

AVIATION TERRORISM. THE ESSENCE OF THE PHENOMENON, SYSTEMATICS, TYPOLOGY

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Abstract

The article sets out the characteristics of the reason and source of contemporary terrorism as well as an explanation of the general concept of terrorism, including aviation terrorism. Moreover, aviation terrorism is systematised on the ground of the subject of attack. Finally, the article presents a typology of aviation terrorism taking into account the following criteria: manner, form, and means, alongside the anticipated effects of aviation terrorism.

Key words: terrorism, airports, airlines, airspace management agencies, aviation terrorism, systematics, typology, form, manner, means

Introduction

Presently, terrorism is one of the most dangerous social phenomena in the world and, simultaneously, one of the biggest threats to world security. The most developed and affluent democratic countries and their allies are especially susceptible to any types of terrorist attacks. For a balanced development, such countries' systems require a stable market of natural resources, especially energy-related ones, as well as the predictable behaviour of the countries possessing the resources.

Nonetheless, the leading economic and military global powers use natural resources located in weaker, less developed countries, inhabited by people of

a different culture and a dissimilar system of values. Frequently, the culture of numerous nations of this kind is mainly shaped by orthodox religion and the harsh conditions of day-to-day life highlighted by poverty and the lack of any hope for improvement. Moreover, countries with underdeveloped systems of democratic power¹ provide the perfect conditions for the growth of various types of organised crime, piracy, and corruption among the top brass, which altogether creates an ideal environment for the development of terrorism. The politics applied in the Middle East region by the countries of Western Europe, and in particular Great Britain, from the turn of the 20th and 21st century, through the two world wars up to the moment when Israel² was established as a country, together with the clash of three religions' interests over the territory of Palestine, namely Islam, Christianity, and Judaism, turned out to be of some validity for the existence and advancement of the phenomenon of contemporary terrorism. Through many centuries, Palestine remained in Jewish, Roman, Christian, and Turkish hands, in the sphere of British interests and, after the expiry of the British mandate, it belonged to Israel and Jordan after 1948 to be finally submitted to Israel³ in 1967. As a result, the Middle East region, including Palestine, where the Palestinians of Arab origin strive for independence without any effect, can be acknowledged as a constantly active source of cross-border, supra-national, and mostly Islamic terrorism, which the whole world is presently grappling with.

Terrorism experts hold the view that the moment people realised how much their behaviour is driven by threats, they created the concept of terrorism. The brutal actions of Jewish groups, dubbed *Sicarii*, aimed at the Roman occupation army in year 70 AD⁴ are believed to be the first acts of terrorism which found their way into historical documents.

From that moment in history, terrorism, as well as the methods and forms of terrorist activity, kept developing alongside the development of civilisation. However, these activities were invariably highlighted by brutality and eagerness

1 Except totalitarian and authoritarian countries, where the absence of democracy does not result in the decrease of their safety.

2 See K. M. Sweet, *Aviation and airport security, Terrorism and Safety concerns*, CRC Press Taylor&Francis Group, USA 2009, pp. 76-79.

3 *Popularna encyklopedia powszechna*, vol. 13, Fogra, Kraków 1996, p. 37.

4 *Ibidem*, p. 76.

to win potentially big publicity for the terrorists' prevailing cause. They were, and unchangeably are, ready to devote their lives for the issue and, thus, totally ignore the health and life of their victims. The ongoing development of civilisation provides terrorists with convenient targets where their victims flock. The latter include inter alia: systems of public transport e.g. underground, shopping centres, hotels, and passenger liners. Since the early 30s the list of the most frequent objects of terrorist attacks can be extended by the addition of aircraft. Whereas, since the night of July 22nd and 23rd 1968 when three terrorists of the Popular Front for the Liberation of Palestine took control over an airplane belonging to Israeli airlines, El Al, aircraft have become one of the most common targets of terrorist attacks. At the same time, terrorists have widened the spectrum of aviation-related targets to include airports and their infrastructure, as well as airlines' offices⁵. What has also increased are the number of reasons considered by terrorists as convenient for planning and launching aviation terrorism. What is more, the applied methods and types of attacks have been constantly mastered.

The increasing, constant threat of aviation terrorism, has forced international society and particular countries to separately undertake political, strategic and tactical measures to neutralise the effects of aviation terrorism. Scientists and the results of their research have also played a significant role in the creation of the organisational effectiveness of counter-terrorist activity. A description of the results of terrorist-related research is presented in worldwide literature on the topic (the works of P. Wilkinson, B. Jenkins, K. Sweet, J. C. Price., J.S. Forrest). In Poland we can only find a few works on this subject: Krzysztof Liedel published his book in 2003 entitled: *Zwalczanie terroryzmu lotniczego. Aspekty prawnomiędzynarodowe* and in 2010, K. Liedel and Tomasz Aleksandrowicz presented a publication under the title: *Terroryzm lotniczy. Wybrane zagadnienia i źródła prawa międzynarodowego*.

The outlined problem provides grounds for the following question: What is the nature of aviation terrorism? An attempt to find an answer to this question has shaped the structure of this article.

⁵ See P. Wilkinson, B. M. Jenkins, *Aviation terrorism and security*, Frank Cass Publisher, London 1999, pp. 11-16.

Nature of aviation terrorism

Aviation terrorism is a subject drawing the attention of researchers not only in Poland but also in the world as a whole, which is expressed in publications devoted to this topic⁶. Their analysis leads to the conclusion that the description and explanation of the concept of aviation terrorism is based on facts, i.e. when, where, how and in what circumstances the acts of aviation terrorism take place; furthermore, the books show how international society can guard itself against this type of terrorism by specific legal and organisational measures. As a result, there is a quite extensive empirical data base concerning aviation terrorism. Nonetheless, in order to design response systems the data base needs to be constantly supplemented with new knowledge⁷ characterised by classification, typological and semantic order. Owing to the collected facts, the order should follow unquestionable deductive reasoning based on historical generalisation playing the role of a reality axiom, all this to a much bigger extent than has been achieved so far. Such an attitude makes the design of modern organisations counteracting acts of aviation terrorism easier. In such organisations the main actors, reacting to particular types of aviation terrorism, will take steps structured in time and space which will create a scenario in compliance with conditions set by particular types of aviation terrorism risks.

The subject literature presents a definition of terrorism from numerous points of view vital for each researcher and expert-practitioner. As a result, there are many ways of understanding current terrorism, including aviation terrorism, which aim at an explanation of its nature, both in the scientific environment as well as in practice. I think that in the near future the dynamics of the phenomenon will hinder effective elaboration of a univocal definition of terrorism. Simultaneously, researchers applying the rules governing the creation of descriptive, constructive, analytical or synthetic definitions will depict the concept of terrorism (and aviation

⁶ See T.R. Aleksandrowicz, K. Liedel, *Zwalczanie terroryzmu lotniczego*, Wydawnictwo WSP, Szczytno 2010, P. Wilkinson, B.M. Jenkins, *Aviation terrorism and security*, Frank CASS, London 1999, J. C. Price, Ma J. S. Forrest, *Practical Aviation and Security*, BH. USA 2009, K.M. Sweet, *Aviation and air port security. Terrorism and safety concerns*, CRC Press, Boca Raton 2009.

⁷ The new knowledge is understood as new scientific facts created by deduction.

terrorism) more and more accurately. Out of the enumerated types of definitions, the advised logical order in the creation of an internalised concept of aviation terrorism can be achieved by an inductively and deductively grounded analytical definition. It is this definition of aviation terrorism that will be created in this work following the types of analysis advised by T. Kotarbiński, i.e. formative, inductive, intuitive and philological.

In order to explain the nature of aviation terrorism, it has been decided to accept the following explanation of **terrorism** as the axiom of reality: it is a social phenomenon in which groups of people as well as individuals team with one another to exert violence against innocent, defenceless victims. The actions result in death and damage, evoke fear and panic, everything in order to make another person take action leading to the achievement of the real goal set by the groups⁸

Taking the above into consideration, the following can be perceived as an attempt at ordering terrorism:

- assignation of terrorism to its type – social phenomenon;
- granting organised (group or individual), intentional character;
- differentiation from other group or individual, organised, intentional activities by:
 - exertion of violence against innocent, defenceless victims,
 - resulting in death, damage,
 - evoking fear and panic,
 - achieving a set goal by making a subject different than the attacked do as the terrorists like.

Specification of the term *terrorism* by the adjective *aviation* creates the need for defining the noun *aviation* (aeronautics). Aviation as a noun can be understood as *issues, machines and measures connected with the construction as well as exploitation of... aircraft*⁹. M. Żylicz links the word 'aviation' used in the expression 'aviation law' with aviation activity¹⁰. Whereas the latter one, as the target of terrorist activity, can be divided into the activity carried out within airlines, at

⁸ See definition of terrorism by Dawid Framkin 'Foreign Affairs' 1975 in conference materials: *Przeciwdziałanie atakom terrorystycznym na lotniskach wojskowych i cywilnych. Materiały z konferencji*, AON, Warszawa 2005, p. 6.

⁹ *Popularna encyklopedia powszechna*, Volume 9, Fogra, Kraków 1995, p. 204.

¹⁰ M. Żylicz, *Prawo lotnicze międzynarodowe, europejskie i krajowe*, Wydawnictwo Prawnicze LexisNexis, Warszawa 2010, pp. 24–25.

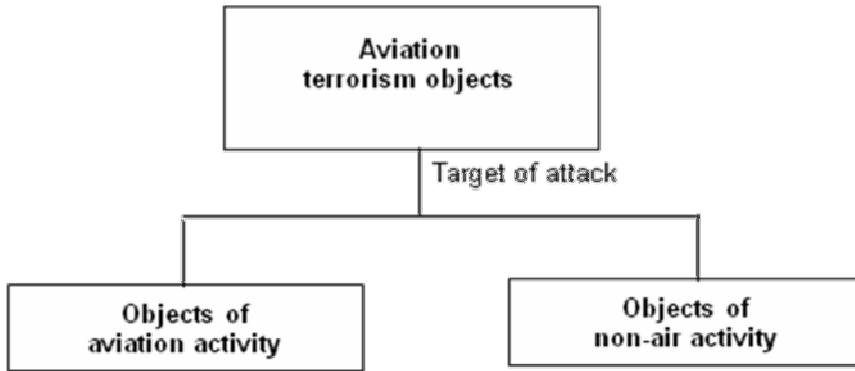
airports and in air navigation services agencies. The analysis of past aviation terrorist attacks, as well as the ways of defining the acts of lawless interference in aeronautics, shows that it is not often that aviation personnel and the operated machines are involved (voluntarily or not) in the activity of terrorist groups. In this situation, the chosen aviation appliances and the operators are the attacking body, whereas the people and objects not involved in aviation activity are the target of the attack.

To sum up, **aviation terrorism** can be understood as a part of terrorism in which the subject or object of attack can be organisations, apparatus, and people involved in aviation activity, or being beneficiaries of such activity. Aviation terrorism understood in this way distinguishes aviation from the general understanding of terrorism as a specific subject or target of terrorist attack. Thus, the target of an attack is the most convenient criterion ordering the phenomenon of aviation terrorism.

Systematics and typology

Aviation terrorism is such a complex phenomenon that to conceive it, it is necessary to divide it into smaller parts which are easier to analyse. This is a systematic, multilateral classification carried out on the basis of one criterion, that can be assumed as a perfect tool for ordering the results of research. The deductive reasoning presented in the introduction to this chapter distinguishes the criterion of the target of a terrorist attack as the most important element, which allows us to distinguish aviation terrorism from other types of terrorism attacks. The division presented below systematises aviation terrorism on the basis of the object of the attack.

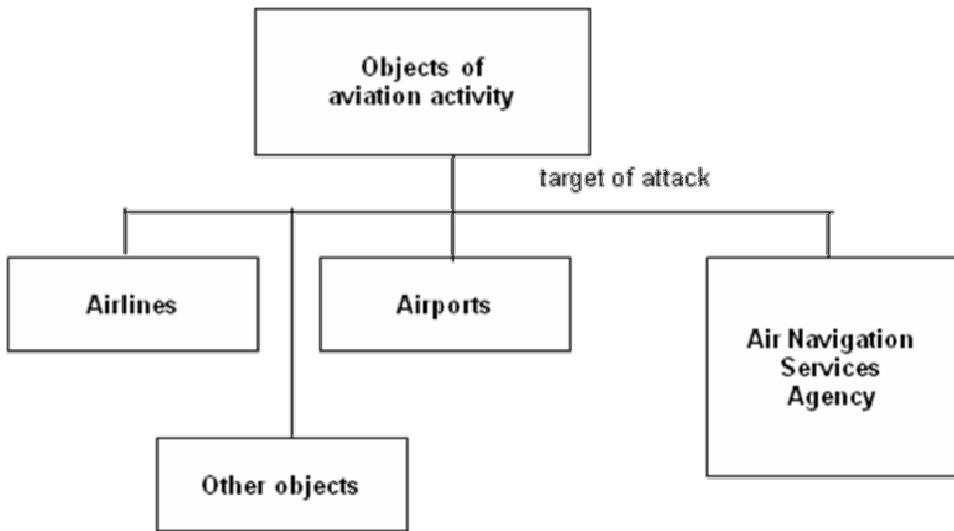
Figure 1 illustrates the first level division and it indicates that terrorists can attack both flying objects as well as non-flying ones. In the second situation, they use personnel and/ or aviation apparatus.



Source: own elaboration.

Figure 1. Systematics of aviation terrorism objects (level I)

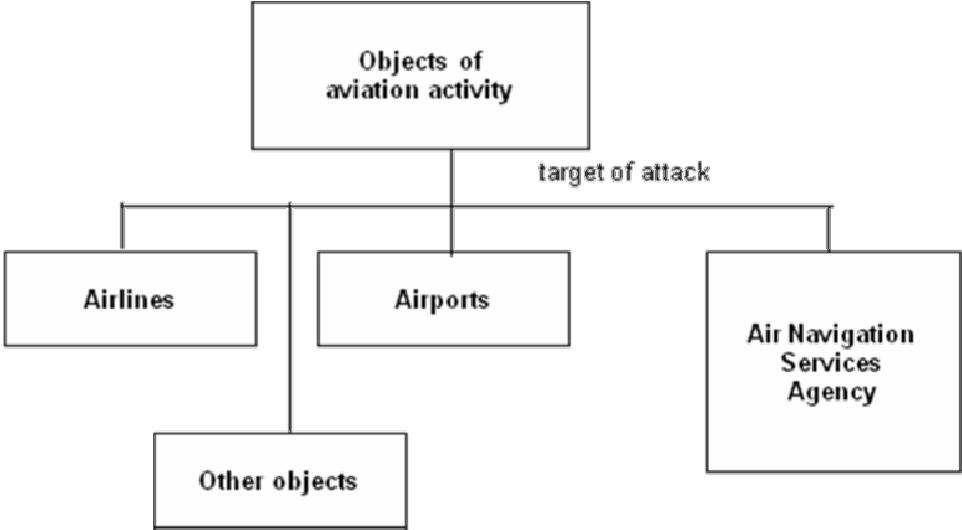
Thus, the first level of systematics allows us to distinguish, and at the same time notice, the activities of aviation terrorism aimed at the apparatus used in aviation activity and the personnel operating it, as well as using the aviation potential to launch attacks on objects which do not run aviation activity.



Source: own elaboration.

Figure 2. Systematics of aviation terrorism objects (level II)

On the other hand, detailed analysis of the second level division of the objects of aviation activity (see Figure 2) visualises two important qualities of aviation terrorism. The first one is based on the fact that¹¹ terrorists mostly focus on airlines and airports as well as air navigation services agencies. The second characteristics stems from the principle governing the division on that level, based on a variable, i.e. it is necessary to add one additional result of division – and other objects - in order for the division to be complete. The result of the division of ‘other objects’ helps to realise the rule applied in terrorist activities, including aviation terrorism, according to which terrorists avoid repeating scenarios which have been already used¹². Thus, the planned systems counteracting aviation terrorism have to be open and flexible, able to adjust quickly to the existing situation, in which the object of aviation terrorism attack will include objects of aviation activity other than airlines, airports or air navigation services agencies. A conclusion formulated in this way concerns all divisions carried out in the presented systematics based on a variable.



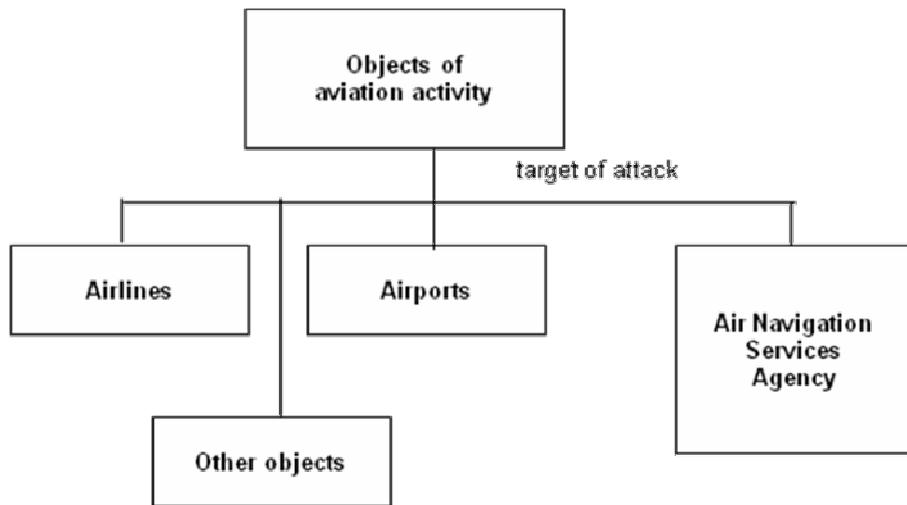
Source: own elaboration.

Figure 3. Systematics of aviation terrorism objects (level III)

¹¹ See A. Merrari, *Attacks On Civil Aviation: Trends and Lessons* in: P. Wilkinson, B. Jenkins, *Aviation ... op. cit.*, pp. 11–26.

¹² *Ibidem*, p. 24.

Division carried out on the third level of classification orders and which differentiates the objects being affected by aviation terrorism. Figure 3 indicates that terrorists in airlines have to adopt different tactics (methods, means and forms of attack) within the same strategy (vision, mission, domain, and goals) adjusted to all four objects of attacks distinguished by the division.



Source: own elaboration.

Figure 4. Systematics of aviation terrorism objects (level III)

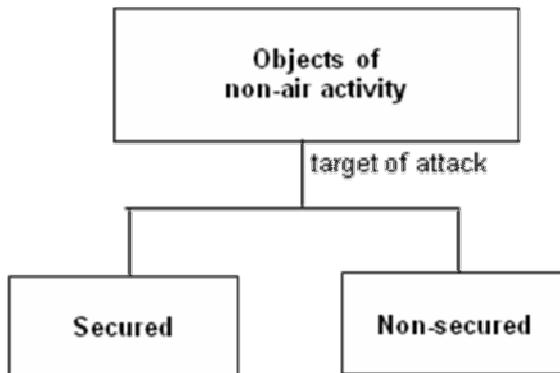
In the case of airports, division on the third level (Figure 4) reveals that the elements of an airport’s infrastructure and the people flocking to airports are most vulnerable to acts of aviation terrorism. Here, the word ‘passengers’ used in this division refers to all people in attendance at airports: passengers and relatives or friends seeing them off, the clients of shops located at the premises of airports, etc.

The objects distinguished by Figure 5 play three basic roles in air traffic management: air space management, air traffic flow management, providing air traffic services (controlling the area, approximation and airport). When terrorists take direct or indirect control over the people, machines or software that enable the users of aircrafts to meet the planned departures and arrivals and the preferred flight profiles, with possibly small limitations and deviation from the agreed levels of security, it can result in situations difficult to assess but definitely desired by terrorists.



Source: own elaboration.

Figure 5. Systematics of aviation terrorism objects (level III)



Source: own elaboration.

Figure 6. Systematics of aviation terrorism objects (level II)

Figure 6 illustrates a dichotomous division of non-air activity of objects which are vital from the perspective of organisations counteracting acts of terrorism. The importance of this stems from the fact that, first of all, it is much easier to take action against objects which are not secured, and secondly, organisations counteracting terrorism find it much easier to act on premises which are systemically and permanently protected against terrorist activities.

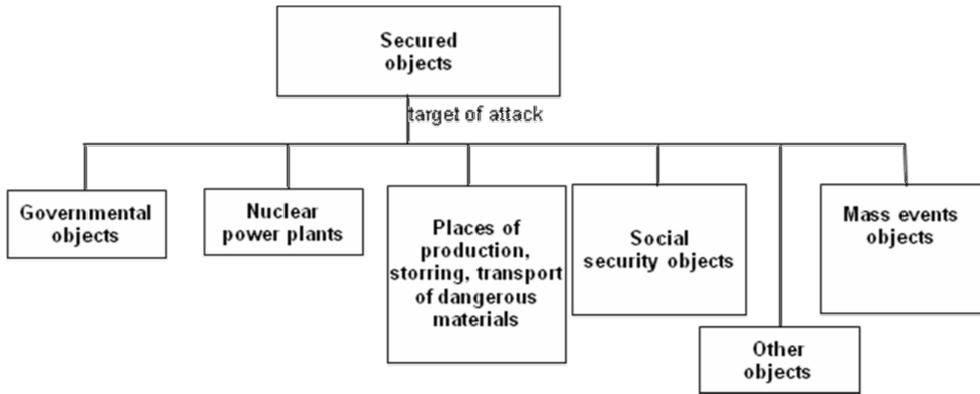


Source: own elaboration.

Figure 7. Systematics of aviation terrorism objects (level III)

The analysis of figures 7 and 8 indicates the too small sensitivity of the often applied scale ‘easier’, ‘more difficult’ to describe both the activities of terrorists and those of organisations counteracting aviation terrorism. The assessment is strengthened by the rule adopted at the beginning of this chapter, according to which the divisions depicted by figures 7 and 8 are not complete without one more element i.e. ‘and other objects’. However, even objects enumerated in the third level division show that the forms, means and manners of terrorists’ activities must be different according to the qualities of particular secured and non-secured targets of attacks. Also, the organisation of forces counteracting terrorism should take into account both possible terrorist actions and the peculiarity of secured and non-secured objects of terrorist attacks.

The diverse forms, means, and manners of attacks launched within aviation terrorism, which were pointed out in the conclusions of the conducted systematics, point to the necessity of implementing a typology of aviation terrorism activities. The typology should take into consideration the mentioned manners, means and forms of aviation terrorism activities grouped on the basis of the peculiarity of terrorism objects distinguished in the suggested systematics.



Source: own elaboration.

Figure 8. Systematics of aviation terrorism objects (level III)

The conducted systematics of aviation terrorism allows us now to use the manners, means and forms of attacks to group terrorist activities within particular types of aviation terrorism acts. As a result, table 1 distinguishes 94 types of acts of aviation terrorism. For instance, with reference to the airlines' personnel, there are four types of attacks:

- shelling the airlines' personnel with small arms on a plane,
- shelling the airlines' personnel with small arms at an airport,
- throwing grenades at the airlines' personnel on a plane,
- throwing grenades at the airlines' personnel at an airport.

The remaining 95 types of attacks are presented in table 1. However, it should be emphasised that the professional list of aviation terrorists attacks is still open. This should be the subject of ongoing analysis of current and prospective terrorist attacks.

Terrorists' activities Groups of attack's objects			Type of attack			Remarks
			Form	Means	Manner	
Air objects	Airlines	Personnel	- shelling	- small arms	- on a plane - at the airport	
			- throwing	- grenades	- on a plane - at the airport	

Terrorists' activities Groups of attack's objects		Type of attack			Remarks
		Form	Means	Manner	
		- blackmail	- relative or friend - compromising materials	- violence - provocation - fabrication - obtaining	
	Passengers on aircraft	- shelling - bomb attack	- small arms, grenades - specialized, classic, chemical, biological	- in the air - on ground - suicide - delay-action - steered	Bomb attack – unaware passenger, bribed, blackmailed attendants. Hijacking – bribed, blackmailed crew.
	Aircrafts	- shelling - bomb attack - arson -electronic attack - hijacking	- small arms, grenade launchers - MANPADS - specialized - specialized - electromagnetic pulse, laser light - computer programme - gun, cold steel, handy direct coercive measures	- stop - taxiing - in the air - in the air (suicide, delay-action, steered) - on the ground (suicide, delay-action, steered) - on the ground (delay-action, steered) - direct - sabotage - takeover on the ground - takeover in the air	
	Offices	- shelling - bomb attack - arson	- small arms, grenade launchers, grenades - specialized - improvised - specialized - improvised	- close - distant - close - suicide, delay-action, steered - suicide, delay-action, steered - direct - delay-action - steered - direct - delay-action - steered	

Groups of attack's objects		Terrorists' activities	Type of attack			Remarks
			Form	Means	Manner	
Airports	Passengers	- shelling	- small arms, grenade launchers, - grenades	- close - distant - close	Bomb attack – unaware passenger, bribed blackmailed attendants	
		- bomb attack	- specialized, classic, chemical, biological, radiological - improvised	- suicide, - delay-action, - steered - suicide, - delay-action, - steered		
	Infra-structure	- bomb attack	- specialized - improvised	- suicide, - delay-action, - steered - suicide, - delay-action, - steered		
		- arson	- specialized - improvised	- direct - delay-action - steered - direct - delay-action - steered		
Personnel	- shelling	- small arms, - grenade launchers, - grenades	- close - distant - distant - close	Concerns airport security services		
	- blackmail	- relative or friend - compromising materials	- violence - provocation - fabrication - obtaining			
	Infra-structure	- shelling	- small arms, - grenades launchers, - grenades	- close - distant - distant - close		

Terrorists' activities Groups of attack's objects		Type of attack			Remarks	
		Form	Means	Manner		
		- arson - bomb attack - electronic attack	- specialize - improvised - specialized - improvised - electromagnetic pulse, - computer programme	- direct - delay-action - steered - direct - delay-action - steered. - suicide - delay-action - steered - suicide - delay-action - steered - physical damage - overpower - takeover of control - interference		
Non-air objects	Non-secured	Religious	- attack from the air	- airliner, cargo aircraft	- suicide	
		Means of transport		- light aircraft		
		Shopping centres		- ultra light trike, powered parachute etc.	- suicide - airdrop of explosive charge - suicide - airdrop of explosive charge - remote homing and hitting an object	
		Cultural		- unmanned aerial vehicle		
	Secured	Governmental	- attack from the air	- airliner, cargo aircraft	- suicide	
		Power plants		- light aircraft		
		Dangerous materials (production, storing, transport)		- ultra light trike, powered parachute etc.	- suicide - airdrop of explosive charge - suicide - airdrop of explosive charge - remote homing and hitting an object	
		Social security		- unmanned aerial vehicle		
		Mass events				

Source: own elaboration.

Note: the abbreviation MANPADS used in table 1 means Man-portable air-defence system.

Table 1. Typology of aviation terrorism

The systematics presented in pictures 1 – 8, as well as the typology of aviation terrorism depicted in table 1, should be supplemented by the characteristics of the means, forms, and manners of terrorist threats, which will be presented by the author in the next article.

Conclusion

Terrorist groups are constantly improving the ways in which they act. Several acts of terrorism that took place in the last decade were preceded by a long phase of preparation. At this time terrorist groups were perfecting their skills, enrolling new members, intensifying training processes, deploying resources needed to launch an attack or attacks in an area of future operation, as well as preparing a detailed plan of operation. In comparison to a long-lasting lead time, the remaining activities connected with taking combat positions, as well as the attack itself, usually take very little time. A typical global terrorist attack is characterised by a very long lead time, a short period of time known as a crisis situation and a long-lasting phase of elimination of the effects of a terrorist attack.

Terrorist organisations have so far used varied forms, methods, and manners connected with aviation terrorism, including:

- hijacking of aircrafts;
- destruction of aircrafts;
- attack on the infrastructure of an airport and the representatives of carriers;
- attacking ground objects with a hijacked plane.

Each of the enumerated types of aviation terrorism can lead to serious consequences in international air transport, contributing to significant financial losses for air carriers. Because acts of aviation terrorism are difficult to hide, they are becoming a more and more attractive way for achieving the goals of terrorist groups. The objects of attacks may still include both aircrafts themselves, which if damaged bring significant loss, aircrafts hijacked together with passengers as hostages, as well as the infrastructure of airports, airlines and air navigation services agencies and other ground objects connected with aviation.

The results of aviation terrorism reach far beyond the area strictly connected with aviation. It is possible to distinguish six basic types of results connected with aviation terrorism: social, material, psychological, economical, organisational, and legal. All the above enumerated results are very often observed together, being a net force of the consequences of the performed terrorist attacks. Acts of aviation terrorism result in the intimidation of societies worldwide and they evoke the common fear of those who travel by planes. The consequences of aviation terrorism include, inter alia, a decline in the number of passengers travelling with airlines and a reduction in their income. Airlines are forced to look for reserves and very often they make employees redundant, which increases the rate of unemployment. The frustrated unemployed generally voice their dissatisfaction during demonstrations, which may turn into riots, and this consequently reduces the level of security and public order and finally may destabilise the security of the whole country.

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