RISK ANALYSIS OF SELECTED SOFT TARGET

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Abstract: *Most terrorist attacks are focused on so-called soft targets - crowded places, which are not secure against violent attacks. Furthermore, attacks on school facilities abroad are most common too. A well-prepared risk analysis is a necessary method to detect weaknesses and strengths of a soft target. Due to these reasons, a university in Zlin was chosen as a soft target. Also, the Ministry of the Interior of the Czech Republic methodology was selected for risk analysis. According to this methodology was the university analyzed. The result of the risk analysis is a degree of threat which shows a possible risk of the university. In keeping with the weaknesses, we should protect the university as well as possible.*

Key words: *safety; risk analysis; soft targets; terrorism; security*

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1. Introduction

Terrorism threatens humanity for a very long time. [1] Targets and modus operandi of terrorist attacks are still changed. Nowadays, most terrorist attacks are focused on crowded places that are not secure against violent attacks or its security has a very low level. [2] These places are labelled as Soft Targets. [3] The opposite of soft targets are so called hard targets, which have high-security precautions against violent attacks. Military facilities or government facilities are examples of so-called hard targets. [4] As soft targets are labelled following examples:

- school facilities,
- train or bus stations,
- religious monuments,
- hotels
- shopping malls,
- bars or clubs,
- cinemas or theatres,
- sport halls,
- etc. [5],[6],[7],[8]

Terrorist attacks on soft targets in the last years were most common. For example, there are terrorist attacks aimed on soft targets in last two years: Christchurch in New Zealand, 2019 (mosque), Nairobi, in Kenya, 2019 (hotel), Sri Lanka, 2019 (church), Halle in Germany (synagogue), Carcassonne and Trebes in France, 2018 (car, supermarket), Strasbourg in France, 2018 (Christmas market). Typically, most of the attacks on school facilities were in the USA, however, these attacks increased abroad in recent years also. There are examples of these attacks: Charlotte in North Carolina (USA), 2019, Salt Lake City in Utah (USA), Volsk in Russia, 2019, Suzano in Brazil, 2019, Shaanxi in China, 2018, Grasse in France, 2017. As can be seen, a lot of attacks were focused on so called soft targets and a lot of attacks were focused specifically on school facilities. Due to these reasons, the University in Zlin was chosen as the soft target for risk analysis. Problematics about secure soft targets are solved in government documents as Strategy of the Czech Republic for Combating Terrorism from 2013, Terrorism Situation and Trend Report 2019 (TE-SAT) EU, or Crowded Places Guidance (United Kingdom). The first step to make an effective security solution for protecting a soft target is a well-prepared risk analysis. The Ministry of the Interior of Czech Republic methodology “Basics of Soft Target Protection Guidelines” and “Evaluation of Soft Target Vulnerability” was chosen for this paper.

2. Risk Analysis

A risk analysis is a necessary method to detect weaknesses and strengths of a soft target. The analysis evaluates the most dangerous situations which should be secured. The Ministry of the Interior of the Czech Republic methodology was selected for this

study. The risk analysis is separated into two auxiliary tables and one main table. The first of them describes the likelihood of an attack. The next table determines the impact of an attack. And the last of them evaluates the degree of threat. As can be seen, the likelihood is determined as accessibility, obstacles, and desirability. Moreover, each of these categories is separated into seven points, where point one represents a minimal likelihood. On the opposite, the category with the seven points represents the highest likelihood. The points will be used in the main table to calculate the degree of threat.

Likelihood			
P.	Accessibility	Obstacles	Desirability
7	Without arms	An individual without the assistance of other people, a public place	It has already occurred many times in the Czech Republic
6	Commonly available (knife)	It requires the involvement of more people, a public place	It has been in the relevant foreign country many times
5	More commonly available weapons, a weapon of less commonly available (car)	Simple or one-off cooperation with local criminal a group, a public place	It has appeared several times in the Czech Republic
4	Gun on Permit or More, (Firearm)	More complicated or longer-term cooperation with the criminal group of the public is inaccessible	It has appeared several times in relevant foreign countries
3	A weapon obtainable by criminal activity (black market, etc.) without the need for professional training	One-time talks with a local terrorist group, a public inaccessible place	It occurred rarely in the Czech Republic
2	A weapon that can be acquired by criminal activities with the need for professional training with short delivery times	Coordinated actions at the local level with cooperation with a terrorist group, public inaccessible place	It has rarely occurred in the relevant foreign countries
1	The weapon can be obtained by criminal activity with the need for professional training and long delivery times	Internationally coordinated action by a terrorist group, accessible to the public or inaccessible to the public	It never appeared in the Czech Republic or in the relevant foreign countries

Tab. 1. Auxiliary table – Likelihood [2]

Table 2 shows the impact of an attack. As can be seen, the impact is determined as damage to building, threat to lives, impact on community, and economical losses. The value of impact is defined into seven points as the previous table, where point one represents a minimal impact. On the other hand, the category with the seven points represents the highest impact.

Impact				
P.	Damage to building	Threat to lives	Impact on community	Economical losses
7	Destruction of the object, eventually static disruption, cancellation of the event	Serious injuries to more people and the death of more people	Termination of participation / activity	Impact economically liquidated
6	Extensive limitation of the functionality of an object or possibility of organizing an event	Serious injuries to more people and death of individuals	Temporary interruption of activity	Impact over CZK 500,000, insurable by insurance
5	Limit the functionality of part of the object or part of the action	Serious injuries to more people	Real risk of people being involved in other activities	Impact over CZK 100,000, insurable by insurance
4	Local limitation of the functionality of the room or part of the action	Serious injury to individuals	General concern to be active in the community, more limitation of activities	Impact over CZK 100,000, solvable by insurance
3	Serious damage to the object or disturbance of the action without limitation of functionality	Light injuries to more people	Less activity restrictions	Impact in the order of tens of thousands
2	Minor damage to the object or disturbance of the action without limitation of functionality	Light injuries to individuals	Poor impact on individuals	Impact to 5000 CZK
1	No or negligible object damage or action disruption	Shock or minor injuries	Without an obvious impact on the community	No impact, or negligible

Tab. 2. Auxiliary table – Impact [2]

Table 3 shows the main table of risk analysis. The degree of threat is calculated in this table. Table 3 is separated into several columns. The first step is to determine to perform an attack. In this study were chosen the most common situations as shooting, knife attack, attack by car, and bomb. Place of attack was separated into two possibilities – attack in front of the university, and inside of the university. Next, the time of attack represents attack during daily working time or during the event for invited. The following values of likelihood and impact were chosen by auxiliary table 1 and table 2. The total likelihood was calculated according to formula 1.

$$L = x1 + x2 + x3 \quad (1)$$

L... Total impact of Likelihood

x1... Accessibility

x2... Obstacles

x3... Desirability

$$I = y1 + y2 + y3 + y4 \quad (2)$$

I... Total value of Impact

y1... Damage to building

y2... Threat to lives

y3... Impact on community

y4... Economical losses

Performing an attack	Place of attack	Time of attack	Likelihood				Impact					DEGREE OF THREAT
			Accessibility	Obstacles	Desirability	Threat in total	Damage to building	Threat to lives	Impact on community	Economical losses	Threat in total	
Shooting	In front of	Daily working time	3	7	2	12	2	6	4	4	16	192
Shooting	In front of	Event for invited	3	7	2	12	2	6	3	3	14	168
Shooting	Inside	Daily working time	3	7	6	16	5	7	4	4	20	320
Shooting	Inside	Event for invited	3	7	2	12	5	6	4	3	18	216
Knife attack	In front of	Daily working time	6	7	4	17	2	4	4	3	13	221
Knife attack	In front of	Event for invited	6	7	2	15	2	4	3	3	12	180
Knife attack	Inside	Daily working time	6	7	3	16	2	4	4	3	13	208
Knife attack	Inside	Event for invited	6	7	4	17	2	4	3	3	12	204
Attack by car	In front of	Daily working time	5	7	2	14	3	6	3	4	16	224
Attack by car	In front of	Event for invited	5	7	2	14	3	6	4	4	17	238
Attack by car	Inside	Daily working time	5	7	1	13	3	4	4	4	15	195
Attack by car	Inside	Event for invited	5	7	1	13	3	4	5	4	16	208
Bomb	In front of	Daily working time	2	5	2	9	6	7	5	4	22	198
Bomb	In front of	Event for invited	2	5	2	9	6	7	4	4	21	189
Bomb	Inside	Daily working time	2	5	2	9	7	6	4	4	21	189
Bomb	Inside	Event for invited	2	5	2	9	7	6	5	4	22	198

Tab. 3. Risk analysis of the university

$$D = L * I \quad (3)$$

D... Degree of threat

L... Total impact of Likelihood

I... Total impact of Impact

The maximum value degree of threat is value 588. An acceptable risk level is not determined by the methodology. The author defined the acceptable risk level as a mean value of all variables (Likelihood and Impact) with the value 192.

3. Conclusion

This paper deals with the fact that the terrorist attacks on so called soft targets are most common. Furthermore, the attacks on school facilities are quite frequently too. For these reasons, a selected soft target was analyzed by the Ministry of the Interior methodology. The risk analysis shows that the highest value of the degree of threat represents shooting inside university during the daily working time with the value 320. On the other hand, the minimum value of the degree of threat represents shooting in front of the university during the event of invited with the value 168. According to the risk analysis, we could identify the weaknesses of the selected soft target and protect the university as well as possible. One of the challenges for future research is to develop a united value for the acceptable risk level. Another next research could be focused on possibilities to protect soft targets.

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