PREVENTION OF TERRORISM ATTACKS THROUGH ENVIRONMENTAL DESIGN IN INDONESIA AIRPORT

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Abstract

This research previously identified civil aviation as a vulnerable and appealing target. Terrorism-related airport security concerns have gained much attention since the 9/11 attacks. Terrorist assaults against flights, airports, passengers, crew, and cargo continue to pose a severe threat to human and national security worldwide. The X Indonesia International Airport is a civil enclave airport that offers the concept of Crime Prevention Through Environmental Design to combat these attacks and threats (CPTED). This article aims to provide an overview of airport security management and present a CPTED concept for avoiding a terrorist assault and threat. This paper employs a descriptive qualitative approach with in-depth interviews and a literature review as a data-gathering strategy. The result depicts the CPTED concept developed to prevent terrorism: access control, surveillance, and territoriality. Furthermore, it is believed that collaboration in security management would be ideal in carrying out CPTED to eradicate terror elements and establish a sense of security in public venues. Thus, it is envisaged that the creation of this idea would help the X International Airport region build a sense of security and stability and eradicate terror fears.

Keywords: CPTED, Security System, Aviation, Civil Enclave

INTRODUCTION

The CPTED idea is seen to be extremely useful for usage in airport security planning. The author of this scientific research will concentrate on numerous features of the CPTED idea that can prevent or mitigate the effects of terrorist strikes in airport areas. CPTED (Crime Prevention Through Environmental Design) is a problem-solving approach by considering environmental conditions and the possibilities that can lead to criminality or unpleasant behavior. The Airport can

implement CPTED without disrupting the routine use of space. It is stated that there are six components of CPTED, namely: Territorial, Surveillance, Access Control, Image/Maintenance, Activity Program Support, and Target Hardening. Through environmental design, terror prevention in the X International Airport area aims to reduce opportunities that allow terrorism to occur.

Aviation terrorism is potent and symbolic, an d it will undoubtedly remain to become a popular target for terrorists attempting to produce disruption and widespread casualties in the same way that the 9/11 attacks on the United States did. The 9/11 attacks are considered the most violent acts of terrorism globally, where the World Trade Center Twin Towers were attacked by a group of terrorists using a commercial aircraft (Supriyadi, 2020; Islami, 2017). The attacks killed at least 3,000 people and were recorded as the highest number of victims in America in a single day (Chaliand & Blin, 2016, p. 328–329). According to Baker (2015), aviation terrorism is powerful and symbolic. It provides an international theater and considerable media exposure.

The implications of a successful assault are significant on airlines and the government. It leads to political shame and vulnerability, and it is efficacious. Therefore, we believe that the worldwide aviation industry remains a staple target for terrorists for varied purposes. Jenkins (2021) inferred that aviation security is the most intrusive kind of security due to the nature of the threat, pushing hard against the limits of civil rights. Terrorists continue to be fascinated with attacking planes, and the danger is real. Terrorists have previously found civil aircraft to be a vulnerable and enticing target (UNODC, 2014). Duchesneau and Langlois (2017) established a database of "acts of unlawful interference" from 1931 to 2016 on civil aviation. They found that ground attacks, hijackings, sabotage, and suicide missions were all classified as attacks. They discovered a total of 2,071 acts of unlawful interference (635 of which are "definitively" terrorist) that resulted in 9,508 deaths.

Honestly, we may argue that terrorists' obsession with attacking planes persists, and the threat is real. For instance, the Moscow Bombing (2011), the Brussels Airport Terminal Bombing (2016), and the Ataturk Airport Attacks (2016) are among the most prominent and influential of these airport attacks in the last ten years. First, two female suicide

bombers (Islamic State terrorist group) from Russia's Dagestan area set off explosives on the metro system, killing 40 people in the Domodedovo International Airport bombing in Moscow (The Guardian, 2011). Next, on March 22, 2016, two bomb explosions occurred at the departure terminal of Brussels International Airport in Zaventem, Belgium (Beauthier et al., 2020, p. 223). In that attack, thirty-two civilians and three perpetrators were killed, and more than 300 people were injured. Lastly, a gun and bombing attack on the Ataturk international airport in Istanbul on Tuesday night, June 28, killed 41 people and 239 wounded. (The Guardian, 2016).

Similarly, international airports in Indonesia are also the national critical infrastructures of strategic value that have become terrorist attacks. The first incident was the bombing at Terminal 2F of Soekarno-Hatta International Airport in 2003 (Prasetyo, 2018). Additionally, I Gusti Ngurah Rai International Airport, Bali, one of the main entry points for foreign tourists to Indonesia, has also experienced the threat of terrorism. According to Loreza et al. (2018), there have been three cases of bomb threats at I Gusti Ngurah Rai International Airport, Denpasar. First, the threat of a bomb on

June 11, 2011, the escape of a bomb-like object on Qatar Airways flight QR961 on December 6, 2015, and the last one was a joke carrying a bomb by a prospective passenger on a Lion Air flight on March 8, 2017. For this reason, the X Air Force Base is one of Indonesia's defense elements that play a role in ensuring security against terrorism emerging in the country.

The international airport serves as the significant and border entrance of activity for passengers. Thus, the airport officers need procedures that are equipped with the cautiousness of terrorist attacks. So then, in dealing with terrorism security issues, The X International Airport, which is owned by the Air Force Base, this airport is asked to be well-prepared for dealing with terrorist threats that occur. Bartholomew Elias (2010), in his book with the title Airport and Aviation Security, discusses airport security in terms of terrorist threats, hijacking/piracy, weapons smuggling, and aviation cargo security. Assuredly, we may say that terrorists may change their methods, adapt to changes in safety or perceived value or significance of the target, or adapt techniques that have been used successfully against other targets to

attack airports. Civil aviation has been and continues to be a vulnerable and desirable target for terrorists.

The prior study used in implementing the X Force Base in dealing with terrorism security threats in Indonesia in securing the X civil enclave airport area is discussed in this article. Authors' searches for research on terrorism security concerns include, for example, the first study published in an international publication by Dian Bashari et al. (2018). According to Bashari et al., Airport safeguarding in civil aviation safety and security is the Air Force Base and Airport authority (Angkasa Pura I). The second research was by Jorry S.Koloay (2018). He addressed that strengthening airport security systems involving civilian and military forces is essential to face potential threats and security disturbances. The third study was Jacques Duchesneau and Maxime Langlois (2017). They analyzed the phenomena of airport assaults in which airplanes as targets had shifted security concerns to the airport, which he conducted using a unique database of aviation terrorist acts. The fourth research is a study by Bambang Yunianto (2017). He found that joint use

of the Indonesia Naval Airbase as a Civil Airport often caused conflict related to assets, flight security, and safety. The fifth study comes from Baker (2015), who adopted qualitative methods focused on the main features of the Aviation Security and Security Act and the characteristics of security policies that were generated. The sixth study is by Jeanette Rose Moreland (2011). She adopted qualitative ethnographic methods that discuss several airport functions as a contemporary border and concentrate on security forces.

From those researches, we remind the reader that recorded data assists in the development of methods to prevent or mitigate the effects of future terrorist attacks by increased access control, surveillance, and territoriality, in particular. As a result, the author summarizes why the CPTED idea should be implemented by planners of critical objects in Indonesia, one of which is the X International Airport place.

RESEARCH METHODS

In this study, the method used is descriptive by providing an overview of the conditions at the research location. The data collection was conducted by

interviewing four primary sources: the X Air Force Base Commander, Executive General Manager of the X International Airport, Head of Operational, and Head Section of Defense the X Air Force Base. Likewise, this research is equipped with several secondary sources that the authors collected from various literature, including books, the research journals of publications, legislation, and information search on the internet.

From the interview method, the Author can only understand by combining analysis and security dimensions. The analysis is divided into the security dimension includes military, political, social, economic, and environmental protection. In dealing with security issues regarding the current threat of terrorism, cooperation between actors and security institutions is needed. So in this context, the Author assumed that security is threat-free from the side of the state and the international system and the individual stage.

RESULTS AND ANALYSIS

The X International Airport is a vital national object of strategic value that can withstand security disturbances. Security and safety issues have become

an important position for industrial areas globally (Beirman, 2016, p. 8). Security is a broad concept, which has inadvertently been used in various service and industrial fields, such as social security, health and safety, financial security, police and community security, national security, military security, and environmental security (Zedner, 2009, p. 9). The pattern of security and security maintenance in the X International Airport area (public areas, particular areas, and other places) aims to (Adisasmita, 2012, p. 72) are designed such as: (1) Guaranteed flight safety and security; (2) Maintaining conducive security and public order in the airport area; (3) Guaranteed comfort, freedom from worries and fears from the public using airport services and air transportation modes; and (4) To build and maintain the trust of the international community in the world of national aviation.

Referring to Priyanto et al. (2020), terrorist groups' actions not only have a negative impact because of their severe effects, but they also have a negative psychological influence on many people. It also has an impact on the area's social and economic developments. The action has ramifications across multiple

sites, including culture, economics, and the social complex. Thus, to protect the X International Airport from the threat of terror that can disrupt airport operations and national security stability, the authority can effort a good environmental design concept. The basic idea behind CPTED is terror prevention based on the relationship between humans and their environment, targeting the development of safer and more secure spaces.

Security Issues of the X International Airport

International Law comprehensively regulates the security and safety of civil aviation through the 1944 Chicago Convention and its accompanying documents. Airports with civil status are facilities in civil aviation so that they become one of the objects regulated in the convention. In practice, airports that are civil enclaves are not entirely polite but also have military status. According to Law No. 34 of 2004 concerning the Indonesia Military (TNI), that in carrying out Military Operations Other than War (OMSP), the TNI is tasked with assisting local government tasks (article 7 paragraph (2) points b, 9). One of the tasks of the regional government is the existence of aviation services in its

territory, namely the everyday use of the Air Force (TNI AU) Base as an airport. This shared use is one of the TNI AU's OMSP activities by assisting the task of local governments in developing their regions and securing flights. Shared use as an airport has been regulated in Article 257-259 of Law Number 1 of 2009 concerning aviation. The following is the definition of shared use according to the Aviation Law (Law No. 1 of 2009): a) Under certain circumstances, the airport can be used as an air force base, b) Under certain circumstances, the Airbase can be used as an airport, c) Joint Use of an Airport or air force base as referred to in paragraphs (1) and (2) shall be carried out by taking into account.

The above understanding shows that the purpose of holding a common use is to assist local governments related to development in air transportation needs. The Air Force Base can also be used as an airport and vice versa to fulfill commercial and national defense needs. This mutual agreement was then further regulated between the Indonesian Air Force, the Directorate General of Civil Aviation of the Ministry of Transportation, PT. Angkasa Pura I and PT. Angkasa Pura II, Letter Number KB/4/I/2011, and Letter Number

AU/838/KUM.18/I/2011 dated January 31, 2011, concerning arrangements for joint-use of Airports and Air Bases (Suprijanto, 2018, p. 4). Based on the cooperation agreement letter, the X International Airport was then designated as a civil enclave. It means that the X Air Force Base belongs to the Indonesian Air Force (TNI AU) and is used as an airport to serve commercialized civil aviation under PT Angkasa Pura II (Atmadjati, 2014, p.1). So the implementation of the security management of the vital object area is managed jointly between the Indonesian Air Force and PT Angkasa Pura II. The X International Airport and Air Force Base management have carried out the critical object. However, there are still weak points in the military and civilians' efforts in carrying out security procedures at the X International Airport. The problems found in managing security at the X International Airport, as well as:

a. Legal regulation for implementing actions. There needs to be a mechanism for implementing activities that involve various elements in binding rules and become the legal basis for acting. The interview results found that this cooperation in strengthening the security

system does not yet have a valid form of collaboration in terms of legality or object fulfill the form of a Cooperation Agreement markedly a Memorandum of Understanding (MoU). According to the party who will give the authority, acknowledgment is given if the recognized party has fulfilled the requirements, effectively mastering formally and substantially and delivering full availability (Pujilestari, 2018).

b. Limited human resources in managing security at the X International Airport. According to the Air Force Base authority, it is undeniable that the number of military personnel at the X Air Force Base is still not optimal. A Base Security Defense Team has been formed with twenty-five Air Force Police and Air Base Intelligence personnel, who supervise and carry out the base security perimeter patrols. Moreover, the number of personnel is still considered insufficient, considering that the sector responsible for supervision and monitoring is pretty extensive, covering an area of approximately 21 HA. In terms of airport terminal security, the number of Aviation Security (AVSEC) PT. Angkasa Pura II personnel assigned to oversee the security perimeter of the X

International Airport terminal are also still minimal. As this was conveyed by the EGM of the X International Airport, that the number of AVSEC officers who handled the X-Ray on sector Security Checkpoint (SCP) I and II are still minimal.

c. According to the Head Operational of the X Air Force Base, Air Force officers who were joined on the Air Force Base security required basic abilities and skills, including shooting, physical excellence, and self-defense. However, most of them have not been provided with educational and training basic aviation security materials.

d. The security management facilities and infrastructure have not been optimally integrated. Looking at the current condition of the facilities, the author observes that the implementation of security operations has not yet established an integrated radio communication network between security bases and terminals. Officers on duty face these obstacles to coordinate and communicate continuously, especially under certain conditions met with contingency threats of terrorism. In addition, according to EGM Airport, currently, officers guarding the airport terminal security perimeter only use

personal communication tools that have been installed, setting significant numbers on their respective means of communication. Moreover, the X International Airport Terminal X-Rays, placed on SCP I and II, do not yet have a backup tool ready to be used if there is damage between the two equipment.

CPTED from the aspect of Access Control

It is necessary to improve access control by presenting the presence of security personnel, either individually or in organized groups. This method is called authorized access control to reach the security parameters of the X International Airport area. Its efforts are being made to strengthen the authority of airport security personnel. Based on information obtained from the Head Operational of the X Air Force Base, it is possible to thicken the number of security personnel in the area to anticipate the threat escalation. The appointment of the personnel involved is carried out selectively based on the abilities and qualifications of the officers' skills. Also, it is necessary to have periodic rotations to maintain the morale of security officers in the field. Referring to Moffat (1983), access control is a concept from CPTED that

focuses on reducing opportunities for terrorism to occur by denying access to potential targets and creating increased perceptions of risk for perpetrators (Cozen, Saville, & Hiller, 2005). According to Kusmuk and Whittemore (1981), access control is the ability to regulate who enters and leaves an area or building, intending to restrict access for those who are entitled. If we look at the current situation at the X International Airport, access for every visitor is still too loose.

CPTED from the aspect of Surveillance

Surveillance or "supervision" means increasing opportunities for space users who have the authority to monitor that space/location. The assumption underlying the surveillance is that legitimate users will be more likely to pay attention to intruders. Potential violators will be deterred from the premises because of the risk of being caught (Schneider, 2015, p. 61-62). In this study, based on spatial planning, the author argues that supervision in the public space of the X International Airport area can be carried out by 1) Implementing an integrated communication network system, 2) Periodic patrol of airport perimeter and

base security to avoid hazards and security disturbances from criminal acts, 3) Supervise visitors airport through face detection facilities/or tools to do profiling and identification in the context of early detection of prospective passengers who have been registered in the red notice Police as people who are suspected and wary of as people who are members of organized crime groups. The communication network is an essential means to be completed by airport and air force base managers. The communication and coordination would provide information related to preventing and handling terrorism threats incidentally.

Several posts that need additional airfield personnel include: 1) Joint Security Post. AVSEC and air force base officers handle the joint security post as command and control in security activities. The officers at this post control all security activities and carry out coordinated patrols in the land and air areas of the airport; 2) Departure Lobby. The departure area is central in the movement of people and luggage. AVSEC and air force base officers are always observant and alert to suspicious signs of prospective passengers who can commit terror at any time; 3) Entrance.

This area is a place where officers carry out inspections of people and luggage. This area is equipped with X-Ray, Walk Through Metal Detector, and Hand Held Metal Detector facilities. When the AVSEC officer conducts an inspection, the role of the airbase officer in assisting is that if at any time there is an attempt to act against the law (Acts of Unlawful Interference) carried out by the prospective passenger, coordination can be carried out immediately with the airbase officer; 4) Cargo. The placement of airfield personnel in the cargo sector is the right effort to secure goods, where this is the entry gate for goods from outside; and 5) Parking Area and Drop Zone. It is necessary to place airbase officers equipped with security equipment in parking areas and drop zones to anticipate acts of chaos and terrorism. It is essential to be careful where the perpetrators of suicide bombings tend to be desperate to blow themselves up in mass gatherings where people are busy gathering. At this drop zone point, security officers, especially air force base personnel, need to anticipate the possibility of a bomb attack from members of a terrorist group.

CPTED from the aspect of Territoriality

According to Moffat, territoriality is a design concept that aims to increase the sense of ownership of legitimate users and emphasizes the importance of paying attention to such rights to reduce opportunities for perpetrators to commit terror (Cozen, Saville, and Hillier, 2005). In addition, Sudiadi and Runturambi (2011) adjusted that to create a strong sense of territoriality and belonging among fellow residents or users. Territoriality is a physical design that aims to achieve it. Territoriality is carried out through efforts to unite the Airbase and the airport management, in this case, PT. Angkasa Pura II naturally works together to protect the area that is considered its property.

According to the above, the methods in territoriality that can be applied is organized territoriality, whereas an effort to increase territoriality is related to social factors and groups/individuals inhabiting the area. The methods are: 1) Accommodating cooperation agreements between airport and air force base personnel and explaining the duties and authorities in implementing airport security to establish apparent social cohesion in carrying out tasks in the airport area. 2) Giving authority,

responsibility responsible for regional security and freedom of movement of security personnel under the command and control of the X Air Force Base. Related to the research location, the author argues that the application of territorial strengthening measures in the X International Airport area is not only on the physical aspect but also on social aspects such as joint activities and workshops between the military airbase officers and security officers, and airport authorities. The intense interaction between airport security managers will facilitate coordination and become more coherent in protecting their territory.

Analysis

The analysis of the security problems at the X International Airport has motivated the author to develop a strategic concept in implementing crime prevention based on environmental design (CPTED). Afterward, it can provide a sense of security. Based on the existing conditions at the research site, the authors feel the need to encourage three possible CPTED concepts to be applied at the X International Airport, including a) Access Control, which aims to avoid access to the target of the terrorism and to create a perception of risk for the perpetrator. This method of access control relates to space and circulation control patterns that directly reduce the opportunity to commit a crime because many criminals see from the ease of escape, by limiting the accessible area is an effective way to deter criminal activity (Kinney, Mann, & Winterdyck, 2017, p. 381), then b) Surveillance, supervision is defined as a design aimed at preventing the entry of unknown persons through observation or observation (Sudiadi & Runturambi, 2011), and c) Territoriality.

Access control is one of the components of CPTED. The authorized control access method can be developed in the X International Airport area, which can control access to and from the site by tightening inspections by security personnel. This method thickens the number of security officers at central points prone to terrorism, such as airport and terminal entrances, departure lobbies, cargo loading and unloading points, drop zones, and parking areas. With the method applied, it is hoped that it can reduce the opportunity for criminal acts to occur while increasing the perception of risk for potential perpetrators because the X International Airport has tight security and is difficult to penetrate. Suggestions that can be

given in optimizing access control are to improve the quality of airport security personnel. Apart from the basic military capabilities possessed by security personnel from the Airbase, it needs to be accompanied by particular/basic vocational training. It is hoped that the security personnel will have a standard of ability in the field of Aviation Security.

Surveillance is one of the critical components in implementing the CPTED environmental design at the X International Airport. The implementation of supervision is carried out by security personnel by conducting periodic patrol methods. Suggestions that can be sought in maximizing surveillance in the X International Airport area are by adding vehicle facilities, both cars and motorbikes patrol at the Joint Security Post. It is attempted so that it can involve some mobility. In addition, the X International Airport area needs to be equipped with a Joint Security Post fitted with a control room. Hopefully, it can synergize security governance in the common use of airports and airfields to anticipate the threat of terrorists committed jointly by the air force base and airport security personnel. Territorial strengthening of

territoriality is a component that can optimize crime prevention in the X International Airport area. It is necessary to have security cooperation carried out between the air force base and airport management. The technique and method used are to carry out a joint meeting of security personnel. The territorial strengthening component in the X International Airport area can be realized with good synergy in the common use of airports and air force bases.

CONCLUSION

One of the essential aviation infrastructures is the airport. The main purpose is to provide the infrastructure necessary for airlines to provide air transportation services, such as a runway for takeoff and landing. Due to the connection between the airport and other local modes of transportation, airports also play other significant and strategic roles for the neighborhood in addition to their core function. Additionally, having an airport can boost the local economy and produce jobs. The terminal building's aesthetic, cleanliness, and the level of security at the airport are the determinants of a good airport.

One of the main challenges ahead is being able to adapt to the development of transnational terrorism continuously.

Aviation terrorism has social ramifications. It includes generating fright in the population and drawing widespread media attention to the situation. One of terrorism's aims is to reach a specific audience, and terrorists achieve this goal by focusing international agencies and leaders on the security and vulnerabilities of schemes. Therefore, it needs the readiness of The Indonesian National Army Air Force to defend against any emerging security concerns, including terrorism threats at the Civil Enclave Airport. Increasing the professionalism of human resources, infrastructure growth, technical advancements, and increased finances are all highly vital necessities in maintaining Indonesia's defense and security. The engagement of the Indonesian Air Force is mandated by Law No. 34 of 2004 concerning the TNI.

In conclusion, it has been carried out jointly between the X International Airport management and Air Force Base. It is necessary to develop a concept of environmental manipulation based on crime prevention through environmental design (CPTED) to improve security in the X International Airport. The components seen in the implementation of CPTED include access control, surveillance, and territoriality, which are carried out by several methods. By looking at the breadth of security parameters in the area, the authors focus on the central points in eliminating the probability of potential terrorist attacks.

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