

IMPLEMENTATION OF SUPPORTING SAFETY ASPECTS AT FRANS SALES LEGA AIRPORT IS RELIEVED WITH THE FULFILLMENT OF ARFF PERSONNEL COMPETENCE

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Abstract

Airports are one of the infrastructures that prioritize safety aspects. One aspect of safety in an airport operator must have a unit that can handle emergencies such as incidents or accidents at the airport, this unit is the ARFF unit which is a vital airport unit as stated in PR 30 of 2022. Fulfillment of the ARFF units must be supported by personnel who have competencies in accordance with the regulations set. Personnel who have basic education and training related to the duties and functions in the ARFF unit, so that they can support flight safety at the airport. The division of duties and functions in accordance with the capabilities of personnel based on the results of training and personnel education makes personnel more focused on their respective responsibilities in carrying out their duties as ARFF personnel. The method used in this study is a qualitative method and literature study, analyzing how the implementation of maintaining safety aspects at Frans Sales Lega Airport with the Fulfillment of ARFF Personnel Competencies.

Keywords: Airport, personnel, competence, safety, ARFF unit.

Introduction

One of the important aspects in a region is the airport, where the airport can be a means of connectivity connecting between regions, considering that geographically Indonesia is an archipelagic country where air transportation is very helpful in connecting people between regions. Law No. 1 of 2009 states "An airport is an area on land and/or waters with certain boundaries that is used as a place for aircraft to land and take off, board passengers, load and unload goods, and a place for intra and intermodal transportation transfers, which is equipped with flight safety and security facilities, as well as basic facilities and other supporting facilities. ". One of the airport organizers in Indonesia is Frans Sales Lega Airport located in East Nusa Tenggara which is a means of connectivity between the Ruteng (Manggarai) region and the provincial capital, Kupang.

In flight safety facilities, it is mandatory for airport operators to provide one of them is the Airport Rescue and Fire Fighting or abbreviated as ARFF. This has been emphasized by the issuance of the Regulation of the Director General of Air Transportation number PR 30 of 2022 concerning technical standards and operations of ARFF services.

Discussing airports cannot be separated from the safety aspect, where flight safety is the main priority in airport services. In supporting the maximization of airport safety facilities, it cannot be separated from the ARFF unit. The role of the ARFF unit is very vital, where the main task of the ARFF unit has been regulated in PR 30 of 2022, namely saving lives and property from incidents and accidents at airports and their surroundings. The ARFF unit is an abbreviation for Aviation Accident Assistance and Fire Fighting. ARFF unit must have personnel who are responsible for operating and maintaining ARFF equipment and dealing with emergencies at airports and their surroundings. (PR 30 of 2022). The safety support that is the responsibility of ARFF personnel is to handle accidents and incidents that occur at the airport, an incident is an event, other than an accident, related to the operation of an aircraft that affects or can affect the safety of operation. While an Accident is an event related to the operation of an aircraft that occurs from the time a person boards an aircraft for the purpose of flight until a time when all persons have left (got off) or exited the aircraft (ICAO Annex 13, 2001), where:

1. A person dies or suffers serious injury as a result of:
 - a. Being on a plane, or
 - b. Direct contact with any part of the aircraft, including parts detached from the aircraft, or
 - c. Directly affected by jet blast. Unless the injuries are caused by natural causes to oneself or another person or occur to a stowaway in a part of the aircraft not designated for passengers/crew; or

2. The aircraft experiences structural damage or failure that:
 - a. Affects the structural strength, characteristics and flight performance of the aircraft, and
 - b. Requires major repair or replacement of damaged components. Except for engine failure or damage, with damage to the engine, cowling and accessories, damage to propellers, wing tips, antennas, tires, brakes, fairings, small holes/dents in the skin of the aircraft.
3. The aircraft is lost or completely unreachable. An aircraft is considered lost when the official Search And Rescue (SAR) operation has been declared over and the aircraft cannot be found.

Accident relief focused by ARFF personnel is assistance to aircraft experiencing incidents or accidents at airports. According to Law No. 1 of 2009 concerning Aviation, what is meant by an aircraft is any machine or tool that can fly in the atmosphere due to the lifting force of air reactions, but not because of the reaction of air to the earth's surface used for flight. Meanwhile, the definition of an aircraft according to the International Civil Aviation Organization (ICAO) is any mechanical structure that can obtain support (lift) in the atmosphere from air reactions other than air reactions to the earth's surface.

In general, the firefighting profession is one of the jobs with a high level of risk. Most firefighters' jobs are in the medium risk category, which is 41.67%. The five types of hazards faced include: physical hazards, such as being hit by falling material from above; chemical hazards, such as exposure to smoke and lack of oxygen while in a building; and mechanical hazards, such as being hit by the tip of a hose (nozzle). The most common hazards experienced include falling from a height when climbing a ladder, burns from exposure to heat or fire, fatigue from carrying heavy hoses, and exposure to smoke from combustion. These hazards have the potential to cause work accidents. Therefore, hazard analysis, risk assessment, and implementation of optimal control are essential to prevent work accidents (M. Zaki A et al., 2024).

Each airport is required to have ARFF unit that meets the specified category. The ARFF unit category consists of 10 levels, each with different specifications. The determination of this category is based on the overall length and maximum width of aircraft operating at the airport, as stipulated in Government Regulation Number 30 of 2022. Frans Sales Lega Ruteng Airport, based on the results of field verification by the Airport Directorate auditor team, has met the flight safety facilities for category 5. The ARFF unit at this airport is included in category 5 because the largest aircraft operating there is the ATR 72, which is 27.2 meters long and 2.8 meters wide (Luna Widyawati, et al., 2024).

In addition to the main tasks of the ARFF unit, there are main tasks that must be fulfilled in order to support the main tasks to be carried out. The main tasks of the ARFF unit are related to the quality of personnel performance where the main tasks of the ARFF unit are

1. Operations include administration, standby, rescue, prevention and extinguishing;
2. training;
3. and maintenance.

The main tasks and principal tasks cannot be separated, because both are interrelated to support flight safety at the airport. Personnel performance in Aircraft Accident Rescue and Firefighting (ARFF) plays a crucial role in maintaining public safety and security. This job requires courage, speed, special skills, and solid readiness. In this case, the three main factors that affect personnel performance are competence, license, and readiness. Understanding the role of these factors in personnel operational effectiveness can help identify areas that need to be improved and further developed.

According to Abdhie (2022), competence is usually defined as a basic characteristic that includes abilities, knowledge, and other individual attributes that distinguish successful individuals from less successful ones. This competence is the basis for a system or capability model. In other words, competence is a tool to predict the extent to which a person can succeed in their work. Competence always has a clear purpose, in the form of a motive or trait that drives a person to act in order to achieve optimal performance results. The influence of human resource competence on performance can be seen from the level of competence possessed, which has implications for the human resource planning process. This can be seen from the fact that competence in the form of knowledge and expertise tends to be more easily recognized and more prominent among employee attributes.

In the other hand, some explain that "competence is the ability, disposition, and appreciation that is considered important for successful work." They also include the fact that "human competence" refers to the abilities, attitudes, values, and appreciation provided in the context of everyday life, and that "Human competence" is the result of the interaction between knowledge, skills, and experience in performing tasks in the workplace. (Ternate & Utara, 2019)

Based on the background that has been explained, the problems that will be discussed can be formulated to build a hypothesis for further research to include: (1) How is the fulfillment of standardization in accordance with regulations regarding human resources needs in ARFF units? (2) How

does the influence of the competence possessed by human resources in ARFF units affect the safety aspect at the research location?

The purpose of this article is to determine the fulfillment of standardization with regulations regarding human resources needs in the ARFF unit and the influence of the competencies possessed by human resources in the ARFF unit on safety aspects at Frans Sales Lega Ruteng Airport.

Research methods

This study uses a qualitative method. Qualitative methods are research methods rooted in philosophy and are used to explore scientific conditions (experiments). In this method, the researcher acts as the main instrument, while data collection and analysis techniques are carried out qualitatively with a primary focus on understanding meaning (Sugiyono, 2018). In this study, the author conducted a study of articles and regulations regarding the performance competencies of ARFF personnel in supporting safety aspects at the Airport. The rules studied are in PR 30 of 2022 entitled Technical Standards and Operations of Civil Aviation Safety Regulations Part 139 (Manual of Standard Casr Part 139) Volume IV Aviation Accident Assistance and Fire Fighting Services (ARFF). The location of this article research is at Frans Sales Lega Ruteng Airport with the research population being ARFF personnel.

Qualitative research generally uses an analytical approach that begins with a literature review to develop data, and ultimately results in acceptance or rejection of the theory used. This method does not directly direct the questions asked by the researcher. Based on the formulation of the problem in this article and a literature review of related journals, the article framework is compiled as follows:



Figure 1
The influence of the independent variable (X) on the dependent variable (Y).

Results and Discussion

Results

Fulfillment of safety standards at airports is stated in regulation PR 30 of 2022 which states that airports need to provide safety facilities such as ARFF units. In the ARFF unit there must be standards that need to be met according to the airport category, for example personnel needs and their competencies. Personnel needs and minimum personnel competencies are stated in national regulation PR 30 of 2022 which requires airports to complete their standard procedures according to the ARFF category. ARFF is divided into 10 (ten) category levels, which are determined based on the total length and maximum width of aircraft operating at the airport, as shown in the following table:

Table 1,ARFF categories based on maximum aircraft length and width

ARFF Category	Overall Length of Aircraft (meters)	Maximum Width of Aircraft Fuselage (meters)	Aircraft Examples
1	< 9	2	Cessna 172 Skyhawk
2	9 to < 12	2	Cessna 208A Caravan I
3	12 to < 18	3	C208B Grand Caravan
4	18 to < 24	4	ATR 42
5	24 to < 28	4	ATR 72
6	28 to < 39	5	Airbus A320 / B737
7	39 to < 49	5	Boeing 737-900ER
8	49 to < 61	7	Boeing 787
9	61 to < 76	7	Airbus A350
10	76 to < 90	8	Airbus A380

Source: PR 30 of 2022

Based on the results of the analysis carried out by the author by taking samples from ARFF personnel at Frans Sales Lega Airport, the author found that flight activities tend to be consistent with the type of aircraft operating, namely the Cessna 208b Grand Caravan and the largest aircraft type ATR-72. Based on the qualifications of the largest aircraft operating, it can be seen that the ARFF of Ruteng Airport is included in category 5 (five), so that the adjustment of the number of personnel refers to the standard of the category.

The fulfillment of ARFF facilities also includes the number of personnel and minimum competency of personnel as an important aspect to support safety according to national regulations, namely Government Regulation Number 30 of 2022. The number of personnel and minimum competency standards are determined based on the ARFF category. Personnel competency in the ARFF unit is divided into three levels, namely Basic, Junior, and Senior. Adjustments to personnel needs and their competencies are made to ensure that ARFF operations at the Airport can run optimally. The calculation of this need is based on the main and supporting vehicle facilities available according to the ARFF category. The following is a table showing the minimum personnel needs based on the ARFF category.

Table 2 Minimum personnel requirements according to ARFF categories

Category Airport For PKP-PK	Number of Officers per shift	Personnel Competency Certificate		
		Senior	Junior	Basic
1	5	-	2	3
2	5	-	2	3
3	5	-	2	3
4	6	1	2	3
5	6	1	2	3
6	13	3	4	6
7	16	5	5	6
8	21	6	7	8
9	21	6	7	8
10	21	6	7	8

Source: PR 30 of 2022

In the condition of Frans Sales Lega Ruteng Airport which has a ARFF unit flight safety facility to support flight safety aspects and has implemented procedures related to the number of personnel and minimum personnel competency in accordance with national regulation PR 30 of 2022. The ARFF Unit of Frans Sales Lega Ruteng Airport has 3 (three) main vehicles and (1) supporting vehicle. The following is the personnel data of the ARFF unit at Frans Sales Lega Ruteng Airport.

Table 3 List of the number of ARFF personnel at Frans Sales Lega Airport

No	Personnel Name	Qualification / Competence Personnel
1	Mr. Dedi Wahyudin	SENIOR ARFF
2	English	SENIOR ARFF
3	Mora Akbar M	JUNIOR ARFF
4	Arjuna Mandal P	BASIC ARFF
5	Gustaf Baskoro A	BASIC ARFF
6	Iwan Setiawan	BASIC ARFF
7	Sahrullah	NON COMPETENCE
8	Ricardus Door	NON COMPETENCE
9	Carmelia Grace	NON COMPETENCE

Source: Airport Emergency Plan Frans Sales Lega Airport, 2024

Discussion

Based on the data that has been listed, the condition of Frans Sales Lega Ruteng Airport which has flight safety facilities, namely the ARFF unit to support flight safety aspects and has implemented procedures related to the number of personnel and minimum personnel competencies in accordance with national regulation PR 30 of 2022. The ARFF Unit of Frans Sales Lega Ruteng Airport has 3 (three) main vehicles and 1 (one) supporting vehicle. For ARFF personnel, the data collected by the author shows that there are 2 (two) personnel who have Senior ARFF certification, 1 (one) personnel with Junior ARFF certification, and 3 (three) personnel with Basic ARFF certification.

By fulfilling the number of personnel and minimum personnel competency in the ARFF unit of Frans Sales Lega Airport which only has one shift during airport operating hours, Frans Sales Lega Airport has fulfilled the requirements according to regulation PR 30 of 2022 as a supporting aspect of flight safety. The influence of the competence possessed by personnel in the ARFF unit greatly influences the safety aspect at Frans Sales Lega Ruteng Airport. Every personnel who has basic, junior, and senior competence must have undergone education and training that focuses on their respective roles, and if an incident or accident occurs, personnel already have their respective responsibilities and roles that are in accordance with national regulatory standards. With this fulfillment, the assistance process in the event of an incident or accident can be carried out effectively and optimally. So the safety aspect at Frans Sales Lega Ruteng Airport is fulfilled.

Conclusion and Suggestions

In the implementation of the Airport, it is mandatory to have a ARFF unit along with personnel and facilities that comply with national aviation regulations, to achieve safety aspects at the Airport. The fulfillment of the number of personnel and the minimum competency possessed by personnel must be in accordance with the required ARFF category. The ARFF category at Frans Sales Lega Airport is 5 (five) with a personnel requirement of 6 (six) people, with details of 1 (one) personnel with senior competence, 2 (two) personnel with junior competence, and 3 (three) personnel with basic competence. By fulfilling the personnel requirements and minimum personnel competence, an effective and maximum flight safety aspect can be created. Due to the division of roles of each personnel according to their competence.

The results of this study are expected to be a reference for airport organizers to further improve the implementation of renewal such as education and competency training for personnel. In particular, personnel who do not yet have ARFF competency are expected to be given priority to get the opportunity to carry out education and training so that personnel who do not yet have competency can have competency. This is intended so that personnel can know their responsibilities and roles in handling assistance from incidents and accidents. This research is expected to be a reference for other authors in conducting research that is continuous with this research.

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