



International Civil Aviation Organization

WORKING PAPER

A37-WP/111

TE/49

31/8/10

English and Russian only¹

ASSEMBLY — 37TH SESSION

TECHNICAL COMMISSION

Agenda Item 45: Next Generation of Aviation Professionals

**NEXT GENERATION OF AVIATION PROFESSIONALS'
RESERVE FORMATION METHODOLOGY**

(Presented by the Interstate Aviation Committee²)

EXECUTIVE SUMMARY

In this paper the concept of process management of providing the branch with the highly qualified next generation aviation personnel is proved.

Key words: formation methodology, next generation aviation personnel, proficiency level, training process.

Action: The Assembly is invited to consider the development of the following requirements to:

- a) process of formation of the next generation aviation personnel professional identity; and
- b) process of next generation of aviation professionals training and reserve formation.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective A: Safety – <i>Enhance global civil aviation safety</i> , to improve the flight safety level of the civil aviation worldwide.
<i>Financial implications:</i>	Financing within the budget of ICAO Regular Programme.
<i>References:</i>	Documentation of the Next Generation of Aviation Professionals Symposium, Montreal, 1-4 March 2010

¹ Versions in Russian and English are presented by the Interstate Aviation Committee (IAC).

² Interstate Aviation Committee (IAC) is the executive body of the interstate Agreement on Civil Aviation and Airspace Use (international agreement, participants of which include Azerbaijan Republic, Republic of Armenia, Republic of Belarus, Georgia, Republic of Kazakhstan, Kyrgyz Republic, Republic of Moldova, the Russian Federation, Republic of Tajikistan, Turkmenistan, the Ukraine, Republic of Uzbekistan).

1. INTRODUCTION

1.1. Air transport is still considered as one of the fastest growing segments of world economics. One of the key elements of the civil aviation viability is the provision of flight safety.

1.2. Due to the rapid growth of scientific and technological advancement, the complex organizational techniques, and management of the process of aviation activity, the interaction between a human and aviation equipment reached its limit and became critical. The reasons for the aviation accidents due to the human factor at present significantly differ from those of previous years and are in general as follows:

- a) inability of the flight personnel to come out of a stressful situation;
- b) lack of communication skills;
- c) uncertainty in decision-making in critical circumstances; and
- d) ineffectiveness of the aviation personnel training programs for airlines operating next generation aircraft.

1.3 In this connection, in the past decade the requirements for the proficiency level of aviation personnel underwent a qualitative change.

1.4 Negative impact of the economic crisis on the air service market has affected previous forecasts. The reduction of traffic volume due to the economic crisis was followed by massive retirement of aviation professionals.

2. FORMATION OF THE AVIATION PROFESSIONALS' RESERVE

2.1 To solve a challenging problem – formation of the next generation aviation professionals' reserve – an advanced concept for organization and management of their training process (hereafter referred to as the Concept) is needed. That Concept should be considered within the two aspects: a) existing problems; b) emerging problems.

- a) existing problems are the following:
 - 1) lack of personnel trained to operate modern aircraft;
 - 2) increased average age of the personnel;
 - 3) high cost of training, re-training and maintaining the qualifications of the flying personnel;
 - 4) inadequate knowledge of English language;
 - 5) insufficient quantity of full-scale certified simulators and unified simulators for initial training;
 - 6) insufficient quantity of modern simulators and training equipment for air traffic management;
 - 7) insufficient quantity of aircraft for initial training;
 - 8) lack of motivation for engineering personnel; and
 - 9) insufficient level of qualifications of some training personnel.

b) to emerging problems we can attribute:

- 1) growth of the traffic volume that would lead to lack of qualified personnel in future; and
- 2) problems of continued airworthiness.

2.2 At the moment these problems obtain a wide circulation in the world. Data presented here is substantiated by the outcome of the international seminars organized within the framework of ICAO-IAC COSCAP Project RER/01/901 by the Interstate Aviation Committee (IAC) together with ICAO, Airbus, Federal Aviation Administration (FAA) and Boeing Training and Services.

2.3 To make the Concept more effective, it is necessary, first, to pass to a new methodology of next generation aviation professionals' reserve formation based on the conceptual study of this process subject to the risk of aviation occurrences attributed to the human factor. Secondly, to redesign the professional training system by creating a continuous monitoring approach (CMA) of the aviation personnel training (see Table 1).

Table 1

Concept of the formation of next generation aviation professionals' reserve		
Existing strategy of formation of theoretical knowledge and practical skills of aviation professionals based on aviation occurrence risk analysis	Development of new techniques and technical support of the aviation professionals training system	Development of requirements for the formation of professional identity of next generation aviation personnel
Technology and shapes aimed on the training of the reserve of professionals		
National and international experience in the field of formation of aviation personnel reserve	Assessment of capabilities of the technical means for training and technique of its efficient locating	Optimum allocation of simulator flight hours according to the pilot's training level
Continuous monitoring approach (CMA) of aviation personnel		
Procedure of assessment of the flying personnel readiness on simulators	Procedure of assessment of a degree of pilot's practical skills and knowledge loss	Development of requirements for the training process and reserve formation
Economic assessment of effectiveness of the aviation professionals' reserve formation		
Feasibility study for the purchasing and locating of technical means of training	Methodology for the evaluation of the effectiveness of new training techniques	Comparative technical and economic analysis of aviation professionals' training based on the location of training centers

2.4 Priority items in solving the problem of supplying the aviation industry with next generation professionals:

- a) develop a new policy of next generation aviation professionals' training at the State level;
- b) develop the national programs which include new approaches and requirements for the certification of high, professional schools and Training Centers; and these programs should comply with the international standards and requirements, with the provision of necessary material and human resources;

- c) pay priority attention to the development of sub-programs aimed at the training of the managers of administrative bodies at the international level of scientific and technological advancement and new technologies, primarily to those recommended by the International Civil Aviation Organization (ICAO);
- d) training institutions and training and upgrade training centers should work in close cooperation with the industry and airlines;
- e) coordinate the training of aviation professionals and plan it in such a manner that the training centers for pilots, engineering personnel and maintenance personnel be ready by the time of delivery of new aviation equipment; and
- f) promoting and advertising of the aviation professions among the young generation.

— END —