

Analysis of Aircraft Movement Monitoring by Apron Movement Control Officers Due to the Absence of Lead In Markings at the Apron Area at Bandung's Husein Sastranegara International Airport

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Abstract

Bandung's Husein Sastranegara International Airport does not have a Lead in marking in the Apron area and is one of the factors causing aircraft that will park to often leave the parking stand center line and have an impact on other aircraft that will park at the parking stand next to it. Apron Movement Control (AMC) officers play an important role in overseeing the movement of aircraft when they are going to park towards the parking stand because there is no Lead in marking on the apron area. The purpose of this study was to find out how the supervision of aircraft movements by Apron Movement Control (AMC) officers was due to the absence of Lead-in markings on the apron area and the impact of not having Lead-in markings on the Apron area at Husein Sastranegara International Airport, Bandung. This study uses a qualitative approach. The data used in this study is the result of interviews, observations, and documentation at the Apron Movement Control (AMC) unit of Husein Sastranegara International Airport, Bandung. The informants in this study were Apron Movement Control (AMC) officers. Observations were made by observing the Apron Movement Control (AMC) unit, and for documentation in this study, namely by taking pictures of events that occurred in the field. The results in this study are that Apron Movement Control (AMC) officers supervise by going directly to the field and ensuring that the marshaller officers are in position for the aircraft to be parked, besides that the Apron Movement Control (AMC) officer added at least one wingman so that safety and security in flight activities was maintained. Bandung's Husein Sastranegara International Airport does not have a Lead in marking on the apron area, which is one of the factors why planes often leave the centerline parking stand markings.

Keywords: Supervision, Apron Movement Control (AMC), Marka Lead In



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INTRODUCTION

Air transportation has an important role in Indonesia as a driving bridge economic growth, tourism, social and others, besides that air transportation has a role as a means of accelerating goods and passengers. Air transportation is an effective, efficient and fast transportation. With the existence of air transportation, many areas that are relatively difficult to reach using land transportation or sea transportation can now be reached easily and quickly using air transportation modes. Transportation can be defined as an activity to move or load people and goods from one place to another or from a place of origin to a destination (Wirangsane, 2016). The airport has an important role as a place for the take-off and landing of air transportation, besides that the airport is also used as a place for loading goods, or picking up and dropping off passengers. According to the Directorate General of Transportation, airports have a role as a place for transfer of modes of transportation, in the form of interconnections between modes at transportation nodes to meet demands for an integrated and continuous increase in service quality which can be described as a place for transferring modes of air transportation to other modes of transportation or vice versa.

The city of Bandung is included in the third largest city in Indonesia and is the capital of the province of West Java, has an area of 166.59 square kilometers and with a population of up to 2.53 million in June 2022. Topographically, the city of Bandung is in the middle -the middle of West Java province is located at an altitude of ± 768 meters above sea level (Rinaldi Ardiansyah, 2019). The city of Bandung is a city that has grown into a central city for local and regional trade, a center for education, tourism, culture and also an industrial center, so that air transportation and airports have an important role as a means of support in the city of Bandung.

Husein Sastranegara International Airport as well as an airbase belonging to the Indonesian Air Force, is located at Jalan Pajajaran Number. 156, Husen Sastranegara sub-district, Cicendo sub-district, Bandung city. In 1994 Airport Management was transferred from the Ministry of Transportation to PT. Angkasa Pura II according to PP RI Number 26 of 1994 dated August 30, 1994 concerning Addition of RI State Equity Participation to PT. Angkasa Pura II. Husein Sastranegara International Airport has a runway length of 2,220 meters x 45 meters with 8 taxiways and 8 parking stands with operating hours during the Covid 19 pandemic from 06.00 to 19.00 WIB. The capacity of the terminal area at Husein Sastranegara International Airport reaches 3,400,000 passengers per year.

Lead in Marka has an important role to support security and safety in the Apron area. Based on the Regulation of the Minister of Transportation Number KM 21 of 2005 the Lead in and Lead Out markings are yellow lines in the Apron area with a width of 0.15 m. Its function is as a guide or reference used by aircraft to taxi into and out of the Apron, located in the Apron area. Based on the observations of researchers while conducting research at the Apron Movement Control (AMC) unit, Husein Sastranegara International Airport in Bandung does not have Lead in markings in the Apron area and is one of the factors causing aircraft that will park often out of the parking stand center line and have an impact on aircraft that will park on the parking stand next to it and also dangerous on the wingtip of the aircraft (Researcher's Observation). Under these conditions, the need for supervision by officers, especially Apron movement control (AMC) officers to oversee the movement of aircraft when they are going to park towards the parking stand because there is no Lead in marking in the Apron area. QThe objectives of this research are as follows: To find out how the supervision of aircraft movements by Apron Movement Control (AMC) officers is due to the absence of Lead in markings in the Apron area at Husein Sastranegara International Airport, Bandung. To find out what is the impact of not having a Lead in marking on the Apron area at Bandung Husein Sastranegara International Airport.

Theoretical Basis

Supervision

Supervision is an activity carried out to guarantee and ensure that a job is carried out properly according to a predetermined plan. The purpose of supervision is also to reduce or correct wrong actions in carrying out work. According to Daulay (2017), Supervision is a systemic effort in setting implementation standards with planning purposes, designing feedback information systems, comparing actual activities with predetermined standards, determining and measuring deviations and taking corrective action needed to ensure that all company resources available has been used optimally most effectively and efficiently in achieving company goals.

Airport

An airport is a place used for aircraft to take off and land, carry out loading and unloading of cargo baggage which is equipped with good supporting facilities to meet the needs of aircraft

when on the ground. 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) that is used either wholly or partly for the arrival, departure and movement of aircraft. While the definition of an airport according to PT (Persero) Angkasa Pura I is an airfield, including all forms of buildings and equipment which constitutes the minimum equipment to ensure the availability of air transportation facilities for the community.

Aprons

According to the Regulation of the Director General of Civil Aviation No. KP 326 of 2015, an apron is an airport area on land that has been determined to accommodate aircraft for the purposes of boarding and disembarking passengers, loading and unloading of goods, passengers, mail, refueling, parking or aircraft maintenance. air. The designed apron must be able to support the load of the aircraft when it is fully loaded with slow motion or in a stopped condition. The apron is on the airside which directly intersects with the terminal building, and is also connected to the taxiway to go to the runway.

Lead in and Lead Out Markings

MarkLead-inAndLead Outis one of the markers located in the areaApronswhich is used as a reference or guide for the aircraft when heading toApronsorparking stands. According toRegulation of the Minister of Transportation Number KM 21 of 2005 concerning Enforcement of the Indonesian National Standard (SNI) 03-7095-2005 Regarding Markings and Signs in the Aircraft Movement Area at Airports As Mandatory Standards, Apron lead-in and lead-out line markings are lines that yellow on the Apron with a width of 0.15 m, which serves as a guide used by aircraft taxiing into or out of the Apron.

Lead Marking Standard in Airports

Based on the Regulation of the Minister of Transportation Number KM (Ministerial Decree) 21 of 2005 concerning Enforcement of the Indonesian National Standard (SNI) 03-7095-2005 Regarding Markings and Signs in Aircraft Movement Areas at Airports as Obligatory Standards explaining the meaning of aircraft movement areas at airports is a sign written or depicted on the aircraft movement area with the intention of giving directions, informing conditions (disturbances/prohibitions), and flight safety limits.

Apron Movement Control (AMC)

Apron Movement Control (AMC) are personnel in the airport unit who have a license, are in charge of and are responsible for overseeing facilities and all movements in the Apron area, namely the movement of aircraft, vehicles, people or goods. Based on KP 21 of 2015, it is explained that Apron Movement Control (AMC) is airport personnel who have a license and rating to carry out supervision of order, safety of traffic movement on the Apron and determine aircraft parking. Apron Movement Control (AMC) has the task of being responsible for flight operations services, monitoring aircraft movements, vehicle traffic, people and goods on the Apron, while also being responsible for cleanliness on the airside area.

Relevant Research

Table 1. Relevant Research

No.	Name	Year	Research Title	Research result
1.	Fildza Ichwan Nur	2021	Analysis of the Importance of Service	Service Road is a very important and mandatory marking at domestic and international airports

	Muhammad Amin		Road in the Implementation of a Safety Management System to Support Aviation Safety and Security at Husein Sastranegara International Airport, Bandung	which has an important role in the Safety Management System. Bandung Husein Sastranegara International Airport does not have a Service Road due to limited land, this results in an impact or risk of traffic accidents at the airport in supporting the Safety Management System. As well as making a safety plan that has been agreed upon by Bandung Husein Sastranegara International Airport.
2.	Dwiki Ian Adrian, Dhimas	2021	The Role of Apron Movement Control (Amc) Officers in Supervision of Aviation Activities to Support Airside Safety at Tunggul Wulung Cilacap Airport	The results of this study indicate that the role of AMC unit officers has complied with the Minister of Transportation Regulation No. PM 36 of 2017. Then for the training aircraft parking stand, the AMC unit officers overcome this by going directly to the field to arrange the parking of the training aircraft so that the distance between the aircraft and one another and obstacles does not touch.
3.	Mughni Kurnia, Akbar	2020	Design of Terminal Apron Markings for Haji Muhammad Sidik Airport, Muara Teweh City, Central Kalimantan	The aircraft parking system used is the normal configuration and the nose-in type. The planned capacity of the Apron terminal is 5 aircraft parking stands. The Apron terminal can be increased in capacity to accommodate 7 aircraft parking stands.

RESEARCH METHODS

Research design

Judging from the type of data, the approach in this study uses a qualitative approach. In this qualitative method the data collected is in the form of words, pictures, not in the form of numbers. the type of research approach used is descriptive research. Descriptive research is research to solve existing problems based on the data obtained. Qualitative research methods are research methods that explain a phenomenon in depth and by collecting data to show in detail the data studied. According to Libarkin C. Julie and Kurdziel P. Josepha (in Fitrah, Muh and Luthfiyah, 2017) Qualitative research is a research procedure that uses descriptive data in the form of written or spoken words from the people and actors observed. Qualitative means something related to aspects of quality, value or meaning that is behind the facts. Quality, value or meaning can only be expressed and explained through linguistics, language or words. the qualitative method in this study is used to answer the formulation of the problem that has been determined by the researcher in the previous chapter and the purpose of using this type of qualitative descriptive research is to obtain information about how PSupervision of Aircraft Movement by Apron Movement Control (AMC) Officers Against the Absence of Lead in Markings in the Apron Area and the impact of the absence of lead in markings on the Apron area at Husein Sastranegara International Airport, Bandung. This research was conducted at PT. Angkasa Pura II Husein Sastranegara International Airport Bandung in the period from 1 October to 30 November 2022.

Data Collection Technique

1. Interview Method. According to Fitrah, Muh and Luthfiyah (2017), one way of collecting data is by interviewing, namely obtaining information by asking respondents directly. In-depth interviews were conducted by asking questions directly to the research subjects, namely with three Apron movement control (AMC) officers at Husein Sastranegara International Airport, Bandung. In conducting this research the authors conducted semi-structured

interviews to find research data. According to Fitrah, Muh and Luthfiyah (2017), semi-structured interviews. This interview begins with the issues discussed in the interview guide. The interview guide is not a timetable as in qualitative research. The sequence or order of questions is not the same for each participant depending on the interview process and the answers of each individual. However, the interview guide can guarantee that the researcher can collect the same type of data from the participants.

2. Observation. Observation is a research method by collecting data to collect direct and detailed information through observing the object to be examined. Observation also aims to get conclusions about the object being observed. According to Sugiyono (2018) Observation is a data collection technique that has specific characteristics when compared to other techniques. Observation is also not limited to people, but also other natural objects. Through observation activities researchers can learn about behavior and the meaning of this behavior. In this study, observations were made by researchers based on the Apron Movement Control (AMC) Standard Operating Procedure (SOP) at Husein Sastranegara International Airport, Bandung,
3. Documentation. The documentation method is a data collection method, namely by collecting documents in the form of photographs during research activities or implementation, in addition to collecting documents from trusted sources to find out about the object to be studied. According to Sudaryono (2018) Documentation is intended to obtain data directly from research sites, including books, documentaries, relevant research data. In this study, researchers will collect data and information from books, journals, articles, the internet, photos and videos Bandung Husein Sastranegara International Airport.

RESEARCH RESULTS AND DISCUSSION

Supervision of Aircraft Movement by Apron Movement Control (AMC) Officers Due to the Absence of Lead in Markings in the Apron Area at Bandung's Husein Sastranegara International Airport

Lead-in marking is a marking located at the airport, located on the airside area, namely the apron area. The function of the lead-in markings is as a reference or guide for the aircraft when heading to the apron or parking stand. Lead-in marking is one of the mandatory requirements that must exist at an airport. From the results of observations made during the research, Bandung Husein Sastranegara International Airport does not have lead in markings on the apron area which can affect flight security and safety, therefore the importance of monitoring aircraft movements is carried out by apron movement control (AMC) officers, which is based Based on KP 21 of 2015 Supervision of aircraft movements on the air side is one of the duties of Apron Movement Control (AMC) officers.

Ulung Bayu Yudhishtira, Syarif Muhammad Lingga and Aslansyah Prawiranegara as apron movement control (AMC) officers said, Supervision of aircraft movements in the absence of lead-in markings needs to be carried out especially when the aircraft is about to enter the parking stand, supervision is carried out by looking directly at the field and ensuring or monitoring that the marshaller already in position for the aircraft to be parked, besides that supervision is carried out by implementing or adding at least one wingman for safety management, and as a giver of direction to the pilot, besides that it also helps the marshaller who parks the aircraft to minimize the occurrence of errors that can disrupt security and safety flight. The following is a picture of the application or addition of a wingman when the aircraft is parked towards the parking stand.

The impact of not having a Lead in marking on the Apron Area at Bandung Husein Sastranegara International Airport

From the results of observations made by researchers, it was found that the impact of the absence of lead-in markings on the apron area at Husein Sastranegara International Airport in Bandung, namely that aircraft often leave the centerline parking stand markings, so that when an airplane exits the centerline parking stand markings, it must be repositioned by officers immediately. so as not to have an impact on the aircraft that will be parked at the parking stand next to it and can be dangerous for the wingtip of the aircraft, and make the ground time longer, apart from that there is no lead in marshaller marking which does not have a reference in giving directions to the pilot when the aircraft enters the parking stand.

Ulung Bayu Yudhistira, Syarif Muhammad Lingga, and Aslansyah Prawiranegara as apron movement control (AMC) officers who supervise aircraft movements in the apron area conveyed, the impact of the absence of lead in markings on the apron area at Husein Sastranegara International Airport Bandung, namely:

1. The aircraft must perform a one-wheel lock turn 180 degrees or make a sharp turn which can cause the aircraft's tires to run out quickly, and can cause weakness on the apron surface.
2. The aircraft's stopping position did not match the centerline parking stand markings, or it was deviated because it was only following directions from the marshaller.
3. Marshaller so there is no standard benchmark in giving directions for aircraft when turning.
4. It was difficult for the pilot to direct the plane towards the parking stand.

From the description above, it explains the impact of the absence of lead in markings on the apron area at Husein Sastranegara International Airport in Bandung which causes disruption to flight operations, and can disrupt flight safety and security. So it can be concluded that the results of observations made by researchers are in accordance with the results obtained from interviews with apron movement control (AMC) officers.

CONCLUSION

Lead-in markings are an important marking at Bandung Husein Sastranegara International Airport in accordance with those stipulated in the Regulation of the Minister of Transportation Number KM (Ministerial Decree) 21 of 2005 concerning the Implementation of Indonesian National Standards (SNI) 03-7095-2005 Regarding Markings and Signs on Aircraft Movement Areas at Airports As Compulsory Standards and KP 326 of 2019 Concerning Technical and Operational Standards Civil Aviation Safety Regulations-Part 139 (Manual Of Standard Cask - Part 139) Volume I Airport (Aerodrome). The absence of lead-in markings on the apron area of Husein Sastranegara Bandung International Airport has an impact on aircraft that will park towards the parking stand, namely the aircraft often stops leaving the parking stand centerline marking which can endanger other aircraft.

From the results of this study the researcher wants to provide suggestions that hopefully will be useful for the future, while the suggestions that the researchers convey are as follows: For Husein Sastranegara International Airport Bandung, Trying to provide lead-in markings to several parking stands to see if there is a significant difference in the aircraft that will park towards the parking stand. The need for widening the apron area so that the aircraft becomes easier to park. If this cannot be achieved, the apron movement control (AMC) officer needs to improve the implementation of safety or supervision and always conduct safety campaigns with related units. For Further Research, The researcher hopes that this research can be developed from another side, such as from the perspective of a pilot or marshaller.

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