ABSTRACT

Methods for Training Safety and Effective Interaction between Crew Members

Postgraduate Student **Martynenko N. O.**[1]
[1] *Flight Academy of National Aviation University, Ukraine*

Background:

Today, in modern civil aviation, with the innovation of technical progress, a safety problem arises, including the formation of skills and an increase in personnel training levels. An urgent problem is the need to take into account personal characteristics, mutual understanding, interaction and teamwork of flight personnel. Statistics of the world's largest air crashes (Aviation Safety Network) shows that the main cause of accidents in the air is the human factor (error of the crew members or ATC).

The aim of the study: to characterize some of the main methods for training safety and effective interaction between crew members.

Results:

The International Civil Aviation Organization (ICAO), when analyzing human participation in processes affecting the problem of safety in civil aviation, relies on the basic concepts: human factor (interaction between crew members); communication (information exchange process); optimization of crew resources (human factors training for flight crews); situational awareness (activation, attention and alertness); safety culture; emotional climate (attitude towards each other, positive, freedom of expression, clarity of professional requirements); stress (reduces the crew's ability to act as a team); fatigue (reduces the ability to cope with stress and stress).

James Reason ("Human Error"), the psychologist of the University of Manchester, ordered new conception of human mistakes solving. The basis of Reason's concept, which is also called the "cumulative consequences of actions", is the identification of typical mistakes in any area or organization. According to the model, there are 4 types of errors: management problems, insufficient control, prerequisites for unsafe actions, and unsafe actions themselves. Without knowledge of what was the starting point for an incident, it is impossible to be sure that it will not happen again in the future.

Crew Recourse Management – is the effective use of all human recourses which appeared after The L-1011 crash in the Everglades. It was a major air crash on December 29, 1972. Lockheed TriStar airliner was flying EAL 401from New York to Miami, but crashed into the Everglades swamp 30 kilometers from the airport when landing at Miami Airport – 99 were killed and 77 others were injured. According to the report, the cause of the crash was that the crew was obsessed with solving the problem of non-flammable light bulb-release of the front chassis and did not notice that the plane loses altitude due to FAC severely hit the rudder, which led to disconnection of the autopilot and deviation. Today CRM is a must-have training course for personnel in areas where the cost of human error is very high and can lead to disastrous consequences. A personnel training methodology that is not based on technical knowledge, but on the interaction between crew members, including leadership and decision making. One of the most important principles of CRM is the recognition that even an experienced and professional team member can make a mistake.

We would like to pay your attention to another method that, in our opinion, can be used in aviation – SCRUM. This is a management method that is used in various fields of activity; it can either complement any other management process or act as an independent one. The primary goal of this method is teamwork, which depends on the crew commander (SCRUM-master). This is the most important person in the whole process. The initiative and independence of all other team members, satisfaction with the results obtained, the atmosphere in the team and the results of work in general depend on him. The captain is obliged to ensure maximum efficiency and productivity of the team, clear interaction of all project participants, creation of a trusting atmosphere, and elimination of obstacles in work. In turn, the rest of the crew should be able to plan and evaluate their work, be able to work in a team, systematically analyze the quality of their interaction and work and improve it.

Conclusions:

The problem of safety and effective interaction of crew members is very urgent today. The priority task of the crew is to create and support the team. The use of the above methods and practices will make it possible to work clearly and consistently in different situations in flight, to concentrate on fulfilling the set goals and objectives, to take into account the team's opinion, to motivate and encourage the participation of crew members in planning and setting goals.

Information about the author:

Martynenko Nadiia Oleksandrivna – Postgraduate Student, Flight Academy of National Aviation University, Kropyvnytskyi, Ukraine.
Research interests: higher education, pedagogy, aviation education and training; https://orcid.org/0000-0002-5695-4685