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AN EMERGENCY RESPONSE: THE AVAILABILITY OF ACCESS ROAD AT THE INTERNATIONAL AIRPORT

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Abstract

An access road is a road traveled by ARFF vehicles to connect the fire station with the runway or aircraft movement area. This research aims to identify the situation and opportunity of the access road built in Juwata Tarakan Airport to provide response time by rearranging aircraft movement management on the Main Apron and Taxiway. The research method used in this research is descriptive qualitative with gap analysis techniques and uses data collection through observation, interviews, and documentation. The result of this study can be used as a reference and guide in designing access roads under applicable regulations, and it is expected to complement and expand references in the development of science in the field of air transportation management. In addition, the position of the Fire Station is close to one of the Runways and is not in a strategic location (0°). So that we can achieve faster response time to the nearest Runway, the conclusion is that the Juwata Airport ARFF Unit cannot build an access road to national regulations because the Fire Station is directly opposite the old Apron and Taxiway. It is expected that Juwata Airport can make rearrangements related to aircraft movement management on the Main Apron and Taxiway.

Keywords: *Analysis, Access road, Emergency Response Time*

Introduction

Airports are areas on land or in waters with predetermined boundaries used for aircraft landing and take-off, up and down passengers, loading and unloading goods, and a place to change intra and inter-mode transportation (Walewangko et al., 2021). Juwata Tarakan Airport is an airport operator unit of the Indonesia Directorate General of Civil Aviation (DGCA) located on Tarakan Island, precisely in Tarakan City, North Kalimantan Province (Bakri et al., 2019). Juwata Tarakan Airport has two service roads directly opposite the main apron and ARFF unit. Juwata Tarakan Aiport also has two taxiways: Taxiway Alpha and Taxiway Bravo. It also has an ARFF unit tasked with first aid during emergencies on the airport's airside. ARFF vehicles also have a particular lane called an access road related to this task.

State that an access road is a road traveled by ARFF vehicles that connects the fire station with the runway or aircraft movement area. The access road is connected from the fire station to the Runway so ARFF vehicles can cross it. The access road has a vital role in achieving optimal Response Time and impacts flight safety in the airport area. Access roads must not have obstacles. The minimum width of the access road is 5 meters, and has a minimum turning radius of 25 meters at each intersection.

The access road is built and adjusted to the weight and width of the vehicle, the access road must have a shoulder with a minimum width of 1.5 meters, the access road must have a flat surface with the Runway at each intersection, and the access road must be in the middle of the ARFF vehicle parker so that it leads directly to the Runway. Research by (Wasanta et al., 2022) the access road is very important as a connecting access from one lane to another, with this access road facilitating the movement of vehicles during an emergency and can increase response time. And the other research by (Akbar et al., 2023) aims to get the dominant risk and find out the right action to handle these risks this is done to minimize the occurrence of risks that affect cost and time.

The observation results showed that the ARFF unit at Juwata Airport still needed to meet the established standards with a finding in the lack of a barrier-free access road for ARFF vehicles to the Runway. Currently, the position of the fire station is directly opposite the Main Apron and Service Road, so many obstacles will hinder the movement of ARFF vehicles during an accident or incident. So, we can conclude that no access road meets the requirements stipulated in the applicable regulations. Some previous studies related to access road analysis at class I airports, from the research results (Wasito et al., 2021) show that one way to support ARFF troops is to provide supportive facilities, such as a 1000-meter path. The goal is to enable ARFF vehicles to respond quickly by the specified time requirements.

This research aims to identify the situation and opportunity of the access road built in Juwata Tarakan Airport to provide response time by rearranging aircraft movement management on the Main Apron and Taxiway. This research recommends designing and developing an access road through the Apron Movement Control (AMC) area so that aircraft movement through the Main Apron does not interfere with ARFF vehicles in carrying out ARFF service operations and response time can be achieved. The result of this study can be used as a reference and guide in designing access roads under applicable regulations, and it is expected to complement and expand references in the development of science in the field of air transportation management.

Methods

This research was conducted directly at the location point by the researcher while carrying out the on-the-job training (OJT) activities at Juwata Tarakan Airport, focusing on the ARFF unit. This research lasted for 9 months, starting from 26 September 26^{th,} 2022 to June 20^{th,} 2023. The primary purpose of this research is to analyze the situation and reach a conclusion that can be accounted for. This research focuses on describing the situation and getting a picture of the object to be studied. Therefore, the approach used in this

research is qualitative research. Qualitative research methods will be used to gain an in-depth understanding of the situation and conditions of the research object during the research. Qualitative research is often called naturalistic research because it is conducted in natural conditions or settings (Sugiyono, 2018). Qualitative research in flow has its own characteristics including the flow of positivism, post-positivism, critical theory, and constructivism (Habsy, 2017).

The research subject plays an important role in obtaining information about the factors observed in this study. In this study, researchers chose 3 who had the highest license (senior) and were considered the most knowledgeable about ARFF (Tanujaya, 2017). The research object is the variable to be examined at the place where the research is conducted. The object of research that researchers will examine is the ARFF access road at Juwata Tarakan Airport. In accordance with the previous problems formulated earlier, the results of this study are the results of observations made by researchers directly to the facilities in the ARFF unit of Juwata Tarakan Airport. In addition to observations, researchers also collected data through interviews with several personnel and the person in charge of the Juwata Tarakan Airport ARFF unit.

The data gap analysis technique is defined as a method of comparing current conditions with expected conditions in accordance with regulations. The gap analysis aims to identify the gap between optimistic allocation and integration and current achievement (Endang et al., 2019). GAP or gap analysis is defined as comparing actual performance with potential or expected performance. Researchers use this technique so that the data obtained can be analysed further (Jienardy, 2017).

Results And Discussions

The research involved three personnel of the ARFF unit of Juwata Tarakan Airport, including the Head of the ARFF unit, the ARFF Duty Commander I, and the ARFF Duty Commander II. These three personnel have a higher license than other personnel, and they have extensive experience in carrying out the day-to-day operational duties of ARFF personnel.

Table 1. Identity of Interviewee

No	Name	Job Tittle	License
1	Asyraf SG. SE	Head of ARFFUnit	ARFF Senior
2	Jainal Abidin	Duty Commander 1	ARFF Senior
3	Sherly Maurits	Duty Commander 2	

Based on the results of observations made by researchers using several indicators. Researchers take indicators through PR 30 Year 2022 in Chapter V, namely ARFF Facilities. Researchers observed on October 3rd 2022, at 15.00 WIT at Juwata Tarakan Airport, specifically in the ARFF unit. The result of the observation in the ARFF unit is that the unit still does not have several ARFF facilities, one of which is the access road.

Researchers also get documentation results in the form of taking pictures when carrying out observations and research in the field. Researchers also added some literature studies in the form of references from the Ministry of Transportation's National Regulations. Researcher conducted interviews with respondents with a total of 3 resource persons. They were consisting of 1 Head of ARFF Tarakan and 2 Duty Commanders. The sources in this study were used as informants in this study, which was carried out to find data about the access road in the ARFF unit of Juwata Tarakan Airport.

This is based on the results of interviews with 1 ARFF unit head and 2 ARFF duty commanders. Currently, the ARFF unit at Juwata Tarakan Airport does not yet have an Access road by the provisions listed in the Regulation of the Director General of Civil Aviation No. 30 of 2022. However, all ARFF personnel can still carry out emergency services using the old Apron and Taxiway media. The old Apron and Taxiway become temporary access roads in the movement of ARFF vehicles. All personnel, especially for ARFF vehicle drivers, must pay attention to several obstacles, namely aircraft movements. To achieve Response Time in emergency response, the ARFF unit is still 0.0. can achieve Response Time when the old Apron and Taxiway have no aircraft movement. Suppose at Juwata Tarakan Airport there is an Accident. In that case, ARFF personnel must see the situation and condition of the old Apron and Taxiway and calculate the distance so that the ARFF vehicle can be free from aircraft movement.

Researchers took pictures when observing the ARFF unit at Juwata Tarakan Airport. In addition, researchers also obtained a layout plan of Juwata Tarakan Airport to provide valid data and explain the position of facilities on the air side and land side of Juwata Tarakan Airport.

Table 2. Gap Analysis Results

No.	Current Condi-tion	Gap	Condition desired	Refere nce
1.	ARFF Juwata Tarakan unit does not yet has no Access road.	From the results of the interview, the absence of Access road can affect the emergency manageme nt process.	ARFF units at all airports are required to have an Access road.	**PR 30 Year 2022**
2.	**ARFF Juwata unit uses the media Apron Main and Taxiway instead of Access road**	**ARFF personnel must pay attention to several obstacles that can interfere with ARFF personnel achieving response time.**	**All airports are required to have an Access road that is free of obstacles.**	**PR 30 of 2022**

The table above shows that the access road in the ARFF unit of Juwata Tarakan Airport does not yet exist. Based on the Directorate General of Civil Aviation Regulation No. 30 Year 2022, ARFF units at all airports must have an access road from the Fire Station to the Runway. This can affect the process of overcoming emergencies and achieving response time.

Figure 1. Aircraft Parking Stand

In Figure 1, there is an aircraft in the parking stand area. An aircraft parking stand is a certain place at the airport that is used for aircraft parking (Qin et al., 2018). This can be classified as an obstacle to the ARFF vehicle movement process. ARFF officers must divide their attention between watching aircraft movements and calculating response time to get to the source of the accident/incident.

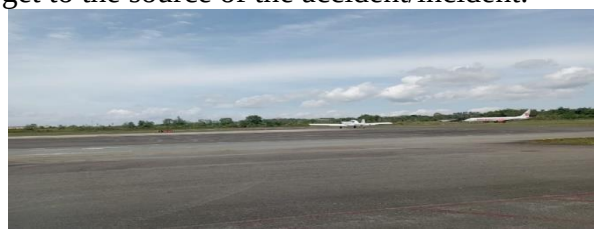

Figure 2. Aircraft Holding Position

Figure 2 shows the movement of aircraft while holding on the ground. The unavailability of access roads can hinder ARFF vehicles and ARFF officers during an accident or incident. The aircraft will hold first before entering the Runway and taking off. This aircraft holding is an air traffic control procedure to ensure safety and operational efficiency.

Figure 3. Ground Vehicle in Service Road

The movement of ground vehicles on the service road as seen in Figure 3 can cause interference with the movement of aircraft rescue and firefighting vehicles. Ground vehicles are all vehicles operating in the airport area, such as baggage towing tractor, aircraft towing tractor, ground powering unit, pushback car, trucks and others (Shvetsov, 2022). All of these vehicles play an important role in maintaining smooth airport operations, optimising aircraft service times, and ensuring safety on the ground.

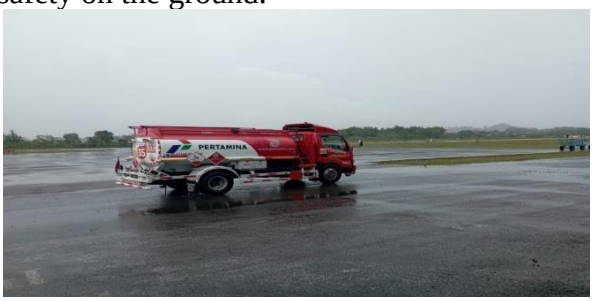

Figure 4. Pertamina Vehicle in Main Apron

Similarly, as shown in figure 4, Pertamina vehicles located on the main apron. These pertamina vehicles transport and provide aviation fuel (Kadarwati, 2022), avtur, thus ensuring smooth and secure energy supply for aircraft at various airports. The vehicle can become obstacles for aircraft rescue and firefighting vehicles so that they impact the achievement of response time.

In making an Access road, several requirements must be considered, including that it is free from other Access roads. This emphasises that the Access road has no obstacles that interfere with the movement of ARFF vehicles in responding to emergencies, because ARFF vehicles must achieve a predetermined response time. Access road is a road that can be traversed by ARFF facilities that connecting the fire station with the runway or aircraft movement area.

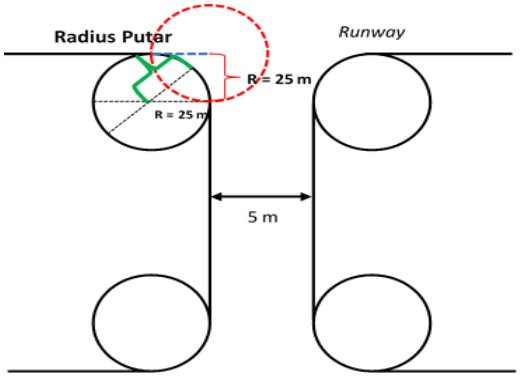

Figure 5. Required Access Road Structure

The access road must have a minimum width of five meters and a minimum turning radius of 25 metres at each meeting of the access road with the Fire Station or taxiway or Runway as shown in Figure 5. Obstacles will make ARFF operational vehicles do too many maneuvers to pass through several possible obstacles. This means that researchers can conclude that in the absence of Access road as stipulated in the Regulation of the Director General of Civil Aviation No. 30 the Year 2022, this research refers to the guidelines and requirements set by the regulation, ARFF Juwata Tarakan vehicles are not yet accessible from other access roads because they must pay attention to several obstacles, one of which is aircraft movement.

From the results of interviews from 3 sources of ARFF unit personnel at Juwata Tarakan Airport stated that the Fire Station at Juwata Tarakan Airport researchers can conclude that the ARFF unit at Juwata Tarakan Airport is directly opposite the Main Apron so it is not possible to build an Access road, and the fire station is closer to Runway 24 than to Runway 06. In addition, it is faster to reach Response Time to Runway 24 than to Runway 06. The Fire Station must be strategically located in order to achieve Response Time in the movement of ARFF vehicles from the Fire station to the Runway. The sentence concludes that the Fire station must be at 0°, while the Fire Station at the ARFF unit at Juwata Tarakan Airport is not at a strategic location (0°). Based on the results of the research that has been carried out and the data obtained from the field, the position of the access road should be in the middle of the fire station and directly to the Runway.

Based on the results of interviews and observations of the feasibility of ARFF operational equipment and supporting ARFF facilities at Dewandaru airport at this time, it is said to be feasible because it has met the standards for the main facility/vehicle category in providing aviation accident assistance and firefighting following the Regulations (Safitri et al., 2022). The availability of all ARFF facilities can speed up ARFF officers' ability to overcome emergencies and achieve response time.

Conclusion

Based on the results and previous discussion, the researcher can conclude that at Juwata Tarakan Airport, especially in the ARFF unit, there is no Access road under national regulations, namely the (Keputusan Direktur Jenderal Perhubungan Udara, 2022) concerning Technical Standards and Operations of Civil Aviation Safety Regulations. Several factors make the ARFF unit not yet have an access road is because the position of the Fire Station is directly opposite the Main Apron so it is not possible to build an Access road by these regulations. Based on the observation of the current conditions, the achievement of Response Time in emergency service operations carried out by the Tarakan ARFF unit from the fire station to the Runway is still less effective. Because ARFF vehicles use the Main Apron and Taxiway media as a substitute for temporary access roads so that personnel must pay attention to several obstacles on the Main Apron and Taxiway, this can interfere with ARFF vehicles in carrying out emergency service operations at Juwata Tarakan Airport.

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