

SAFETY MANAGEMENT MANUAL, ITS RELEVANCE AND REALISATION IN SLOVAK REPUBLIC

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The contents of the article are the issue of air safety, which is subject to numerous legal regulations, laws, and international organizations. The purpose of the article is to provide a more detailed overview of the organizations and their rules regarding this issue. The mission of the article is to provide the reader with information about the current status of the aviation security system and how we implement this system throughout the world.

Keywords: Security, Aviation Safety Management Manual, International Aviation Organizations

1 INTRODUCTION

Safety of Civil Aviation has been a priority since the beginning of aviation. It implies a theory, examination and categorization of failures in aviation, and their prevention by appropriate regulation, technical support and training.

Only uniform and detailed rules are able to provide a precise definition and the definition of specific requirements and to supervise their compliance by the responsible air control authorities and certification authorities. Such treatment is currently represented by the Convention on International Civil Aviation and its Annexes and the work of specialized international organizations in the field of civil aviation. Air transport is currently the safest transportation in the world thanks to a complex and constantly evolving legislation.

2 SAFETY

Safety is one of the fundamental concepts not only in security policy, but also in carrying out various activities and tasks. Every human activity has its security aspects, ranging from safety in production over safety in transportation to a safe product. Generally, the security can understand an activity that does not harm anyone, or if the possibility of that damage is minimized to an acceptable level.

To define the safety course can be different opinions. In general terms there are two possible approaches, namely that:

- **the required level of safety** is achieved when the normal (standard), course work is required the adoption of specific measures;
- **security** is a condition where the protection of the interests protected is such that the risk of damage is minimized.

2.1 The importance of safety in aviation

An important and frequently discussed issue in aviation is safety. It currently attracts the most attention. Despite the clear results statistics for a lot of people traveling by plane is a psychological problem. A simple explanation for this situation is that the accident attracted considerable publicity. Despite its relative rarity compared to other types of vehicles accident, are in fact very large consequences.

Major impact on aviation safety was the development of technology. In the early days of aviation, the pilots had to rely only on their judgment and to several devices such as altimeter, fuel gauge, air speed indicator. The accuracy of these devices, however far can not be compared with today used avionics.

Significant impact on aviation safety was the development of radio technology. Improvement in this field enable the early provision of meteorological information to aircraft in the air and later service management and provision of air traffic.

A typical example of the impact of technology was a huge drop in accidents in 60-ies, which led to the introduction of jet engines. Currently, planes can fly in zero visibility, with the help of nearly perfect and is still improving air

devices. The only imperfect article remains the human.

2.2 Security risks and threats in the air transportation

The aviation safety is influenced by several factors. These factors include the human, technical and natural factors. Failure of any of the aforementioned factors compromises air safety in other ways. Therefore it is necessary to become familiar with the risks of individual factors.

2.2.1 Human factor

Reports on aviation safety in civil aviation supported by a gradual decrease in the number of accidents, which in developed countries of Europe amounted to an accident at 5 million takeoffs. Human error has resulted in the highest accident rate of all the factors. Human error has been documented as 70% of the causes of accidents for commercial aircraft. When investigating the accident found that a substantial part has its origin in the maintenance errors.

In addition to technical maintenance staff is necessary to mention air traffic controllers and pilots because of their failure has also resulted in accidents in air traffic. Therefore, in selecting candidates for the position of the pilot and air traffic controllers are mainly placed great demands on their health and mental state.

The terrorism is also possible to include to human factor, which has resulted in material damage and loss of life in aviation.

2.2.2 The technical factor

The air disasters, besides the human input from largely technical factors are also involved. This term encompasses various types of defects on the aircraft structure, different technical solutions and materials, and various organizational and technical shortcomings of airports. Neustále improvement and development of techniques for the reduction náslidok these deficiencies.

With the rapid development in almost all areas of aviation there is a still lower number of accidents caused by air technology. Despite advances in technology can not exclude its failure. Failure of technical factors may result in

loss of connection as a pilot with air traffic controllers, loss of control of the aircraft, the failure of navigation equipment, engine or other equipment.

2.2.3 Natural factors

Air safety is affected by the addition of human and technical factors also natural factors. Natural factors represent particular weather conditions during which the flight is conducted. Meteorological phenomena are less frequent causes of accidents, but because of their inscrutability is the threat to air transport comparable to other factors. Snow storms, causing reduced visibility and a rapid drop in temperature are the most typical meteorological factors causing air disaster. It may include, poor weather conditions that threaten the safety of the flight particularly during takeoff and landing. Another danger is storms that can cause turbulence, which might entail the loss of stability of the aircraft. Another dangerous factor is the natural ice that is formed on the aircraft, increasing its weight, reduces buoyancy wings and can negatively affect the functioning of mechanical parts and aircraft equipment.

The natural factors include many other factors such as bird strikes, volcanic activity, when it gets into the atmosphere of volcanic dust. Both of these symptoms can adversely affect engine operation and may result in their failure.

2.3 Legislative and safety standards

It is important to legislative and safety standards drawn up and applied consistently, not only within one state or country. For this purpose, are particularly crucial to international organizations in its areas of competence issued by the legislative and safety standards.

2.3.1 Legislative ICAO standards

ICAO is a specialized United Nations organization. This is the most important international governmental organizations in the field of civil aviation. ICAO develops standards and recommendations for international civil aviation. Uniform rules for all provide greater protection in the field of international aviation.

In the fifth chapter of the Chicago Convention are the most basic provisions relating to aviation safety. Article 31 and 32 dealing with airworthiness certificates, which must be equipped with all aircraft engaged in international air transport licenses and capability of the air staff. These certificates and licenses are issued and their validity is tested by individual states.

Chicago Convention has 18 Annexes to its standards and recommended practices (SARPs) contribute to increased safety. SARPs are updated as needed several times a year.

ICAO inter alia, approved various regulations, which are discussed as well as on security measures of individual parts of the transport process.

2.3.2 EUROCONTROL

In 1960, signed at Brussels Treaty establishing a EUROCONTROL to improve traffic management in European airspace, to ensure air traffic safety and operation of international air transport, an efficient system of air traffic control, optimization of flight routes. The organization is responsible for setting objectives, coordination of national policies and support training. Eurocontrol also examines amendments to regional plans to be submitted to the International Civil Aviation Organization (ICAO), and sets and collects route charges on behalf of the signatory States.

2.3.3 The European Civil Aviation Conference – ECAC

European Civil Aviation Conference was founded in 1955 as an intergovernmental organization. Coordination work is reflected in the standardization of requirements for aircraft, particularly in the form of recommendations. Like the ECAC assumed schematic structure of ICAO. The initial success of the European Civil Aviation Conference should designate particular, the conclusion:

- **Multilateral Agreement** on Commercial Rights of non-scheduled air services in Europe (Paris 1956);
- **Multilateral Agreement** relating to certificates of airworthiness for imported aircraft (Paris 1960);
- **International Agreement** on the process of tariffs for scheduled air services (Paris 1967).

In recent years, its activities focus more on cooperation with non-member countries, particularly the USA.

2.3.4 The European Aviation Safety Agency - EASA

Regulation (EC). 1592/2002/ES of 15 July 2002, establishing a European Aviation Safety Agency as an Executive Agency of the European Union based in Cologne. The Agency is responsible for the security rules that apply to products, people and organizations, and for taking decisions in connection with the checks and investigations to ensure compliance with these rules. Other tasks include EASA certification of airworthiness in the assessment activity and support the Commission in drawing up legislative proposals in the field of aviation.

3 SAFETY MANAGEMENT MANUAL

Safety Management Manual discusses the development of legal framework and supporting guidance material for application in aviation safety management (SMS) service provider. It also provides guidelines for developing national safety program (SSP), in accordance with international standards.

Manual is a basic security concepts that form the basis for understanding the existence of this manual. The next section deals with security risks, requirements for security management to the last chapter, which deals with the SPP.

3.1 The structure and content of the document

The manual consists of eleven chapters, namely:

- Overview Guide;
- Basic Safety Concepts;
- Introduction to Safety Management;
- Details about the Dangers;
- Security Risks;
- ICAO Requirements for Safety Management;
- Introduction to the Safety Management Systems (SMS);
- SMS Scheduling;
- SMS Traffic;

- State Safety Program (SSP).
- Procedures for Project Implementation (SMS);

Manual contains several annexes with practical examples and information directly related to the implementation of SMS and SSP.

- **Chapter No. 2** is a kind of basis, which discusses current security concept.
- **Chapter No. 3** provides basic safety management with emphasis on safety and its importance.
- **Chapter No. 4 and 5** presents the fundamentals of security risk management and explains the basic concepts of risk and security risk.
- **Chapter 6 to 11** represent the approach to the design, development and implementation of safety management processes using SMS as the SSP and systems management.

3.2 The importance of document for development of security

In order to advance the development of safety, it is necessary to identify hazards. SMM offers a process to identify hazards through risk analysis, which consists of three steps. The first step in developing a common security threat is identified. The second step is a general threat divided into a number of specific threats, since each to be such a threat is likely to have different and unique set of causal factors and character. Based on this risk is specified in the third step determines the specific effect of each potential threat.

3.3 Using of SMM

National civil aviation security program of the Slovak Republic is the integration of generally binding legal regulations and actions to improve safety. The SSP is to achieve an acceptable level of safety entities operating in civil aviation. This program is in the Slovak Republic prepared in accordance with:

- International Standards and Recommendations of the ICAO and EU;

- Law of Slovak republic no. 143/1998 Z. of. of Civil Aviation (Aviation Act);
- Generally Binding Legal Regulations and the Relevant Parts of Annex 1, Annex 6 / I, Annex 6/III, Annex 8, Annex 11, Annex 13, Annex 14 of ICAO Doc 9859th

4 TOWARDS SAFETY CAUTION IN AIR TRANSPORTATION

Security measures are at a high level, but their continuous development and improvement is necessary. It should focus on the safety of passengers on the plane and on the ground in the airport. New security measures are established on the basis of identified weaknesses.

Even before 2001, the responsibility of airport security depended of individual states. Everything changed after the attacks of 11 September 2001 at the World Trade Center in USA. After the terrorist attacks has received a further series of measures in aviation safety. These measures include stepping up random inspections, increase the number of agents in the air on specific routes and increase the number of suspects in a system for tracking terrorist activities. In 2002 the EU adopted a common standard for aviation safety.

From 2006 it is forbidden to take liquids and gels of more than 100 ml on board of aircraft. The ban came after British police uncovered the attackers, who wanted to detonate liquid explosives during a flight to Canada and USA.

After the bombings in London and Madrid, it was decided to more detailed harmonization of European rules and 29 April 2009 was issued a new framework. Commission in response to the European Parliament's 15th June 2010 adopted a Communication on the use of security scanners at EU airports. The executive scanners compared with metal detectors can improve the quality checks at airports.

4.1 American dominance

Latest technology help to improve safety in particular, but the latest technologies are still unpopular in the market. Although the U.S. company are buying this technology.

U.S. has to lead the EU such as X-ray diffraction. Technology that can identify what molecules are in the container. Being developed by the European laboratories, but American companies are buying it. According to a European source is the EU regulation, which slows the placing on the market. Diffraction is used as the Sheremetyevo airport in Moscow, and Ben Gurion airport in Tel Aviv. In Europe, scanners and baggage X-ray still dominates.

In the U.S. has the whole procurement and development of safety technology charge of transport safety. In Europe, there is no such office and the European Commission is criticized for not looking for scientists and engineers who would formulate a policy that has been globally accepted. Deficiencies in security controls at airports recently managed the French investigative program Envoyé Speciale. The agent managed to go through inspection at the airport in Marseille and Roissy with firearms in hand baggage.

4.2 Diffraction in Europe since 2013

However, for practical and economic reasons, the diffraction of European standards is not going to happen so soon. Diffraction equipment is five meters high and can only scan large objects, and a need for about a minute. They use them mainly for transportation of goods.

However, several companies developing such a device for hand luggage, which is needed five seconds to scan one object, but the companies argue that the EU hinders them in getting products to market. According to estimates, but the machine had come to the EU market in 2013.

5 CONCLUSION

Aviation safety is the object of many international organizations, whose activity should lead to the development of new safety systems and procedures. It is essential that security measures were in place even before their introduction to compel any accident or terrorist attack, which will result in loss of human life. From a historical perspective that most of the security measures introduced after the events have a negative impact on air transport.

Development should seek to use new safety technologies serving to identify the person against whom there are prohibited items and substances in order to prevent another terrorist attack similar to the January 24, 2011, which was at the Moscow airport Domodedovo.

These facilities should be located in the entrance of the airport to a dangerous person was recorded as soon as possible, it is also necessary to ensure that control devices are unobtrusive and will not create panic and dangerous behavior of the monitored person. With the new technology is needed and new security procedures, which should be based SMM.

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