THE ROLE OF THE AVIATION ORGANIZATIONS IN THE CREATION OF AVIATION SAFETY

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Summary: The aim of the authors is to present the role of aviation organizations in the development of aviation safety. Over the years, there has been a change in the perception of the causes of aviation accidents, the role of organizational factors has been recognized, which has highlighted the role of aviation organizations. Due to the wide variety and number of organizations, they are responsible for quality and safety in aviation. The demands placed on organizations make the quality of the services that they provide on the highest standard, which in everyday activities translates into a state of safety. Thanks to the research conducted we have confirmed that in aviation, safety is the result of the activities of all aviation organizations, from supervisory organizations to organizations ordering passenger transport, handling and training.

Keywords: safety, organization, aviation, system, aviation accidents.

1. INTRODUCTION

In our times, a greater attention is being devoted to aviation organizations and their growing role in the safety assurance in aviation. Operational safety is a fundamental and essential element for their functioning on the market, and to provide an acceptable level of safety of services. The experience and results of the work of aviation accident investigation committees around the world, as well as the opinions of experts, confirm that the sum of the activities of all aviation organizations contributes to the state of aviation safety. The ambiguity and interdisciplinarity of the concept of organization means that it is defined in many ways. Derived from the Greek word in the mansion, is related to such disciplines as sociology, psychology and management. According to the classical model, organizations can be considered in terms of material, functional and attribute. Nowadays, organizations are defined in a systematic and situational way[1]. The system presentation treats the organization as the set of subsystems harmonizing by it. This means that it is a socio-technical system with a defined, structured structure and set goals[2]. In the situational presentation, the organization constitutes the arrangement of relations created in relation to the coming into existence, with activity and the development of the given whole in specific environmental conditions. Due to the fact that the organization is an open system and refers to the environment in which relationships exist to perform tasks and functions, the environment is one of the main factors influencing the organization's activities as a whole, as well as the individual components of the organization. The environment defines the rules of the game, the opportunities for development, creating opportunities, but also barriers and threats[3]. Based on the information above, the organization can be called as a complex system designed to achieve specific goals that are achieved through appropriate human and technical resources. Taking into account the above information, the organization, now, has an organizationally and functionally coherent organizational unit with the necessary resources (finance, personnel, technical equipment,

[1] Based: Puchalski J., *Podstawy nauki o organizacji*, Wydawnictwo Wyższej Szkoły Oficerskiej Wojsk Lądowych, Wrocław 2008, s. 10.
[2] Bielski M., *Podstawy teorii organizacji i zarządzania*, C.H. Beck, Warszawa 2004, s. 35
[3] Koźmiński A.K.., Piotrowski W., *Zarządzanie: teoria i praktyka*, Wydawnictwo Naukowe PWN Warszawa 2010, s. 31.

training base, etc.), meeting the requirements for carrying out specific activities in the aviation industry certified by the national aviation authority[4].

2. TYPES OF AVIATION ORGANIZATIONS

Nowadays, there are many aviation organizations operating in the world with a variety of activities. Due to the type of activity and the functions, it is possible to divide the aeronautical organizations into:

- Supervising and regulating aviation activities, at global level, that is International Civil Air Organistaion, International Air Transport Association, regional level, that is European Aviation Safety Agency, European Organisation for the Safety of Air Navigation and national, that is Civil Aviation Authority and Polish Air Navigation Services Agency5,
- Air crew members, that is International Federation of Air Line Pilots Associations, Aircraft Engineers Association and International Federation of Air Traffic Controller's Associations,
- Conducting the training activity for the air and ground staff, flying clubs belong to them, training centers air and training other organizations, that is ATO - Approved Training Organization, MTO - Maintenance Training and CAPTO - Certificated ATS Personnel Training Organization,
- Providing services and transport, we include air carriers and private entities providing services using aircraft,
- Dealing with the construction of aircraft, equipment and on-board systems, construction offices, that is DOA - Design Organization Approval,
- Producing aircraft, POA - Production Organisations Approvals,
- Dealing with aircraft maintenance, MOE - Maintenance Organization Exposition,
- Maintaining airworthiness of aircraft, CAMO - Continuing Airworthiness Management Organization,
- Dealing with the control and management of the airspace, ATS - Air Traffic Service,
- Protecting aircraft operations and handling of passengers and goods, that is handling agents and airports.

Due to the diversity of aviation organization, each of them performs a different role and performs separate tasks. Regardless of the type of aviation activity, the essence of any organization is the safe execution of the tasks resulting from its intended use.

3. REQUIREMENTS FOR AVIATION ORGANIZATIONS

In order to be considered as an aviation organization, it must have necessary elements for its operation, such as, staff, technical background, training base, finances and other elements to operate in the aviation sector in accordance with its intended purpose, such as the relevant certificate issued by the aviation authority. An aviation organization, in order to be able to operate in aviation, must meet the requirements of the international and national legal systems. One of their scopes includes all aviation organizations irrespective of their intended purpose, like the obligation to function in the organization of the Safety Management System and the second, closely related to the activity conducted, like air carriers - Air Operator's Certificate. The requirements are set by regulators and regulators of aviation at international, regional (european) and national levels. Belongs to them, the International Civil Aviation Organization is responsible for the creation and implementation of the laws governing the operation of aviation around the world, the International Air Transport

[4] Kozuba J, Rurak A., *System Zarządzania Bezpieczeństwem w organizacji lotniczej* [w:] Logistyka nr 4, Poznań 2014, s. 564.

[5] Based: Zajas S., *Międzynarodowe i krajowe organizacje lotnicze*, Wydawnictwo AON, Warszawa 2015.

Association[6], to promote the development, safety of air transport, regional organizations such as the European Aviation Safety Agency responsible for civil aviation safety in Europe and national aviation authorities responsible for legislation and the development of aviation in a given country. It is the responsibility of international organizations to develop appropriate procedures and guidelines for the safe conduct of air operations; and to support the planning and development of air transport. All aviation operators must meet the specific requirements to their destination as set out in the international, european and national aviation laws. This requirement is primarily related to the obligation to have a certificate issued by the aviation authority in accordance with regulations and to the type of business carried out. According to the European Commission Regulation (EU) No 965/2012[7], organizations engaged in commercial air transportation must have an AOC (Air Operator's Certificate)[8]. In this way, the process of certification for service activities ends by obtaining an AWC (Aerial Works Certificate)[9]. Both certificates are granted in the form of an administrative decision. Organizations dealing with airplane airport operations are required to have an AHAC (Airport Handling Agent Certificate)[10]. Compulsory maintenance organizations are required to comply with PART 145, design and production organizations must comply with the requirements of PART 21. An organization responsible for ensuring the continuing airworthiness of aircraft must meet PART M requirements and training organizations PART 147. Air navigation service providers must have an ANSP (Certificate of Air Navigation Service Provider)[11]. Organizations carrying out aviation personnel training courses in accordance with PART-FCL approved training organization certificate must have the ATO (Approved Training Organization). Above, it was mentioned requirements only for few aviation organizations, however they are a base for their functioning. The complexity of the certification process is providing air subjects about the high standard and must cope with both tasks; the beginning of functioning in the air industry and in the route confirming one's fitness for the performance of tasks.

4. AVIATION ORGANIZATION IN THE AVIATION SAFETY SYSTEM

Aviation organizations are responsible for maintaining an acceptable level of aviation safety, due to the variety of business organizations that covers the entire aviation industry. Some organizations are developing standards, rules of law, the determination of the criteria necessary to meet in order to be able to operate in the aerospace industry; others carry out air operations, training, and perform many other activities in the field of aviation. All activities undertaken by organizations shape the environment and air safety. Organization, and in particular, the processes taking place inside the decision on the safety and the quality, carried out tasks that correspond to the actual state of aviation safety. All tasks carried out in air organizations, structured entities, take place in a specific environment, are performed by people using appropriate equipment, so that, the proper functioning of the aviation organization consists of a number of factors that, through their interaction, translate into actual state of safety in aviation[12]. This makes the aviation organization increasingly seen as one of the

[6] Source: http://www.iata.org/whatwedo/safety/pages/index.aspx, access: 16.06.2017.

[7] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council.

[8] Source: https://sprintair.eu/certyfikaty/, access: 16.06.2017.

[9] Source: http://ulc.gov.pl/pl/%20http:/dziennikustaw.gov.pl/DU/2013/1077, access: 16.06.2017.

[10] Source: http://www.ulc.gov.pl/pl/operacje-lotnicze/certyfikacja/procedura-uzyskania-certyfikatu-ahac, access: 16.06.2017.

[11] Source: http://www.pansa.pl/?menu_lewe=o_pazp&lang=_pl&opis=certyfikaty, access: 16.06.2017.

[12] Based: Klich E, Karpowicz J., *Zarządzanie bezpieczeństwem w lotnictwie*, Wyższa Szkoła Oficerska Sił Powietrznych, Dęblin 2011.

essential components of the aviation system, namely: *Man - Aircraft - Task Force - Aviation Organization*[13].

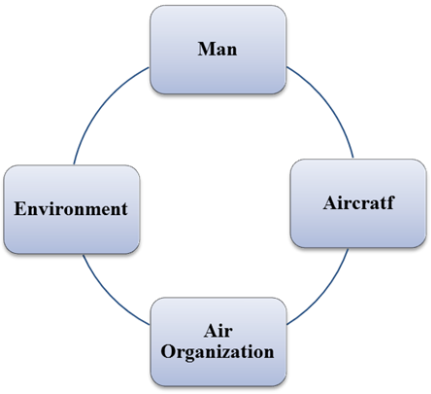

Figure 1 The aviation safety model. Source: Own work

To ensure air safety, the components of the system must work together and complement each other. A man, that is, an aircraft operator or other constructor who performs aviation operations with a specific characteristic that performs tasks in a mission environment such as airspace, and the surface of the ground, the environment with specific characteristics and the organization and the constituent elements, together composition of the air safety system. Such perception of aviation organizations is due to the need to carry out high-level tasks that ensure the safety and quality of aviation tasks. This means that all processes within the organization and in collaboration with other organizations translate directly into the real state of aviation safety. Providing an acceptable level of security in daily operations, in relation to the wide range of activities of the aviation organization, is essential to its development and is a determinant factor for the overall functioning of the aviation industry.

5. EVALUATION OF THE ROLE OF THE ORGANIZATION IN ENSURING AVIATION SAFETY

This part of the article is based on empirical research, which is an interview. The purpose of the study was to determine the role of aviation organizations in the creation of aviation safety. For this purpose, interviews were conducted with experts who were involved in their day-to-day safety activities with aviation organizations. Taking into account the diversity of aviation organizations and the wide range of aviation tasks, interviews were conducted with experts from supervisory organizations, training providers, air traffic services, handling organizations and service organizations like airlines. In order to achieve the results concerning the role of aviation organizations in the safety assurance, five questions, detailed in the following lines, were asked to the experts:

- Do you agree with the statement that "the organization of aviation is one of the essential elements affecting aviation quality and safety"?
- Do you think that safety in aviation organizations depends on the type of mission?
- Do you think that safety in aviation also means quality?
- Do you think that the type and destination of an aviation organization has an impact on the risk of adverse events?

One of the interviewees was two experts from the supervisory organization. One expert responding to the first question agreed that the aviation organization was one of the essential elements affecting

[13] Kozuba J, Rurak A., *System Zarządzania Bezpieczeństwem w organizacji lotniczej* [w:] Logistyka nr 4, Poznań 2014, s. 563.

aviation quality and safety. On the other hand, the respondent stated that he disagreed with the statement, stating that "(...) civil aviation safety measures are undertaken collectively within the civil aviation system, which has a very large number of organizations that contribute to maintain a balanced level of aviation safety ". The opinion of one of the experts who agreed with the statement was also shared by experts from the training organization, the organization providing the air traffic services, the handling service and the airline.

The second question asked was about the impact of the type of mission performed on an airline organization on its safety. Also in this case the experts of the supervisory organization expressed a dissent, one stated that the type of work performed had an impact on safety; while the other stated that it was definitely not, stating that "the type of work performed involves an assessment of the risk of the hazard being a factor that can threaten the maintenance of a balanced level of security. Nevertheless, all risks are eliminated through appropriate remedies (...) ". The training organization expert, as well as airline staff, air traffic services organization, and other experts, support the state that the type of work performed translates into the level of security in the organization.

The third question asked was related to safety and quality. Does aviation safety also mean quality? From the point of view of one of the quality assurance organization experts, "(...) one of the components in the operation of the aviation organization, maintaining a high level of safety in the presented results. However, there are other components of the organization that do not necessarily contribute to perceiving it as having the highest quality standards". An expert opinion supported the example of Ryanair as one of the lowest accident rates, and was known for its significant financial backing for safety training, but this did not lead to the highest standards of passenger handling. The second expert stated that aviation safety also means quality, depending on the context (...) if we assume that the quality of air services (ex. air transport) is safety and such are customer expectations ("take me safely from airport A to the airport B) that's it, you can say that. Quality itself focuses on customer satisfaction, safety, on error and human capabilities. "Other experts in their statements have unequivocally stated that aviation safety also means quality, to confirm this thesis, the expert of the air traffic services organization has determined that, from the air traffic control point of view, "the quality of the ATC also includes the safety of the operation".

The fourth question concerned the impact of the type and destination of the organization on the risk of adverse events. Here too, different views of employees of the supervisory organization can be noted. One expert believes that this is the case, while the other states that "there is no meaningful distinction, for example, which airlines are safer: cheap, traditional or charter or some other. There are no tendencies here because civil aviation safety standards are the same for any organization without exception". The first expert's opinion is shared by other experts. The above-mentioned aviation industry experts indicate that aviation is one of the key elements of the aviation system that determines quality and safety. However, it should be emphasized that many aviation organizations, through the sum of its safety operations, contribute to maintaining an acceptable and balanced level of safety in aviation. Taking into account the answers given, it is important to point out that the safety of the organization is influenced not only by the nature of the statements and its purpose, but also by process factors such as recruitment and continuous staff training, which turn into results not only in safety but also in quality, which is one of the key elements of organizations identified with safety.

6. CONCLUSION

Taking into account the answers given, it is important to point out that the security of the organization is influenced not only by the nature of the statements and its intended use, but also the factors involved in the processes, that is recruitment and ongoing staff training, which turn into results not only in safety but also in quality, which is one of the key elements of organizations identified with safety**.**

The changes that have taken place over the years in perceiving the causes of aviation events and incidents clearly indicate a significant role for the organization, especially organizational factors. The

diversity of air carriers and their tasks is related to the presence of many factors that determine their safety; the negative impact which can lead to air events, which are most often the result of several factors at the same time. In order to minimize the risk of their occurrence in aviation organizations, a systematic approach to safety and quality management is introduced.

Get thanks to the conducted interviews to the specialists from the air industry. They have showed that the aviation organization is one of key elements of the aviation safety system, determining the quality and safeties, emphasizing the fact that these many aviation organizations, through the sum of their action in the margin of safety, are contributing to hold on the acceptable and balanced safety level in aviation.

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