Optimization of Monitoring of Apron Cleanliness from Foreign Object Debris (FOD) by the Apron Movement Control Unit (AMC) at Supadio Pontianak International Airport

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Abstract

Foreign Object Debris (FOD) is an object or foreign object that is alive or not living in the apron area (aircraft parking area), taxiway and runway (runway) which can cause damage to aircraft and has the potential to pose a hazard to the safety and security of aircraft operations fly. The purpose of this study was to determine the efforts, constraints, and solutions of Apron Movement Control (AMC) officers in monitoring the cleanliness of aprons from Foreign Object Debris (FOD) at Supadio Pontianak International Airport. This study used a qualitative research method using primary and secondary data which was conducted in March 2023 at Supadio Pontianak International Airport. This research was conducted in the Apron Movement Control and Ground Handling units using data collection and retrieval techniques through interviews conducted with 1 resource person from the Apron Movement Control Coordinator, 1 marshaller from PT. Mulio Citra Angkasa as the Ground Handling Agent, through observation, documentation and library research. To test the validity of the data, researchers used credibility, transferability, dependability, and confirmability tests. As for data analysis that researchers use, namely data collection, data reduction, data presentation, verification and conclusions. The results of this study indicate that AMC officers make efforts to monitor the cleanliness of the apron by carrying out scheduled inspections, outside of the scheduled ones, and coordinating with related stake holders such as ground handling, bukaka, and Pertamina. The obstacle faced by AMC officers is the number of officers who are only 2 to 3 people per shift makes it difficult for officers to carry out supervision on the apron, the condition of the apron is cracked, and the construction of new corridors so that it is feared that it can cause FOD to enter the apron. The solution to deal with these obstacles is to carry out routine inspections at least 2 times per shift and additional inspections if the weather is bad, conduct socialization to increase awareness of all stakeholders at the airport, conduct FOD Walks when AMC officers want to operate garbarata.

Keywords: Cleanliness Supervision, Apron Movement Control, Supadio



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INTRODUCTION

In this modern era, technological advances have developed rapidly, especially in the field of air transportation because it is the pattern of human life to meet the many and varied mobility needs of life that can be easy and fast. One example of development that has been felt by many people is in the field of air transportation where the mobility of human movement can be shortened to become much faster. Air transportation at this time is one of the most chosen or used transportation to make it easier for humans to travel from one island or country to another. Because of this, of course, air transportation companies in Indonesia are competing to continue to develop and improve the quality of their services as best they can, so that they can continue to compete in the aviation industry itself.

In addition to improving service quality and offering speed for service users, air transportation business actors must prioritize safety aspects for their service users in order to

increase trust and maintain an impression on consumers of the transportation they use, so that there are still consumers in a sustainable manner, and strategy This is the most effective in increasing the revenue of companies engaged in services.

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Airports are one of the important aspects to support the chain of aviation economic movements, airports are areas on land and/or waters with certain boundaries that are used as a place for aircraft to land and take off, take passengers on and off, load and unload goods, transfer places. intra and intermodal transportation, equipped with supporting facilities for aviation safety and security, as well as basic facilities and other supporting facilities. Airports become a bridge between consumers (passengers) and producers (airlines) that offer supporting facilities so that the level of passenger comfort and safety is maximized.

To increase passenger satisfaction, especially the company that manages this airport must have standard operational security standards, in order to guarantee overall flight safety, especially at the airport so as to minimize the number of flight accidents. The majority of airports in Indonesia are managed by the state, each managed by the Ministry of Transportation and the Ministry of BUMN. Supadio Airport is an airport under the auspices of a state-owned company, namely PT. Angkasa Pura II which is located in the District of Kubu Raya, West Kalimantan. Supadio Airport has work unit sections that function to increase comfort and safety, of course. one of the work units tasked with overseeing aviation security is Apron Movement Control (AMC).

In serving flight operations, a unit is needed whose role is to ensure operational security at the airport. The airport area consists of the air side and land side. If on the land side, we know Aviation Security (Avsec).) then on the air side there is an Apron Movement Control (AMC) unit, for the air side itself including the runway, taxiway, apron where the air side is the AMC work area to ensure the safety and cleanliness of the air side. While the land side is the area at the airport which is outside the terminal building which is open to the public (public area) and inside the terminal building which is limited to the public (restricted area).

The AMC unit is under the auspices of the Supadio Airport Operations Service which is responsible for managing, monitoring and supervising all traffic movements in the apron area which consists of the movement of vehicles, aircraft and all interested personnel on the apron. In carrying out its duties and responsibilities, AMC is expected to act in accordance with predetermined operating standards and work procedures, this aims to create a safe and comfortable service, the lack of supervision from the AMC unit will have an impact on airside safety, therefore AMC officers are required to remain thorough and alert to the movement in the apron.

As for their duties, one of which is to ensure that the apron area is safe and clean from Foreign Object Debris (FOD), AMC is also responsible for preventing the entry of wild animals, birds and other foreign objects that enter the airside area which can disrupt safety. and aviation security. Work activities on the air side require a controlled and integrated control system so that they can run properly. In accordance with the provisions in Article 30 paragraph (1) of Law Number 15 of 1992 concerning aviation: "Airport operators are responsible for the security and safety of flights and the smooth running of their services". Based on this, airport managers must be able to play an active role in the smooth operation of flights at airports, especially in areas on the air side.

The aviation world knows the term Foreign Object Debris (FOD). The existence of FOD has many impacts and losses, especially for airline companies. There are two definitions of FOD, namely Foreign Object Debris and Foreign Object Damage. Foreign Object Debris is a foreign object on the air side (apron, taxiway and runway) that can cause aircraft damage during the take off and landing phases. Foreign Object Damage is damage caused by Foreign



Object Debris. There are many FODs on the air side, especially on the apron, therefore the apron must always be clean and sterile from foreign objects that can cause damage to the structure and performance of aircraft that can interfere with the safety and security of an flight. This should make the related units aware to always monitor all movements on the air side and always carry out daily checks on the area of aircraft movement before something fatal happens.

The large number of activities in the apron area is an important concern for Apron Movement Control (AMC) so that procedures can be carried out properly and efficiently. One of the tasks of Apron Movement Control (AMC) is to ensure that there are no foreign objects on the apron that can interfere with smooth operation. operational on the apron in particular. Quoted from Angkasa Pura Airports (2017), Foreign Object Debris (FOD) is a foreign object or hazardous material in the runway area (runway) and apron (aircraft parking lot) that has the potential to pose a hazard to aircraft safety and operations. FOD can directly damage aircraft such as tearing of aircraft tires or FOD being sucked into aircraft engines which can damage aircrafts.

What's more, currently the condition of some of the aprons at Supadio Airport is experiencing down grading (decreasing building mass) which results in the risk of gravel or stones on the apron causing damage to the apron, so careful supervision is needed so that there are no incidents on the apron . Supervision by following the correct operating and production standards (SOP) will of course make the AMC supervision function run smoothly, if all elements work well together. Also, Supadio Airport is building a new corridor area in the airport terminal area, where there are lots of activities and materials such as stones, iron, nails, bolts, and wood which are very dangerous if they enter the apron area. Because the corridor area of the terminal is very close to the apron, this can be quite dangerous and disrupt the smoothness and safety of flights, where construction activities are carried out along the start from parking stand 6 to parking stand 10. Of course, things like this need to be of more concern to AMC officers to improve supervision so that no FOD enters the apron area.

Based on the background described above, the formulation of this problem is: How are the Apron Movement Control (AMC) officers trying to keep the apron clean from Foreign Object Debris (FOD)? What are the obstacles faced by Apron Movement Control (AMC) officers in monitoring the cleanliness of the apron from Foreign Object Debris (FOD)? What is the solution to deal with the constraints of Apron Movement Control (AMC) officers in monitoring the cleanliness of the apron from Foreign Object Debris (FOD)? Based on the description above, the authors determine the objectives of this study are as follows: Knowing the efforts of Apron Movement Control (AMC) officers in maintaining the cleanliness of the apron from Foreign Object Debris (FOD). Knowing the constraints of Apron Movement Control (AMC) officers in supervising the cleanliness of the apron from Foreign Object Debris (FOD). Knowing the solution to deal with the obstacles of Apron Movement Control (AMC) officers in supervising the cleanliness of the apron from Foreign Object Debris (FOD). Knowing the cleanliness of the apron from Foreign Object Debris (FOD). Knowing the cleanliness of the apron from Foreign Object Debris (FOD). Knowing the solution to deal with the obstacles of Apron Movement Control (AMC) officers in supervising the cleanliness of the apron from Foreign Object Debris (FOD). Knowing the solution to deal with the obstacles of Apron Movement Control (AMC) officers in monitoring the cleanliness of the apron from Foreign Object Debris (FOD).

Previous Research

Table 1. Previous Research

No	Name	Year	Title	Research Result
1	Muhammad Ismi Yatino	2019	Optimizing Apron Movement Control (AMC) Performance in Improving Aviation Safety at Apron at Abdulrachman Saleh Airport Malang	The results of this study indicate a complete lack of personnel and equipment such as CCTV which is useful for monitoring flight safety on the apron



			Optimizing the supervision of	The results of this study indicate that Apron
2	Chindy Destiana Sari	2021	the Apron Movement Control	Movement Control (AMC) officers monitor
			(AMC) unit on the cleanliness	airport cleanliness through routine
			of the air side from Foreign	unscheduled inspections and coordination
			Object Debris (FOD) at	with staff for cleaning apron units, ground
			Jenderal Ahmad Yani	handling, and air traffic controllers (ATC)
			International Airport	when reports are received from pilots.
			Semarang	
			The Effect of the Performance	The results of this study indicate that there
			of Apron Movement Control	are implications between the performance of
			(AMC) Units and Ground	Apron Movement Control and the Ground
3	Yoga Purmedia Utama	2019	Handling Units in Handling	Handling Unit in handling Foreign Object
			Foreign Object Debris (FOD)	Debris (FOD) for aviation safety and security
			on Aviation Safety and	at Lombok International Airport. The
			Security at Lombok	percentage of variable X to variable Y is
			International Airport	0.087 or 87% through the value of the
				coefficient of determination or R square R2.

Airport

An airport is a facility where aircraft can take off and land. In this modern era, many facilities have been added, such as mini markets, restaurants and boutiques with well-known brands, especially at new airports. The definition of an airport according to Law No. 1 of 2009 concerning Aviation is an area on land and/or waters with certain boundaries that is used as a place for aircraft to land and take off, board passengers, load and unload goods, and place intra and intermodal transfers. transportation, equipped with aviation safety and security facilities, as well as other basic supporting facilities. In addition, according to Annex 14 of ICAO (International Civil Aviation Organization) an airport is a certain area on land or water (including buildings, installations and equipment) which is intended either in whole or in part for the arrival, departure and movement of aircraft.

General Profile of Supadio International Airport

Supadio Airport is located 17 km southeast of Pontianak City, the location of the airport which can be reached from the city center is about 20 minutes driving. Supadio International Airport is located on an area of 528 ha with a terminal building of 6,045 m2. Because the airport is still far from the city center, the condition around the airport is still empty land such as agricultural land. This airport has a runway of 2,250 x 45 m and can accommodate large aircraft of the class Boeing 737 and Airbus 320. Supadio Airport is equipped with immigration services, health quarantine, plant quarantine, animal quarantine and tourism services.

Land side and Air side LandSide

According to the Regulation of the Minister of Transportation Number 77 of 2015, the Land Side is an airport area that is not directly related to flight operations. Land side or land area, this zone is the passenger movement zone, starting from the entrance to the airport, vehicle parking, and the terminal building. The several parts of the area that are included in the land side area are:

Terminal

The terminal area is one of the most important elements besides the runway at the airport, when passengers first enter the terminal, many functions can be performed at the terminal, such as buying tickets, checking in, waiting rooms and so on. The terminal acts as a liaison or intermediary for passengers to board the plane, in which there are several areas in



the terminal with different policies. The airport terminal building is divided into three areas called Public Area, Restricted Public Area and Non Public Area.

Aprons

The definition of an apron corresponds to SKEP/100/XI/1985 concerning airport rules and regulations, an apron is an area or place at an airport that has been determined for placing aircraft, lowering and boarding passengers, cargo, refueling, parking and aircraft maintenance. This area is built side by side with the terminal building to facilitate these activities or efficiency. Each parking stand located on the apron has a sign, the sign is in the form of letters and numbers colored yellow on a black background which function to indicate the direction and number where the aircraft parking is located.

Apron Movement Control (AMC)

Apron Movement Control (AMC) is one of the units in the airport. The definition of AMC according to the Regulation of the Director General of Civil Aviation Number KP 21 of 2015, Apron Movement Control (AMC) aircraft movement control personnel are airport personnel who have a license and rating to carry out supervision of order, safety of traffic movement on the apron and the determination of aircraft parking.

Definition of Foreign Object Debris (FOD)

Surveillance in the airside area carried out by the Apron Movement Control (AMC) unit includes monitoring of Foreign Object Debris (FOD). FOD according to Regulation of the Director General of Civil Aviation Number: KP 326 of 2019 concerning Technical and Operational Standards of Civil Aviation Safety Regulations-Part 139 (Manual of Standard CASR-Part 139) Volume 1 Airports, FOD is immovable objects that are in the movement area that has no operational or aeronautical function and is a potential hazard to aircraft operations. FOD can directly damage the aircraft, such as tearing tires, being sucked into the aircraft engine or being thrown very hard due to the pressure of the aircraft engine and can eventually damage the aircraft engine or injure people.

Operation and Production Standards (SOP)

According to Ekotama (2015) Standard Operating Procedure is a system that is structured to facilitate, tidy up, and order our work. This system contains a sequence of processes to carry out the work process from start to finish. In order for service products for airport service users and the operation of airport facilities as well as supervision on the Air Side in accordance with high quality Occupational Safety and Health (K3) standards to be achieved, there is a need for a Standard Operating Procedures (SOP) book for Air side Operations Unit officers as a guide. carry out operations, services and supervision at the airport.

RESEARCH METHODS

Research Design

According to Silaen (2018), research design is a design regarding the entire process needed in planning and conducting research. Design This study used qualitative research, in which this research was a direct survey using interview, observation, and documentation techniques. According to Sugiyono (2017), Qualitative research is a research method based on the philosophy of postpositivism, used to research on natural object conditions, (as opposed to experiments) where the researcher is the key instructor, data collection techniques are carried out by triangulation (combined), analysis the data are



inductive/qualitative in nature, and the results of qualitative research emphasize meaning rather than generalization.

Time and Place of Research

This research will be conducted on March 1 – March 8 2023. This research will be conducted at PT. Angkasa Pura II Branch of Supadio Pontianak International Airport.

Types and Data Sources

This study uses a qualitative research approach with descriptive methods through observation and interviews with certain parties. In this study, researchers used primary and secondary data types obtained by observing and interviewing PT. Angkasa Pura II (Persero) at Supadio Pontianak International Airport. Secondary data in this study is in the form of photographic documents related to optimizing the supervision of the Apron Movement Control (AMC) unit on the cleanliness of the apron from Foreign Object Debris (FOD) at Supadio Pontianak International Airport. The data used in this study are:

- 1. Primary Data. Primary data is information obtained or collected directly in the field by researchers or people who need it. Primary data according to Sugiyono (2015), is data obtained directly from the field or research site. Primary data has advantages because researchers can collect accurate data according to observations in the field. The primary data for this research were obtained from interviews with Apron Movement Control (AMC) unit officers and Ground Handling officers. Supadio Pontianak International Airport.
- 2. Secondary Data. Secondary data are data sources that are not directly available to data collectors, for example through other people or documents. According to Sugiyono (2014), secondary data is a source of research data obtained by researchers indirectly through intermediary media (obtained and recorded by other parties). Secondary data for this study were obtained by researchers from books and SOP AMC Supadio Pontianak Airport

Research Instruments

To obtain the necessary data for this study, researchers used the following instruments:

- 1. Interview. Interviews are data collection techniques that are carried out by asking directly to respondents or informants. The interviews that the researchers carried out used semi-structured face-to-face interviews at the AMC unit office of PT. Angkasa Pura II Branch of Supadio Pontianak International Airport. Interviews were conducted with 3 informants, namely Supervisor Apron Movement Control (AMC), Officer Apron Movement Control (AMC), Ground Handling officers.
- 2. Observation. The definition of observation is an observation which is a case study or learning that is carried out deliberately, directed, sequential, and in accordance with the objectives. In addition, observation is a form of gathering information that involves social interaction between researchers and informants on the research environment (observation of research objects in the field). Observation is done by observing and recording all events. This method aims to find out the truth or facts in the field (Moleong, 2014). By using the observation method the data obtained is more relevant and up to date. The researcher made observations using the observation sheet that the researcher had attached in the appendix.
- 3. Documentation. Documentation is a method used to provide various kinds of documents. Documentation can be used as data collection if the information collected comes from documents. Such as pictures, books, journals, and so on. During the research, the researcher documented the inspection activities carried out by Apron Movement Control (AMC) officers and the types of Foreign Object Debris (FOD) found in the airside area such as cat litter, paper scraps, and gravel.



RESEARCH RESULTS AND DISCUSSION

Research result

Optimizing Supervision of Apron Movement Control (AMC) Officers Against Foreign Object Debris (FOD) at Supadio Pontianak International Airport

According to Winardi in Bayu (2017) Optimization is a measure that causes the achievement of goals whereas when viewed from a business perspective, Optimization is an attempt to maximize activities so as to realize the desired or desired benefits. From this description it is known that optimization can only be realized if it is implemented effectively and efficiently. In managing the organization, the goals are always directed to achieve results effectively and efficiently so that they are optimal. In supervising the cleanliness of the apron from Foreign Object Debris (FOD) you definitely want optimization for the smoothness and comfort of operational activities on the apron and also to support flight safety.

Supervision is one of the main tasks for AMC, in addition to other tasks the purpose of supervision is of course to support the smoothness and safety of flights. Supervision can be carried out directly or indirectly, in which direct supervision is AMC officers who go down directly to look at the apron, and indirect supervision can be through CCTV or Handy Talkie (HT) which of course is to support surveillance activities carried out by AMC officers in the field. Supervision carried out by AMC officers, of course, with the cooperation of related parties, in order to facilitate the duties and responsibilities of AMC officers. Such as ground handling officers and Air Traffic Controllers (ATC) which are related to the duties and functions of the AMC in supervising the apron area.

Indirect supervision is carried out by AMC officers by looking at Closed Circuit Television (CCTV) which covers the apron and service road areas. CCTV makes it easier for officers to monitor the airside area without having to go to the field, if they find something potentially dangerous AMC officers communicate by notifying officers in the field, and make a report if something dangerous happens in the log book. AMC has responsibility for airside surveillance and service. Supervision is carried out directly when carrying out inspections in the airside area using a Follow Me Car to ensure cleanliness and safety, inspections are carried out 2 times in 1 shift to ensure the readiness of airside facilities to function properly and ensure the cleanliness of the airside to support activities on the water side optimally. When carrying out inspections, there is damage to facilities on the air side which can disrupt the operational activities of officers in the field. They can immediately coordinate with ground handling officers and general engineering.

Indirect supervision is carried out by AMC officers by looking at Closed Circuit Television (CCTV) which covers the apron and service road areas. CCTV makes it easier for officers to monitor the airside area without having to go to the field, if they find something potentially dangerous AMC officers communicate by notifying officers in the field, and make a report if something dangerous happens in the log book. As for the results of the researcher's interview with the Air Side Operation Coordinator, AMC officers besides carrying out supervision on the air side also operate garbarata so that in each aerobridge operation AMC officers simultaneously carry out FOD walks (patrols) so that they are more effective in supervising cleanliness on the apron in particular. In addition, AMC officers carry out additional patrols in case of bad weather to ensure that the apron and airside facilities are safe for operations. This is done to ensure smooth operations on the air side, especially aprons, so as to realize security and smooth operations on the apron.

The construction of a new corridor area in the airport terminal area is of particular concern to the AMC unit because it is feared that it could disrupt the smooth operation of the apron, due to the presence of materials that could enter the apron such as nails, bolts, stones,

debris. wood, even sand can be dangerous for aircraft because the distance between the apron and the corridor is close, there is a worry that FOD can enter the apron if it is carried by the wind. Based on the interviews that the researchers conducted, the AMC unit cooperated with the party responsible for carrying out this development, namely BUKAKA so that it could instruct its members to maintain cleanliness at work.

Some of the apron conditions at Supadio Airport are currently in cracked condition, starting from parking stands 1 to 2, but for now only parking stand 1 cannot be used because it has been determined to experience down grading (decreasing capacity) because it can be dangerous for aircraft. Parking stand 2 is also cracked but through the AMIFF recommendation that it can still be used, however this is a special concern for AMC officers to continue to monitor the condition of the apron which is feared to be dangerous for flight safety. The efforts of the AMC unit in following up on problems with the condition of the apron apart from reporting to the authorities in the construction of this apron, namely carrying out extra supervision on each patrol to see the readiness of the condition of the apron.

The supervision carried out by AMC is inseparable from the movements on the apron, one of which is the movement of passengers on the apron. This only applies to flights that do not use aerobridges, so there is a need for supervision of passengers. Based on the interviews the researchers conducted with AMC officers, there were several incidents that became a reference for monitoring the movement of passengers on the apron, one of which was a passenger throwing garbage on the apron, smoking, and also entering an area where passengers were not allowed to approach it. This happens due to the lack of knowledge of passengers about the regulations that apply on the air side so that there must be supervision by AMC officers, although not intensely, because the presence of ground handling officers in serving passengers until they enter the plane is one of the responsibilities of ground handling officers, in this case it is important that synergy between AMC and Ground Handling.

Marshaller Officer Supervision of Foreign Object Debris (FOD) at Supadio Pontianak International Airport

The problems that occurred at the apron were also an obstacle for the marshaller at Supadio airport, especially because the apron surface was uneven, especially at parking stand 2, which made the marshaller have problems positioning the aircraft to block on. This is of course a special concern for the marshallers to continue to ensure flight safety which is worried about the unstable position of the aircraft which could disrupt operations on the ground, such as the possibility of an airplane wing colliding with an airplane wing next to it.

Discussion

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The efforts of Apron Movement Control (AMC) officers in monitoring the cleanliness of the apron from Foreign Object Debris (FOD)

Apron Movement Control (AMC) is one of the units authorized to monitor everything on the apron, from the movement of vehicles, people, to even inanimate objects. This aims to support flight security and safety so that the AMC's role is very vital to oversee all activities on the air side, one of which is overseeing the cleanliness of the apron from foreign objects that can disrupt smooth operations and even endanger flight.

Foreign objects in the world of aviation are known as Foreign Object Debrtion (FOD), which are foreign objects or hazardous materials in the runway and apron areas that have the potential to pose a hazard to aircraft safety and operations. The existence of Foreign Object Debris (FOD) is one of the most potential threats in the failure and unworthiness of flights on land.



At Supadio Pontianak International Airport there are various types of FOD where the presence of FOD on the apron can be from various factors, namely:

- 1. Rainy weather accompanied by strong winds that carry various objects into the apron area.
- 2. Undisciplined airplane passengers who get on and off the plane without using a garbarata by littering
- 3. Loading and unloading of baggage and cargo by ground handling which triggers foreign objects to fall onto the apron.
- 4. Aircraft maintenance activities by technicians.
- 5. The condition of several cracked aprons which can trigger gravel-shaped asphalt fragments.
- 6. Construction of a new corridor in the terminal area using materials adjacent to the apron.

Apron Movement Control (AMC) makes efforts to maintain cleanliness on the apron by conducting patrol inspections in each shift at least 2 times and when conditions after bad weather rain or strong winds must carry out additional inspections to ensure the condition of the apron and existing facilities are ready for use. In addition, to maximize the performance of cleaning supervision on the apron, the AMC unit conducts a FOD Walk when personnel want to walk towards the apron to operate the garbarata. This FOD Walk is carried out in order to monitor cleanliness around the service road and parking stands when personnel walk from the AMC room to the apron, this is done to optimize the performance of FOD's apron cleanliness monitoring to support smooth operations and flight safety.

AMC partners who are in contact with activities on the apron also have a hand in realizing the cleanliness of the apron from FOD such as Ground Handling Agents, Bukaka, and Pertamina. AMC's duties in carrying out supervision. Ground Handling is a ground officer who prepares all flight needs so that the role of ground handling in ensuring clean apron conditions is more optimal than AMC. Bukaka is a company that is responsible for all development activities at the airport, one of which is the construction of a new corridor, AMC communicates with Bukaka so that its workers remain disciplined in maintaining cleanliness at work. And also pertamina is a partner in charge of supplying aviation fuel and refueling which has the potential to cause fuel spills on the apron, with solid cooperation between AMC and related partners this will be a success in realizing clean aprons from FOD and also support the smooth operation and safety of aviation.

Hygiene supervision is intended to ensure cleanliness conditions in the airside area. The scope of cleanliness supervision includes: service roads, baggage make up/break down, equipment strogae areas, and aprons to meet safety operating standards in the airside area. When carrying out field inspections, airport officers are required to equip themselves with Handy Talkie (HT) two-way communication devices and use Personal Protective Equipment (PPE).

Obstacles with Apron Movement Control (AMC) officers in overseeing the cleanliness of the apron from Foreign Object Debris (FOD)

Foreign Object Debris (FOD) is an object that is difficult to avoid, however, it can be anticipated by carrying out structured supervision. In accordance with the understanding that FOD is a foreign object that is on the air side and can endanger flight safety, FOD can appear due to weather, animals, the physical condition of the apron, and human negligence. Various obstacles experienced by AMC personnel in carrying out their duties to supervise the cleanliness of the apron from FOD, one of which is:

- 1. The condition of the apron is cracked so that small pebbles appear which can endanger aircraft.
- 2. Lack of personnel in each shift to further optimize supervision



- 3. There are construction activities for new corridor materials in front of parking stands 7 to 9
- 4. Lack of awareness by ground handling officers when they see FOD on the apron
- 5. There are passengers going up and down without using the aerobridge, due to the lack of awareness of the passengers on the regulations on the air side

The condition of the apron at Supadio Airport is a serious obstacle not only felt by AMC officers but also marshallers who work directly on the apron. Marshallers are required to be able to marshal aircraft according to a predetermined point and also ensure that the parking stand conditions are in a safe condition for the aircraft itself, such as parking stand 2 which is experiencing the most severe conditions with cracks and even an uneven apron surface which becomes an obstacle for the marshaller.

Of course, this has been carried out by AMC who is authorized to carry out repairs to related parties, here Airport Maintenance And Terminal General Building (AMTG) is one of AMC's stake holders who is responsible for the physical condition of the apron itself. In carrying out their duties and various obstacles, AMC officers are required to continue to be able to carry out their duties properly, by inviting stake holders to work well together so that supervision is carried out properly.

The solution for Apron Movement Control (AMC) officers in supervising the cleanliness of the apron from Foreign Object Debris

To minimize the negligence of supervision of FOD, AMC officers have ways to at least reduce the accident and incident rates on the apron by means of:

- 1. Conduct a FOD Walk for each AMC officer if they wish to operate a garbarata
- 2. Give warnings and sanctions to officers who are caught throwing garbage carelessly on the air side or causing the surface of the apron to become dirty.
- 3. Carry out additional inspections when the weather conditions are heavy rain accompanied by strong winds.
- 4. Conduct weekly meetings with stake holders to keep reminding them to maintain cleanliness on the apron,
- 5. Report to the technician if you find damage to the apron, so that it can be handled quickly so as not to disrupt operations.

The above activities are a way for AMC officers to anticipate the presence of FOD on the apron which can disrupt the smooth operation and safety of flights, reduce the ratio of work accidents, create a safe and comfortable work environment, and also strive towards zero accidents. With limitations and constraints there are AMC officers who still have other ways or solutions to optimize the supervision of apron cleanliness from FOD.

CONCLUSION

Based on the results of the research that the researchers have done about Optimizing Supervision of Apron Cleanliness from Foreign Object Debris (FOD) by the Apron Movement Control (AMC) Unit at Supadio Pontianak International Airport, the following conclusions can be drawn: Supervision by the AMC unit has been considered very optimal, because the surveillance efforts carried out do not have an impact on operational problems on the apron and also flight safety. With limited human resources, AMC officers can carry out their duties properly, moreover with the construction of a new corridor which requires extra supervision to ensure safety and comfort on the apron. Supervision is carried out in addition to following the applicable SOP, AMC officers have the initiative to supervise cleanliness on the apron by



conducting FOD Walks and also monitoring via CCTV, because AMC officers at Supadio Airport also operate garbarata so that when AMC officers walk to the apron AMC officers carry out FOD Walk. Several cracked apron surfaces are a concern for AMC unit officers in carrying out inspection patrols to ensure that the apron is in proper condition and safe for use by block on and block off aircraft. With the surface of the apron experiencing cracks, the AMC unit's responsibility is simply to report to General Engineering if there is a problem on the apron to be repaired immediately. In addition to the AMC unit, ground handling officers also play a role in realizing the cleanliness of the apron because the ground staff carry out all their work on the apron, so that the ground staff is also an important instrument in overseeing the cleanliness of the apron from FOD. Marshaller is no exception, marshaller is required in addition to guiding the aircraft to block on but also ensuring safe parking stand conditions from FOD for aircraft to enter. With the condition of the apron being cracked and uneven, namely at parking stand 2, the marshaller needed to be careful to guide because the apron surface was uneven and also cracked, there was concern that the plane's wings would collide and also collapse, this was the reason parking stand 1 could not be used because it was feared vanished.

Based on the research that the researchers have carried out, the researchers provide constructive and useful suggestions for PT. Angkasa Pura II Cab. Supadio Pontiank International Airport and especially the Apron Movement Control Unit (AMC), as well as for further research, namely adding AMC unit personnel to be even more optimal in carrying out their duties, especially if the new corridor can be used of course it will increase the number of garbarata that will operate. Increase cooperation between officers in each shift so that a solid and good working relationship is established. Increase supervision and education for ground staff in airside areas that are prone to violations of airside regulations. For PT. Angkasa Pura II to solve problems on the apron as soon as possible, especially parking stands 1 to 3 and also taxiway Charlie. So that it can optimize the use of existing parking stands at the airport. Fixed several CCTV positions in each parking stand that experienced blind spots so that they could further optimize the use of CCTV in assisting AMC's duties in conducting surveillance on the apron.

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