

2. NONMILITARY SECURITY

PLANNING ACTIONS IN THREAT SITUATIONS IN AN AIRPORT AS ONE OF THE ELEMENTS OF THE CRISIS MANAGEMENT PROCESS

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ABSTRACT:

This article deals with the topic of organizing activities undertaken by the airport operator in order to respond to an emergency. It introduces the principles of their organization, explains the need for planning steps aimed at controlling an emergency situation, and also presents methods for checking the procedures included in an emergency action plan. It presents the planning of actions in an emergency situation as one of the necessary elements of crisis management leading to the achievement of the intended goal, which is to control the emergency situation with the appropriate, correct and efficient cooperation of services involved in activities and taking into account the impact of the human factor.

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KEYWORDS

Airport emergency situation, emergency planning at the airport, Aerodrome Emergency Plan, AEP, crisis management at the airport.

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Introduction

For most people not related to the aviation industry, the terms *aerodrome* and *airport* seem to be the same. However, there are fundamental differences. In accordance with art. 2 points 4 of the Aviation Law Act 1, an airfield is a separate area on land or water, in part or in whole, intended for take-offs and landings, as well as surface or above-ground movement of aircraft, together with permanent objects and construction equipment located within its borders, entered in the airfield register .

Under Polish law, airfields can be divided into:

- public use¹ (general access),
- non-public use².

The definition of an airport can also be found in the Aviation Law³, namely: “the airport is a public use airfield used for commercial purposes”. Usually passenger and freight traffic is carried out at airports.

¹ Art. 54 section 2 of the Aviation Law Acts. U. 2002, No. 130, item 1112 consolidated text.

² Art. 2 section 17 of the Aviation Law.

³ Art. 2 section 17 of the Aviation Law.

Airports can be divided according to several other criteria. Taking air traffic service as a determinant, we can distinguish: domestic and international airports.

There is also a division into the following types of airports:

- local,
- regional,
- central.

It follows from the above that the terms airfield and airport are interrelated and interdependent. In general, however, they differ from each other. Putting both concepts in the simplest framework, it should be stated that the term airfield is closer to operational issues, while the airport has more to do with business (trade). However, taking into account the topic and area of consideration for planning actions in emergency situations, discussed in this article, it can be assumed that for its needs the alternative use of both concepts is acceptable. This is the interpretation adopted by the author of the article.

The irresistible need for ever faster movement, civilization development, technological progress, as well as the implementation of new technologies and phenomena related to the globalization of society force the continuous evolution of air transport. This generates an increase in air operations in the sky and at airports. According to the analysis carried out by the Civil Aviation Office, Polish airports handled 22,300,000 passengers only in the first half of 2019, which means a 7% increase compared to the same period in 2018⁴. There is also a tendency to constantly increase the number of transport flights. The consequence of this is the increase in the amount of goods transported by air. Comparison of statistical data for the second quarter of 2018 and

2019 shows an almost 6% increase in the total volume of freight transported⁵.

From the very beginning, air transport has been associated with the risk of an accident. In over a century of aviation development, this risk has been reduced to such an extent that it has now become the safest means of movement. Undoubtedly, this is due to technical and organizational progress in aviation. The economic benefits resulting from the use of aircraft allow the introduction of newer, more technologically advanced machinery and equipment, as well as the development of airport infrastructure, which has a positive impact on the safety level. It should be noted, however, that aviation is one of the types of human activity. In this activity, the risk of accidents can be minimized, but it cannot be eliminated completely.

Modern, technically advanced aircraft structures have two passenger decks. This gives the opportunity to significantly increase the number of passengers carried at one time. Consequently, it is necessary to increase the amount of fuel in the tanks. The latest aircraft have several hundred seats for passengers, in the transport compartment they are able to transport loads of several dozen tons and take up to several hundred tons of fuel needed for the flight.

The dynamics of air transport development is a factor forcing the development of airport infrastructure. The requirements regarding the capacity and functionality of passenger terminals are increasing, hence the news about the opening of a new facility appear in the media from time to time. The infrastructure necessary for aircraft ground handling, parking lots for ground handling equipment and repair hangars for aircraft are also being developed. It is important from the development point of view to adapt

⁴ Source: <https://ulc.gov.pl/aktualnosci/4861-dobrewyniki-przewozow-pasazerskich-w-transportcie-lotniczym-w-pierwszej-polowie-2019-roku> [accessed November 14, 2019]

⁵ Source: https://ulc.gov.pl/_download/regulacja_ryнку/statystyki/cargo/wg_org_cargo_kw22019.pdf [accessed November 14, 2019]

the airport's air part to the growing requirements related to the parameter mentioned previously, the dimensions of the aircraft. It is important to maintain the appropriate aviation fuel and diesel oil storage reserve. While the diesel oil supply does not affect the airport's operation so much, the necessary aviation fuel supply has a huge impact on this parameter. Considering the amount of fuel needed for the flight of the aircraft and the constantly increasing number of flight operations, it is not difficult to conclude that in order to store such a huge amount of fuel it is necessary to build a fuel base and ensure smooth supply.

The term "threat" is usually intuitively understood and commonly used, but its different interpretations can be seen. The PWN Polish Dictionary gives the following definition of a threat: "a situation or condition that threatens someone or in which someone feels threatened" and "someone who creates such a situation". To interpret the noun "threat", the dictionary uses the verb 'threaten', which can take on (herein after the PWN dictionary) two meanings: 1) 'to scare someone to make him act'; 2) "become a real danger to someone or something"⁶. So what is an emergency situation? The easiest way to deal with an airport is to define the emergency situation from a system perspective. It should be understood as such a system functioning state, when as a result of external threat (e.g. emergency landing of an aircraft, act of terror, natural disaster) or internal (e.g. fire of an airport facility, power failure) it passes from the state of proper functioning to less satisfactory operating condition (desirable).

Each airport is a specific environment operating according to specific rules. Looking at the whole of this environment through the prism of potential threats, several areas of

their impact can be distinguished. Hence the need to plan emergency actions at the airport. Each occurrence of a threat situation creates a certain type of crisis situation understood in a more or less developed area of impact, which triggers the crisis management process. According to one of the analytical currents of searching for crisis issues, creating scenarios of possible development and course of the crisis and preparatory actions, i.e. planning actions in an emergency situation taking into account the greatest number of threats, it facilitates undertaking actions controlling the course of the crisis towards acceptable solutions and gaining control over the crisis⁷.

1. Types of emergency situations that may occur at an airport

Hazard situations related to the operation of an airport can be most easily divided into: aircraft-related emergency situations, non-aircraft related emergency situations, medical emergency situations or a combination of these situations⁸.

Furthermore, the following aircraft-related emergency situations can be identified:

- aircraft accident at the airport,
- aircraft accident outside the airport (on land, on water),
- aircraft incident in the air (severe turbulence, decompression, structural failure),
- aircraft incident on earth,
- incident - sabotage, including the threat of a bomb attack,
- incident - unlawful seizure of an aircraft.

Emergency situations not related to the aircraft:

- fire (airport infrastructure),

⁶ <https://sjp.pwn.pl/szukaj/zagro%C5%BCenie.html> [accessed November 14, 2019]

⁷ J. Ziarko, J. Walas-Trębacz (2010), Podstawy zarządzania kryzysowego. Część 1. Zarządzanie kryzysowe w administracji publicznej, Kraków: Wydawnictwo Akademii Frycza Modrzewskiego, p. 16.

⁸ Based on ICAO Doc 9137, part 7 *Airport emergency planning*, p. 7.

- sabotage (also threat of bombing),
- act of unlawful interference,
- act of terror,
- natural disaster and technical failure,
- dangerous materials,
- medical emergency situations.

Complex emergency situations:

- aircraft / object (structure),
- aircraft / fuel refueling device,
- aircraft / other aircraft.

Aircraft-related emergency situations requiring rescue operations are generally classified as follows:

- aircraft accident: at or near an airport (operational area),
- full operational readiness - an aircraft approaching an airport has, or is suspected to have, problems causing an immediate risk of accident,
- local state of readiness: an aircraft approaching an airport has, or is suspected to have, some defect, but this does not cause problems that would normally cause any serious difficulty in making a safe landing⁹.

2. Lawmaking

Like most issues related to aviation, the obligation to plan actions in an emergency situation was imposed on the airport operator (for Polish: zarządzający lotniskiem)¹⁰ in the areas of international, EU and national law.

In 1958, Poland ratified the Chicago Convention¹¹. Based on the wording of

Art. 25 of that Convention, Member States are required to assist aircraft in distress in their territory or territorial waters¹². The most important provision of the Convention is

the establishment of the International Civil Aviation Organization (ICAO)¹³.

Guidelines in the form of recommendations and requirements enabling the proper implementation of the planning process for emergency situations at airports are contained in Annex 14 Volume I - Design and operation of airports. Aviation, especially commercial one, is an international activity. That is why international regulations are of fundamental importance in the field of public law regulations related to air navigation.

In the area of EU law, when the European Aviation Safety Agency (EASA)¹⁴ was created in 2002, operational safety was included in the new institutional framework. The transformation consisted in taking over by EASA tasks in the field of aviation safety from European Union (EU) member states. The agency started its activity in 2003 and is currently the most important EU pillar in the area of operational safety, alongside the European Commission, EUROCON-

⁹ Ibidem, p. 7-8.

¹⁰ An entity that has been entered as a manager in the register of civil airports - art. 2 section 7 of the Aviation Law. The term 'airport operator' is used in European legislation.

¹¹ Convention on International Civil Aviation, signed on December 7, 1944 in Chicago.

¹² T. Compa, J. Kozuba, Z. Skop(2010), Ratownictwo lotnicze i lotniskowe, Dęblin: WSOSP, p. 7.

¹³ J. Szczucki, M. Gąsior, G. Zając, M. (2011), Zarządzanie bezpieczeństwem lotnictwa cywilnego. Skrypt dydaktyczny. Wrocław: Wydawnictwo Naukowe Dolnośląskiej Szkoły Wyższej, p. 113.

¹⁴ EASA (European Aviation Safety Agency) is one of the institutional pillars of the European aviation safety system alongside the European Commission, EUROCONTROL and national aviation authorities. It was established pursuant to Council and European Parliament Regulation No. 1592/2002 and started its activity in September 2003. Currently, the legal basis for its functioning is Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No. 1592/2002 and Directive 2004/36 / EC (Journal of Laws L 79 of 19 March 2008) Source: <http://www.ulc.gov.pl/pl/podmioty-nadzorowane/248-wazne/1482-easa> [accessed on December 30 2019]

TROL¹⁵ and national aviation authorities.

In all EU regulations, EASA, and with it the European Parliament and the Council, refer to the regulations established by ICAO (international). This policy reflects efforts to harmonize rules to maintain a uniform level of safety in air transport.

Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down administrative requirements and procedures for airports in accordance with Regulation (EC) No 216/2008¹⁶ of the European Parliament and of the Council – Annex III to Regulation 139/2014 Requirements for organizations - airport operators (part of ADR.OR) imposes detailed obligations on airport managers in the area of, inter alia, emergency response planning at an airport¹⁷.

The documents developed by EASA have the form of acceptable ways of meeting the requirements (Acceptable Means of Compliance, AMC) and guidelines (Guidance Material, GM) and certification specifications (Certification Specifications, CS), are a technical development of the general provisions of Regulation 139/2014. In the law of the European Union, they are treated as guidelines and interpretive guidelines, among others, in the area of planning emergency actions at an airport.

In the area of national law, the supreme legal act regulating security issues, including planning actions in emergency situa-

tions at airports is the Act of 3 July 2002 – Aviation Law to which the Regulation of the Minister of Transport, Construction and Maritime Economy of 4 April 2013 on preparation of airports for emergency situations and airport emergency firefighting services¹⁸ was issued as an executive act.

In the current legal status, native normative acts strive to regulate the issues related to planning activities in situations of threat to airport security by referring firstly to international regulations, in particular to Annex 14 of ICAO, and then to the dynamically evolving regulations adopted by the EU authorities comprehensively.

National law additionally refers to the area of planning actions in an emergency situation at the airport through the provisions of the Crisis Management Act¹⁹. In accordance with art. 3. point 2 of the cited act, an airport is a critical infrastructure facility. According to the provision of art. 4. paragraph 1. point 5: "Civil planning tasks include: (...) preparing solutions in the event of the destruction or disruption of critical infrastructure." The obligation to plan actions in the event of an emergency situation at the airport directly imposes on the manager of art. 6, section 5 of the Act: "Independent and dependent owners of critical infrastructure objects, installations or devices are obliged to protect them, in particular by preparing and implementing, according to anticipated threats, plans for critical infrastructure protection (...)". Methods of implementation and goals of critical infrastructure protection the legislator defined in art. 3 point 3. of the Act.

¹⁵ EUROCONTROL (European Organization for the Safety of Air Navigation) - a regional, specialized intergovernmental organization focused on ensuring the safety of civil and military air navigation by coordinating cooperation between Member States and international organizations, including the European Union. Established under the International Convention on Cooperation for the Safety of Air Navigation (Brussels, 13 December 1960) Source: own study based on the website: <https://www.eurocontrol.int/articles/who-we-are> [accessed on December 30, 2019]

¹⁶ Acts, EU L 44 of February 14, 2014.

¹⁷ K. Łuczak (red.) (2016), Zarządzanie bezpieczeństwem w lotnictwie cywilnym, Katowice: Wydawnictwo Uniwersytetu Śląskiego, p. 133.

¹⁸ Acts. U. 2013, item 487

¹⁹ Act of 26 April 2007 on crisis management Acts. U. 2007 No. 89, item 590 consolidated text

4. Actions taken in the event of an emergency at the airport

4.1. Procedures planning in case of an emergency

Planning of the actions in an emergency situation at an airport is the process of preparing it for an emergency situation that may occur in the airport's administrative area or in its operational area, but also outside the operational area.

The regulations govern the airport's operational area²⁰ as follows: the airport area and the area around it, where airport services and other entities provide assistance to aircraft in distress in accordance with the principles set out in the Aerodrome Emergency Plan, with a radius of 8000 m – for a certified airport²¹.

The goal of planning emergency situations at an airport should be to minimize the effects of the emergency, in particular in terms of saving human lives and maintaining the continuity of air operations.

Action planning in the event of an emergency for an airport defines the procedures for the operation of airport services and those external entities and institutions that could support and improve operations in the event of an emergency. The concept of emergency response planning must address the following areas:

- control and command,
- communications,
- coordination

It must also take into account:

- planning of actions before a threat occurs,

- actions taken during an emergency,
- actions implemented after the emergency situation ceases,
- influence of human factor,
- use of airport equipment and facilities.

According to the law, the airport operator is responsible for planning actions in an emergency. Arrangements regarding action in emergency situations due to applicable regulations are included in the document „Aerodrome Emergency Plan“ (AEP). This document takes the form of a textbook. It is a set of procedures to be applied in a specific emergency situation, it defines the principles of managing the operation depending on the emergency situation and the principle of delegating powers by the manager, the principles of appointing a crisis staff, a mobile management position, as well as an operational center. It also contains communication schemes. Maps and plans of the airport are also an indispensable component, which is usually enclosed as attachments. It is also distributed to all services and entities provided for in the procedures.

The purpose of the AEP document is to provide all necessary information for staff of services and organizations involved in emergency situations. This document should be structured graphically so that the required information is easily accessible.

An example of the table of contents is shown below:

- Chapter 1 – Emergency telephone numbers;
- Chapter 2 – Aircraft accident at the airport;
- Chapter 3 – Accident of an aircraft outside the airport boundaries, including division into incidents in the area and outside the operational area of the airport;
- Chapter 4 – Failure of an aircraft in flight (full threat or local operation readiness);

²⁰ § 2, point 7. Regulation of the Minister of Transport, Construction and Maritime Economy of 4 April 2013 on the preparation of airports for emergency situations and airport rescue and firefighting services (Acts. U. 2013, item 487)

²¹ The airport referred to in § 2, point 2 MTCaME Regulation of 4 April 2013 on the preparation of airports ...

- Chapter 5 – Object fire;
- Chapter 6 – Sabotage, including bomb threat (aircraft or facility);
- Chapter 7 – Unlawful seizure of aircraft;
- Chapter 8 – Airport incident;
- Chapter 9 – Representatives of authorities - functions at the place of activity;
- Chapter 10 – Exercises;
- Chapter 11 – Rules for managing rescue operations;
- Chapter 10 – Attachments, maps²².

4.2. Including the human factor

Product and service providers and national organizations form an aviation system. Due to its complicated structure, this system requires an assessment of the human factor's impact on security and understanding how human behavior can change due to multiple and interacting system components²³.

The SHELL model was developed to enable the interaction of various system components to be analyzed. These components include:

- Software (S) – procedures, training, support, etc .,
- Hardware (H) – machines and equipment,
- Environment (E) – the working environment in which the rest of the L-H-S system must function,
- Liveware (L) - people in the workplace²⁴.

At the center of the SHELL model there are people directly involved in the activities. People tend to adapt quickly to a particular situation, but there is a significant variation in their actions. Hence, it follows that people are not standardized to the same extent as equipment. People do not have the characteristics that allow for perfect inter-

action with the various components of the environment in which they work. In order to avoid tensions that may adversely affect human activities, it is important to minimize the effects of disturbances in relationships between people and other components of the model. To avoid disruptions to the system and human errors, other components must strive for careful adaptation to people²⁵.

A convergent interpretation of the concept of the human factor can be found in the Union document: „human factors principles' means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance²⁶” In this case, the extension of the concept of “human performance” is also cited, that is: “(...) ‘human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations²⁷”

All actions taken by the airport operator during an emergency situation also qualify as components of the aviation system, so the inclusion of a human factor in the planning of emergency situations at an airport becomes indispensable. In order to neutralize the human factor as deeply as possible, it becomes necessary to use a tool in the form of training and exercises.

4.3. Crisis Staff

In the event of an emergency situation in the administrative area or operational area of the airport, a Crisis Staff shall be appointed. Crisis Staff may also be called during an aircraft accident outside the airport's operating area if the aircraft performed or was to carry out operations at the airport.

²² Based on the EASA document: Easy Access Rules for Aerodromes (Regulation (EU) No 139/2014) 2014 -Revision from May 2019.

²³ Doc 9859-AN / 474 Safety Management Manual - Third Edition 2013.

²⁴ Ibidem, p. 22.

²⁵ Ibidem, p. 22-23.

²⁶ Easy Access Rules for Aerodromes (Regulation (EU) No 139/2014), op. cit., p. 32.

²⁷ Ibidem, p. 33.

The workplace of the Crisis Staff should be previously designated and included in the staff appointment procedure set out in the AEP. The Crisis Staff is appointed on the instruction of the Rescue Action Coordinator (RAC) in the following cases:

- aircraft accident or other threat to aircraft within the airport, in the operational area of the airport or outside it,
- occurrence of an act of terror,
- bomb threat,
- public health and epidemic threats,
- when there are events involving hazardous materials in transport or technological installations that pose a threat to people or the environment,
- when there are events related to the failure of airport infrastructure and / or natural disaster posing a threat to people, property of the natural environment,
- when the information obtained indicates that the local threat may increase in size,
- when the information obtained indicates that during a fire there is a danger to property or the environment,
- when the occurring event requires cooperation with external higher-level rescue entities or specialists from other industries,
- at the request of a representative of the entity envisaged to work in the Crisis Staff,
- at the request of the head of the action in an ongoing emergency.

The Crisis Staff is an advisory body for the Rescue Action Coordinator (RAC) and Rescue Operation Manager (ROM), Action Commander (Operation) (AC) or Operation Manager (OM) in the area of professional and specialist knowledge of individual staff members. Staff members cooperate with ROM, AC, OM and RAC in their area of competence.

The Crisis Staff develops the concept of actions during long-term and complicated rescue operations and police operations; prepares data for the analysis of the event, which can be used in the process of professional development as well as by the State Commission on Aircraft Accident Investigation.

An example of the composition of the Crisis Staff:

- Chairman - Chief Executive Officer,
- Safety Division Manager,
- Head of the Airport Security Service,
- Chief of the Border Guard Post,
- Commandant of the Airport Rescue and Firefighting Service (ARFS),
- Representative of the State Fire Service,
- Police representative,
- Head of the Emergency Medical Service,
- Head of the Duty Service,
- Head competent for energy,
- Head competent for communications and teleinformatics,
- Manager responsible for operation and transport,
- Head of the Customs Department,
- Head of the Airport Area Control Team,
- Managers or representatives of ground-handling agencies,
- Managers or representatives of fuel operators,
- State Sanitary Inspector territorially competent or representative²⁸,
- representative of the competent voivode²⁹,
- airline representatives,
- specialists from other areas.

Depending on the type of threat, the composition of the Crisis Staff can be extended to specialists whose knowledge and ex-

²⁸ If the emergency situation is related to an epidemic threat, infectious disease or other threat with the same consequences.

²⁹ If the emergency situation requires mobilizing forces and resources at the voivodship level

perience can be useful in solving a crisis. The accepted principle is the delegation of a representative by a person envisaged to participate in the work of the staff when there is a situation of inability to personally arrive by it.

The main tasks of the Crisis Staff

- collecting, selecting and analyzing information on planned and conducted activities as well as developing conclusions and forecasts of the situation development on their basis,
- determination of the forces and means necessary to remove the threat,
- preparation of detailed variants proposals for ROM, AC, OM actions,
- forwarding, through representatives of individual services (staff members), decisions and requests of ROM, AC, OM subordinate employees / officers,
- exercising supervision over achieving full readiness for activities of subordinate forces,
- supervising and coordinating the implementation of tasks by subordinate forces during operations,
- coordinating logistic and medical intervention support,
- preparing periodic and ad hoc reports,
- preparation of the final report on the conducted activity.

4.4. Mobile command centre

The mobile command centre is an operational unit that acts as the Staff for Intervention, whose goal is to coordinate the activities of the services involved in on-site activities. It is appointed by the RAC on the basis of an analysis of the emerging threat situation whose the size and development require the establishment of a staff supporting the ROM, AC, OM in the immediate vicinity of the activities. The workplace of the Staff of Intervention is appointed on an ad hoc basis by the RAC in consultation

with ROM, AC, OM. It should be located near the place of operation, but outside the zone of impact of hazardous factors. During the activities, members of the Staff for Intervention are required to wear properly marked vests.

Main tasks:

- providing necessary information ROM, AC, OM,
- cooperation with specialists in matters of rescue, terrorism, pyrotechnics, negotiations, construction (depending on needs),
- the use of other means, devices, communication systems and data analysis methods, the use or use of which may improve operation in an emergency.

The Staff of Intervention is launched in the following cases:

- when there is a need to support ROM, AC, OM at the scene of an accident,
- at the request of a member of the Crisis Staff directed to the RAC,
- at the request of ROM, AC, OM

4.5. Contact with the mass media

A press center is organized for contact with the mass media. The Spokesperson or other person appointed by the manager provides information about the situation to the mass media in an organized press center. To ensure the efficiency of operations, RAC may temporarily limit or refuse to provide information to mass media if it is required by the safety of persons in aircraft or facilities covered by the action. The frequency of meetings of the Press Spokesman with representatives of the mass media always remains at the management decision. The rule is not to disclose any information by unauthorized persons. A press center can be organized at airport infrastructure facilities. It is important that the location of the press center is organized in a different facility than that intended for contact with

victims' families, a center for providing information about victims and a connecting point between victims and their families.

4.6. Contact with victims' families

Information about injured persons is provided in the information transfer center. The representative of the managing body shall appoint its exact location. The center can be organized in airport infrastructure facilities, providing the center's location is different than the location of other centers.

4.7. Center for persons not requiring medical assistance, center for connecting victims with their fami-

lies, a place for luggage for victims

The place of organization of the centers is usually designated by RAC. These centers can be organized in airport infrastructure facilities depending on the number of people and the use of airport facilities for other purposes. The center is located in a different facility than the one intended for other centers.

4.8. Rules for managing of intervention and delegating authority

The rules for managing of intervention and delegating authority are summarized in the table below.

Table 1. Rules for managing of intervention and delegating authority

Intervention Coordinator	Intervention Leader	Emergency situation	Comments
<p>In each case the coordinator is the representative managing the airport and at the same time is the chairman of the Crisis Staff</p> <p>The role of RAC is performed in the following order: General director of the airport, Operational and technical Deputy Director, Port Duty Officer</p>	<p>ARFS Commander- (ROM)</p>	<ul style="list-style-type: none"> • aviation accident at the airport and within the airport's operational area; • AC air incident during a flight resulting in the need for a landing (without terrorist threats and explosives) • airport facility fire; • release or change of hazardous materials; • natural disaster or technical failure 	<ul style="list-style-type: none"> • ARFS Commandant is responsible for the proper management of the rescue operation and rescue units participating in the intervention. • In the absence of the Commandant, the duties of the ROM are performed in the following order: Deputy ARFS Commandant, commander of the ARFS platoon. • The management of rescue operations may be taken over by an authorized firefighter State fire brigade at any stage of the operation. • When threatened with hazardous material, ROM works closely with a specialist appropriate to the type of threat (Radiological Protection Inspector, DGR / ADR specialist, CARGO agent with IATA qualifications, National Sanitary Inspector, Central Laboratory for Radiological Protection, Gas Emergency Service)

	Representative of Police or Border Guard (AC)	<ul style="list-style-type: none"> • sabotage with regard to the bomb threat; • act of unlawful interference 	<ul style="list-style-type: none"> • The first entity authorized to direct the intervention is the Police.
	The State Sanitary Inspector competent for the territory or a representative of the territorially competent Sanitary-Epidemiological Station, doctor on duty at the medical aid point (outpatient clinic) (OM)	<ul style="list-style-type: none"> • epidemic threat or other public health threat. 	<ul style="list-style-type: none"> • In the first phase of activities, the referring entity is a doctor on duty at the medical aid point (outpatient clinic)
	Officer of the State Fire Service from the unit competent for the place of incident	<ul style="list-style-type: none"> • aviation accident outside the airport's operational area 	

Source: Own study based on applicable regulations.

4.9. Exercise

Exercises reflecting the real situation that may occur at an airport are an indispensable element of planning actions in an emergency situation at an airport. Conducting the exercises gives the opportunity to verify the procedures contained in the AEP.

Testing procedures in AEP through exercises is a diagnostic tool to identify potential, serious gaps and imperfections in its content. Conducting exercises enables airport services obliged to respond to emergency situations to integrate more deeply and to learn their own ways of operating. In turn, it provides the opportunity for external services to improve cooperation with airport staff and become familiar with the airport infrastructure and identified areas of danger. In order to accurately reflect the threat situation at the airport, you should strive for the exercises to be carried out both during the daytime and at night, and in various atmospheric conditions.

There are the following types of drills for emergency situations:

- comprehensive (full scale) organized at least every two years,
- partial carried out during the year after the given comprehensive exercise to make sure that any deficiencies and errors that occurred during the comprehensive exercise have been corrected.

The International Civil Aviation Organization (ICAO) in Doc 9137-AN / 898 - Airport Service Manual: Part 7 - Planning emergency operations at an airport (second edition) identifies one more type of exercise: staff (theoretical) exercises at least once every six months, except for the six-month period during which comprehensive exercises were carried out.

Checking the following items should be considered as the main objectives of exercises in emergency situations:

- the response of all services involved in rescue operations,
- emergency plans and procedures (including those regulating the crisis management process),
- rescue equipment and means of communication.

Exercises are a form of training, therefore they should also be seen as a tool to neutralize the impact of the human factor on the effectiveness of actions and decisions taken in the crisis management process.

4.10. Rescue organization

The most common and probable event that results in an emergency situation at the airport and operational area is an air accident. Air accidents and traffic accidents,

which have the hallmarks of a mass event³⁰, are usually distinguished by greater tragedy. Hence, as the main task of the services responsible for the safety of passengers and airport employees, constant striving for the proper organization of the airport rescue system³¹ is indicated. The airport rescue system consists of: Airport Rescue and Firefighting Service³² as a leading service and units of the health care system, public administration bodies, units of the State Fire Service and other public services. These activities are aimed at helping persons on board the aircraft or in airport facilities³³.

The tasks of the rescue system are not reduced only to rescue operations after the event with the participation of the aircraft. It also includes firefighting activities during an airport facility fire, responding and removing the effects of natural disasters, technical failures, preventing their occurrence, as well as preventive and control activities of the state of fire protection, implemented by the Airport Rescue and Fire Fighting Service (the airport operator performs this task based on regulations Act on fire protection and the Aviation Law).

5. Summary

The events of September 11, 2001 drew the attention of the whole world to the threats of terrorism. Undoubtedly, these were tragic events that were widely heard in civil aviation due to the use of previously hijacked aircraft for attacks. Activities in the field of civil aviation security aimed at counteracting terrorism began to take on another, more expressive meaning. In many countries, the state of increased readiness for terrorist activities has been maintained so far. Despite the tougher civil aviation security regulations in relation to the state prior to 2001, there is still a likelihood of an act of terror. This facilitates the global reach of air transport. Without proper preparation of procedures in this circumstance, it is impossible to effectively manage the crisis.

Air transport, as previously mentioned, gives the possibility of rapid movement of people, goods, as well as factors causing infectious diseases³⁴ or particularly dangerous and highly contagious³⁵. A flight from one end of the world to the other usually involves more than one change and waiting for the next flight, an infected person (carrier) may not even be aware of their condition. According to medical literature, such a short period of time is sufficient to develop the disease in the body of an infected person³⁶, and even to spread the disease to other passengers and the crew of the aircraft due to the simple fact of the inability to physically isolate the carrier. This event, depending on the type of disease, gener-

³⁰ Events as a result of which the demand for qualified first aid and medical emergency operations identified in the segregation process of the victims exceeds the capacity of the emergency entities and forces present at the scene of the emergency in a given phase of rescue operations. Source: Regulation of the Minister of the Interior and Administration of 3 July 2017 regarding the detailed organization of the national fire and rescue system Acts. U. 2017, item 1319, as amended - § 2. point 15.

³¹ The Aviation Law Act in art. 84. imposes on the manager an obligation to ensure airport fire protection; organization of the airport rescue system by developing AEP and coordinating the tasks of external services as well as organization and ensuring the functioning of ARFS (element of the airport rescue system).

³² The airport rescue and firefighting service is a unit of fire protection within the meaning of the Act of 24 August 1991. on fire protection. The airport operator is responsible for its organization.

³³ T. Compa (2014), *Bezpieczeństwo transportu lotniczego w systemie bezpieczeństwa narodowego*, Dąbлін: WSOSP, p. 373.

³⁴ Disease that was caused by a biological pathogen - Act of 5 December 2008 on preventing and combating infections and infectious diseases in humans Acts. U. 2019, item 1239consolidated text - art. 2. point 3.

³⁵ Infectious disease, easily spreading, with high mortality, causing a particular threat to public health and requiring special methods of eradication, including cholera, plague, smallpox, viral hemorrhagic fever - Act on prevention and eradication ... - Art. 2. point 4.

³⁶ <https://gis.gov.pl/zdrowie/choroby-zakazne/> [accessed on November 15 2019]

ates a threat to the flight (inability of the crew to continue piloting) and to the airport (the possibility of spreading the disease). Therefore, actions aimed at preventing the spread of the disease at the airport must be carefully thought out and implemented in the crisis management process

In many cases of emergency situations at the airport, it often becomes necessary to take rescue action. An aviation accident is the most evident example. This event forces the manager to perform probably the most extensive spectrum of activities in the area of planning and organization of crisis management. However, it is not the only option. The necessity to launch rescue operations is also associated with events such as airport facility fire, release or change of hazardous materials, natural disaster or technical failure. In such cases, the implementation of properly planned procedures facilitates the efficient launch and conduct of rescue operations, which can also be considered a form of crisis management.

Considering the above arguments, it is clear that emergency planning is becoming indispensable. It is impossible to act spontaneously in crisis situations, which are so extensive and which may with great probability become mass events, or be as „delicate” as the threat of an infectious disease, or negotiations with a terrorist hijacker. Properly planned actions collected in the handbook - action plan in emergency situations, however, are one of the three components of the success of planned projects. The second component is well-trained staff, both in applicable procedures and the rules of their own actions. Therefore, it is also extremely important to regularly conduct exercises. Their organization allows to verify the AEP procedures and creates the opportunity to improve the cooperation of services and entities not only in the im-

mediate danger zone, but also outside of it, thus limiting the element of the human factor (limitation of the human factor should be considered as the third component) in the entire crisis management process in the airport.

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