
Evolution of Aviation Terrorism – El Al Israeli Airlines, Case Study

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Evolution of Aviation Terrorism - El Al Israeli Airlines, Case Study

Abstract

The research problem of this article is the process of evolution of aviation terrorism over the years as illustrated by attacks against El Al airlines, with special reference to the research perspective of the security system. The author embarks on verifying the hypothesis that aviation terrorism is changing phenomenon which has been accompanied over the years by increasingly brutal methods and effects of the attacks, transforming aviation terrorism from a medium of communication to a tool for causing maximum damage. Employing the genealogical method, the author analysed 52 terrorist attacks from the years 1968 to 2012, whereby he attempted to answer the research question of "How has the phenomenon of aviation terrorism evolved over the years?"

Introduction

The term aviation terrorism stems from the sectoral division of terrorism and is categorised among the most serious threats to civil air transport. The research problem of this article encompasses the process of evolution of aviation terrorism over the years, using the example of El Al Israel Airlines as a target of an attack. The hypothesis is aviation terrorism is a changing phenomenon, which has been accompanied over the years by increasingly brutal methods of attacks, transforming aviation terrorism from a medium of communication to a tool for causing maximum damage. The transformation is not only a product of changes in the ideological motivations of terrorists, but arises also from advances in security systems in civil aviation, which continues to be an attractive target of attacks.

To verify the hypothesis, the author will employ the genealogical method to attempt to answer the research question is, how has the phenomenon of aviation terrorism evolved over the years? To answer the question, the author assessed 52 attacks against various infrastructure elements in the years 1968 to 2012, from the first to the last attack on El Al, as of October 19, 2021. Terrorists have chosen El Al as the target of their attacks with full awareness and deliberation. Furthermore, attacks on that airline set new trends in attacks, as evidenced by the examples such as an aircraft hijack in 1968 and the first ever attack in the landside area in 1970. Finally, throughout its history El Al has faced key terrorist threats in civil aviation, such as

- Hijacking aircraft
- Attempting to blow up an aircraft in flight
- Engaging aircraft with man-portable air-defence systems (MANPADS) and firearms during landing, taxiing, and parking on the apron
- Attacking passengers in an airport's landside area (terminal and parking lot) with the use of firearms and grenades
- Hostage-taking situations with passengers
- Attacking airline personnel with the use of firearms
- Planting of improvised explosive devices (IEDs)
- Attacking El Al in a cargo terminal
- Simultaneously attacking the airline from different places, and
- Conducting suicide attacks.

Materials and Methods

There is no single universal definition of aviation terrorism. Definitions of terrorist acts may be aided by the list of acts of unlawful interference contained in Annex 17 to the Chicago Convention, which are defined as acts or attempted acts such as to jeopardize the safety of civil aviation, including

- Unlawful seizure of aircraft
- Destruction of aircraft in service
- Hostage-taking on board aircraft or on aerodromes
- Forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility
- Introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes
- Use of an aircraft in service for the purpose of causing death, serious bodily injury, or serious damage to property or environment, and
- Communication of false information such as to jeopardize the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the public, at an airport or on the premises of a civil aviation facility.¹

Every act of unlawful interference is not tantamount to a terrorist incident. The important terms are the purposefulness and unlawfulness.²

Before embarking on an analysis, one needs to differentiate a terrorist operation from a terrorist attack. A terrorist operation is a planned operation which includes the following elements:

- Intention
- Reconnaissance and selection of the target of the attack (object)
- Development of an action plan
- Preparation of the attack
- Execution of the attack
- Exploitation of the benefits obtained during the attack.

In this context, an attack is an element of a terrorist operation. Characteristically, it is the most destructive stage of an operation and the sum of the four elements that precede it. The relevance of differentiating between an attack and operation is important for the development of the safety philosophy and design of security systems, particularly ones dedicated to countering terrorism.

Having analysed such sources as Global Terrorism Database, *Terrorist Incidents Against Jewish Communities and Israeli Citizens Abroad, 1968–2003*, and *Chronology of Aviation Terrorism: 1968-2004*, the author compiled a list of 52 terrorist attacks against El Al.³ The Table 1 contains dates of attacks; locations (in the case of aircraft hijacking, the location of the attack is considered to be the place of departure, which is supported by the research perspective of the security system, as it is important to identify where the security failed); the object of the attack; the name of the terrorist organisation; the method of the attack; information on the victims and injured as well as killed and wounded terrorists; information whether the attack was successful—an IED attack is considered successful when it involves an explosion, regardless of the number of victims, as this analysis does not include deliberations on secondary targets of attacks. Table 1 on the following page describes incidences of terrorist attacks on El Al Airlines from 1968 to 2012.

Table 1. Terrorist Attacks on El Al Israel Airlines from 1968 to 2012

Date	Location	Object of Attack	Attacker	Method of Attack	Victims / Injured Killed / Injured Terrorists	Successful Attack?
7/22/1968	Rome–Tel Aviv flight	Aeroplane	PFLP	Hijacking. IED	0/0	Yes
12/16/1968	Athens	Aeroplane	PFLP	Automatic weapons and grenade launcher fire during aeroplane taxiing	1/1	Yes
2/13/1969	Zurich. Amsterdam–Zurich–Tel Aviv flight	Aeroplane	PFLP	Automatic weapons fire during aeroplane take-off	4/3	Yes
2/10/1970	Munich	Coach with passengers	PFLP	Automatic weapons fire and grenades	1/11	Yes
4/15/1970	Istanbul	Office	no data available	IED	0/0	Yes
06/09/1970	Tehran	Office	PFLP	IED	n/a	Yes

Date	Location	Object of Attack	Attacker	Method of Attack	Victims / Injured Killed / Injured Terrorists	Successful Attack?
09/06/1970	Amsterdam. Tel Aviv–Amsterdam–New York flight	Aeroplane	LFWP, FSLN	Hijacking. Small arms and grenades	0/0 1/0	No
10/06/1970	London	Office	no data available	IED	0/0	No
08/28/1971	Rome. Destination Rome–Tel Aviv	Aeroplane	PFLP	Air sabotage. IED	0/0	No
09/01/1971	London	Aeroplane	PFLP-GC	Air sabotage. IED	0/0	No
09/20/1971	London. Destination London–Lydda	Aeroplane	no data available	Air sabotage. IED	0/0	No
08/16/1972	Rome–Tel Aviv	Aeroplane	PFLP-GC	Air sabotage. IED	0/4	Yes
10/13/1972	Paris	Office	no data available	IED	0/0	No
03/04/1973	New York	Cargo terminal	Black September	IED	0/0	No
04/04/1973	Rome	Aeroplane	PFLP	IED	0/0	No

Date	Location	Object of Attack	Attacker	Method of Attack	Victims / Injured Killed / Injured Terrorists	Successful Attack?
04/27/1973	Rome	Employee	Black September	no data available	1/0	Yes
09/05/1973	Rome	Aeroplane	Black September	MANPADS	0/0	No
01/13/1975	Paris	Aeroplane	PFLP	MANPADS	0/3	Yes
01/19/1975	Paris	Passengers on aerodrome	PFLP	Hostage taking. Automatic weapons and grenades	0/20	Yes
01/25/1976	Nairobi	Aeroplane during parking	PFLP and Baader Meinhof	MANPADS	0/0	No
08/11/1976	Istanbul	Office	PFLP	Automatic weapons fire and grenades	4/17	Yes
11/06/1976	Istanbul	Office	THKO	IED	0/1	Yes
05/20/1978	Paris	Passengers	PFLP	Automatic weapons fire. IED	5/3	Yes

Date	Location	Object of Attack	Attacker	Method of Attack	Victims / Injured Killed / Injured Terrorists	Successful Attack?
08/20/1978	London, a stop at a hotel	Crew	PFLP	Automatic weapons fire and grenades	2/9	Yes
04/16/1979	Brussels	Aeroplane, passengers	Black March	Fire arms and grenades	0/12	Yes
12/09/1979	Rome	Aeroplane	NAR	IED	0/3	Yes
01/02/1980	Istanbul	Employee	MLSPB	Automatic weapons fire	1/0	Yes
02/18/1980	Rome	Office	ASALA	IED	0/1	Yes
04/21/1980	Zurich	Aeroplane	PLO	Air sabotage, IED	0/0	No
01/19/1981	Copenhagen	Office	no data available	no data available	0/1	Yes
05/15/1981	Rome	Office	15 May Org.	IED	0/0	Yes
05/16/1981	Istanbul	Office	15 May Org.	IED	0/0	Yes
08/09/1981	Rome	Office	15 May Org.	IED	0/2	Yes
10/07/1981	Rome	Office	no data available	IED	0/1	Yes

Date	Location	Object of Attack	Attacker	Method of Attack	Victims / Injured Killed / Injured Terrorists	Successful Attack?
01/09/1982	Istanbul	Office	no data available	IED	0/0	Yes
03/28/1982	Rome	Office	PLO	IED	0/0	Yes
07/31/1982	Munich	Passengers in a terminal	no data available	IED	0/7	Yes
11/12/1984	Vienna	Office	no data available	IED	0/0	Yes
08/25/1985	Milan	Office	no data available	IED	no data available	Yes
08/27/1985	Istanbul	Office	no data available	IED	0/0	Yes
09/30/1985	Amsterdam	Office	ANO, Fatah	IED	0/0	Yes
12/27/1985	Rome	Passengers in a terminal	ANO	Automatic weapons fire and grenades	16/81; 3/0	Yes
12/27/1985	Vienna	Passengers in a terminal	ANO	Automatic weapons fire and grenades	4/38; 1/2	Yes

Date	Location	Object of Attack	Attacker	Method of Attack	Victims / Injured Killed / Injured Terrorists	Successful Attack?
04/17/1986	London. New York– London–Tel Aviv flight	Aeroplane	No affinity	Air sabotage. IED	0/0	No
06/26/1986	Madrid	Passengers in a terminal	Fatah	IED	0/13	Yes
12/07/1988	Copenhagen	Travel agency office	Anti-Zionist Autonomy	no data available	no data available	Yes
05/21/1990	Istanbul	Office	no data available	IED	no data available	Yes
07/06/1990	London	Office	no data available	IED	0/0	No
01/03/2001	Zurich	Office	RP	IED	0/0	Yes
07/04/2002	Los Angeles	Passengers in a terminal	No affinity	Small arms fire, knife attack	2/4; 1/0	Yes
11/18/2002	Tel Avivi-Istanbul flight	Aeroplane	No affinity	Hijacking. Attacker armed with a knife	0/0	No
07/18/2012	Burgas	Passengers in a coach	Hezbollah	IED. Suicide attack	6/30; 1/0	Yes

Source: Author's adaptation from the Global Terrorism Database <https://www.start.umd.edu/gtd/>; Michael Whine, “*Terrorist Incidents Against Jewish Communities and Israeli Citizens Abroad, 1968–2003*,” International Institute for Counter-Terrorism, December 20, 2003, <https://www.ict.org.il/Article/893/Terrorist-Incidents-against-Jewish-Communities-and-Israeli-Citizens-Abroad-1968-2003#gsc.tab=0>], Hillel Avihai, “*Chronology of Aviation Terrorism: 1968–2004*”

Acronyms:

ANO—Abu Nidal Organization

ASALA—Armenian Secret Army for the Liberation of Armenia

FSLN—Frente Sandinista de Liberación Nacional (Sandinista National Liberation Front)

MLSPB—Marksist Leninist Silahlı Propaganda Birliği (Marxist Leninist Armed Propaganda Union)

NAR—New Armenian Resistance Group

PFLP-GC—Popular Front for the Liberation of Palestine-General Command

PFLP—Popular Front for the Liberation of Palestine

PLO—Palestine Liberation Organization

RP—Revolutionary Perspective

THKO—Türkiye Halk Kurtuluş Ordusu (People's People's Liberation Army of Turkey)

Systematisation of the analysis of the perpetrators' *modus operandi* is aided by information contained in Table 2 regarding frequencies with which respective means of attack were used. The number of tools totalled 59, for in certain cases the terrorists used multiple means of attack.

Table 2. Frequency of Use of Respective Means of Attack

Tool of attack	Frequency of use
Improvised explosive device	33
Automatic weapons	11
Grenades	7
Small arms	2
Grenade launcher	1
Man-portable air-defence system	3
Knife	2

Source: Author's adaptation from the Global Terrorism Database, <https://www.start.umd.edu/gtd/>

Historical Process of Evolution of Aviation Terrorism

Aviation terrorism has been dominated by attacks on two targets in aviation infrastructure—aircraft and airports.⁴ In 1970-2018, there were 1,358 terrorist incidents targeted against aviation, including 260 hijackings which accounted for the main method of attack.⁵ It is considered that the first terrorist-like act took place in Peru in 1930, when Peruvian revolutionaries hijacked an aeroplane to drop propaganda leaflets. The first aircraft hijacking after World War II took place in Macao in 1948. The practice was sporadic until 1966. In 1967, 15 aircraft hijackings were reported, and the number grew 30 in 1968.⁶ The growing incidence of civil aircraft hijackings triggered first attempts to analyse and categorise hijackings by the criteria of their nature and purpose. Four types of hijackings were distinguished:

1. Political escape, for example hijackings of aeroplanes in socialist countries.
2. Mental illness—aeroplanes hijacked by mentally disturbed individuals.
3. Sky banditry—desire for profit as the motive.
4. International terrorism—hijackings have a political context.⁷

Of the four types of aircraft hijackings listed above, only one—number four—is considered as a manifestation of terrorism, which is supported

by the political connotation of the perpetrators' motives. Type 1, the so-called political escape, is also politically motivated, but the escaping hijacker has a personal motive only.

The beginnings of the contemporary aviation terrorism date back to July 22, 1968, when three terrorists of the Popular Front for the Liberation of Palestine (PFLP) hijacked an El Al aeroplane flying from Rome to Tel Aviv.⁸ That hijacking had three attributes that distinguished it from ones which had taken place before July 22, 1968, setting a new trend in aviation terrorism, for example:

- Change of course and destination was not the only purpose of the hijacking;
- The aeroplane was hijacked for political reasons; the passengers and crew became hostages whom the terrorists wanted to exchange for Palestinian prisoners;
- The choice of the airline was conscious and deliberate—in earlier hijackings, the carrier and aircraft had been chosen solely on the grounds of destination, therefore the aircraft served entirely to an end, for example escape. In the case of El Al, the airline was both a secondary target—the terrorists' intention to enter negotiations with Israel, exchange of the hostages for prisoners, ransom, and the primary target—El Al as a symbol of Israel.⁹

The strategy of the Palestinian terrorists gave aviation terrorism an international character, which primarily attracted the attention of the world's public to Palestinians. George Habash, one of the PFLP leaders, substantiated the strategy in the following words: "When we hijack a plane it has more effect than if we killed a hundred Israelis in battle."¹⁰ In 1976, Zehdi Labib Terzi, the main PLO observer to the United Nations, said: "The first several hijackings aroused the consciousness of the world and awakened the media and the world opinion much more effectively than twenty years of pleading at the United Nations."¹¹ Such a picture shows that aviation terrorism was initially limited to most often to aircraft hijackings, and that the terrorists intended to draw the attention of the world opinion to a specific problem, which somehow made aviation terrorism a means of communicating information.

Presentation of the evolution of aircraft hijacking methods, including chronology and categorisation by characteristic features, is aided by the breakdown of the political threat proposed by John Harrison. It

distinguishes three phases of the political threat in aviation terrorism in the context of aircraft hijackings (see Table 3).¹²

Table 3. Three Phases of Political Threat

Phase	Period of occurrence	Characteristic features
I	1948–1968	Escape from political persecution.
II	1968–1994	Intention to negotiate—hijacking to achieve a political objective, exchange hostages, take ransom.
III	1994–now	Use of aircraft as a tool to cause the maximum number of victims and maximum damage.

Source: Author's adaptation based on J. Harrison, *Aviation Security Practice and Education: 1968 Onward* [in:] A.R. Thomas (ed.), *Aviation Security Management, Vol. 1: The Context of Aviation Security Management*, London 2008, pp. 11-18.

Table 3 shows in a clear manner how aviation terrorism has evolved over the years. The first phase was characterised by sporadic unorganised escapes, most often from countries of the socialist bloc, in which the hijacker treated the aircraft solely as a means of transport. The hijackers of the second phase displayed membership in terrorist organisations, most often ones that fought for independence and/or pursued a left-wing agenda. Since the popularity of those organisations was boosted greatly by the patronage of the Soviet Union, the fall of the Union of Soviet Socialist Republics (USSR) was one of the main reasons which contributed to the end of that phase and finally reduced the appeal of the leftist ideology among terrorist organisations.

The third phase, as shown in the table above, started in 1994 and continues to this day. However, the timeframe is only a matter of convention and depends on arguments used. Among reasons behind the start of the third phase of terrorism is the argument that the fall of the USSR reduced the number of terrorist attacks carried out by left-wing and nationalistic organisations. On the other hand, the 1978-1979 Iranian Islamic revolution, during which its leader Ruhollah Khomeini called for suicide attacks, greatly contributed to the change in the methods of terrorist attacks and increase in the number of victims. The ideology promoting suicide attacks was imported to Palestine by Fathi Shaqaqi.¹³ As a result of the revolution, the motives behind terrorist attacks shifted from political to religious. Convinced of their rights,

religious fanatics began using aircraft as a tool to cause the maximum number of victims and maximum damage. In the years that followed, attacks on civil aviation became increasingly brutal, with the peak on September 11, 2001, when, for the first time ever after, aircraft were hijacked by suicide attackers and used as live bombs (the aeroplanes involved were in service with American Airlines and United Airlines). It can also be said that under the influence of the said revolution, aircraft became not only a target but also a potential tool of attack.

Aviation Terrorism Targeting Ground Facilities of Civil Aviation as Illustrated by the Example of El Al

The first terrorist attack to take place at an airport happened in Munich in 1970 and targeted El Al passengers travelling by coach—three PFLP fighters opened fire at the passengers, killing one and wounding 11.¹⁴ The latest attack took place in Bourgas, Bulgaria, on July 18, 2012—it has also been the only suicide attack on passengers of the Israeli airline to date.¹⁵ In accordance with the sources used to create the tables contained in the work, in the last 50 years, there have been 33 attacks on elements of ground infrastructure which targeted El Al—offices, staff and cabin crew on the way or from the airport, passengers at the airport, cargo terminal. Twenty of those attacks were on offices outside airports; three attacks targeted personnel; nine attacks targeted passengers at airports—including seven in a terminal and two on a coach; and one attack was on a cargo terminal. In the attacks on offices, IEDs were used on 17 occasions, while in three cases no information was provided on the tool of attack. No person was killed in all the attacks on offices, while five were wounded, although 17 attacks on offices were considered as successful. From the perspective of the security system, a successful attack with the use of an IED is considered an attack that resulted in an explosion, regardless of the number of casualties and the size of the damage. Passengers in an airport's landside area (terminal and coaches in the parking lot) account for the second most frequent target of attacks, and all such attacks were considered successful. Fire arms were the preferred tool of attack, with six such attacks reported, in which 28 people died and 157 were wounded, and 5 terrorists were killed. On one occasion, an IED was planted wounding 13 people. There was one suicide IED attack, in which 6 people died and 30 were wounded, and one terrorist was killed. In total, attacks on EL Al's ground infrastructure resulted in 38 victims, 217 wounded and six terrorists killed.

Discussion

In the case of hijackings of El Al aircraft, which fell within the second phase of the political threat, the only successful hijacking took place in 1968, which shows how quickly and effectively Israel responded to the new type of threat. Since the last hijacking attempt took place in 2002, it is unclear whether one can refer to the third phase of the political threat in the case of El Al. However, considering the present denomination of religiously-motivated terrorism and the popularity of suicide attacks, El Al's security system is focused also on preventing the most serious forms of attacks on board aircraft, such as explosion of an IED planted on board, a suicide attack in flight and use of an aeroplane as a live bomb. In this case, the simultaneous attack of September 11, 2001, represented the peak moment for civil aviation terrorism. After that date, a number of security enhancements were introduced, including linking passengers with hold baggage, enhanced security checks and 100% baggage control, additional checks of cargo and mail, installation of cockpit doors and the obligation to ensure uninterrupted contact between aircraft and ground personnel.¹⁶ cannot rule out that aircraft hijackings driven by the motives characteristic of the first and second phases will take place, but they are highly unlikely due to the difficulty of mounting such an attack today because of the increased number of safeguards and security measures. One must also note the shift in the target of attacks from aircraft to airport infrastructure, for example attacks on the landside, which is a result of the ever more enhanced security systems focused on aircraft with the crew and passengers on board. Naturally, the holistic aspect of civil aviation security rests on three pillars:

1. Protection of aircraft (including protection against attacks from the outside and inside of the aircraft);
2. Protection of airports;
3. Protection of air traffic—encompassing protection of facilities, personnel, and operational data, including cybersecurity and protection of means of communications vital to air traffic management.¹⁷

However, the philosophy of civil aviation security is dominated by the concept of treating aircraft with the crew and passengers on board as the core element of security—which results from the nature of the first attacks, for example, the hijacking of the aircraft in flight with the crew and passengers on board, and the fact that security systems are most

often designed on a reactive basis. For this reason, one of the negative effects of the evolution of aviation terrorism is the introduction of further elements of security system that limit the freedom of passengers. Another negative trend is the use of increasingly brutal methods on the side of terrorists.

In case of attacks on ground elements of civil aviation infrastructure, the landside area is particularly vulnerable.¹⁸ In 1980-2003, airports accounted for one third of attacks on aviation elements.¹⁹ At present, the greatest threat is attributed to IED attacks, with suicide IED attacks in terminals and parking lot areas being particularly dangerous.²⁰ As it can be seen in Table 1, there are two distinct periods characterised by different levels of brutality of the attacks. In 1970-1985, one could see a low fatality rate, particularly in the case of IED attacks on offices. In that period, the anti-Israel terrorism was dominated by nationalistic and leftist organisations, which is in line with Rapaport's concept of the third wave of terrorism.²¹ IED attacks on offices which brought no killed or wounded show clearly that the terrorist organisations intended to attract the public attention to their cause rather than to deal the maximum damage—as this type of terrorism served primarily as a method of negotiations and a means of communicating messages.

The period of increased brutality started on 27 December 1985 with attacks in Rome and Vienna, in which a total of 20 people died and 109 were wounded, accounting for 43 percentage of all fatalities and 41 percentage of all wounded reported in all 52 attacks on El Al. A total of seven member of the Abu Nidal Organization took part in the attacks, of whom four were killed (57 percentage of all terrorists killed) and one was wounded (50 percentage of all terrorists wounded). The two simultaneous attacks marked the entry of aviation terrorism targeted against El Al in the fourth wave of contemporary terrorism, which is supported not only by an increased number of victims, but also the terrorist mindset whereby the perpetrators were increasingly often ready to die in the attack. That mindset was motivated by the departure from the nationalistic ideology towards religiously-inspired terrorism, as is illustrated by the Fatah attack on the passenger terminal in Madrid in 1986, in which an IED explosion wounded 13 people. The last element of the present evolution of aviation terrorism, as shown by the example of El Al, was the first suicide attack in 2012 which came with the third wave of jihadism.²²

The evolution of aviation terrorism involves also changes in potential targets of attacks. Paradoxically, each successive attack could contribute to improving civil aviation security and hindering similar attacks in the future. This situation made, and still makes, terrorists seek ever new methods, tools, and targets of their attacks. Also, the expansion of the list of potential targets came as part of the ideological transformations and shift from the political to religious motivation. Politically-motivated terrorists, who wanted to attract the public attention to their cause, perceived aircraft as the most attractive target, whereas an attack in a passenger terminal would not be as effective, for those types of attacks were intended to achieve intimidation and publicity rather than cause deaths and damage. On the other hand, religious fanatics—who have different motives (for example, maximum deaths and damage) and do not have as easy access to aircraft as their predecessors due to continuous security enhancements—are more eager to attack targets other than the increasingly better protected aircraft.

Aircraft with the crew and passengers on board is the core element of the current philosophy of civil aviation security. Naturally, great importance is attached to protection of every civil aviation element, as due to the continuous technological development, changing motivations and modus operandi only sky is the limit for potential contemporary terrorists. Furthermore, an airport is a part of critical infrastructure, although it must be noted that most critical infrastructure elements are located in operational or restricted zones, which makes them better protected. Indeed, with its general accessibility, the landside zone is the easiest area to attack due to difficulties in ensuring the appropriate level of protection, which effectively can be achieved mainly by surveillance and monitoring.²³ Despite the shift in the attitude to designing security systems from reactive to proactive, towards anticipation of potential threats, the risk of attack cannot be eliminated completely. The picture of the evolution of aviation terrorism in terms of targets of attacks is not limited only to the transition from politically-motivated to religiously-motivated terrorism. At present, no motive can be ruled out, although the religious motivation is prevalent. Considering the easy accessibility of the landside zone, where there are many people, it is an attractive target for terrorist who want to cause many victims, which is part of the concept of postmodern terrorism.²⁴

Conclusions

The example of terrorism against the El Al lines gives us a historical overview of almost all methods of attacks against civil aviation, considering changes in the ideological motivation of terrorists and the attack methods used. In summary, one can see a clear process of evolution of aviation terrorism over the years which is characterised by changes in methods and motivations of terrorists. The shift from politically-motivated terrorism to religious motivations is particularly notable. At its beginning, aviation terrorism was associated with aircraft hijackings where the only threat was the threat of violence by the hijacker or hijackers who used the aircraft to escape. Subsequently, hijackings involved threats of violence issued by people who had sufficient means to destroy the aeroplane or kill the passengers and crew, and who treated hijackings as a means of communicating information and attracting public attention. In its third phase, aviation terrorism is accompanied by the intention to cause maximum damage, which underlines the departure of terrorism from being a means of communication towards being a tool of combat. A similar trend can be seen in the case of attacks on ground aviation facilities, where the shift in terms of targets does not result only from ideological changes, but also from the level of protection which makes terrorists seek more accessible targets of their attacks.

The advent of religiously-motivated terrorism made aircraft a tool for causing maximum victims and damage, which is confirmed by the increasing brutality of attacks raised by the author in the hypothesis. Furthermore, changes in aviation terrorism—both on the side of terrorists and civil aviation safety and security agencies—entailed a shift in potential targets of attacks from hardly accessible aircraft to virtually any element of civil aviation infrastructure, where the landside zone is most vulnerable due to its attractiveness and ease of attack. However, this does not mean that aircraft are no longer potential targets—in this case, IED sabotage in flight or attempts to use aircraft as live bombs represent the most dangerous methods of attack. It would be optimistic and unrealistic to say that the evolution of aviation terrorism discussed in this article is over. The process is far from complete, and its future shape cannot be predicted precisely.

Endnotes

- ¹ International Civil Aviation Organization, *Annex 17 to the Convention on International Civil Aviation. Security. Safeguarding International Civil Aviation Against Acts of Unlawful Interference*, Tenth Edition, April 2017.
- ² Adrian Siadkowski, "A Method of Analysis of Acts of Unlawful Interference in Civil Aviation," *Przegląd Strategiczny*, no 7, (2014): 169, <https://repozytorium.amu.edu.pl/bitstream/10593/22172/1/Adrian%20Siadkowski%20A%20Method%20of%20Analysis%20of%20Acts%20of%20Unlawful%20Interference%20in%20Civil%20Aviation.pdf>.
- ³ Global Terrorism Database <https://www.start.umd.edu/gtd/>, Michael Whine, "Terrorist Incidents Against Jewish Communities and Israeli Citizens Abroad, 1968–2003," International Institute for Counter-Terrorism, December 20, 2003, <https://www.ict.org.il/Article/893/Terrorist-Incidents-against-Jewish-Communities-and-Israeli-Citizens-Abroad-1968-2003#gsc.tab=0>., Hillel Avihai, "Chronology of Aviation Terrorism: 1968–2004," Unpublished manuscripts.
- ⁴ Jacques Duchesneau, Maxime Langlois, "Airport Attacks: The critical role airports can play in combatting terrorism," *Journal of Airport Management*, vol 11, no. 4, (Autumn/Fall 2017): 343, <https://www.henrystewartpublications.com/sites/default/files/JAMLanglois.pdf>.
- ⁵ Global Terrorism Database <https://www.start.umd.edu/gtd/>.
- ⁶ Tomasz Aleksandrowicz, "Postępowy rozwój prawa międzynarodowego a bezpieczeństwo międzynarodowego lotnictwa cywilnego," [Progressive Development of International Law and the Safety of International Civil Aviation] in *50 lat konwencji tokijskiej – bezpieczeństwo żeglugi lotniczej z perspektywy przestrzeni powietrznej i kosmicznej* [50 Years of the Tokyo Convention - Air Navigation Safety from an Air and Space Perspective], ed. Z. Galicki, K. Myszone-Kostrzewa (Warszawa: Stowarzyszenie Absolwentów WPiA UW, 2014), 49-50.
- ⁷ Edward McWhinney, *The Illegal Diversion of Aircraft and International Law* (Leiden: Sijthoff, 1975) 8-14.
- ⁸ Radosław Wolniak, "Aviation Terrorism and Its Impact on the Aviation Industry," *Organisation and Management Series*, no. 134, (2019): 297, <http://dx.doi.org/10.29119/1641-3466.2019.134.23>.
- ⁹ Łukasz Szymankiewicz, *Terroryzm lotniczy wobec Izraela* [Aviation Terrorism Against Israel] (Warszawa: Difin 2019), 94.
- ¹⁰ Jan Laskowski, "Terroryzm lotniczy – charakterystyka zjawiska," [Aviation Terrorism - Characteristics of the Phenomenon] *Studia Humanistyczno-Społeczne*, vol. 7, (2013): 146.
- ¹¹ Alex P. Schmidt, Janny de Graff, *Violence as Communication: Insurgent Terrorism and the Western News Media*, (London: Sage, 1982), 32.
- ¹² John Harrison, "Aviation Security Practice and Education: 1968 Onward," in *Aviation Security Management, Vol. 1: The Context of Aviation Security Management*, ed. Andrew R. Thomas (London: Greenwood, 2008) 11-18.
- ¹³ Rachel M. Rudolph, "The Islamic Jihad Movement in Palestine: a Wild Card in Palestinian Politics?," in *From Terrorism to Politics*, eds. Anisseh Van Engeland, Rachel M. Rudolph (New York: Routledge, 2016) 101.
- ¹⁴ Radosław Wolniak, "Aviation Terrorism and Its Impact on the Aviation Industry," *Organisation and Management Series*, no. 134, (2019): 298, <http://dx.doi.org/10.29119/1641-3466.2019.134.23>.
- ¹⁵ "Bulgaria Implicates Hezbollah in July Attack on Israelis," *The New York Times*, February 5, 2013, , <https://www.nytimes.com/2013/02/06/world/europe/bulgaria-implicates-hezbollah-in-deadly-israeli-bus-blast.html>.
- ¹⁶ Knut Billing, (2001), "Air transport and Terrorism: How to Enhance Security?," Report. Committee on Economic Affairs and Development, 2001, 2020, <https://assembly.coe.int/nw/xml/XRef/X2H-Xref-ViewHTML.asp?FileID=9574&lang=EN>.
- ¹⁷ "Aviation Security and Detection Systems – Case Study," Center for Strategy & Evaluation Services, , https://ec.europa.eu/home-affairs/sites/default/files/e-library/documents/policies/security/pdf/aviation_case_study__cses_en.pdf.

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- ¹⁸ Arijana Modić, Andrija Vidović, Zeljko Lovrić (2018), "Airport Landside Security: From Recommended Practice to Standard. Conference paper," 18th International Conference on Transport Science – ICTS 2018, Slovenia, pp. 1-7, https://www.researchgate.net/publication/326320050_Airport_Landside_Security_From_Recommended_Practice_to_Standard.
- ¹⁹ Terry L. Schell, Brian G. Chow, Clifford Grammich (2003), "Designing Airports for Security. An Analysis of Proposed Changes at LAX," *RAND Issue Paper*, IP-251, (2003), https://www.rand.org/pubs/issue_papers/IP251.html.
- ²⁰ International Civil Aviation Organization, "Update on Aviation Security Threat and Risk," Revision No. 1, 11/10/2018., (2018): 2.
- ²¹ David C. Rapaport, "The Four Waves of Modern Terrorism,," in *Attacking Terrorism Elements of a Grand Strategy*, eds. Audrey K. Cronin, James M. Ludes (Washington D.C.: Georgetown University Press, 2004) 46-73.
- ²² Glenn E. Robinson, "The Four Waves of Global Jihad, 1979-2017", *Middle East Policy Council*, vol XXIV, no. 3, <https://mepc.org/journal/four-waves-global-jihad-1979-2017>.
- ²³ Arijana Modić, Andrija Vidović, Zeljko Lovrić (2018), "Airport Landside Security: From Recommended Practice to Standard. Conference paper," 18th International Conference on Transport Science – ICTS 2018, Slovenia, pp. 1-7, https://www.researchgate.net/publication/326320050_Airport_Landside_Security_From_Recommended_Practice_to_Standard.
- ²⁴ Robert Borkowski, *Terroryzm ponowoczesny. Studium z antropologii polityki* [Postmodern Terrorism. A Study in Anthropology of Politics] (Toruń: Wydawnictwo Adam Marszałek) 2007, 50-61.