



# Accidents, aviation incidents, acts of terror and other dangers in aviation: Security procedures and entities implementing them in international, EU and national laws

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## Abstract

The purpose of this article is to show the relationship between international, EU and national laws, assuming primarily the nature of public and international law in the field of air traffic safety, the entities and their tasks implementing aviation safety regulations and procedures, along with a discussion of the basic concepts that allow the distinction and qualification of a given event to a specific category, along with the procedures to be undertaken by the state bodies empowered to do so. This article also reveals the issues of cooperation and exchange of information between the authorities of signatory states and the authorities of international organizations such as the International Civil Aviation Organization (ICAO), as well as between a European Union member state and EU authorities. It also points out the responsibilities of airport operators and third parties witnessing aviation incidents.

**Keywords:** air traffic protection, air traffic safety, aviation accidents, aviation incidents

## 1. Introduction

Public law issues in aviation law mainly include aviation accidents and incidents, and indicate how protection against such acts should be carried out. Such issues are regulated by international and EU convention regulations, which have been fully adopted by national legal orders, including Poland. It is worth paying special attention to them because, as stipulated in the Aviation Law of July 3, 2002, in Article 3(1) (Journal of Laws (PL), 2022; item 1235), the provisions of the Aviation Law shall apply to legal relations in the field of civil aviation, unless ratified international agreements that are binding on the Republic of Poland provide otherwise.



## 2. Aviation accidents and incidents, and their characteristics

### 2.1. International Aviation Law

To discuss the issues of aviation accidents and incidents in Polish law, it is first necessary to look at the international regulations governing these issues in a comprehensive manner. Aviation accidents and incidents are governed by the Convention on International Civil Aviation (ICAO, 1944), which was signed in Chicago on December 7, 1944, hereafter referred to as the “Chicago Convention”, and Annex 13, entitled “Aircraft Accident and Incident Investigation”. In order to distinguish between these two concepts and correctly interpret the regulations, it is necessary to familiarize oneself with the meaning adopted under the Chicago Convention. Annex 13 defines an *accident* as an occurrence associated with an aircraft’s operation between the time a person boards an aircraft with the intention of flight until such a person has disembarked. In a situation where an aircraft has the attribute of being unmanned, the defined occurrence takes place between the time the aircraft is ready for flight and its complete coming to rest as a result of the shut-down of the primary propulsion system. To qualify a situation as an accident, it is mandatory that one of the following situations occur. The Convention lists the death of a person or serious bodily injury resulting from being in the aircraft or coming into contact with its part, including one that has become detached from the aircraft, or following exposure to jet blast from the engine as the first situation. If forces of nature caused the death of a person or bodily injury or was self-inflicted or inflicted by other persons, or when the injuries occurred as a consequence of hiding in areas not available to passengers or crew, then such a situation cannot be classified as an accident. The second situation relates to the aircraft itself, which, as a consequence of certain occurrences, has sustained damage or structural failure which adversely affects its structure, performance or flight characteristics and would normally require major repair or replacement of the damaged part of the structure, except for the marginal components listed in detail in the Annex. The last but no less important situation is where the aircraft is missing or is completely inaccessible. The Chicago Convention chose to give an *incident* a more succinct definition, which indicates that it is an occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation. This concept is expanded in the definition of a *serious incident* included in the Annex, which is characterized by the occurrence of circumstances that pose a significant risk of an aviation accident.

Article 26 of the Convention, entitled *Investigation of accidents*, stipulates that in the event of an accident affecting an aircraft of a state being a party to the Convention in the territory of another state and involving the death of a person or serious injury, or indicating serious technical defects in the aircraft or a lack of favorable conditions for air navigation, the state in whose territory the accident occurred shall initiate an investigation into the circumstances of the accident, taking into account its own legislation, using the procedure specified by the *International Civil Aviation Organization, ICAO*. The investigating state shall communicate the report and findings on the matter to the other state and is obliged to ensure the participation of observers to be present at the inquiry.

It is stressed that Contracting States are obliged to inform the ICAO of any discrepancies arising on the basis of national regulations and the methods of investigation contained in Annex 13, when such information is fundamental to air transport security. The resolution adopted by the Council emphasizes not only the legitimacy of the standards adopted by the ICAO but also the nomenclature specific to the matter. It should be noted that the methods of proceedings derived from Annex 13 are formed at such a level of generality that it will undoubtedly be absolute in some situations to apply national laws in order to obtain a complete pattern of proceedings. The Annex primarily normalizes the obligations of the state within whose borders the occurrence took place, as well as any obligations relating to the protection of evidence on board the aircraft and the aircraft itself. It is also necessary to ensure a flow of information from the country where the occurrence took place to the country where the aircraft is registered. The investigation is initiated by the state of occurrence; however, it may be distributed in whole or in part between the user of the aircraft or its flag state. In a situation where the location of an accident or incident is undefined, or there are factors that make it impossible to learn the location, it is up to the state from which the aircraft originated to conduct the investigation, with the proviso that this right may be passed on to another state (Żylicz, 2011). Annex 13 provides detailed information about the responsibility of the state of occurrence, the state initiating the investigation, and the state conducting the investigation. It was also decided that the Annex should regulate the issues of the selection of the investigator as well as their qualifications and assigned competencies. The provisions create the possibility of certain persons participating, such as proxies, advisers, or representatives of countries whose citizens have suffered death or serious injuries. It is worth mentioning the relation of Annex 13 to Article 26 of the Chicago Convention, which, as mentioned earlier, recommends, to the extent possible, the use of the investigation methods adopted by the ICAO in conducting the proceedings. This should also be understood as the possibility of deviating from those provisions of the Convention under Article 38, defining departures from international standards and procedures that do not apply to the accidents typified by Article 26 of the Convention (Andrachiewicz, 2015). In a situation where an occurrence does not fall within the concept of an accident as defined in Annex 13 and, in particular, does not involve fatalities or other serious injuries, the procedure for its investigation shall take place in accordance with the national laws of the state concerned until the ICAO orders a specific procedure for the investigation.



## 2.2. European Aviation Law

The basic principles of investigating and preventing accidents in civil aviation under European Union law are governed by Regulation (EU) No. 996/2010 of the European Parliament and of the Council of October 20, 2010, repealing Directive 94/56/EC, which establishes the fundamental principles governing the inquiry into the causes of accidents and incidents in civil aviation (Official Journal of the EU L 295 of 12.11.2010, as amended). This Regulation is applicable to accidents and incidents that occur within the borders of the European Union, with the proviso that states – parties to separate international treaties regulating the same subject matter are obliged to comply with these treaties as well. At this point, it is necessary to refer to the repeatedly mentioned Annex 13 to the Chicago Convention, whose expansion is the Regulation under discussion (Żylicz, 2011). In addition to satisfying the provisions of Annex 13, the Regulation also governs new issues (Konert, 2013). It imposes an obligation on states to conduct an investigation procedure for both aviation accidents and serious incidents, a list of examples of which is provided in the Annex to the Regulation. The definitions of aviation accidents and incidents are coherent with those appearing in international regulations. However, the concept of a serious incident has been clarified, giving it detailed time limits, that is, from the moment of boarding an aircraft until it is disembarked (Konert, 2013). The European Parliament and the Council decided that the Regulation should also govern the participation of Member States in the investigation of aviation incidents. The authority to receive information on accidents and serious incidents has also been granted to the European Commission, the European Aviation Safety Agency and Member States. In addition, it was decided on cooperation between authorities investigating aviation incidents and the status of the investigators who deal with inquiries into such incidents. Such regulations are necessary to protect the autonomy and independence of Member States to ensure synchronization of the activities and interests of the authorities managing the investigation of an aviation occurrence and the entity involved in criminal proceedings (Konert, 2013).

## 2.3. Polish Aviation Law

The Polish Act of July 3, 2002 – Aviation Law regulates the issues of aviation accidents and incidents, satisfying the requirements of all the international regulations mentioned above. The investigation of accidents and serious incidents of aircraft subject to registration in the State Register of Civil Aircraft is entrusted to the State Commission on Aircraft Accidents Investigation. The Act defines its powers and the rules under which it operates. Pursuant to Article 17 of the Act, the Commission shall conduct investigations not only on the basis of the provisions of the Act and European Union law pertaining to accidents and incidents but, more importantly, the standards and methods recommended in Annex 13 discussed earlier must be taken into account when conducting such activities. The Chairperson of the Commission is authorized to delegate the investigation to a consenting entity if the take-off weight of the aircraft does not exceed 2250 kilograms. Other aviation incidents, if the Commission decides not to investigate them, are investigated by the aircraft operator or air navigation service safety institutions, or the airport operator, as appropriate (Jaworek, 2015). The Commission collaborates with relevant international organizations and authorities of foreign countries, and at the end of the investigation, it prepares a final report and adopts a resolution in this regard, but does not rule on guilt and liability (Konert, 2013). The Act imposes obligations on specific entities, particularly public administration authorities and other state and local government organizational units, as well as entrepreneurs, who are obliged to interact with the Commission and provide it with the necessary assistance. Notwithstanding the possession of certain qualities, any person who has found an abandoned aircraft or its remains, or has been a participant in or witness to an aircraft accident or forced landing of an aircraft outside an airport, is obligated to immediately notify the nearest police station or public administration, or other security or public order services dealing with search and rescue efforts. This legal instrument also provides for regulations with regard to state aviation that are structurally and substantively equivalent to the principles that determined the standards for civil aviation.

## 3. Protection of aviation against acts of terror

The issue of aviation security is regulated in Annex 17 to the Chicago Convention (Żylicz, 2011; Mendala, 2021). This kind of protection is defined as preventing occurrences that unlawfully interfere with civil aviation, achieved through the use of all available means and resources, both human and material. At the same time, acts of unlawful interference, which are a component of the above definition, are defined by enumerating acts or attempted acts that threaten civil aviation security. This catalogue includes, inter alia, forcible intrusion on board an aircraft and unlawful seizure of aircraft, as well as the destruction of aircraft service facilities. Acts classified as unlawful also touch on the matter of people's safety. In particular, causing death or serious injury or taking the crew hostage are mentioned in the list (Radomyski & Bernat, 2018).

The provisions of Annex 17 to the Chicago Convention specify the due behavior of the Contracting States in the matter of civil aviation security, which is specified within three categories (Żylicz, 2011). Issues related to organizing safeguarding activities are determined in the first category, while the second category focuses on preventive security measures. The last one relates to the measures taken when an occurrence of unlawful interference takes place. The first category primarily details the obligations



of states to establish a specific body with the authority to develop and implement a national aviation security program, as well as to provide information to the ICAO on the commencement of operation of such an organizational unit. Depending on the current security risk assessment carried out in the country's territory, this plan is structured differently and has distinct features specific to each contracting state.

Such a national plan aims to safeguard aviation operations against unlawful activities, expressed through regulations, practices and procedures adapted to the safety, regularity and efficiency of flights (Żylicz, 2011). In addition, regardless of the operations of such an authority, the provisions of the Annex seek to establish an aviation security committee within the territory of the state, which would be competent in matters of coordination and delegation of tasks to all bodies and organizations responsible for security. It is also indispensable to draw up a training program for personnel, a certification mechanism for trainers, as well as to provide spare flight decks and instrumentation that are necessary for the proper performance of aviation services. The lack of such training would entail the likelihood of a dangerous event or disruption of airport operations. Each airport serving civil aviation in its scope of operations, as well as an air carrier, is obliged to implement a written airport security program appropriate to meet the requirements of the national civil aviation security program. Depending on the country where it is created, such a program may be structurally different from the others and may be characterized by divergent attributes. The provisions of Chapter 3 of the Annex also specify how quality control is carried out and define the characteristics of the entities performing the control. The person who undertakes the control activities is subjected to competency-checking procedures and training and a series of examinations in such a way as to meet the reliability requirements of the national aviation security program. Due to the importance of the duties incumbent on such persons, these procedures are strictly adhered to, and specific qualities must characterize those performing control tasks and have multifaceted knowledge in order to perform the delegated activities to the fullest extent possible. A state that has been affected by an act of unlawful interference is obliged to audit and re-evaluate its security controls and procedures and remedy weaknesses to prevent the recurrence of such an act. These actions need to be communicated to the ICAO. Chapter 4 of the Annex, which is the second category of behaviors, specifies mainly the objectives and security measures taken with regard to an aircraft, its passengers and baggage. Each of the obliged states, within its scope, shall introduce a procedure to prevent weapons, pyrotechnic materials and any objects of a dangerous nature or the possession of which is prohibited or which may be used to commit an act of unlawful interference from being brought on board a civil aircraft. At the same time, in view of the nature of unpredictable controls aimed at discouraging unlawful acts, a recommendation was formulated in this regard for participation in the application of ad hoc additional protective measures. This unpredictability has its own definition, which is based on the use of such control measures that intensify the deterrent effect by using them with non-uniform frequency and by using different methods. Control carried out in this way is preventive in nature and protects against committing acts of unlawful interference. In order to prevent unauthorized entry to certain areas at the airport, each state must take measures to guarantee the identification of persons and vehicles. These areas are the airside and the security-restricted areas of the airport. The first includes the maneuvering area, adjacent land and buildings or parts thereof, access to which is controlled. For the second concept, the Annex chose to assign a more expansive definition that focuses on that area of the airport where additional security measures are used since it is considered a priority risk area. Examples of these areas are provided by the second part of the definition, which enumerates taxatively all commercial aviation passenger departure areas between the screening checkpoint and the aircraft, the ramp, and baggage make-up areas, including those where aircraft are being brought into service and screened baggage and cargo are present, cargo sheds, mail centers, airside catering and aircraft cleaning premises. With regard to passengers and baggage, it is recommended that measures be taken to subject passengers and their cabin baggage to screening before boarding the aircraft. Passengers and their baggage are protected from external influences at the time following the screening until embarkation. In order to maintain the highest form of precaution, in the event of mixing of passengers already controlled with those who have not yet been screened, it is recommended that each passenger be screened again. Each Contracting State shall create a catalogue of requirements for carriers regarding the transportation of potentially disruptive passengers who are obliged to travel because they have been the subject of judicial or administrative proceedings, and the operator while complying with these requirements, shall at the same time guarantee safety on board the aircraft during such transportation. Issues related to law enforcement officers carrying weapons on board aircraft are left to the legislation of individual states. This usually involves issuing an appropriate decision permitting weapons being carried by certain categories of persons who are citizens of a particular state and considering a request for such carriage submitted by another state. Carrying weapons by people other than officers has also been legalized; however, it is stipulated that such a person should be properly trained and authorized, in addition to declaring that the weapon is not loaded and stowed in a place not accessible to unauthorized persons. This provision guarantees the attainment of the highest possible degree of caution when such a person is not a professional entity and does not professionally perform weapons-related activities. It is recommended that after transit flights, any items left by passengers on board should be promptly removed from the aircraft and that air transport operators should not take on board the baggage of persons who are not present aboard the aircraft unless such items have been screened and identified as unaccompanied baggage.



The last specified category of behaviors directs attention to the aspect of management of response to acts of unlawful interference. This chapter of the Annex includes two types of behaviors identified as prevention and response. In terms of prevention, states are obliged to take measures to protect the aircraft after obtaining undoubtedly reliable information regarding an act of unlawful interference. The first form of such protection is to notify the authorities of the relevant airport and its services of the arrival of such an aircraft as soon as possible. Measures should also be taken to ensure that the aircraft is searched for concealed weapons, explosives or other dangerous devices, articles or substances. If one of the above-mentioned materials is found, it is indispensable to investigate and neutralize them, and then formulate contingency plans for the future, and systematically review them to effectively prevent dangerous situations. The catalogue of behavior categories, classified as examples of response, begins with the activity typified as aimed at implementing all measures to ensure the protection of passengers and crew of the aircraft affected by an act of unlawful interference. Such activities are mainly intended to obtain key information regarding the flight itself and communicate it to the states responsible for units performing air traffic service. All states being parties to the Convention are obliged to support each other, which can be manifested in the provision of human resources, navigational aids, as well as permission to forced landing as a consequence of crystallized unlawful conditions. Such landing is restricted to that necessitated by the need to stop the aircraft on the ground unless the protection of human life requires further flight. In this regard, consultations should be held between the state of detention and the state where the aircraft is registered. It is recommended that immediately after an act of unlawful interference is resolved, information is provided to the ICAO on the extent of the protection undertaken. In addition, the flow of these communications between states is desirable if it is relevant to the management of response to the Act described.

In Article 186 of the Aviation Law, the legislator decided to include a cross-reference provision, which states that the protection of civil aviation from acts of unlawful interference which threaten the safety of aviation, as well as persons and property, in connection with its operations shall be regulated through separate laws, special provisions of aviation law and international agreements and regulations (Journal of Laws 2022, item 1235). In this regard, Polish aviation law satisfies all international obligations under Annex 17 of the Chicago Convention by adapting its provisions to the Polish legal system. The concept of an act of unlawful interference in the Aviation Law Act corresponds to the definition provided in the Annex; however, it should be noted that the acts of unlawful interference catalogued therein form an open list, while their listing in the Polish law is enumerative (Żylicz, 2016). The Aviation Law additionally includes in its catalogue the destruction, damage, and interference with the operation of ground-based or airborne equipment or airport equipment, as well as the use of violence against a person operating such equipment when this causes a significant disruption of air traffic or the operation of the airport, or a threat to the safety of civil aviation (Żylicz et al., 2016). In order to materialize security policies, the Act establishes the Civil Aviation Security and Facilitation Council, which performs its tasks under the minister in charge of transport and develops a number of competencies and tasks in the scope of security. The Minister of Transport has been given the responsibility of establishing the National Civil Aviation Security Program, which specifies how this protection should be implemented in its entirety. It largely focuses on how security should be structured and crystallizes the preventive measures and steps to be taken in the event of an act of unlawful interference (Żylicz et al., 2016). The Act also decides on the duty to collaborate in this area for a certain category of entities, which includes public administration bodies and services responsible for public security, airport managers, air carriers and other entities involved in aviation activities. It is noteworthy that conducting risk verification in cases of deviation from the common basic standards of civil aviation security is an obligatory requirement. and the adoption of alternative security measures, while at the same time adapting the actions to both international and European Union regulations that correspond to the rules of civil aviation security. Preventive activities are carried out in correspondence with the programs in question, agreed on with specific airports, with the proviso that the multiplicity of their standards depends on the type of airport, the type and frequency of air operations performed at the airport, and the results of the risk analysis connected with the operation of that airport.

#### 4. Summary

This article presented the complex issues aimed at maintaining safety, appropriate conditions, and response procedures in dangerous situations in civil aviation, such as accidents, aviation incidents, terrorist acts, or acts of unlawful interference. These issues have been addressed at both the international level, binding the states that are parties to the Chicago Convention and those belonging to the ICAO, extended through the established union regulations in the form of a regulation replacing the previously introduced directive. This, in turn, implies the obligation to comply with them by EU Member States and by national legal orders, including the Polish Aviation Law. This paper aimed to organize and distinguish the concepts of an accident and an incident in the field of civil aviation, along with the rationale for qualifying them as such, and outlined the responsibilities and competencies expected from state authorities, civil airport operators and subcontractors in terms of the necessary security procedures and planning acts intended to implement such procedures and prevent acts of terror or unlawful interference.



### Declaration of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

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