

DECISIONAL MODEL FOR AIRCRAFT SAFE SYSTEM

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Summary

This publication show issue of decision process for safety air activity connected with correct service and using of aircraft. Model-decisional loop is very good indication, which should be used by technical staff and pilots during aircraft maintenance and operation.

System constructed according to model of decision loop helps to select essential information and analyze current situation on aviation market, what allow on quick and efficient planning next technical activities.

Keywords: maintenance, operation, diagnostic, management project, aircraft safe system.

MODEL DECYZYJNY DLA BEZPIECZEŃSTWA EKSPLOATACJI LOTNICZEJ

Streszczenie

W publikacji przedstawiono istotę procesu decyzyjnego dla bezpieczeństwa lotniczego oraz działalność związana z prawidłowym obsługiwaniem i użytkowaniem statków powietrznych.

Model-pętla decyzyjna stanowi bardzo dobry wskaźnik, jakim powinien się kierować personel lotniczy podczas eksploatacji statków powietrznych. Systemy konstruowane wg pętli decyzyjnej pomaga selekcjonować istotne informacje, analizować aktualna sytuacje na rynku lotniczym, co pozwala na szybkie i skuteczne zaplanowanie racjonalnych, technicznych działań.

Słowa kluczowe: eksploatacja, diagnostyka, zarządzanie projektami, system bezpieczeństwa lotniczego.

1. INTRODUCTION

Decision process influences on aviation safety by activities connected to correct service and using of aircraft.

One of the manners of upgraded effect aircraft exploitation is make decision model by integration using spheres of modern science (technique, economy, psychology, medicine etc.). Model of decision loop give arise common correlation between humanistic science and technical.

This model influences on:

- flights safety,
- reliability,
- economics uses of aircraft.

Moreover air-companies are looking for possibility of introducing new approach decision system, which influences on development and enriching of knowledge technical staff and pilots by essential elements of different scientific disciplines.

2. ORGANIZATION USING KNOWLEDGE FOR NEEDS OF AIRCRAFT FLEET USER

Integrated user support is introducing new system which approaches to relating air-companies based on the integral support of user in regard of

successes all scope of modern science: technique, economy, psychology, medicine, philosophy etc. (fig. 1).

The idea concerning spheres of modern science for using in decision loop system of air-company is not well understood by technical staff.

That is why this problem must be explained by showing progress of not only technical but also humanistic sciences and their common correlation.

Currently present air-market is seeking of new methods and manners of solutions constantly pervading problems related to: material storages and products reception, transportation service testifying of people and commodities, repairs and services of air-equipment, utilization of devices and materials, instructions professional users, human supplies management, materials and technical devices etc.

Moreover, it also exists possibility of introducing to air-companies new logistic approach system and model of decision loop. They influence the quality of executed services during technology development and enriching of knowledge staff company. It is possible thinking to new integrated elements of different scientific disciplines.

Above all, the decision process influences correlation between low cost and flight safety.

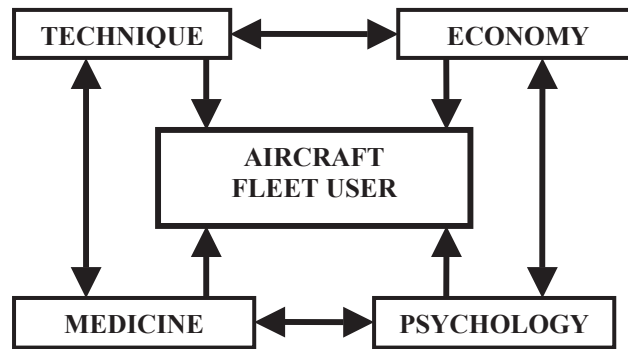


Fig. 1. Aircraft fleet user's development

3. DECISION PROCESS SUPPORT FOR NEEDS OF AIRCRAFT FLEET USER

Ability of air company to satisfy needs of air equipment users will demand simultaneous selection of suitable factors. The suitable factors make possible for integrated logistic support with regard to successes of present sciences.

Existing logistic system is an object of analysis and test in improvement area. Unfortunately, sometimes user experiences makes difficult in decision process. Presumably, it is the reason of lock receive satisfying successes.

The problem can be solved by logistic system analysis, it means by logical approach and basing on morphological method. Such approach did not be able fully dissolve of air companies problems.

Very often, it is difficult to achieve useful system during analysis of mental decision process.

That is why, the above problem refers to every system will be supporting by parallel service of users experiences..

Integrated logistic support should create transformation of knowledge for aviation companies (fig. 2). In this context, the knowledge with essential technical tools, should improve activity of air companies.

Furthermore economic analysis of air market by actual economy research, allows its penetrating qualification of situation in sphere of finance.

The fact above regards to skills, feasibilities, capacities and capabilities of rational acting for proper schedule of financial centre in order to improve working air companies.

Important element of this system is also prophylaxis of professional diseases of technical staff and pilots. It is important for different kind of measures to prevent bad workers accidents.

It has influence on efficiency and quality of air services.

Decision system with using measures of informative support (e.g.: computer simulations) permits to solve a lot of decision problems with consider action of high coefficient of risk related to aircraft safety.

Additionally, the examining interpersonal relation concerning mutual human dependence and personality relationships, allows to obtain important

innovative relating to needs of working air companies.

Taking into innovation for creating methods, there will be able to find system which influences on development of aviation companies.

The idea of logistic system for decision process gives development of air companies. It is held by organizational transformation of knowledge refers to efficient activities. It creates success of high production qualities and air equipment repairs with regard to optimization of costs and rules for safety of aircraft.

4. MODEL OF DECISION LOOP

Philosophy of decisional model offers the best technology relating to air equipment which already exists in production and operational on recent knowledge aviation program.

Constantly, knowledge and experience use in system design provide interpretation of technical staff and pilots behaviors.

Over all, model of decision loop allows:

- progressive involvement air-companies;
- contains of budgetary constraint and strategy choices;
- integration of equipment selected by technical staff and pilots;
- large growth potential;
- provide industrial expertise for real and no risk aviation program;
- federate training, maintenance and workmanship within air-companies in the future.

Above all this model will be able to make facility integration air business in common logistic process.

Keeping in mind safety of flights the model of decision loop is supporting activities of technical staff and pilots in exploitation process (fig. 3).

Moreover model of decision loop describes physical condition factors of technical staff and pilots in the aim to take the rapid decision for fulfill tasks.

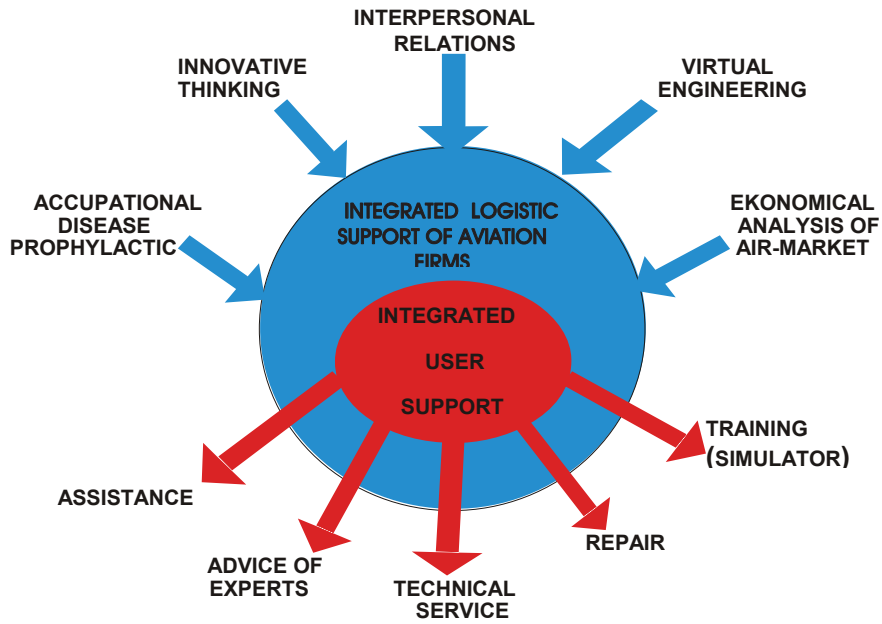


Fig. 2. Integrated logistic support

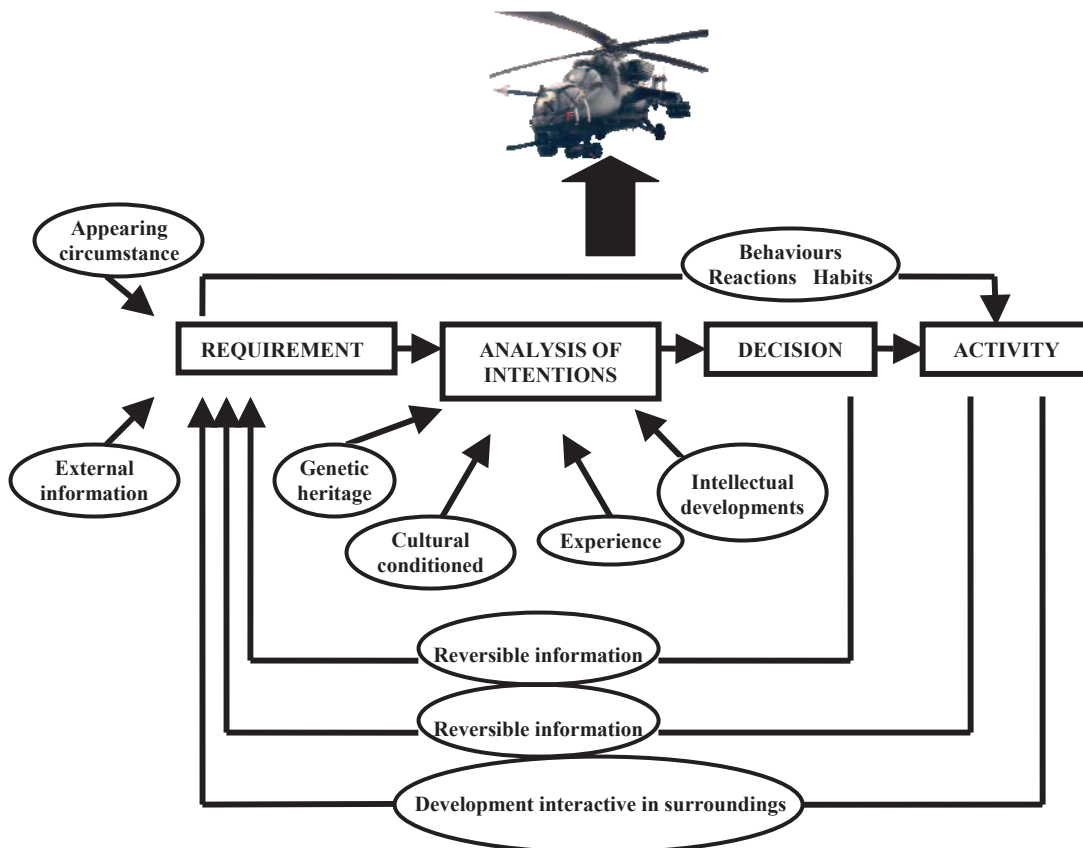


Fig. 3. Model of decision loop

All elements in this model relating to: requirements, analysis of intentions, decisions and activities operate simultaneously creating loops.

Requirements – collection of norms „condition”, which technical staff and pilots have to adapt oneself having on attention behaviours, reaction and habits on activity.

Analysis of intentions - inspection of correctness reasoning e.g. genetic heritage, cultural conditioned, experience and intellectual developments influence the plan of activity.

Decision - final decision of realization definite activities.

Group of activity - team of act undertaken by technical staff and pilots for successes of definite target.

Reversible information - return message about pronouncement of event, that is to say of decision and activities.

The requirements and analysis influence on decisions and activity. They should be formed by reversible information and other occurrences appearing in requirements area.

Moreover, decisional loop is mutually related process of forecasting ways of behavior in definite situation.

4. CONCLUSION

Examination of obtained results from the model of decision loop should be notice that:

1. Achievements different scopes of modern science (technique, economy, psychology, medicine etc.) support requirements of user aircraft fleet.
2. New approach systematic related to model of decision loop influences on quality of executed service through development of technology and enriching of knowledge by staff of aviation firm.
3. Model of decision loop influences on low cost and relate to flight safety.

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