

Importance of safety in aviation world engineering essay

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1.0 Introduction

Annex or can be said as The Annexes to the Chicago Convention are organized by documents covering technical issues and are updated on a fairly regular basis. The creation of Annex 1 - 18 by ICAO is most probably has main objective which is to improve safety in aviation industries by making states more aware of, and responsive to the importance of human factors in civil aviation operations. Firstly, safety and security is very important to aviation facilities. Basically, safety can be defined as condition, state or situation in which a person feel safe from danger and harm while security can be described as procedure or action taken to ensure safety of a person. This law is fixed as stated as in Annex 17 which is Security: International Civil Aviation Organization (ICAO) against Acts of Unlawful Interference where can be best explained as the annex sets out the basis for ICAO civil aviation security

programmed and seeks to safeguard civil aviation and its facilities against acts of unlawful interference and to prevent and contain all acts of unlawful interference against civil aviation throughout the world. Aviation world need safety and security systems in each department section is to avoid crimes happen in airport where there is a thousand people come into. Besides that, aviation need to prevent treats because of they do not want to tarnish the good name of aviation industry. This is because the airport where involved with major treats such as smuggling and hijacking, the management does not want to lose their profit. Types of profit that aviation industry can lose are customers do not want to travel abroad because they afraid of hijacking and smuggling cases that usually happen in some European countries, high in maintenance of aircraft that has been hijacked or being accidents. Then, smooth the airport system which can meet requirement from ICAO for providing safety so that passengers will feel comfortable and secure. 1There are a lot of importance when implement the Annex 17 inside the aviation industry. Such the importances are the annex can completely provide protection towards the civil aviation for example like hijacking either aircraft or it can be an airport. Then, annex is a basis of aviation safety program such as all safety and security aspects are amended inside the law and regulation under the ICAO. Therefore, these annex contain all the acts of unlawful interferences for example smuggling, terrorism, bird strikes, and etc. Besides that, why ICAO establishes Annex 1 - 18, this is probably because they wanted to give standard guidance to all aviation industries as procedures. This is because the membership of civil aviation department has to make sure that all the airports have to follow the annexes for continuous

monitoring purposes. In this assignment, I will discuss the importance of safety to aviation world and how can aviation world improves the level of safety. Even though safety can be described as a state of being safe and feel free from any danger or threat that could possibly harm human and aviation facilities. <http://www.icao.int/Security/SFP/Documents/AVSEC%20MANUAL%208th%20ED/AVSEC%20MANUAL%208th%20Ed.png> Figure 1. 0 Annex 17

Safety and Security Manual²². 0 Importance of Safety in Aviation

World Safety is something that aviation industry must aware off and it is the main action that the person who responsible, has to make sure all passengers are in safe condition. However, the safety in aviation world is very important, usually airport management only consider aspects of safety when some accident occurs. Implementation of safety regulations in aviation industry is mainly to protect the passengers live whenever they are in-flight or airport. Besides that, basically this implication not only save lives while passengers travel through the air, but to ensure the safety of everyone whenever they are dealing with business on the ground as well. Furthermore, Federal Aviation Administration (FAA) has discovered many of the efforts concerning about aviation safety, along with the education of flight crews to give maximum level of safety precautions are followed continuously. All the flight crews must be well trained and most hard-working individuals are employed within the commercial airline industry as requested in the requirement. By the way, major responsibilities are burden on mostly pilots' shoulder because he is the person who dealing with lives whenever flying the aircraft above sea level. [http://t1.gstatic.com/images? q= tbn:](http://t1.gstatic.com/images?q=tbn:ANd9GcS7XHwyBvbvqYjR9nFatE-)

ANd9GcS7XHwyBvbvqYjR9nFatE-

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Figure 2.0 Safety first

Never the less, the importance of aviation safety and security is overwhelming and can be understood by few communities. With every air traffic accidents, passengers are more hesitant to fly by resulting in a loss of revenue to the aviation industry. This can be proved through statistic where it is approximately around 40% of all tourists travel by air, so a small decline in this area due to safety concerns which can easily gathered in hundred millions transferred to other airline industries. In terms of cargo business, 45 million tons of freight is transported annually by air transportation and 10% of the world's Gross Domestic Product (GDP) is generated by airline industries. Then, there are also has 14 million jobs around the world which are attached to aviation industry. If the financial management of aviation found there is declined number in commercial and cargo aircraft movement due to aviation safety concerns the result would be an economic disaster which impact not only the aviation industry in the origin country, but worldwide. However, aviation safety and security is crucially importance to every country and economy on earth. In addition, in aviation industry, the only thing that matter is safety because aviation world is only prioritize the high level of safety despite of making profit. However, aviation should tighten the procedure of safety to instil trust value among the passengers where the more the passengers, the more the profit. By the way, if the aviation does not has safety and security, airline industry will be turned down such as lose a lot of profit, no more customer will come to airport, no aircraft will land to that particular airport, and increasing of illegal activities.

http://www.ainonline.com/sites/default/files/uploads/2011_accidents_year3.

jpgFigure 2. 1 Aviation safety statistics43. 0 How Aviation Improves Level of Safety? Even though we know that security in aviation industry is tighten enough but there is still have treats that can be happened inside the airport for example, smuggling, fraud, hijacking, terrorism, criminal, and bird striking. Those are the major treats that usually happened in the aviation world. This is why airport management should take immediate action for preventing these treats originator by improving the airport security systems so that it can less the number of criminal in aviation. However, since the incident of 11 September 2001 where terrorists hijacked four U. S. airliners and crashed three of them into buildings and one into the ground, causing the death of thousands, the technology in aviation greatly improved and tightens the law and regulations that have been stated in Annex 17. Besides that, professional engineers have been creates lots of new and modern technologies for purpose to avoid people from nowhere from bringing any dangerous material or do illegal activity inside the airport either aircraft which might can cause harm to other surrounding people. This is the reason why airport is having too many securities, the purposes of having the airport security are to protect airport from any attacks and crimes and also to protect aircraft from being attacks or being hijack. However, the airport security is providing first line of defence which is can attempt to stop suspicious attackers from bringing any weapons or bombs inside the airport. Besides that, the higher the level of security inside the airport is, the safer the passengers will feel. Inside the airport, the management has its own procedure for improving the level of security in airport where it is started from check-in stage (first line of defence), baggage and luggage scanning,

personal check, boarding pass check, and embark to aircraft. 5Figure 2. 2 Airport security management3. 1 Check-in Stage (First line of defence)Basically, first thing that the airport checks whenever we as traveller step into the airport is identity check. This is because the airport wants to confirm the identity of travellers whenever they want to go internationally or domestically. The requirements that usually can be done by checking at the check-in stage are traveller's photo ID, identity card, passenger details, and legal document. Whenever we as traveller want to travel internationally, we must need to bring along our passport as your personal identity card. The other purpose why airport must have the first line defence is to avoid any fraud or false identity person from embark inside aircraft. False identity is one of the famous crimes which could create the highest chances of hijacking and terrorism to be happening. As the result, false identity has been related to the incident of hijacking. Besides that, this procedure is to early detect if there is any suspicious of wanted person, terrorist or criminal. http://t3.gstatic.com/images?q=tbn:ANd9GcSUd3f2loHKBO1AjfoBG44akDFI4C3lwEn08Gi0WtiyY2Mm_5epFigure

3. 1 Check-in counters6http://1.bp.blogspot.com/-7Le5bpy7Rns/UJxle_-SMRI/AAAAAAAAAD20/LpBqyreijM0/s1600/ID-fake.jpgFigure 3. 1 False identity3. 2 Security Patrols/Enforcement Personnel/OfficersTherefore, another example of first line of defence is security patrols. The purpose of having security patrols are basically to scan the perimeter of the airport in case there is someone who tries to pass through the barrier. The more the number security patrols surrounding the airport, the safer the passenger or even airport staffs will feel. This kind of security patrols will be placed at

every edge of airport especially sensitive areas such as fuel depots, terminals, and baggage handling facilities are even more secure with more barriers and security checkpoints. http://img.dailymail.co.uk/i/pix/2007/06_03/airport2PA_468x290.jpg Figure 3. 2 Security patrols

73. 3 Closed-Circuit Television (CCTV) Then, inside the airport itself has been installed surveillance camera (CCTV) at all access gates just for the continuous monitoring. What do continuous monitoring means here that airport management will always keep monitor the surrounding environment of the airport by using CCTV and apply 24-hours safe guarding action. Besides that, the purpose of applying this continuous monitoring procedure is basically to detect if there is any suspicious act inside the airport. Let say if security management found out that there is any suspicious act inside the airport, the authority will immediately take action and make report to the other authority to ensure safety and secure. The more the authority installed the CCTV, the harder the terrorist or criminal want to make suspicious steps. If the terrorist is brilliant enough, he will easily hack the airport systems and hijack the airport. <http://navalpattu.files.wordpress.com/2009/11/cctv-trichy-airport.jpg> Figure 3. 3 CCTV

83. 4 Baggage and Luggage Scanning At this phase, passenger needs to scan all the baggage and luggage that they just bring along to the airport by using X-Ray Hand Baggage Scanner. Now days, usually all the airports are using WG IS100XD X-Ray Hand Baggage Scanner which is suitable solution for screening large sized luggage, parcels and boxes for airport, government, post office, and commercial applications. Then, the other types of scanner are Computed Tomography Scan and Fluoroscopy Scan. This is because to avoid passenger from bringing any

illegal items which potentially can jeopardize other passengers and aircraft.

The scanner basically scans the baggage and luggage where the airport management can identify illegal substance from the scanner image.

<http://img.bosscdn.com/photo/product/19c454f3ff79306a91dad2e6cd83233a/x-ray-machine-luggage-scanner-xj8065.jpg>

Figure 3. 3 X-Ray Luggage Scanners93. 5

Boarding Pass CheckBoarding pass check is similar step with check-in stage which is purposely to double check whether the person who check-in and boarding is the same person or wrong. This also can be said as a fraud or false identity. http://news.bbc.co.uk/nol/shared/spl/hi/uk/10/airport_security/img/boardpass-436.jpg

Figure 3. 5

boarding pass checks103. 6 Metal DetectorMetal detector is a stage where after check-in and baggage scanning. There is a tall boxy gate where the passenger needs to pass through which call multi-zone metal detector. The purpose why the airport authority installs this kind of machine is basically to avoid passenger from bringing any metal weapon or item which just not only harm to surrounding people but also aircraft which can lead the instrument experienced inaccurate reading. Besides that, each of security personnel has been attached with handheld metal detector which can used to distinguish any occurrence of metals. <http://www.blogcdn.com/www.gadling.com/media/2010/01/308874031290becd0bab-gadling-bumper-1264376405.jpg>

Figure 3. 6 Metal detectorhttp://t1.gstatic.com/images?q=tbn:ANd9GcTqYoQ91g8Avs5vb_rzW1or-11jTH6P2_sTNPkLjsAoTjmhXKQqTg

Figure 3. 6 Garret metal detectors113. 7 Multi-Task Zone Detector

This invention is basically my new idea of creation which can increase the level of security at

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the airport whole the world. However, the equipment is included all tools inside it. It is liked one chamber where got all tools inside it. The function is similar among the other machine. It has metal detector, x-ray, and detection dog. Detection dog or known as sniffer dog which is trained by using its sense of smell to detect substances such as explosives, drugs, and even bombs.

124. 0 Conclusion All the security equipments provided at the airport just not only meant to solve all the problems but actually to minimize the number of crimes and criminal and also assist human which might occur. Although of having good equipments and procedures, but aviation industry still need to be develop and continuously improve the level of safety. This is because of the fact which is all the procedures and equipments are human made, and also can be still possibility of failure. Aviation safety and security is mainly focus by Annex 17 which to create this awareness and understanding, aviators must be equipped with Safety Management System (SMS) principle. Despite of having all outlines regarding safety and security, it is useless if we cannot give full commitment and cooperation towards it. This is why aviation crews should understand and aware about the concept of law and regulations that already stated inside the Air Law and Regulation book.

135. 0 References

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- 4) http://www.hfes.org/web/Newsroom/Improve_Airport_Security.pdf
- 5) Slide Aviation Safety and Security
- 6) Air Law and Regulations Book

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