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Ya. Absaliamova, PhD in Pedagogy
L. Kucheriava, PhD in Philology
G. Mikhnenko, Lecturer
(National Aviation University, Ukraine, Kyiv)

PROVIDING PROFESSIONAL RELIABILITY OF THE FLIGHT CREW MEMBERS

The article deals with the problem of providing professional reliability of the flight crew members. It explains the essence and importance of training and retraining these specialists of a new quality – the intellectually mobile specialists prepared for life-long learning in their field; capable of changing quickly the types of intelligence activity without reducing its productivity and ready to make complicated choices in changing circumstances.

At present the system of air transport is undergoing fundamental transformation, in which the constant modernization of the aviation equipment plays an important role. Analysis of the professional literature and documentation of the Air Transport Administration shows that in this process it is training the flight crew members that represents a great challenge, especially considering the advanced requirements of the International Civil Aviation Organization (ICAO). The human factor issue is one of the most major problems in aviation. A human being is the most vulnerable part of any technological process. In aviation the human factor issue is considered to be more acute than in other dangerous fields because of tough demands set up for human operator of sophisticated control systems.

Human factor is a combination of mental, physiological, biomechanical, anthropometrical and other human features which are determined by the criteria of human to machine compatibility [1, 2, 3]. The concept of "human factor" in piloting the airplane represents the dependence of human activity on constructive and technological parameters of the machinery applied and involves all variables that influence the reliability and efficiency of pilot to machine integration, namely: mental and physiological characteristics inherent to all people; individual capability limitations which become apparent under special conditions of a certain pilot interaction with the controlled object; limitations inherent to all pilots when objective complications are available [4].

According to the scientific reports of International seminars and meetings on the issue of human factor in aviation, 86% aviation accidents were caused by human factor, among which 49% were caused by poor pilot training and 37% – through dispatchers' fault [5, P. 26].

The analysis of the reports on the aviation accidents happened for the past 10 years, made by the Air Transport Administration of Ukraine, shows that one of the reasons of a number of aviation accidents and even aircraft disasters is either the violation of crew integration, or misuse of airplane equipment, or failure of this equipment and disability of pilots to identify it. In fact, during the mentioned period human factor contributed to 135 aviation accidents, which accounts for 78% of their

total number. This percentage includes the incidents that took place because of the violation of crew integration (14%) [6].

Thus, the level of training flight crew members did not appear to be sufficient that resulted in sharp increase in the number of aviation accidents, material losses for the past 15 years amounting to more than 4 billion dollars.

A thorough analysis of the Air Transport Administration documentation and other sources has shown that the critical problem of the process of modernizing aviation is to improve the training of specialists at higher education institutions for civil aviation and their further retraining, as providing flight safety is the key element of maintaining the viability of civil aviation. Providing safety is considered to be the main objective of the International Civil Aviation Organization (ICAO).

Human factor in aviation was and has been investigated by such Ukrainian and foreign aviation psychologists and educationalists as B. Aliakrynskyi, D. Gander, N. Gorbach, K. Platonov, C. Gellershtein, V. Ponomarenko, R. Makarov, C. Leichenko, B. Lomov and others. They all pointed out the existence of a number of scientific problems.

One should mention that the traditional system of training aviation personnel at higher education institutions for civil aviation and their further retraining in market economy does not sufficiently meet present-day airplane performance requirements, especially during the period of their constant modernization as well as possibility for personnel to fly different types of aircraft. The level of training flight crew members turns out to be insufficient, and the chain of recent human-error caused mishaps confirms this statement.

The National Doctrine of Education Development [7] states that the personality training for successful professional activity in the XXI century requires productive skills, which is possible only if the higher education system is transformed into personality-oriented one, when professional disciplines taught at universities do not only coexist within a training programme but also are interdependent and complementary to curriculum. In this way the foundation for further advanced training is laid.

The efficiency of the aviation personnel training system and flight crew members in particular is connected, first of all, with the solution of challenging tasks of professional activity. For example, to solve effectively non-typical professional tasks a future pilot has to learn how to independently choose appropriate personal knowledge and skills and use them in certain situations under certain conditions. Then, while retraining, a pilot has to use his profound background for continuous professional improvement. Another example concerns both professional training and retraining of flight engineers due to their possibility to work on different, maybe, more up-to-date types of aircraft. It requires such an integral professional skill that is based on the developed creativity and heuristic capabilities, expanded knowledge and skills to operate aviation and electric radio equipment underlying flight safety.

The appropriate realization of the modern branch standards of training flight crew members stipulates coherence and coordination of the disciplines content, which, in its turn, will ensure the optimal results. Furthermore, the necessity to develop in students of higher education institutions for civil aviation the ability to communicate skillfully in professional situations, to acquire interpersonal contacts,

especially, to perform communication within the flight crew has become of crucial significance.

Thus, an extremely vital problem of professional reliability of the flight crew members and the ways to its solution, especially while developing professionally important skills, qualities and, in particular, the problem of the reliability in decision-making and implementing decision process in specific and critical situations, require complex consideration.

Professional reliability, according to R. Makarov, is considered by us to be a sustainable integration of motivational, emotional, intellectual, mental and physiological, psychological and physical components of the personality activity which are aimed at the effective performance by a pilot of his professional functions in extreme modes at predetermined time.

In this connection, developing intellectual mobility of the flight crew members as their ability to change quickly the types and forms of intelligence activity without reducing its efficiency and productivity is becoming extremely important. After studying the results of scientific investigations on the problem of mobility (L. Khorunzha, G. Egorova) we define intellectual mobility as an integrated quality of a personality that combines intellectual capabilities and personality qualities in a system which ensure the readiness of a specialist to find quickly, process and apply information, to make decisions and act promptly in conventional and unconventional situations, to implement effectively the acquired knowledge in practice, and choose the best ways and means of solving both reproductive and creative tasks.

One should mention here that mobility is often limited, in the professionals' debates, to the physical mobility, that is to say to travelling, studying and working abroad or just at different places, on different apparatus. However, thanks to digital revolution, mobility is becoming more and more "virtual", it facilitates cooperation, synergy, cross-fertilization; people work and act locally but think globally, internationally. Mobility, first of all, can be linked with mental flexibility and innovative thinking, and in our opinion, it is intellectual mobility that is the base of the personality mobility, which shows itself in its other dimensions: professional, social, cultural, methodological, technological.

In the world of change, a singular specialist can be someone who knows more and more about less and less, someone inadequately prepared to acquire new forms of expertise in professional life and unable to adapt to new circumstances. It is important for students to find themselves, for example, in conversational seminar contexts, imaginatively occupying worlds they might not finally choose to inhabit and considering ideas they might not finally accept. Students should be taught to think both within and beyond the framework of a selected discipline, ready to ask the unexpected question and risk getting the unanticipated answer, able to situate specialized knowledge in the context of sophisticated general education perspectives. In other words, stimulating the mobility of the minds, being the key issue for the educational programs, will help to develop the intellectual mobility that enables them to make complicated choices in changing social and professional circumstances.

Taking everything into account, we state that the process of the

improvement of the professional training and retraining of the flight crew members is certain to be the process of enrichment, broadening and deepening available knowledge and skills, which can be realized only if the essential regulations of theoretical background, such as the law of succession of knowledge and skills, are followed, and if both demands of professional activity and personal needs of single specialists are met so that their professional reliability is continuously provided.

Besides this law, one should reconsider the existed system of the professional training and retraining of the flight crew members in order to provide optimal structuring of its content taking into account the conditions of further pilot's professional activity that is considering time-perspective orientation.

Conclusion

To provide professional reliability of the flight crew members it is essential to train specialists of a new quality – the intellectually mobile specialists. They are prepared for life-long learning in their field; they are able to change quickly the types of intelligence activity without reducing its productivity and ready to make complicated choices in changing circumstances. Only then the process of the improvement of the professional training and retraining of the flight crew members can be considered as the process of enrichment, broadening and deepening available knowledge and skills, which can be realized only if theoretical regulations are followed and both demands of professional activity and personal needs of a single specialist are met.

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