

UDC 629.735.083 (045)

Philip O. Orlov, post-graduate student

## AIRCRAFT MAINTENANCE MARKET IN UKRAINE, ANALYSIS OF THE STATE PROBLEMS OF REFORMATION

*Maintenance market qualitative change and main problems of its reformation are analyzed.*

*Проаналізовано якісні зміни на ринку послуг з технічного обслуговування та основні проблеми його реформування.*

### Introduction

The implementation of market principles into the state regulation and control of the aviation activity in Ukraine had, as a fact, spasmodic nature. This has caused the transitional processes features in aviation activity, that with reference to the Operators and Approved Maintenance Organizations (AMOs) were displayed through the changes of their quantitative composition, qualitative contents and the quantitative characteristics of activity as on operational and maintenance markets.

The absence on state level of goal setting, acceptable and perceived, for market participants, methods of goal achievement on maintenance market has conditioned non-cooperative activity of Operators and AMOs.

This reduces the competitive potential of Ukrainian participants on this market.

### Analysis of the investigations and publications

Publications that are dedicated to the studies of the current maintenance market in Ukraine are not large in number.

In author's opinion, this is conditioned by the following main interconnected factors:

1) deficit of Operators resources for undertaking of operating activity, that caused domination of the problems of air-transport activity development with respect to the problems of the maintenance support for used aircraft (AC);

2) deficit of Ukrainian Civil Aviation Authority (CAA) experience in using regulatory methods for coordinative control of aviation activity development in a market based economic environment.

The specified factors have conditioned the delay of maintenance market problems actualization and claiming of corresponding studies of this market.

The studies of the problems of maintenance market reformation in Ukraine with reference to the repair of soviet manufactured AC were dedicated to the works of S.N. Podreza, state regulation and control of this market – Y.I. Kordyanin, A.V. Orlov.

With reference to the group of foreign manufactured AC target studies of maintenance market are not presented in the works known for the author.

**Statement of the problem** is the study of the factors that defines specific character and content of the maintenance market evolution in Ukraine, separation and consideration of the problems of its reformation. Analysis of the dynamics as the changes of Ukrainian Operators air-transport activity volumes and redistribution of these volumes at the period 1992-2007 [1] showed that in 2004-2007 on the passenger and cargo (less clearly) air-transport market the separation of the "main players" group had took place.

They provide the main growing of the volumes of air-transport activity on Ukrainian operational market [2].

On the international passenger air-transport market this growing is closely connected with the process of replacement of long range (LR) and middle range (MR) soviet manufactured AC fleet on corresponding foreign manufactured AC, which were taken by Ukrainian Operators on lease agreements.

These AC formed the independent AC group on the maintenance market, on the base of which the modern market principles of building of the relations between Operators and AMOs have been developing and realizing.

Due to the mentioned above changes in composition of the AC fleet, on the maintenance market in Ukraine two independent sectors were segregated, which of them has its own mechanisms of the development and changes: the soviet manufactured AC, that was as inheritance and was enough arranged and provided by resources; and the foreign manufactured AC.

So, further consideration of the problems of Ukrainian maintenance market reformation is reasonable to segregate on the market for foreign produced AC and the market for soviet manufactured AC.

**Group of foreign manufactured aircraft**

Specific characters of the development of maintenance market for foreign manufactured AC in Ukraine were caused, in significant, by composition and features of involved AC fleet and term of their leasing agreements, as well as regulatory factor – obligation to register these AC and to create by Operator the minimum own AMO. The last aspect it is possible to consider as example of the positive regulatory position of the Ukrainian CAA in respect to the process of changes on the maintenance market.

The analysis of the dynamics of foreign manufactured AC characteristics, that were used by Ukrainian Operators on the terms of leasing agreements for the period of 1997-2007 (fig. 1 and 2) shows that mainly arrived from the secondary market foreign manufactured AC were involved on the air-transport market.

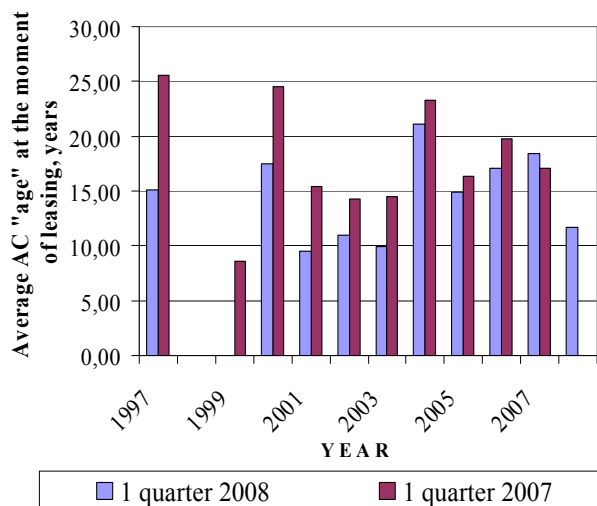


Fig. 1. Dynamics of changer of the average "age" of foreign manufactured AC leased by Ukrainian Operators (at the moment of taking them in leasing)

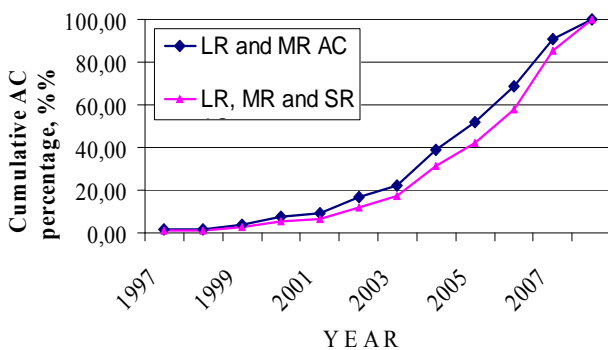


Fig. 2. Dynamics of cumulative percentage of foreign manufactured AC leased by Ukrainian Operators (%% from amount at a the 1st quarter of 2008)

Herewith, due to the changes by Operators of leased AC composition, the reduction trend of the average "age" of these AC fleet may be observed on fig. 1.

It should be marked that the supporting of growing rate for the passenger air-transportation is closely connected with the growing rate of this AC fleet in the group of "main players" of market. The stability of the position occupied by "main players" on the passenger air-transportation market was confirmed by declaration of "Ukraine International Airline" (UIA) and "Aerosvit" concerning to their plans to increase, at least to double, during nearest 5...7 years the total amount of air-transportation and to renew the fleet by the newest LR and MR foreign manufactured AC [2].

The maintenance market sector for LR and MR foreign manufactured AC were formed on a base of Ukrainian Operators self-dependent strategies of development.

This became as a significant new phenomena of this market. Actually, the Ukrainian Operators made self integration in to the foreign logistic structures. Ukrainian CAA support of this process was minimal - only through an approval of foreign AMOs that were selected by Operators mostly according to terms and limitations of the aircraft leasing agreements.

As to LR and MR AC, the "main players" practically already made a choice of the direction for development of maintenance market sector for foreign manufactured AC. As a confirmation of this factor it is possible to take in to consideration the step on consolidation of the activity of Aerosvit and Donbassaero in air-transport activity, as well as viewing by author the possibility to create for cooperative use a large AMO in Donetsk for available Operator's alliance.

The position of the Ukrainian CAA, regarding to the terms of foreign manufactured AC leasing by Ukrainian Operators, has provided the initial conditions, which allowed to the Aerosvit and UIA to make a choice in future direction of own AMOs development – reduction of outsourcing services in maintenance market for foreign manufactured AC, as well as to begin the maintenance export for foreign Operators.

As natural base for development of the "main players" own AMOs had become an available resource that were released due to leaving from the air-transportation market (due to physical and moral

ageing) of great amount of LR and MR soviet manufactured AC. This allowed these Operators greatly reduced the necessary expenses for own AMOs development.

Despite of presence of relatively high level of uniformity for used types of AC the problem of consolidation of "main players" own AMOs activity at this sector of the maintenance market remain unsolved.

Taking into account the understanding by Ukrainian Operators the dangers of transition of the significant part of air-transportation market in Ukraine to the greatly more powerful and more experienced foreign Operators, that have higher level of passenger air-transportation development with respect to Ukrainian Operators [2], in author's opinion it is required the goal-directed work at the level of Ukrainian CAA and Government for forming the conditions, which creating the prerequisites for deeper consolidation of air-transportation activity of Ukrainian Operators. "Critical mass" of such consolidation must prepare and govern the need of its reinforcement through consolidation in the field of maintenance.

In solution of specified consolidation problem it is possible to allocate the two scenarios.

The first scenario is connected with radical decision – a real merging of the available own AMOs. The some aspects of this decision were discussed long time on different levels, including Ukrainian CAA, which in this situation in addition represent one of the owners of involved Operators.

The main advantages of such integration are well known and, certainly, are understood by potential competitors.

However the problems, appearing in formation of such structures, are not simple and obvious decisions.

This confirms the difficulties, appeared between competitors of large avia-alliance, Star Alliance, Oneworld and Qualiflyer Group, in questions of maintenance market consolidation[1].

The Second scenario is more soft. It provides the conservation of existing own AMOs of each participant.

Consolidation undertaking should be realized on the base of the sequences of a step-by-step compromise within the framework of separate components of maintenance activity.

For example, as a first possible step, it can be considered a coordinated training of maintenance personnel on the base of existing Approved

Maintenance Training Organisations (AMTOs) of each participant, which in association can provide maintenance personnel training not only for needs of own AMOs, but also for the other consumers with more less resource expenses, including certification/approval, as well as by Ukrainian CAA and foreign CAAs.

It should be marked that for foreign manufactured AC maintenance market, like in Ukraine as in abroad there are the quite similar tendencies and problems.

The sense of them is that two interconnected but enough independent markets are existing: air transport activity market and AC maintenance market.

Each of these markets has an independent organizational mechanisms and approaches of development and specificity of consolidation strategies arrangement.

However these mechanisms, with reference to AC maintenance market and beside with other factors, generated the problems in arrangement of the potentially effective corporative structures.

For situation when the state regulation are based on market principles and mechanisms, the potential competitors had the significant difficulties in co-ordinated consolidative decisions even having enough developed structures of operator's logistic support system.

The feature of the Ukrainian situation is in the lack of the own logistic support structures for foreign manufactured AC, even when the "main players" have separated fragments of this already exists structures.

### **The group of soviet manufactured aircraft**

The growing of internal passenger air-transportation market was basically supported by soviet manufactured AC.

Due to delays in arrangement of corresponding financial-organisational support structures for short-range/regional (SR) Ukrainian manufactured AC (AN-140, AN-148) and for theirs leasing, as well as arrangement of base component of the Integrated Logistic Support (ILS) system for these AC, the real threats to loss its attractiveness for Ukrainian and foreign Operators had arise.

As a result, and due to the reduction of internal passenger air transportation percentage (fig. 3), during 2007 and at the beginning of 2008 the leasing processes of SR foreign manufactured AC were initiated.

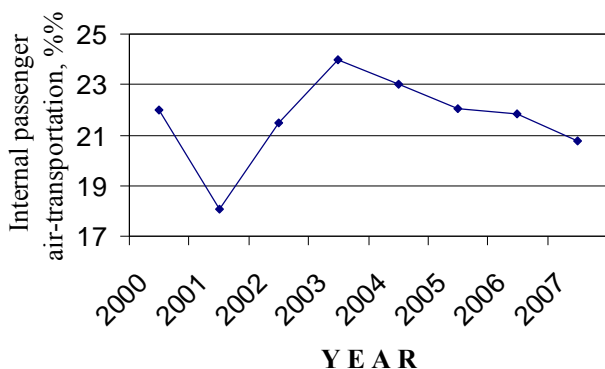


Fig. 3. Dynamic of changes for the internal passenger air-transportation percentage in Ukraine

This caused the appearance of a new area on the maintenance market of foreign manufactured AC. Due to small number and promiscuity of such AC fleet this area of market is more oriented on foreign AMOs, i.e. on import of the maintenance.

Maintenance market for soviet manufactured AC (excluding IL-76 and AN-124 and some other not numerous cargo AC of Antonov's family) are mainly characterized with uncontrolled and not managed changes, which, in the author's opinion, should be related with disorientation of corresponding Operators and AMOs. This creates the danger of the irreversible loss of involved resources of numerous and not powerful AMOs at this maintenance market sector that are distributed on Ukraine territory.

As a base for initiation of the described above transitional processes and events in Ukrainian civil aviation, but not their peculiar evidences, they where enough energetic change of regulatory principles in the state management of aviation activity. It came in to decentralised and less controlled, by the Ukrainian CAA, sequence of deconsolidation of the existing full-scaled Operators and AMOs (former United Air Brigade), and on the following stages - at bad managed and restructured, but already self-developing (with different by nature mechanisms for foreign and soviet manufactured AC) system, specific particularity of which became the absence of consolidated efforts between its competitors on the main aspects of aviation activity.

In the context of these transitional processes on the initial stage dominated the formation of new Operators and AMOs, which were built on a base of available resources (soviet manufactured AC, producing resources) "redistributions" between new market's competitors and the following "market" consumptions.

At the same time the baseless growing of the prices on AC maintenance market took place, the problems with consumed resource amortization by the new controlled-owners of state property and number other negative events appeared, caused by losses of integrity in regulatory principle of aviation activity management.

Instead of centralised command-administrative method of air-transport activity state control, that had a corresponding logistic support structure for operated ACs, it was introduced a new market based method, which has found the reflection in the corresponding system of national Air Rules (AR). But the using of this new market based regulation principles of Operators and AMOs approval became, a stimulator for the noted above deconsolidating and destructuring processes.

At the same time died off the existed centralized control-organisational logistic structures (e.g. centralised system of logistics support of avia-organizations, branch system of personnel training at educational institutions of different levels), but new substituting structures, which were adequate to the reality of economics' and regulators' were not formed.

The state stopped to be a source that supplied and controlled the necessary resource for air-transport branch.

At the same time, the implementation of market regulatory mechanisms, as well as execution of goal setting functions for support of integrity of air-transport activity in the state and creating of the conditions for the self-organization processes for the formation of new substituting market structures were provided not enough from the side of state (on behalf of Ukrainian CAA).

To the significant reasons of this it is necessary to assign the following: the change and implementation of market regulatory principles of state control of the aviation branch and control function of the state property was place on Ukrainian CAA simultaneously. This has generated collisions in their activity.

Besides this, formation of the Ukrainian CAA activity when the deficit of necessary management and inspectors' personnel took place. At the moment of Ukrainian CAA formation, due to centralizations of civil aviation control in USSR, the necessary personnel in Ukraine were absent.

That's why in state regulatory branch existed deficit the necessary experience in arrangement of AR, as well as the necessary experience in theirs

implementation under market based regulation methods. The situation was aggravated by frequent "realignments" and status changing of the State civil aviation management body - Ukrainian CAA. In a certain manner, the appeared management decentralization and restructuring of the branch resource, as well as decline period of air-transport activity were predestined by noted above.

Except of mentioned before part of the maintenance market sector for soviet manufactured AC (IL-76 and An-124 and other not numerous Antonov family cargo AC), due to inevitable retiring from operation of soviet manufactured AC, in nearest 4..5 years it is necessary to expect for release of powers of some large repair plants, as well as significant number of not so powerful, but multiple AMOs. Due to this there exists a necessity in a preceding and controlled reformation of this maintenance market sector on the level of Ukrainian CAA, as well as a broad attraction to this process of competitors from different parts of this market sector in order to ensure the following adequate their perception of formed aims and realized regulatory politics.

Author believes that the most largest components from releasing resources of soviet manufactured AC maintenance market, for instance - ARP-410, taking into account their traditional relationship with Design organisation and Manufacture of Antonov family AC, in principal it is possible to reorient on SR AC type An-140 and An-148 for arranging in Ukraine base parts of the structure of logistic support system for these AC.

## Conclusion

The transitional processes in Ukrainian economics and corresponding changes in regulating principles of approval/certification of Operators and AMOs have generated the manifestations, which, in the author's opinion, should be considered as breaking of state control integrity in regulation of aviation activity.

At this item the Ukrainian maintenance market for soviet and foreign manufactured AC are segregated on sectors that have a different level of uncertainties in possible directions of the development. However, for each of those sectors it is typical the presence of low-level consolidation of participant's efforts. Due to this, it is necessary to develop and analyse possible reformation scenarios for segregated sectors of maintenance market in order to provide the controllability of the development processes on a base of the arrangement of the efficient structures of logistic support of operation for appropriated AC groups.

On the author opinion it is requires to provide on the State level the corresponding organizational measures.

## References

1. Орлов Ф.А. Анализ особенностей рынка услуг по техническому обслуживанию воздушных судов в Украине // *Економіка та держава*. – 2007. – № 10. – С. 45–50.
2. *Український авіаційний портал*. <<http://www.aviation.com.ua/>>.

The editors received the article on 22 May 2008.