PERFORMANCE ANALYSIS OF GROUND SUPPORT EQUIPMENTPERSONNEL ON ORDER AT H. HASAN AROEBOESMAN ENDE AIRPORT APRON

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ABSTRACT
H. Hasan Aroeboesman Airport is an airport located in Ende City, this airport is managed by the H. Hasan Aroeboesman Airport Operator Unit which is supervised by the Directorate General of Transportation. In 2021. H. Hasan Aroeboesman Airport is the third busiest airport in East Nusa Tenggara after El Tari Airport and Komodo Airport. To meet the needs of aircraft services, the airport cooperates with other parties. The cooperation is in the form of ground handling services and Ground Support Equipment (GSE) equipment to support operational activities on the air side of the airport. The formulation of the problem in this study is How is the performance of personnel Ground Support Equipment (GSE) personnel performance and how efforts are made to improve the orderly operation of GSE vehicles at H. Hasan Aroeboesman Airport Ende. Aroeboesman Ende Airport. This research was conducted using qualitative research methods qualitative research method that describes the situation that occurs in the object of research. Data obtained by direct observation, literature study of related regulations, and interviews. related regulations, and interviews. The results of the research still found problems that there are still several violations of the orderly operation of GSE equipment that are not in accordance with applicable regulations. Orderly operation of GSE equipment affects the smooth operation of flight operations on the air side when providing services to aircraft.

Keywords: Ground Support Equipment (GSE), Performance of Ground Support Equipment (GSE), Personnel, Ground Handling.

1. INTRODUCTION

The H. Hasan Aroeboesman Airport, located inthe city of Ende, is one of the critical infrastructures in East Nusa Tenggara. This airport is managed by the H. Hasan Aroeboesman Airport Operating Unit, which is under the supervision of the Directorate General of CivilAviation. In 2021, the Ministry of Transportation allocated IDR 85 billion for the construction of a new terminal at this airport, aiming to increase capacity and service quality. The new terminal was finally completed and began operations on April 12, 2023. H. Hasan Aroeboesman Airport is the third busiest airport in East Nusa Tenggara, after El Tari Airport in Kupang and Komodo Airport in Labuan Bajo. It has a single terminal that serves domestic flights, and due to its proximity to residential areas and vacant land, the airport typically serves small aircraft such as the ATR 72-600 and Fokker 50.

Like all airports, H. Hasan AroeboesmanAirport has two main operational areas: the landside andthe airside. Airside operations, known as ground handling, encompass services provided to support aircraft operations before, during, and after flights. These activities include passenger services and ramp services, with the primary goals of ensuring flight safety, punctuality, and passenger satisfaction. The supervision of airside operational activities is the responsibility ofthe Apron Movement Control (AMC) unit, which oversees all activities related to aircraft services at the apron,including the performance of ground handling personnel and the operation of Ground Support Equipment (GSE).

Orderliness in the operation of GSE is crucial in supporting smooth flight operations at the apron or airside. According to SKEP 140 of 1999, GSE personnel are individuals prepared to assist aircraft and passenger needs on the ground during arrival and/ordeparture, as well as during the loading and/or unloading of passengers, cargo, and mail. At H. Hasan Aroeboesman Airport, scheduled aircraft ground handling services and airside support equipment are managed and owned by PT. Global Sky Aviation. However, the orderliness of GSE personnel at this

airport often does not meet the established standards, as regulated by SKEP 140 of 1999 and KP 635 of 2015.

Several issues have been identified concerning the performance of GSE personnel at H. Hasan Aroeboesman Airport. These issues include GSE vehicles being left unattended in improper locations,GSE vehicles parked carelessly, blocking access for other GSE equipment, and the use of GSE equipment that does not comply with regulations. Such disorder can pose a risk of accidents and disrupt the smooth operation of airside activities.

For instance, as noted in the identified problem table, there are cases where GSE vehicles are left unattended in improper locations, which clearly violates SKEP 140 of 1999 regarding the Requirements and Procedures for Operating Vehicles on the Airside. This regulation states that vehicles should not be left unattended. Additionally, there are frequent instances of GSE vehicles being parked haphazardly, blocking access for other GSE equipment, when they should be parked in the designated Equipment Parking Area (EPA) as per the applicable regulations. The disorderliness in parking and operating GSE vehicles not only risks causing incidents or accidents but also hampers the overall smooth operation of airside activities.

In this context, improving the performance and orderliness of GSE personnel is essential to maintaining high operational standards at H. Hasan Aroeboesman Airport. Therefore, this study aims to analyze the performance of Ground Support Equipment (GSE) personnel in implementing Standard Operating Procedures (SOP) at the apron of H. Hasan Aroeboesman Airport Ende. Furthermore, this study will identify the efforts made by GSE personnel to enhance orderliness in operating GSE vehicles and equipment to ensure that airside operations at this airport can run safely,efficiently, and in compliance with applicable regulations. The research will delve deeper into how GSEpersonnel carry out their duties according to SOPs and the steps that need to be taken to improve compliance andorderliness in daily apron operations at the airport.?

2. METHODS

2.1 Research Design

A research design can be defined as a set of procedures and methods used to analyze and collect datato determine the variables that are the subject of the study. It can also be understood as a strategy applied by the researcher to systematically connect each element ofthe research in such a way that the analysis and determination of the research subject become more effective and efficient. In this study, a qualitative descriptive method is used to analyze the performance of Ground Support Equipment (GSE) personnel in maintaining orderliness at the apron of H. Hasan Aroeboesman Airport in Ende. Data collection was conducted through observation, literature review, interviews, and documentation. According to Astarina (2021), a research design is a strategy designed to achieve the research objectives that have been established and serves as a guide or reference for the researcher throughout the research process.

2.2 Research Variables

The research subject, according to Arikunto (2006), refers to the source from which data for the research variables are obtained. It is defined within a framework of thought and limits the research subject to objects, matters, or individuals believed to provide the necessary information relevant to the study being conducted. In any research, the research subject is a crucial element as it is inherently tied to the data being investigated. In this study, the research subjects are the personnel of Ground Support Equipment (GSE) at H. Hasan Aroeboesman Airport in Ende.

According to Sugiyono (2014), the research object is defined as the characteristics, properties, or values of individuals, objects, or activities that exhibit certain variations and are selected by the researcher for study and subsequent conclusion. In this study, the research object focuses on the performance and level of orderliness of the Ground Support Equipment (GSE) personnel.

2.3 Data Collection Techniques and Research Instruments

Data collection techniques, as noted by Sugiyono (2013), are a crucial step in research since the primary objective is to obtain data. The methods used in this study aim to facilitate the collection of data regarding the analysis of Ground Support Equipment (GSE) personnel performance at the apron of H. Hasan Aroeboesman Airport in Ende. The methods employed include observation, literature review, interviews, and documentation.

Observation is a data collection method that involves gathering data through direct observation and sensory perception. The purpose of observation is to describe the setting being studied, the activities taking place, the individuals involved, and the meaning of events from a specific perspective (Bungin, 2007). In this study, the researcher conducted observations at H. Hasan Aroeboesman Airport, Ende, focusing specifically onthe orderliness of GSE personnel during the On the Job Training (OJT) period from December to March 2024.

The literature review involves collecting information and data from various written sources, such as books, scientific journals, articles, and regulations. This process is intended to enhance the researcher's knowledge about the research topic, build a theoretical framework, and gather secondary data to support the study. As stated by Astarina (2021), after formulating the problem, the next step is to search for theories, concepts, or generalizations that can serve as the theoretical basis forthe research. In this study, the literature review includes examining rules and regulations, such as SKEP 140 of

1999, which help address issues related to the orderly use of GSE at H. Hasan Aroeboesman Airport, Ende.

Interviews are another data collection method used in this study. This method involves posing questions, either face-to-face or remotely, to respondents to obtain the necessary information. According to Krisyanto (2018), interviews are conversations between informants,who are believed to have relevant information, and researchers who aim to obtain that information. In this research, interviews were conductedwith personnel fromthe Apron Movement Control (AMC) and GSE staff.

Documentation is a technique used to collect data by gathering records, transcripts, books, journals, papers, videos, photos, minutes, and other materials that are deemed useful for research and can serve as the theoretical foundation or main guideline for the study. According to Fuad & Sapto (2013), documentation is one of the secondary data sources necessary for research.In this study, documentation involved collecting and analyzing photos of the airside area at H. Hasan Aroeboesman Airport, Ende, taken during the OJT.

Research instruments are tools used to observe natural and social phenomena, selected by the researcher to facilitate systematic and efficient data collection. The instruments used in this study include observation and interview guides. The observation guidesupplements the data collected from interviews in qualitative research, with the researcher creating and filling out the guidebased on observations at the apron of H. Hasan Aroeboesman Airport, Ende. The observation focused onaspects such as the speed of vehicle operation, the placement of vehicles when not in use, personnel compliance with apron markings, and thealignment of GSE personnel services with Standard Operating Procedures (SOP).

For interviews, this study used a structured approach, with a list of questions prepared in advance. The interview guide was developed to ensure that the questions were aligned with the research objectives, aiming to gather information about the issues in the apron area of H. Hasan Aroeboesman Airport, Ende. The interview focused on aspects such as GSE supervision, the impact of supervision on the orderliness of GSE usage, and the overall orderliness of GSE operations.

2.4 Data Analysis Techniques

The data analysis technique involves combining data obtained from interviews with findings from literature studies based on existing regulations. The stages of data analysis in qualitative research, as outlined by Miles, Huberman, and Saldana (2014), begin with data collection. This initial step involves the researcher gathering preliminary data, starting with raw and detailed information, and identifying patterns to analyze the data in new ways, potentially uncovering deeperinsights than those initially sought. The next stage is data condensation, which refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data found in field notes, interview transcripts, documents, and other empirical materials. This method allows the researcher to sort, concentrate, discard, and organize the data to draw and verify final conclusions.

Following data condensation, the next stage is data display. According to Miles, Huberman, and Saldana (2014), data display involves organizing and compressing information in a way that facilitates the drawing of conclusions and taking action. In qualitative research, data can be displayed using matrices, graphs, charts, and networks. The final step in the analysis process is conclusion drawing and verification. As notedby Miles, Huberman, and Saldana, final conclusions cannot be made until all data have been collected and analyzed, with consideration given to the quantity of fieldnotes, coding, deviations, and the overall data collection process.

2.5 Data Validation

Qualitative research emphasizes the validity of data, which is tested through three steps: validity, reliability, and objectivity. According to Sugiyono (2014, p. 363), validity refers to the degree of accuracy between the data that occurs in the research object and the data that can be reported by the researcher. Therefore, valid data isdata that shows no discrepancy between what is reportedby the researcher and what actually occurs in the researchobject.

Data validation refers to the degree oftrustworthiness or truthfulness of the research results. As stated by Lincoln and Guba (1985) in Wijaya (2018),in qualitative research, reality is considered to be diverse and dynamic, meaning that it is not consistent orrepetitive in the same way. Data validation can be achieved by using a data collection process with the technique of data triangulation. According to Sugiyono (2015, p. 83), data triangulation is a technique that combines various data and sources. As noted by Wijaya (2018, pp. 120-121), data triangulation is a method of cross-checking data from multiple sources using various methods and at different times. This includes source triangulation, technique triangulation, and time triangulation.

Source Triangulation involves testing the credibility of data by checking it against data obtained from various sources, such as interview results, archives, or other documents.

Technique Triangulation involves testing the credibility of data by checking it using different techniques on data obtained from the same source. For example, data collected through observation might be cross-checked with data from interviews.

Time Triangulation acknowledges that the timing of data collection can influence data credibility. Data obtained through interviews in the morning, when respondents are more alert, may be more valid. Therefore, testing the credibility of data requires cross-

checking through observation, interviews, and documentation at different times or in different situations until credible data is obtained.

2.6 Research Location and Time

The location of this research is at the Apron Movement Control (AMC) unit office and apron at H. Hasan Aroeboesman Ende Airport, the selection of this location is due to the data that can be taken by the author to support the writing of this research. Meanwhile, for the time of this research, the author used the time when authors carry out On The Job Training (OJT) during December 2023 until February 2024.

3. RESULT AND DISCUSSION

3.1 Research Findings

In this section, the author presents the research findings and provides an analysis of the data collected. Given that this study employs a qualitative approach,the data is detailed, described, and elaborated upon to provide a comprehensive understanding of the issues at hand and to propose solutions for the identified problems.

A. Ground Handling

Based on the observations conducted in the field, it was discovered that there are significant areas where the performance of Ground Support Equipment (GSE) personnel falls short of the expected standards of orderliness and compliance with established procedures. The following table outlines the specific areas where GSE personnel's performance did not align with the required standards and includes an analysis of the potential implications of these deficiencies.

The first significant issue observed is related tothe improper securing of GSE vehicles when they are in proximity to aircraft. According to SKEP 140 of 1999, specifically Article 33, GSE vehicles, whether actively providing service to aircraft or parked near them, must have their brakes applied or other movement-preventing devices in place to avoid unintended movement. The failure to secure GSE vehicles in such situations can lead to serious incidents or accidents. These incidents could pose considerable risks, not only to the safety of the aircraft and passengers but also to the overall safety and efficiency of airport operations.

Another critical issue noted was the frequent non-compliance with traffic signs and signals on theapron, as well as the disregard for instructions from authorized personnel. SKEP 140 of 1999, Article 29, clearly mandates adherence to these markings and instructions. However, the observed non-compliance could disrupt the operations of other vehicles on the apron and significantly increase the risk of accidents, thereby endangering both the personnel working on the apron and the general safety of the airport environment.

Additionally, there was a noticeable lack of supervision over vehicles while they were in operation. This requirement, outlined in Article 28 of SKEP 140 of 1999, is critical for maintaining safety on the apron. The observed neglect in monitoring operating vehicles can lead to hazardous situations, especially if a vehicle moves unintentionally or is operated by unauthorized personnel. Such lapses not only compromise the safety of the apron but also undermine the overall operational integrity of the airport. The improper operation of GSE vehicles, particularly when not adhering to the standard structure and capacity as outlined in KP 635 of 2015, was another significant issue identified. This regulation provides clear guidelines on the operation of Ground SupportEquipment and operational vehicles on the airside. Operating GSE vehicles beyond their structural limits or capacity can cause damage to the equipment, leading to potential safety risks and operational inefficiencies. Such practices not only jeopardize the longevity and functionality of the equipment but also create an unsafe working environment, potentially leading to costly operational disruptions and even accidents. Furthermore,the repeated failure to comply with apron markings and traffic signals was a recurring issue, emphasizing the need for strict adherence to these rules. The failure to follow these guidelines can severely disrupt other vehicles' operations and compromise the safety of personnel working on the apron. This issue underlines theimportance of enforcing these standardsto maintain a safe and orderly operating environment at the airport.

B. Efforts to Improve the Orderliness of Ground Support Equipment (GSE) Personnel

Given the performance deficiencies identified among GSE personnel, several measures have been proposed to enhance their orderliness and compliance with established operational procedures. One of the primary initiatives recommended is the implementation of a ramp safety campaign. This campaign is aimed at increasing awareness among ground handling staff regarding the correct and safe use of Ground Support Equipment (GSE). Such a campaign would not only educate the personnel on best practices but also reinforce the importance of adhering to established safety protocols.

In addition to the ramp safety campaign, thereis a need for enhanced supervision by Apron Movement Control (AMC) personnel. Increased oversight is crucialto ensure that GSE personnel strictly adhere to safety and operational guidelines, particularly in maintaining order on the apron. By monitoring GSE operations more closely, AMC can identify potential issues early and take corrective actions before they lead to moresignificant problems or safety violations.

Moreover, optimizing the use of existing apron markings, such as those designating the Equipment Parking Area (EPA), is also recommended. Proper use

of these markings would ensure that GSE vehicles are parked in their designated areas, preventing them from obstructing other vehicles and maintaining the overall efficiency of apron operations. This measure would contribute to a more organized and safer apron environment, reducing the likelihood of operational disruptions.

To address the specific issue of order violationsby ground handling personnel, AMC has developed a series of graduated responses. For minor violations, GSE personnel may receive a formal warning. This step serves as an initial corrective measure, reminding the personnel of their responsibilities and the importance of adhering to safety protocols. However, for more serious violations, AMC may take stricter actions, such as revoking the driver's license (TIM) of the offending personnel. This punitive measure is intended to underscore the seriousness of the violations and to prevent further breaches of safety regulations.

In addition to these corrective measures, AMC also plans to conduct regular ramp safety campaigns. These campaigns are designed to continually raise awareness among ground handling staff about the proper use of GSE. By maintaining a focus on safety and operational integrity, these campaigns aim to cultivate a culture of compliance and responsibility among all personnel involved in apron operations. This proactive approach is intended to prevent violations before they occur, thereby ensuring that airport operations remain safe, efficient, and compliant with all relevant regulations.

3.2 Discussion

A. GSE Personnel Performance

The use of Ground Support Equipment (GSE) that does not comply with established orderliness and safety standards has a significant impact on the operational activities of the airside. When GSE equipment is improperly used, it can lead to disruptions or delays in airside operations. The lack of orderliness among ground handling personnel in operating GSE vehicles not only hampers the efficiency of operations but also increases the risk of incidents and accidents. These incidents could potentially threaten the safety of both airport personnel and passengers, leading to severe consequences. The issues related to the performance of ground handling personnel in using GSE can severely compromise airside operations, leading to inefficiencies, increased operational costs, and safety hazards. Therefore, there is a clear need for stricter supervision and enforcement of safety regulations concerning the use of GSE equipment on the airside. The violations observed among ground handling personnel can be attributed to several factors, including a lack of awareness about the importance of orderliness, insufficient training, and inadequate supervision from AMC. These factors highlight the need for a comprehensive approach to improving GSE personnel's performance, including enhanced training, better supervision, and a more stringent enforcement of safety regulations. The implementation of targeted training programs focused on the proper use of GSE and the importance of adhering to safety protocols could significantly improve the performance of GSE personnel. These programs should emphasize the critical role that GSE personnel play in ensuring the safety and efficiency of airport operations. In addition, AMC should consider adopting a more proactive approach to supervision, with regular checks and audits to ensure compliance with established standards. To overcome problems related to violations of order by ground handling personnel ground handling personnel, the AMC has several steps. For minor violations, ground handling personnel will receive reprimand from the AMC, then if the violation committed by the ground handling personnel is severe ground handling personnel, then the AMC will withdraw the Driver's Permit Driver's License (TIM), carry out ramp safety campaigns to raise awareness of ground handling personnel in the use of Ground Support Equipment (GSE)

B. Efforts to Improve the Orderliness of GroundSupport Equipment (GSE) Personnel

The violations committed by ground handling personnel are influenced by a combination of factors, including a lack of awareness about the importance of maintaining orderliness, insufficient training, and inadequate supervision from AMC. While the current supervision of GSE equipment usage at H. Hasan Aroeboesman Airport in Ende generally meets established standards, lapses in enforcement and oversight still occur, leading to the improper use of GSE equipment. These lapses indicate a need for more robust and consistent supervision to ensure that GSE operations adhere to safety and operational guidelines.

To address these issues, AMC has implemented a series of strategic measures aimed at improving the orderliness and performance of GSE personnel. For minor violations, ground handling personnel are issued formal warnings. These warnings serve as an initial corrective measure, emphasizing the importance of adhering to safety protocols and reminding personnel of their responsibilities. However, in cases where violations are more severe, AMC may revoke the personnel's driver's license (TIM) as a punitive measure. This step is intended to serve as a deterrent to future violations and to reinforce the seriousness of adhering to safety standards.

In addition to these corrective measures, AMC has also recognized the importance of continuous education and awareness-raising efforts. The regular conduct of ramp safety campaigns is a key component of this strategy. These campaigns are designed to enhance the understanding and awareness of ground handling staff regarding the proper use of GSE and the critical importance of maintaining orderliness on theapron. By fostering a culture of safety and compliance, these campaigns aim to reduce the incidence of violations and improve the overall safety and efficiency of airport operations.

Furthermore, AMC is also considering the implementation of advanced monitoring technologies to improve supervision and oversight of GSE operations. These technologies could include real-time tracking of GSE vehicles, automated alerts for non-compliance, and data analytics tools to identify patterns of behavior that may indicate a higher risk of violations. By leveraging these technologies, AMC could enhance its ability to proactively manage GSE operations and ensure that all personnel adhere to the highest standards of safety and orderliness.

In conclusion, while the current efforts to improve the orderliness of GSE personnel at H. Hasan Aroeboesman Airport have made some progress, thereis still a needfor ongoing improvements in training, supervision, and enforcement. By adopting a comprehensive approachthat combines education, technology, and stringent enforcement, AMC can further enhance the safety, efficiency, and complianceof GSE operations, thereby ensuring the continued smooth functioning of airside activities.

4. CONCLUSION

Based on the analysis of the observations conducted by the author regarding the performance of Ground Support Equipment (GSE) personnel at H. Hasan Aroeboesman Airport in Ende, as discussed in the previous chapters, several conclusions can be drawn. First, the observations and literature review reveal that the performance of GSE personnel in operating GSE vehicles falls short of the standards outlined in the Standard Operating Procedures (SOP) as mandated by SKEP 140 of 1999, which governs the requirements and procedures for operating vehicles on the airside. The current state of GSE operations on the apron does not fully comply with these established protocols, indicating a need for improvement in orderliness and adherence to procedures.

Second, the interviews conducted with Ground Handling personnel suggest that one of the most effective ways to improve the orderliness of GSE personnel is by enhancing supervision and imposing sanctions on those who violate the established rules. Thefindings indicate that increased oversight and the enforcement of disciplinary actions are crucial inpromoting compliance with airside operational standards and ensuring the safety and efficiency of airport operations.

Based on the discussions and conclusions presented in the previous chapters, the followingrecommendations are proposed. Firstly, it is recommended that regular Ramp Safety Campaigns be conducted, along with ongoing training and development for both personnel and service operators on the apron. These initiatives should aim to raise awareness about the importance of adhering to procedures, regardless of whether or not Apron Movement Control (AMC) is actively supervising. This continuous education and awareness-raising effort will help create a culture of safety and compliance, thereby enhancing security and safety on the apron.

Secondly, it is suggested that additional markings be added to designate an Equipment Staging Area (ESA) on the apron. The introduction of this designated area will help improve the organization and placement of Ground Support Equipment (GSE), thereby enhancing overall safety and efficiency in flight services. Properly marked staging areas will ensure that GSE vehicles are parked and stored in a manner that minimizes the risk of accidents and obstructions, contributing to smoother operational flow on the apron.

Finally, it is crucial to strengthen the supervision of Ground Handling personnel to ensure they pay closer attention to maintaining orderliness. In cases where violations are identified, it is important that the responsible personnel are held accountable and face appropriate sanctions. This increased level of oversight and accountability will encourage GSE personnel to adhere more strictly to operational standards, thereby improving the overall safety and effectiveness of airport operations.

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