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Improving Discipline through Apron Movement Control (AMC) at PT Angkasa Pura I Adi Soemarmo Airport

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Abstract

Purpose: This study aims to evaluate the supervision of Standard Operational Procedures (SOP) by the Apron Movement Control (AMC) unit at Adi Soemarmo Surakarta Airport in 2019, focusing on the role of AMC in improving discipline at the airport's apron. The study also identifies violations that occurred on the airside and assesses the effectiveness of AMC's supervision.
Research Methodology: A descriptive qualitative approach was used, incorporating interviews, observations, and questionnaires. Data analysis was conducted using the Fishbone diagram method, with a focus on identifying root causes of issues related to airside violations and AMC's role in enhancing discipline.
Results: The study found that there were 44 violations recorded on the airside in 2019, with the most common violation being driving over 25 km/h on service roads. The role of AMC in improving discipline was influenced by factors such as manpower, machinery, and motivation. Despite effective supervision in some areas, the study highlighted the need for improved communication and better facilities, such as the installation of CCTV for better monitoring.
Conclusions: The supervision carried out by the AMC unit was not optimal, primarily due to limited visibility and inadequate resources. The study emphasizes the importance of enhancing AMC's surveillance capabilities and coordination with other stakeholders. The training and motivation of AMC officers also need improvement to ensure more effective supervision.
Limitations: The study was constrained by the lack of advanced surveillance technology, such as CCTV coverage for all parking stands, and the varying levels of performance and communication among AMC officers. Future studies could explore the impact of technological enhancements and more structured training programs for AMC personnel.
Contributions: This research provides insights into the role of AMC in airport supervision, highlighting the critical factors affecting its effectiveness and offering recommendations for improving operational efficiency. The findings contribute to the development of more efficient operational strategies for managing apron discipline at Indonesian airports.

Keywords: *Apron Movement Control (AMC), Discipline, Supervision Apron*

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1. Introduction

An airport is an area on land and/or water with certain boundaries used as a place for aircraft to land and take off, board passengers, load and unload goods, and a place for intra-and intermodal transportation

transfers, which is equipped with aviation safety and security facilities, as well as basic facilities and other supporting facilities (Bae & Park, 2021). According to Chan and Li, 2023, an airport is defined as Aerodrome, A defend area on land or water (including any building, installations, and equipment) intended to be used either wholly or in part for the arrival, departure, and surface movement of aircraft. An aerodrome is a defense area on land or water (including buildings, installations, and equipment) that is used in whole or in part for the arrival, departure, and movement of surface aircraft (Chang et al., 2015).

The airside is one of the most vital components of an airport. The airside is also connected to all takeoff and landing activities at the airport (de Sant & de Hilal, 2021). The airside is divided into three parts: runway, taxiway, and apron. One of the serious concerns is the apron where aircraft are parked. The airside apron must be sterile and free from hazardous activities. As is known, violations on the apron include entering the airside area without a valid airport pass, not wearing personal protective equipment (PPE), driving a vehicle without a driver's license (TIM), not having an airport pass, using someone else's airport pass, and driving over 25 km/h on service roads (Durmaz et al., 2021).

Table 1. Table List Violation on Side Air

No	Type of Violation	Category
1	Entering Region side air (airside) No in accordance with PAS airport	Heavy
2	No tool protector self (PPE) was worn	Heavy
3	No own-sign permission driving (TEAM)	Heavy
4	No have PAS airport	Heavy
5	Wearing PAS person other	Heavy
6	Driving exceeds 25 km/h on the service road	Heavy

Adi Soemarmo Airport in Surakarta is one of the busiest airports in Indonesia, serving domestic and international civil aviation services. It is managed by PT Angkasa Pura I (Persero) and focuses on services in central and eastern Indonesia. PT Angkasa Pura I (Persero) manages and operates 13 airports, five subsidiaries, and one Strategic Business Unit. Therefore, every organization engaged in airport services must have a strong commitment to international standards. Air transport must prioritize customer satisfaction as its ultimate goal. Furthermore, an increasing number of aircraft will directly impact apron mobility. This requires full oversight of the conditions, facilities, activities, and services provided by the apron. Movement Control (AMC), and it is hoped that this will increase the level of discipline of airside officers (Ford et al., 2014).

Supervision is carried out on all movements on the apron, such as arranging and supervising aircraft parking stands, supervising the aviobridge when it is used, supervising all forms of movement of vehicles or people on the airside, supervising aircraft refueling activities (refueling), and supervising the cleanliness of the apron to avoid foreign object damage (FOD), which can endanger flight safety during takeoff and landing (Fu & Chan, 2014). This study observed a lack of supervision which in do by officer unit Apron Movement Control (AMC) works on movements on the apron so that it is found to be entering region side airside No in accordance fit airport Which applies, No wearing tool personal protective equipment (PPE), driving a vehicle without having a driving license (TIM), not having an airport pass, using someone else's airport pass or driving over 25 km/hour on a service road (Hofer & Wetter, 2012).

In line with this, the supervisory function is important at other airports, as explained by Kierzkowski and Kisiel, 2017, who stated that "supervision of order on the apron of Terminal 3 of Soekarno-Hatta International Airport Jakarta carried out by AMC personnel is a very important activity. The increasing

number of flights is accompanied by aircraft ground service support equipment (GSE), which also influences the increase in movement on the apron; the greater the potential for violations of order on the apron (Kucuk Yilmaz, 2019). Currently, the movement of vehicles operating on the air side is increasing, along with the number of aircraft remaining on the runway at Soekarno-Hatta International Airport. Therefore, the Personnel Apron Movement Control (AMC) should enhance the monitoring function to prevent violations that could threaten flight safety on the airside.

Therefore, good handling is needed to create security, safety, smoothness, and comfort for people using airport services. Function supervision to prevent violations can threaten flight safety on the airside (Low & Yang, 2019). Therefore, proper handling is required to ensure security, safety, smoothness, and comfort in airport services. The Apron Movement Control (AMC) unit must optimally carry out its oversight function to improve the discipline of airside officers in fulfilling their duties of guidance, security, and safety. and supervision in creating flight safety by increasing the level of discipline. The definition of work discipline according to Leva et al., 2015 states that "a person's behavior that is in accordance with regulations, existing work procedures or discipline is an attitude, behavior, and actions that are in accordance with the regulations of the organization, both written and unwritten."

In line with Law No. 1 of 2009 concerning aviation in Article 312 paragraph (3) concerning Aviation Supervision, it is stated that "Implementation of supervision as referred to in paragraph (2) is carried out by work units or public service providers." Maximum supervision is required by the Apron Movement Control (AMC) work unit to improve the discipline of officers on the side of the aircraft. It is hoped that the airside will minimize the occurrence of accidents. The focus of the research is more specifically detailed into sub-focuses as follows:

1. Supervision of Standard Operational Procedure (SOP) by Apron Movement Control (AMC) unit officers at Adi Soemarmo Surakarta Airport in 2019.
2. Violations committed on the airside at Adi Soemarmo Surakarta Airport 2019.
3. The role of the Apron Movement Control (AMC) unit in increasing the level of discipline on the apron of Adi Soemarmo Surakarta Airport

Research Objectives:

1. To determine the supervision of Standard Operational Procedures (SOP) by Apron Movement Control (AMC) unit officers at Adi Soemarmo Surakarta Airport in 2019.
2. To determine violations committed on the airside at Adi Soemarmo Surakarta Airport in 2019.
3. To determine the role of the Apron Movement Control (AMC) unit in increasing the level of discipline on the apron of Adi Soemarmo Surakarta Airport.

2. Literature Review

Understanding human resource management, Lyu et al., 2019 states that management is the art and science of planning, organizing, arranging, directing and supervising human resources to achieve predetermined goals. MacLean et al., 2016 defines human resource management as a process that includes evaluating HR needs, getting people to meet those needs, and optimizing the utilization of these important resources by providing appropriate incentives and assignments to suit the needs and goals of the organization where the HR is located. According to Majid et al., 2022, human resource management is defined as "knowledge and art arrange connection and role power work to be effective and efficient in helping to achieve the goals of the company, employees, and society.

The definition of human resource management according to Muecklich et al., 2023 states management of

human resources as the main resource or asset , through the implementation of management functions and operational functions so that the established organizational goals can be achieved properly. From description on can concluded about understanding management resource man is as a process of utilizing humans as human labor and optimizing the utilization of resources that important in this way provide incentives and assignments that appropriately through the implementation of management functions and operational functions so that the organizational goals that have been set can be achieved properly.

Panagopoulos et al., 2017 state that operations management is a series of activities that produce value in the form of goods and services by changing inputs into results. Rakas et al., 2018 stated that it can be said that operational management is responsible for managing parts or functions within an organization that produce goods and services. Roelen and Blom, 2013 states that operations management (OM) is a series of activities that create value in the form of goods and services by changing inputs into outputs. From the description above, it can be concluded about understanding management operational is "a series activity Which produce value in the form of goods and services by changing inputs into outputs and is responsible for managing the parts or functions within the organization that produce goods and services."

Law No. 1 of 2009 concerning aviation in Article 1 paragraph (33) General Provisions states "An airport is an area on land and/or water with certain boundaries which is used as a place for aircraft to land and take off, for passengers to board and disembark, for loading and unloading goods, and for transferring goods intra and inter-mode of transportation, which is equipped with aviation safety and security facilities, as well as basic facilities and other supporting facilities." Airport according to Strawderman and Koubek, 2008 "Aerodrome, A defend area on land or water (including any building, installations, and equipment) intended to be used either wholly or in part for the arrival, departure, and surface movement aircraft". An aerodrome is a defense area on land or water (including buildings, installations, and equipment) that is used in whole or in part for the arrival, departure, and movement of aircraft on the surface".

Explained in Studic et al., 2017 Apron is defined Area, on a land aerodrome, intended to accommodate aircraft for purposes of loading, or unloading passengers, mail or cargo, fuelling, parking or maintenance. Apron is "a certain area on the land aerodrome intended to accommodate aircraft for the purpose of loading or unloading passengers, mail or cargo, refuelling, parking or maintenance of aircraft. The function of the Apron Movement Control (AMC) unit is a work unit as regulated in the Standard Operational Apron Movement Control Version 1.0 PT Angkasa Pura 1 (Persero) has the function of conducting full supervision of conditions, objects, activities, and services on the apron. To ensure the implementation of these tasks and functions, they must be supported by good facilities/equipment that are always ready for operation, skilled personnel who are always ready for duty, and service standards in accordance with the provisions (Teperi & Leppänen, 2011). The Apron Movement Control (AMC) work unit at the Branch Office PT Angkasa Pura 1 (Persero) is a structural implementing unit within the company under the Airport Operation, Service Hospitality division. In accordance with the Standard Operating Procedures for Apron Movement Control Version 1.0 of PT Angkasa Pura 1 (Persero), the main function of the Apron Movement Control (AMC) work unit is to fully supervise the conditions, objects, activities, and services on the apron. However, currently, the supervisory function is not considered to be running optimally, and in the future, a good supervisory function must be improved and is expected to increase the level of discipline in the airport's airside area. The supervisory function carried out by the Apron Movement Control (AMC) work unit is strengthened in Law No.1 of 2009 concerning aviation in Article 312, concerning Aviation Supervision.

To increase the level of discipline, a standard operating procedure (SOP) is required in Apron Movement Control (AMC) work activities as a guideline for carrying out operational activities in the airport apron area, as regulated in the Standard Operating Procedures for Apron Movement Control Version 1.0 PT. Angkasa Pura 1 (Persero). All elements/work units are expected to carry out their duties and authorities

with a full sense of responsibility. The following is a summary of the Standard Operating Procedures (SOPs) or Quality Procedures/Work Instructions that must be prepared by the Apron Movement Control unit when carrying out its work.

Management Safety Apron:

1. The procedure supervision area is dangerous.
2. Procedure supervision protection to the engine jet blast/intake.
3. Procedure supervision engine run-up.
4. The procedure push-back and start aircraft engine air.
5. Procedure supervision activity push-back and start engine aircraft air.
6. Procedure supervision prevention danger fire.
7. Procedure supervision safety moment filling material burn aircraft air.
8. Procedure supervision cleanliness apron.
9. Procedure supervision and handling of Foreign Object Damage (FOD).
10. Procedure for handling spill material burn/material lubricant.

Management Operation Apron:

1. Procedures.
2. Procedure supervision of passenger and baggage handling.
3. Procedure for plotting parking aircraft air.
4. The procedure uses temporary parking of aircraft temporary (temporary).
5. Procedure placement of parking aircraft air in outside condition normal (unusual parking conditions).
6. Procedure for Repositioning Parking Aircraft Air.
7. Aviobridge.
8. Procedure supervision service aviobridge.
9. Procedure for supervising ground support equipment (GSE).
10. Procedure for scouting parking aircraft air (marshalling service).
11. Aircraft parking guidance procedures using the Visual Docking Guidance System / Automatic Docking Guidance System (VDGS/ADGS.)
12. Procedure supervision completeness installation wheel chock and safety cones on aircraft air.
13. Procedure operation in bad weather.
14. Procedure supervision vehicle in the region airside.
15. Procedure operation/service follow-me car.
16. Procedure publishing Sign Permission Driving (TEAM).

In daily practice, numerous violations occur on the apron due to a lack of understanding of the importance of the airside order. This clearly contradicts the aviation principle of prioritizing zero accidents, which

promotes safety and security.

2.1 Violation Side Air (Aiside)

According to the Dictionary Big Language Indonesia (KBBI), a violation is an action (case). An airside violation is an action by an organization (business entity) or personnel that does not comply with the rules in force at an airport Uğurlu et al., 2015. For greater clarity, the author has grouped several violations and sanctions that occur in the airside area on the apron, as shown in Table 4.

Table 2. List Violation On Side Air (Airside)

No	Type of Violation	Category	Sanctions Administration
1	Entering Region side air (airside) No in accordance with PAS airport	Heavy	Quick leave side air
2	No tool protector self (PPE) was worn	Heavy	The PAS Airport is in stand 14 days
3	No own-sign permission driving (TEAM)	Heavy	The PAS Airport is in stand 14 days
4	No have PAS airport	Heavy	Quick leave side air
5	Wearing PAS person other	Heavy	Quick leave side air
6	Driving exceeds 25 km/h on the service road	Heavy	The PAS Airport is in stand 14 days

As explained in the Airside Safety Manual version 1.0 of PT Angkasa Pura I (Persero), ramp handling officers or ramp handling coordinators are "personnel who are responsible for providing services to aircraft while on the ground, from arrival to departure of the aircraft."

2.2 Use Aviobridge / Garbarata

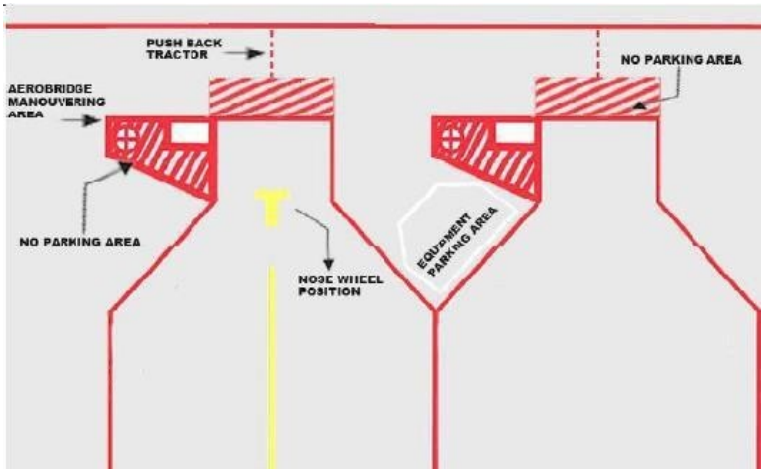

Figure 1. No Parking Area Equipment Parking Area

As explained in the Airside Safety Manual version 1.0 of PT Angkasa Pura I (Persero), a garbarata (aviobrige) is a "facility in the form of a corridor that connects an aircraft with the airport terminal building. which is used for passengers to get on and off the plane or to and from the airport terminal building." During its operation, all vehicles or equipment are prohibited from parking or passing under the garbarata and must immediately move away from the crossing area when the garbarata is operating. Picking up or dropping off passengers via service stairs or metal stairs on the side of the garbarata is also

prohibited (Patriarca et al., 2019). In daily operations, airline operators/ground handlers must follow the rules for using garbarata, such as:

1. Airline and ground handling operators must ensure the cleanliness of the aviobridge/airport bridge.
2. Airline operators/ground handling operators must clean up rubbish/dirt caused by officers and/or passengers from the aircraft they serve.
3. Airline operators/ground handling operators are prohibited from touching the equipment and/or buttons on the garbarata.
4. Airline and ground handling operators must supervise and prohibit passengers from touching the equipment and/or buttons on the garbarata.
5. Airline and ground handling operators must inform apron movement control (AMC) officers if there is a disturbance, an alarm sound, or anything else that is deemed dangerous.

As explained in the Airside Safety Manual version 1.0 of PT Angkasa Pura I (Persero), aircraft ground support equipment (GSE) is equipment prepared for aircraft needs on the ground during arrival or departure, loading and/or disembarking of passengers, cargo And post. In Airline implementation, the operator/ground handling operator must comply with technical and operational requirements standards, such as:

1. Airline operators/ground handling operators must comply with standard requirements. technical and operational requirements as determined by Decree of the Director General of Civil Aviation Number: KP 635 of 2015 concerning standards for aircraft ground support equipment (GSE) and operational vehicles operating on the air side.
2. Airline and ground handling operators must comply with the specified equipment age restrictions. by the Minister of Transportation Regulation Number: PM 174 of 2015, concerning the age restrictions for aircraft ground support equipment (GSE) and operational vehicles operating on the air side.
3. Vehicles other than GSE that are/will be providing services to aircraft are not permitted to enter the apron unless permission is given by the apron movement control.
4. GSE equipment and vehicles must be operated by personnel who have the appropriate and valid competencies.
5. Equipment or vehicle GSE must be in Good And condition and certified.
6. All forms of changes in the form and function of equipment or vehicles must be certified. Repeat and report to the airport management.
7. Vehicles or equipment GSE that experience damage and are repaired must be reported to airport management for inspection before reuse.
8. The positioning of GSE or vehicles when servicing aircraft must be arranged according to the technical provisions of the aircraft.
9. Equipment that is not in use should be arranged in an orderly manner and in a braked position in the designated place.
10. Forbidden leave vehicle in apron in condition machine life.
11. Forbidden move equipment crossing apron through part behind aircraft Which currently parking without the approval of the AMC unit.

12. Comply with vehicle operating procedures in accordance with the document Guidelines for Vehicle Operation in the Airside Area Version 1.0 issued by the airport management.

Understanding discipline according to Wilke et al., 2012 mention that is awareness and willingness somebody Which obey all regulation company And norms social Which applies. The definition of discipline according to Wilke et al., 2014 states that it is the mental attitude of a person or group of people who always want to follow/obey all the rules/decisions that have been set. The definition of work discipline according to Wilke et al., 2015 states that a person's behavior that is in accordance with existing regulations and work procedures or discipline is an attitude, behavior and actions that are in accordance with the regulations of the organization, both written and unwritten. From the description above, it can be concluded that the meaning of discipline is "a person's awareness and willingness to obey all regulations and the desire to follow/obey all decisions. Discipline here is not interpreted as punishment for guilty people, but is education or demands to be motivated, behave, and perform well consistently."

According to Xia et al., 2018, a cause-effect diagram is a diagram that shows the relationship between cause and effect. In relation to static process control, a cause-effect diagram is used to show the causal factors (causes) and the quality characteristics (effects) caused by those causal factors. A cause-effect diagram is often called a "fishbone" diagram because its shape resembles a fishbone (Stolzer et al., 2018). This diagram is also called an Ishikawa diagram because it was first introduced by Professor Kaoru Ishikawa from the University of Tokyo in 1953. The essence of this diagram is that it can be used for the following needs: help identify the root cause of a problem, It helps awaken ideas for solving problems, and help in investigation and search fact more carry on.

The steps in the manufacturing diagram are as follows:

1. Start with statement problems main important And urge For completed.
2. Write down the problem statement that on "head fish" which is effect.
3. The main causal factors (causes) that influence the main cause (large bones).
4. Write it down causes secondary which influence reason main (large bones), and secondary causes are stated as medium-sized "bones".
5. Write it down causes tertiary Which influence causes secondary (medium-sized bones) and the tertiary causes are stated to be small-sized bones.
6. Determine items which are important from every factor and mark it factors important certain which appears to have a significant influence on quality characteristics.
7. Note the information required in the diagram, such as title, product name, processes, groups, etc.

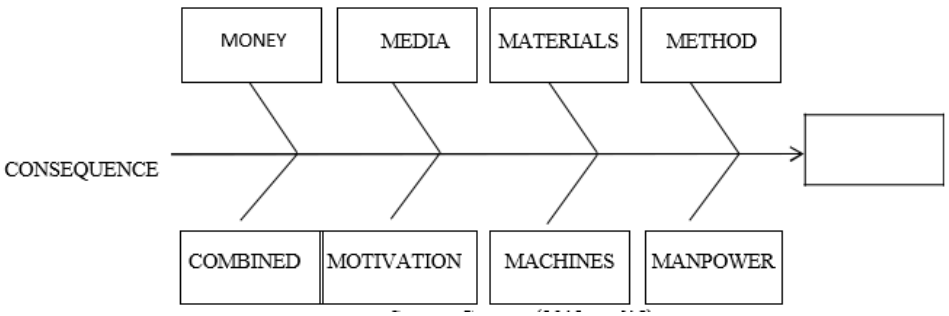

Figure 2. Form Diagram Cause and Effect

3. Methodology

This research used a descriptive qualitative approach. This research was conducted in two stages: reviewing the results of previous research, distributing questionnaires, and conducting follow-up observations. Qualitative and quantitative data were used. Researchers used data analysis with a Fishbone Diagram.

4. Results and Discussion

The researcher conducted an interview with the Apron Movement Control (AMC) section as an informant, Zhang et al., 2022, in relation to the analysis of apron supervision by the apron movement control. control (AMC) in To improve discipline on the apron, the informant stated that "the biggest obstacle for the Apron Movement Control (AMC) unit is limited visualization in conducting surveillance on the airside, we must have an extension of our visualization, namely CCTV, which Currently, it cannot be implemented in all parking stands at Solo Airport. Currently, our visualization can only cover 10 parking stands out of 15 available, owing to our limited visualization. There is a lack of sensitivity from AMC colleagues in seeing the potential violations or hazards that can arise from the habits of ground handling colleagues, which is certain to cause the supervisory function carried out by the AMC to be not optimal in improving discipline.

The informant explained that the biggest obstacle faced by the Apron unit was Movement Control (AMC) in do supervision is the limited visibility or visualization of the Apron Movement Control (AMC) personnel themselves in conducting surveillance on the air side. The informant assesses that currently an extension of the visualization itself is needed, namely CCTV which currently cannot be implemented in all existing parking stands, when on duty the visualization of the Apron Movement Control (AMC) unit can only reach 10 parking stands out of 15 existing parking stands due to the limited visibility capabilities of the officers. In addition the informant assesses that there is a lack of sensitivity from the Apron Movement Control (AMC) unit itself in seeing the potentials that arise from the habits of airside officers which can cause potential violations or potential hazards that can cause accidents and incidents at any time.

The informant also provides the conclusion that the supervision carried out by the Apron Movement Control (AMC) unit is not optimal due to internal and external factors that hinder supervision. Airside officers as informants, namely Mr. Muhamad Noor as Team Leader Operation and Flight Dispatcher of PT Gapura Angkasa, Adi Soemarmo Surakarta Airport branch in relation to the analysis of apron supervision by apron movement control (AMC) in improving discipline on the apron, the informant stated that: "Basically, AMC supervision at Adi Soemarmo Airport is good and quite detailed, such as the placement of equipment that is not in its place, we are reprimanded, in my opinion in daily life, coordination between airside officers and AMC has been running. In daily life if airside officers commit violations are dealt with in accordance with applicable provisions but there are differences between AMC officers, different officers have different treatments given even though the goal is the same.

Sometimes airside officers are forced to commit violations because of the heavy workload they have and must work immediately so that sometimes violations occur, for example, in carrying out airside services and forgetting to bring the airport PAS so they borrow someone else's airport PAS because if they have to go back home and get the airport PAS it will cause take time, a review must be carried out by AMC when finding such violations to see the series of problems behind a violation that occurs, the hope in the future is that communication is always intense between AMC and airside officers so that there are no feelings of like and dislike in carrying out daily operations because sometimes each person also displays such feelings, because each person is different."

The informant explained that the supervision carried out by the Apron Movement Control (AMC) unit

at Adi Soemarmo Surakarta Airport was good and quite detailed in several matters, such as placing equipment in the wrong place, which would receive a warning. The informant also assessed that the coordination between airside officers and Apron Movement Control (AMC) officers was running well. In terms of the actions carried out by the Apron Movement Control (AMC) unit, the informant thought it had been done with Good and not subjective, although there are differences in the treatment given by each Apron Movement Control (AMC) officer when taking action against airside officers in case of violations.

Although Meaning And objective his The same, informant explain there is existence burden Work Which heavy burden borne by airside officers in carrying out their daily duties and that is what sometimes causes a violation to occur, this is also what the informant hopes to be a joint study with the Apron Movement Control (AMC) unit if they find such violations to see the sequence of problems that occur that encourage a violation to occur, the hope is that in the future communication will always be intense between airside officers and the Apron Movement unit Control (AMC) so as not to there is a feeling of like and dislike inside carry out daily operations, because informants assess that each individual has different characteristics, some display feelings of like and dislike between the Apron Movement Control (AMC) unit and airside officers, therefore communication must be improved in the future to avoid this.

After obtaining information from the two informants, the author interviewed the relevant source, namely Mr. Kasnoto as Airport Duty Manager (ADM) of Adi Soemarmo Surakarta Airport to conduct source triangulation related to the author's research, namely the analysis of apron supervision by apron movement. control (AMC) in improve discipline on the apron, source person say : "First of all, it is explained that the main task of ADM is as a supervisory coordinator in daily operations, the duties and responsibilities of ADM are under the auspices of the general manager and senior manager. Responding to the issue of apron supervision by AMC in improving discipline on the apron , first of all, the coordination between ADM and AMC has been quite good in terms of supervision on the air side even though it is not perfect, then the supervision carried out by AMC in improving discipline actually cannot be said to be completely good plus the number of flights that can still be handled and are still within reasonable limits, but in the future if there is an increase in flights at Adi Soemarmo Airport.

It feels his officer AMC must get training more Good again and more strict again in do supervisory function than now, now regarding violations that have occurred on the air side, in fact, apart from the imperfect supervision by AMC, the airlines or ground handling already have their own SOPs in carrying out their duties and this must be in synergy between AMC and the stakeholders of air side officers, improvement synergy seems to have to be done by conducting a briefing monthly between AMC and related stakeholders , namely airside officers, it is also necessary for safety officers to be present in the monthly briefing to educate on flight safety and security in order to minimize the potential " The occurrence of violations that have not been implemented so far, currently system development is also being carried out by improving the airport operation control center (AOCC). This is also a step in monitoring airside operations."

The resource person explained that the main task of the Airport Duty Manager (ADM) is as a supervisory coordinator in daily operations, in this case the duties and responsibilities of ADM are under the manager and senior manager, in matter supervision apron by Apron Movement Control (AMC) in improving discipline on the apron the resource person assessed the coordination between the Airport Duty Manager (ADM) and the Apron Movement Control (AMC) supervision of the apron by the apron movement control (AMC) in improving discipline on the apron, the resource person said: " First of all, it was explained that the main task of the ADM is as a supervisory coordinator in daily operations, the duties and responsibilities of the ADM are under the auspices of the general manager and senior manager, responding to the issue of apron supervision by the AMC in improving discipline on the apron, first of

all, the coordination between the ADM and the AMC has been quite good in terms of supervision on the air side although it is not perfect.

Then the supervision carried out by the AMC in improving discipline has not actually been can be said to be good In total, the number of flights that can still be handled is still within reasonable limits, but in the future, if Adi Soemarmo Airport experiences an increase in flights, it seems that AMC officers must receive better and stricter training in carrying out their supervisory functions than now. Regarding violations that have occurred on the airside, apart from imperfect supervision by the AMC, the airlines or ground handling already have their own SOPs in carrying out their duties, and this must be synergy between the AMC with stakeholders, airside officers, and improvement synergy should be carried out by holding monthly briefings between the AMC and related stakeholders, namely, officers. The air side also needs to have safety personnel present in the monthly briefing to educate on flight safety and security to minimize the potential for violations that have not been implemented so far. Currently, system development is being carried out to improve the airport operation control center (AOCC). This is also a step in monitoring airside operations.

The resource person explained that the main task of the Airport Duty Manager (ADM) is to act as a supervisory coordinator in daily operations. In this case, the ADM's duties and responsibilities are under the manager and senior manager, in matters of supervision of the apron by the Apron Movement Control (AMC) to improve discipline on the apron. The resource person assessed the coordination between the Airport Duty Manager (ADM) and Apron Movement Control (AMC) Supervision of Standard Operating Procedures (SOP) and the use of the number of Aviobridges/Garbarata at Adi Soemarmo Surakarta Airport in 2019.

Based on the analysis of graphic calculations in the research results, in 2019, the use of aviobridge/garbarata had a total of 10109, which averaged out to 842.42 uses of aviobridge/garbarata in one month. The highest number of uses of aviobridge/garbarata was in January, namely 970 times, while the lowest use occurred in May, namely 767 uses. This calculation also has an average use both at the time increase or at the time of decrease of -166 every month or can be interpreted as an average decrease in usage of -1.64% per month. The author sees that the use of aviobridge/garbarata is greatly influenced by national holidays and the end of national holidays in 2019, which has a direct impact on the number of flights, both arrivals and departures, that use parking stands 4, 6, and 8, which are parking stands equipped with aviobridge/garbarata. Violations committed on the airside at Adi Soemarmo Surakarta Airport in 2019. With the various types of violations that occurred on the airside, stricter supervision is needed, as well as handling and imposing sanctions in accordance with the violations made. In 2019, at least 44 violations were recorded by the apron movement control (AMC) unit. of the six types of problem generalization, as described in the following table:

Table 3. List Violation On Side Air (Airside)

Entering region side air (airside) No in accordance with PAS Airport	10 person
No wearing tool protector self (PPE)	7 people
No own sign permission driving (TEAM)	6 people
No have PAS Airport	5 people
Wearing PAS person other	5 people
Driving exceeds 25 km/h on the service road	11 person
Amount	44 person

The most common violation was driving exceeding 25 km/h on the service road, with 11 people violating it. This is certainly a serious concern for the apron movement control (AMC) unit to increase supervision

on the air side to suppress potential violations that may occur. can only happen and The lowest violation is not having an Airport PAS and wearing someone else's Airport PAS other than five people who violated it. Although it is a violation with the lowest level of violation, the author found that the violation of not having an Airport PAS is always followed by the violation of wearing someone else's Airport PAS. Whatever the underlying reason, every violation must be a serious concern and must be dealt with in accordance with the applicable provisions.

The role of the Apron Movement Control (AMC) unit in increasing the level of discipline on the apron of Adi Soemarmo Surakarta Airport in 2019. The researcher in this case conducted a survey whose results have been described in the research results using a questionnaire method using a 4-point Likert scale distributed to employees of PT Angkasa Pura I (Persero) Adi Soemarmo Surakarta Airport in the Apron Movement Control (AMC) work sub-unit, to find out their responses regarding the role of the Apron Movement Control (AMC) unit in increasing the level of discipline on the apron of Adi Soemarmo Surakarta Airport in 2019, the author provided 26 question variables using the 7M method Vincent Gasperz (2002, p. 106) of the 26 research variables, there are 4 variables with the lowest assessment approaching <50 which is the limit of the 4-point Likert scale interval, an assessment can be said to be good, which will be described in the following table:

Table 4. List Violation On Side Air (Airside)

(Manpower) The officer side air is always cooperative with the unit Work AMC, which supervises all airside activities	66.6%
(Manchines) Means support Work unit AMC like facility storage document And equipment tool write office Already available with complete	66.6%
(Motivation) Unit Work AMC accepts awards when they are achieved	52.7%
(Motivation) Unit Work AMC has motivation Work Which Good Because appreciation given by the leadership when unit AMC achieves the expected performance	55.5%

The author sees the need for improved communication between the apron movement control (AMC) units and all airside officers to work together in synergy to carry out daily operational tasks. Updating supporting facilities, such as document storage and provision of office stationery, must be carried out immediately to help the apron movement control (AMC) unit place documents recording violations that occur on the airside. More rewards and appreciation must be provided to increase the work motivation of the apron movement control (AMC) unit. In line with a previous study on "Analysis Supervision PT. Angkasa Temple II (Limited) at the Terminal 2F Apron by Apron Movement Control (AMC) officers in reducing the level of violations at Soekarno Hatta International Airport in 2014 and 2015" (Pricilia Jeniver, 2016) can conclude that reliability and compliance device Work that is HR (source power man) on the apron area at any airport must always follow the rules that apply to the airside area. This is to maintain security, safety, and smooth flight operations

4.1 Discussion Triangulation

After the researcher conducted interviews with 2 (two) informants and 1 (one) trusted source to test the validity of the data using source triangulation, related to the research "Analysis of Apron Supervision by Apron Movement Control (AMC) in Improving Discipline at PT Apron Space Temple I (Limited) port Air Adi SoemarmoSurakarta" then The author will explain the discussion of the triangulation as

follows: Mr. Rewanghadi Widagdo, informant 1 (one) as apron movement control (AMC) stated that: "The biggest obstacle for the Apron Movement Control (AMC) unit is limited visualization in conducting surveillance on the airside , we must have an extension of our visualization, namely CCTV, which currently cannot be applied to all parking stands at Solo Airport, currently our visualization can only reach 10 parking stands out of 15 existing parking stands due to our limited visualization, then the lack of sensitivity from AMC friends in see the potential that arising from habits Friend ground friends handling that can cause potential violations or potential hazards that can cause accident incidents on the air side which is certain to cause the supervisory function carried out by AMC to not be optimal in improving discipline."

Researchers stated that: "At this time, the biggest obstacle in supervision experienced by the apron movement control (AMC) after the author observed it himself in the field was the visualization that limited, Where like Which We know that For moment port Air Adi Soemarmo has 15 parking stands , while the average visualization of the apron movement control (AMC) personnel only reaches parking stand number 10, the procurement of CCTV (Closed Circuit Television) must be done immediately because the apron movement control (AMC) unit must have the abbreviation for the visualization itself, namely CCTV, in line with That training supervision must in do on personnel apron movement control (AMC) in a way continuously to be more sensitive to potential violations that may occur in the airspace of Adi Soemarmo Surakarta Airport."

Mr. Muhamad Noor, informant 2 (two) as an airside officer stated that: "Basically, AMC supervision at Adi Soemarmo Airport is good and quite detailed, such as if we put equipment in the wrong place, we are reprimanded, in my opinion, in daily life, coordination between airside officers and AMC is already running, in daily life, if an airside officer commits a violation, they are dealt with according to the applicable provisions, but there are differences between AMC officers, different officers different treatment given even though the goal is the same, sometimes airside officers are forced to commit violations because of the heavy workload they have and must work immediately so that sometimes violations occur, for example when carrying out airside services and forgetting to bring the airport PAS so borrowing someone else's airport PAS because if they have to return home and get the airport PAS it will cause take time , a review must be carried out by AMC when finding such violations to see the sequence of problems behind a violation that occurs, the hope is that communication will always be "There should be no intense interaction between AMC and airside officers, so that there are no feelings of like or dislike in carrying out daily operations because sometimes each individual also displays such feelings, because each individual is different."

The author stated that: "The author saw that the supervision carried out by the apron movement control (AMC) unit had indeed been running well, although it was not yet perfect. The human factor of each different apron movement control (AMC) personnel could result in differences when treating airside officers when they committed violations. However, apron movement officers control (AMC) take action if there is a violation on the airside based on standard operating procedures (SOPs), namely the Airside Safety Manual PT Angkasa Pura I (Persero), Apron Movement Control (AMC) Manual PT Angkasa Pura I, and Guidelines for Vehicle Operation in the Airside Area of PT Angkasa Pura I (Persero) Airports. Therefore, the heavy workload factor on airside officers is not a reason Why A violation can occur. Assessment burden Work officer "Airside issues must be resolved by the management of the airside service provider company. In the future, communication between airside officers and apron movement control (AMC) officers must be further improved to increase synergy between related stakeholders."

Mr. Kasnoto, a resource person as Airport Duty Manager (ADM) of PT Angkasa Pura I (Persero), stated that: "First of all, it was explained that the main task of the ADM is as a coordinator of supervision. in operational daily life, task And not quite enough answer ADM in lower general shade manager And

Senior Manager , responding to the issue of apron supervision by AMC in improving discipline on the apron , first of all, the coordination between ADM and AMC has been quite good in terms of supervision on the airside, although not yet perfect, then the supervision carried out by AMC in improving discipline cannot actually be said to be completely good, plus the number of flights that can still be handled and still in reasonable limits, but in the future if Adi Soemarmo Airport experiences an increase in flights, I think AMC officers will have to receive better and stricter training. perform supervisory functions rather than now, well related to the violations that has happened in air side Actually besides supervision Which Not yet perfect by AMC party airlines too or Ground handling already has its own SOP in carrying out its duties and this must be in synergy between AMC and stakeholders of airside officers, increasing synergy should be done by conducting monthly briefings between AMC and related stakeholders , namely airside officers, safety personnel also need to be present in the monthly briefing to educate aviation safety and security in order to minimize the potential for violations that have not been implemented so far, currently system development is also being carried out by improving the airport operation control center (AOCC) This is also a step in monitoring airside operations."

Researchers state that: "Role synergy between stakeholders must more in improve in the future, coordination monthly must in plan between stakeholders related part operational flight Which has never been held, besides that, continuous training for apron movement control (AMC) officers must be carried out considering the level of flights that could increase at Adi Soemarmo Surakarta Airport, especially with the addition of the number of parking stands which now has 15 parking stands and Adi Soemarmo Surakarta Airport which now also serves special flights for Hajj and Umrah, in order to suppress the level of violations that occur, the development of the airport operation control center (AOCC) unit must be carried out quickly to facilitate monitoring and coordination between stakeholders Also procurement visualization CCTV (Closed Circuit Television) must quick in do. The current condition is that there are 15 parking stands in the apron port Air Adi Soemarmo Surakarta.

5. Conclusions

The researchers concluded that in 2019, the highest usage of the aviobridge/garbarata was recorded in January with 970 uses, while the lowest occurred in May with 767 uses. In total, there were 10,109 uses of the aviobridge/garbarata, with an average monthly usage of 842.42. The usage fluctuated, showing an average monthly decrease of 166 uses, which translates to a -1.64% decrease per month. Regarding airside violations, the most frequent were driving over 25 km/h on the service road, committed by 11 people; entering the airside area without proper airport PAS, committed by 10 people; not wearing personal protective equipment (PPE), committed by 7 people; and driving without a valid driving license (TIM), committed by 6 people. The least common violation was the absence of an airport PAS and the use of someone else's PAS, with only five people involved. The study also found that the Apron Movement Control (AMC) unit's role in improving discipline on the apron was influenced by several factors. Among 26 variables assessed, the lowest values were observed in four areas: first, the manpower variable, which was a key factor in communication; second, machinery, which affected the availability of supporting facilities; and third, motivation, which played a role in the reward system for AMC officers.

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Author Contributions

AS conceptualized the study, designed the research methodology, and conducted the data analysis. She was responsible for drafting the initial manuscript and revising it based on feedback from her co-author and reviewers. FKA assisted with the data collection, primarily through conducting interviews and surveys, and played a key role in interpreting the results. He also contributed to the writing and revision of the manuscript. Both authors worked collaboratively on the research design, the analysis of the findings, and the final approval of the manuscript, with shared responsibility for the research's integrity and quality..

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this study. This research was conducted independently, and no financial or personal relationships influenced the results or interpretation of the findings.

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