

*Maksym Romaniuk, Postgraduate student
(National Aviation University, Kyiv, Ukraine)*

ORGANIZATION OF INTEGRATED LOGISTICS SUPPORT OF MAINTENANCE AND REPAIR OF AIRCRAFT

Every year the organization of maintenance and repair of aircraft becoming more voluminous. Due to the demand for air travel rostuschim exploiting airlines have large fleet, which in turn differ in types and by producers. To optimize the preparation and planning then injects new system. This work was considering a system of integrated logistics support operation and maintenance of aircraft.

Operating organizations and centers need regular maintenance and repair supplies and maintaining inventory of replacement parts engines (APP) - parts, assemblies, modules.

MTO system, developed in the USSR, needs a thorough reorganization to comply with modern requirements. First of all, instead of a single, very large operating organization, a lot of small and medium-sized carriers, which can not affect the organization of logistics. Effective organization of aftermarket aircraft involves the creation of a global network of regional centers for maintenance and repair, close to home parks places of aircraft and engines, which automatically entails the establishment of a global system of logistic support. In modern conditions sharply tightened requirements for flexibility, efficiency and reliability of logistics support operation and maintenance and repair of aircraft.

Along with the problems, now there are also new possibilities for organizing logistics. First of all, they are associated with the introduction of CALS-technologies. They allow you to implement integrated logistics support products (the ILP; foreign literature-ILS,

Integrated Logistics Support), in the modern sense, LAI operation and maintenance of aircraft should include integrated management processes such as:

- Monitoring (control) the status of each product in the park;
- Planning of maintenance and repair;
- Supply of spare parts, accessories for MRO;
- Training of operators and maintenance personnel, etc.

Technological basis for ILP are:

- Computer-aided inventory control of spare parts (using a standardized electronic parts marking);
- Computer-aided design of orders for delivery of spare parts (the function is implemented in the framework of systems SCM, Supply Chain Management - Supply Chain Management);
- Information system operational support aircraft.

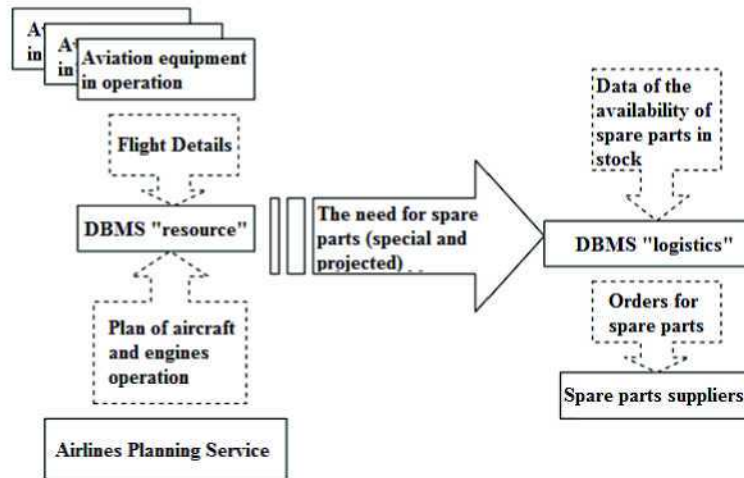
Information support aircraft operation involves providing automated accounting resource generation and control technical conditions of products and their components in real time. The highest requirements for these functions are presented in support of operation of aircraft engines. Developing information support systems operating in the interests of aviation engine (as applied to aircraft

engines, these systems abbreviated ECM, Engine Condition Monitoring and ENM, Engine Health Monitoring,)

Effectiveness of the implementation of information systems is largely determined by the fullness of the services they use new features. In many works devoted to the ILP, the main determinants of its cost-effectiveness, are:

- Automation of inventory control and ordering spare parts for the supply of spare parts at a certain threshold level of reserves, called the reorder point;
- As a consequence, the possibility of optimizing the inventory of spare parts and repair facilities.

That is, essentially, the ILP system is understood as a system of supply chain management (SCM, Supply Chain Management). However, new information technologies and provide other opportunities. First, the information system of aircraft maintenance manual enable realtime automatically control the current technical condition and remaining service life of the elements of each aircraft or aircraft engine. Forecasting is proposed to organize the park needs for spare parts for replacement elements overage. This will allow more reasonable to plan their production and delivery. Informational basis for this prediction can serve schedule. At the same time, forecasts for removal and replacement of elements of aircraft and engines, target volumes and modes of operation of aircraft must be treated the same software and hardware resource balance calculation parts and assemblies, and that the real flight information. Figure 1 depicts the recommended scheme of information flow system integrated logistics support (ILS) operation and maintenance of aircraft.



Recommended diagram of information flow in the system IPL maintenance and repair of aircraft

As a result, the organization of the system LSI, functioning on the proposed scheme, there are the following opportunities:

- Possible reduction of costs associated with the completion and maintenance of required inventory of replacement engines and spare parts, spare capacity and personnel in the field of maintenance and repair, and the like;
- May reduce downtime of aircraft and losses associated with a deficit of replacement aircraft engines and spare parts, as well as the lack of capacity performers MRO.

It should be noted that the system LSI, functioning according to the proposed scheme would be workable only if the unhindered exchange of information operating organizations and suppliers of spare parts in real time. In fact, sometimes the manufacturer must take to fulfill orders for the manufacture and supply of spare parts, when the aircraft is in need of replacement parts and components is still in the air.

In general, the implementation of CALS involves formation of a single information space, and therefore requires facilitate the exchange of data between participants product life cycle in real time. Acceleration and automation of information exchange required to minimize the participation of responsible persons. Naturally, this will solve the complex (technical, legal, etc.), information security, the protection of commercial secrets. However, the presence of these issues in any case should not block the introduction of advanced information technology and business strategies, including, LAI. As a positive example of another industry can lead the global banking information and control systems, the creation of which have been successfully solved similar problems of information protection (not less important and confidential!) From unauthorized access and modification. Solution to this problem is a prerequisite for the successful implementation of CALS-technologies.

Conclusion:

In this paper we consider the system of integrated logistics support operation and maintenance of aircraft. Shows its advantages in relation to other, older systems organization of maintenance and repair of aircraft. Presented its main provisions. Delivered the main tasks and shows the recommended diagram of information flow in the system.

References

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