales and service companies in the industry are gaining on the international market popularity and good reputation.

The stage III is to achieve the goal of «expanding the presence of companies in the industry of aircraft in the market». Having the success of aircrafts in the segments of regional and military transport aircraft, according to conducted research, companies will decide to enter the other segments and expand their presence in the market. In particular, after the formation of the concept of promising projects in the future (conduct financial and economic analysis of the idea and marketing research of competitors and technologies), a decision is made about the segment of wide-body aircraft. Research funding is provided in stages and the following stages are financed only in case of successful completion of the previous one.

For the segment of small aircraft and ULA II stage is combined with stage III, with emphasis on the solution of the problem of subsidies to leasing companies for the purpose of reimbursement of expenses on loans for the purchase of aircraft with capacity up to 20 seats, as well as the perspective of ULA all domestic cycle of assembling;

– Solution objectives expected to be achieved by implementing the following main activities:

Restructuring of aircraft industry, in the framework of what its necessary:

– the closure and withdrawal from the structure of enterprises of the aircraft industry redundant and inefficient assets;

– the conversion of existing facilities in accordance with existing and future needs;

– technical re-equipment;

– completion of transition to digital methods of design of substation;

– optimization of production processes and introduction at the enterprises of the aircraft industry advanced quality control systems and management, appropriate international best practices (Lean, Six Sigma, etc.);

– international certification of production processes at enterprises of aircraft industry;

– debt restructuring of enterprises of the aircraft industry.

The provision of budget investments for the purpose of optimization and modernization of assets is linked to carrying out following activities for optimization and modernization of assets, which are carried out without the involvement of budget investments:

– carrying out a partial privatization / IPO;

– implementation of the system of targets aimed to increase value of the company (EVA, ROA, ROIC);

– development of the system of corporate standards;

– diversification of suppliers, including on the basis of the profile of innovative territorial clusters.

The task of the transition to a new industrial model is provided with all of the concern «Antonov» budget investments with the aim of optimizing and upgrading its assets and management systems for the planning period of 10 years. The transition to a new industrial model in the aircraft industry implemented a set of measures to restructure the production assets of the industry in three main areas:

A. Formation of a competitive environment of suppliers of low value-added products, development of small and medium-sized innovative high-tech enterprises of the aviation industry on public-private partnership, restructuring and allocation to outsource redundant, uncompetitive and ancillary industries carried out including on the basis of the profile of innovative territorial clusters;

– . Optimization and modernization of production assets of the industry through migration, optimization and concentration of domestic production of high value added, creation of centers of key competencies of the concern «Antonov», the inclusion in the system of global industrial cooperation, the completion of corporate procedures to consolidate 100% of shares of main subsidiaries ownership of the concern «Antonov» and optimization of the system of management the enterprises of the sector under a new industrial model.

The implementation of the above directions is ensured by the creation of an aviation cluster industrial and technology parks on the basis of unused production assets aircraft plants (ARPs) (Kharkov ARP, ARP Vinnytsia, Kyiv ARP, ARP Odessa, Nikolaev ARP), which will become sites for the creation of centres of core competencies, allocation of independent businesses in industries of low added value, development of high-tech enterprises of small and average business.

A separate important direction is the provision of sufficient investment, in accordance with what we offer the following solutions:

– the provision of subsidies to Ukrainian producers of aircraft and aircraft engines to the reimbursement of part of expenses for payment of percent on the credits received in the credit organisations and the state leasing company «Ukrtransleasing» on technical re-equipment, and the cost of lease payments for technological equipment supplied by Ukrainian leasing companies under leasing contracts, concluded in advance. The additional condition of providing these subsidies in terms of technological equipment used at the stage of research and development, can be established providing public access to relevant equipment, including participant organizations of the profile of innovative territorial clusters.

– Granting subsidies to Ukrainian leasing companies to compensate part of expenses for payment of

percent on the credits received in credit institutions and state Corporation «Ukrtranslizing» for the purchase of aircraft and their subsequent transfer to the Ukrainian airlines under lease agreements, as well as those companies and aircraft manufacturers on the credits received in credit institutions and state Corporation «Ukrtranslizing» for the acquisition of simulators for Russian aircraft

– provision of state guarantees of organizations for aviation industry operating in the field of aircraft for long-term loans many banks, especially foreign.

2. Increasing the presence of companies in the industry of aircraft in the market.

In this direction the main objectives is the completion of two major projects – the an-140\148 and an-70. Full completion of the project an-140\148 requires the completion of some final R & d and final development of the aircraft An-148. The An-70 project requires the completion of complex R & d, PS international certification and serial production.

According to the forecasts of the market [3,4,5], the total potential demand for the aircraft grade An-140\148 up to 2030 will amount to 893 aircraft, most of which will be implemented in the CIS countries, Southeast Asia and Europe. According to data for 2012, the fleet capacity of 60–120 seats is around 2800 units. Of these, 1280 aircrafts in the segment of 60–90 seats; 1520 aircrafts in the segment of 90–120 seats. The market for regional aircraft is characterized by high competition, today the segment of aircraft with a capacity of 60–120 seats is represented by a wide range of manufacturers. About 50% of the fleet falls on the Embraer and Bombardier (30% and 20%, respectively). About 37% of the aircraft have obsolete aircraft manufactured by Boeing, McDonnell Douglas, BAE systems, Fokker. Also accounted for 8% of the Soviet production aircraft (Yak-42, Tu-134). In the near future, the competition in this segment of the market will grow due to the emergence of new players – companies Comac and Mitsubishi. In 2011, shipments in this segment amounted to 155 aircrafts (about 5.8 billion. USA). According to forecasts, the demand for aircraft with the capacity of 60–120 seats up to 2030 will be 5680 aircrafts (of about \$100 billion. USA). The implementation of built-in sales will take at least 16% of the world market production of regional aircraft by 2030, due to lower level of operating costs in comparison with the main competitors-Embraer and Bombardier and Russian SSJ-100 and high level of comfort that is not inferior to the most modern long-haul aircraft.

3. The development of a global service network and after-sale service system:

– providing companies with the aircraft industry budget investment to create a network of service centers providing support on the system 24/365 globally.

In addition to the above activities in the field of aircraft are planned to be included in the consoli-

dated state order for domestic civil aircraft (An-70\72, An-32, An-140\148). Potential customers can be state institutions such as the security Service of Ukraine, Ministry of internal Affairs of Ukraine, the Ministry of defence of Ukraine, Ministry of emergency situations of Ukraine and Administration of President of Ukraine.

In the segment of small aircraft and ULA solutions goals can be achieved by implementing the following main activities:

1. For the purpose of «Modernization, development and manufacture of aircraft small aircraft»:

– Performing R & d for improvement of existing or development of new substation in accordance with modern requirements and the operating conditions of the internal market of Ukraine.

This event includes the development and production of new aircraft and engine replacement of the existing fleet of small aircraft.

– Subsidies to companies for the certification of the aircraft for local and regional air lines and ULA shopping destination with a full production cycle, as well as training and certification of production PS.

There are two ways of development and production of promising aircraft small aircraft: by localization of foreign production, or the creation or restoration of an independent domestic aircraft production. As mechanisms of state support for these projects may be considered the provision of infrastructure for industrial use as part of the core of innovative territorial clusters, and the co-financing of the aircraft certification and production. The provision of subsidies is made on a competitive basis. In the composition of the tender Committee should include representatives of scientific organizations and companies, as well as representatives of regions. During the competition on R & d, foreign manufacturers should take into account the degree of localization of the future production.

2. For the purpose of «promoting leasing companies in the acquisition of a small aviation aircraft, including aircraft for agricultural purposes» goal it's necessary to provide the subsidies for the leasing companies for the purpose of reimbursement of expenses on loans for the purchase of aircraft with capacity up to 20 seats, and general aviation. This event will enhance the attractiveness of the production of aircraft small aircraft and to reduce the financial burden on lessees that operate this type of aircraft.

Conclusions. Implementation of the proposed measures on the development of aviation industry of Ukraine will allow to achieve the following results:

1. To develop competitive domestic Corporation «Antonov» world-class, optimal product portfolio:

– to restructure the enterprises of aircraft industry (converted/removed from the corporations in unnecessary and inefficient assets);

– to build a transparent system of management of the enterprises of aircraft industry;

- to carry out the optimization of the product portfolio of the enterprises of aircraft industry (closed unpromising and/or competing programs);

- to upgrade the production capacity and streamlined production processes (meet international standards);

- to introduce modern technology and have formed the necessary key competences.

2. To maintain stable profitability of companies in aircraft industry:

- to restruct the debt of the enterprises of aircraft industry;

- to develop a portfolio of long-term orders, which is a stable source of profit.

3. To earn on the world market stable positive reputation and have good operational reliability of the aircraft An-140 and An-148:

- to create a global market for the sales of aircraft An-140 and An-148;

- to bring manufactured products to technical specifications in full compliance with the future requirements of the competitive market and worldwide organizations (ICAO, etc);

- to establish international integration and cooperation, to diversify component suppliers;

- to build a global service network, well-functioning and equal quality of services the main competitors;

- to transit to lifecycle management projects.

4. To satisfy the needs of aviation techniques of Ukraine by domestic manufacturers.

5. To ensure the significant contribution of domestic aviation in the national security of Ukraine.

6. In the segment of small aircraft it's expected the following results:

- to upgrade the model range of the existing fleet of small aircraft;

- to organize in Ukraine the production of modern aircraft small aircraft both domestic and foreign developments;

- to develop and certify a number of promising types of aircraft small aircraft

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