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REFORMATION OF THE REPAIR AND MAINTENANCE SYSTEM OF AIRCRAFT ENGINEERING

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Questions of re-structuring of support and maintenance system of planes serviceability of new generation are considered. Variants of creation and development of concern Aviatechservice are offered.

Introduction

Work of many researchers are devoted to the questions of reformation of the aircraft-repair production and technical maintenance system of aircraft [1; 2; 3].

However the questions of creation of the unique integrated system for providing aircraft good condition were not investigated in them, foremost in relation to a new domestic aircraft engineering.

In the article the results of researches on the development of the support and good condition providing system of a new airplane An-140 are given.

It means that the structure, which would provide maintenance, repair and after-sale provision functions of this airplane is to be created.

If such organizational structure is created by the known linearly functional signs, it will have following disadvantages:

- such structures have weak interfunctional ties;
- slow reaction on achievements of scientific and technological advance;
- unpractical at permanent changes in a market environment.

Really, in such structures any innovation, if it does not satisfy some functional service, can for a long time wait for various ordinations.

Thus the optimum decision is taken only about one function, that does not always guarantee the positive final result of all organization.

In market conditions a structure, which was developed by Americans and named divisional, is more acceptable.

The essence of it is in the complete autonomy of the units in charge, and separate subsections function on self-repayment principles, so they can be named as the "centers of income".

Such centers have to transfer the share of profits to the main office, up to 40% as a rule.

Duplication of functions and functional departments in many subsections in the organization structure is the shortcoming of organization.

Creation of the separate brigades or teams with new independence and responsibility for the definite type of activity is subsequent development of

"centers of income". They can be named as working centers, and the whole complex of such subsections – team-brigade system.

Analysis of market specific character of the aircraft repair services, production volumes showed that the most expedient organizational structure, which undertook implementation of after-sale service functions, is the creation of business concern which was conventionally named Aviatechservice.

The founders of such structure in Ukraine could be aircraft and engine construction plants, aviation scientific and technical complex "Antonov", Kharkiv national aircraft manufacturing association, Zaporozhy machine-building design bureau "Progress" and other interested legal entities.

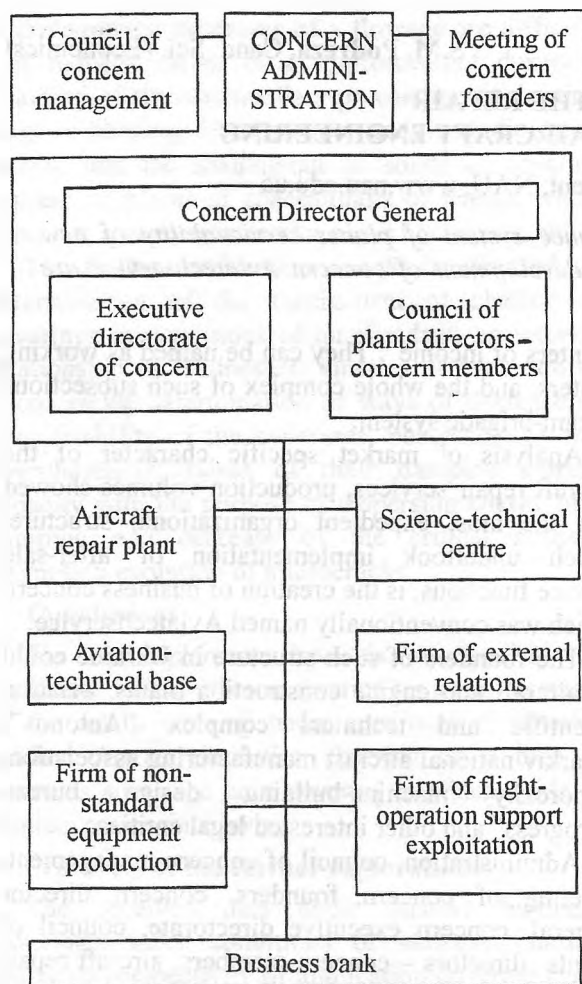
Administration, council of concern management, meeting of concern founders, concern director general, concern executive directorate, council of plants directors – concern members, aircraft repair plant, aviation-technical base, departments of marketing of air-building factories, science-technical centre, firm of external relations, firm of flight operation support, firm of non-standard equipment production, business bank etc. might be included into the concern.

The concern has the status of legal entity with a rather strong hierarchy. All enterprises and firms, which are included in this complex, have status of legal entity.

The offered organization structure of the concern Aviatechservice is represented on figure.

For the effective functioning of concern it is expedient to realize such principles as:

- production program and economic indicators of technical service and repair must be determined by the actual state of aircraft;
- it is necessary to find the optimum correlation between centralization and decentralization of functions in production activity;
- the special programme of management is needed on certification of maintenance and repair operations;
- to provide control of technical service and repair to achieve and maintain necessary flights safety;



Organisational structure of the concern Aviatechservice

– to conduct a common technical policy to provide unity processes of technical exploitation, repair, after-sale maintenance of aircraft.

Implementation of these principles will allow to attain certain technical, economic, social results. Only under such condition the offered organizational structure will be viable.

A technical result can be achieved by the increase of reliability level of aviation engineering, reduction of it's mastering terms in exploitation and repair, expansion of service time, increase of flights safety. High technical efficiency of work will allow to achieve substantial socio-economic results which may be defined numerically.

Economic efficiency of concern creation is based on the possibility to provide high level of production specialization and concentration, maneuvering of money reserves to introduce the science-technical and other innovative programs; reduction of duplicating management organs, which every enterprise were to have incase central management organ; is not available in this connection some

reduction of management of engineering-aviation service; staff possibility of creation of market infrastructure in the system of technical service, repair, after-sale service of aircraft.

As the final result the effect from creation of the concern Aviatechservice is determined by reduction of aircraft idle time while in technical service and repair, prime costs cut of fulfilled work, increase of flight safety, increase of profit at growth of air traffics volumes due to more effective use of aviation engineering. Of course, creation of concern will increase the competitiveness of conducting service, will improve the image of manufacturer of aviation engineering, but these factors of efficiency can not be calculated.

The set tasks and principles of reformation of the aircraft repair production give the possibility to predict some variants of creation and development of the concern Aviatechservice.

First variant

It is based on the principle that aircraft repair enterprise, aviation-technical base after exploitation of aviation engineering, firms on the external relations and logistical support enter the complement of business concern on their free will.

At this aim these subsections administratively are expelled hatch from composition of operating enterprises, airlines, airports, airbuilding enterprises and enter the complement of concern.

In this case the concern Aviatechservice is developing as a structure which monopolistic provides aerservice operation of one or some types of aircraft by it's own.

Second variant

The concern is created and developed in the conditions of competition, when along with it other aircraft plant which executes some functions of aviation maintenance are working.

Some of these firms and enterprises in future can enter the complement of concern, if better economic operating conditions will be provided.

Third variant

Basis of concern is made by an aircraft repair enterprise.

At the expenses of their own funds a center on technical service, firms on non-standard equipment production, logistical support, external relations etc. are created. Gradually the concern becomes a leader in maintenance, repair, after-sale service of certain types of aviation engineering, that, in an eventual result, to large extent provides this type of activity.

Clearly, the offered variants of creation and development of the concern have different degrees of authenticity realization.

It will be very difficult to realize the first variant, because aircraft repair enterprises are included into the complement of Minprompolitika, maintenance - to the airlines or airports of Mintrans, some of these enterprises can be in community property or joint-stock. Therefore unite administratively these constituents it is very difficult and merely impossible.

In our view, the way of creation and development of concern of the mixed (second and third) variant is real.

The point is, that in some towns of Ukraine, foremost, in Kiev, Kharkov, Dnepropetrovsk the unfolded enough infrastructure of aviation-transporting complex is created and is functioning.

Therefore there can be a number of variants or entries of aviation firms, organizations, enterprises to the concern, or collaboration with a concern.

Kyiv aircraft repair plant № 410 may become the base of the concern where the maintenance of An-140 aircraft can be carried out, and aviation repair base of the Kyiv aeroport (Zhulyani) may join it, enterprise on the flight-operation support, marketing department of the Kyiv arbuilding plant (firm of external relations) can join to it, scientific and technical center at Ukraviatrans etc.

С.М. Подреза

Реформування системи ремонту і технічного обслуговування авіаційної техніки

Розглянуто питання реструктуризації системи підтримки і забезпечення справності літаків нового покоління. Запропоновано варіанти створення і розвитку концерну Авіатехсервіс.

С.М. Подреза

Реформирование системы ремонта и технического обслуживания авиационной техники

Рассмотрены вопросы реструктуризации системы поддержки и обеспечения исправности самолетов нового поколения. Предложены варианты создания и развития концерна Авиатехсервис.

Conclusions

For providing competitiveness of such complex it is needed to develop such an economic mechanism which meets the demands of market conditions, quickly respond to the innovation and implementation of innovations.

Creation of such mechanism requires the solution of questions on the improvement of planning methods and regulation of concern activity, improvement of forms and methods of wages, development of financial-credit relations, system of mutual settlements, forming of prices on complex aircraft maintenance.

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