

# *The Effect of Community Traditions on Flight Safety at Perum LPPNPI, Semarang Branch*

Deo Rahmat Kharisma<sup>1</sup>, Sri Rahayu Surtiningtyas<sup>2</sup>, Djoko Djatmoko<sup>3</sup>, Endang Sugih Arti<sup>4</sup>, Suharyanto<sup>5</sup>

<sup>1</sup>Politeknik Penerbangan Indonesia CurugTangerang,  
Indonesia  
16071910006@ppicurug.ac.id

<sup>2</sup>Politeknik Penerbangan Indonesia CurugTangerang,  
Indonesia  
sri.rahayu@ppicurug.ac.id

<sup>3</sup>Politeknik Penerbangan Indonesia CurugTangerang,  
Indonesia  
djoko.jatmoko@ppicurug.ac.id

<sup>4</sup>Politeknik Penerbangan Indonesia CurugTangerang,  
Indonesia  
Endangsugih88@gmail.com

<sup>5</sup>Perum LPPNPI Cabang SemarangSemarang,  
Indonesia  
farellandjihan@gmail.com



**Abstract**— The Effect of Community Traditions on Flight Safety at Perum LPPNPI, Semarang Branch, was a descriptive qualitative research study that used primary and secondary data. The primary data was obtained through interviews with the Semarang Branch of Air Traffic Control (ATC), while the secondary data was gathered through a literature review. The secondary data sources included Law No. 1 of 2009, Ministerial Regulation (PM) No. 40 of 2018, and relevant journals about this research. A systematic literature review was conducted at Indonesia Flight Polytechnic in Curug using a descriptive qualitative method. Descriptive qualitative research is a research method based on post-positivist philosophy, typically used to investigate objective and natural conditions where the researcher acts as a key instrument. This research aimed to determine whether community traditions that were not in accordance with regulations affected flight safety at Perum LPPNPI, Semarang Branch.

**Keywords**— Community Tradition, Aviation Safety, Unmanned Free Ballon.

## I. INTRODUCTION

Indonesia comprises 1.340 ethnic groups and 740 languages, each with its own distinct language and culture. This diversity has resulted in many traditions and cultures across different regions of the country. One of the cultural practices found in Central Java is the tradition of flying unmanned balloons. This activity is carried out to celebrate significant religious holidays. An unmanned balloon is defined as "A non-power-driven, unmanned, lighter-than-air aircraft in free flight" [1]. This means that an unmanned balloon is a flying object without a pilot, lighter than air, and capable of flying freely.

The balloons flown by the community symbolize victory during religious holidays. According to Ministerial Regulation (PM) No. 40 of 2018, the term "balloon" refers to an object that is lighter than air, not powered by an engine, but can fly due to being filled with a gas that provides buoyancy (gas buoyancy) or through the heating of air (airborne heater). The unmanned balloons flown by the community are those that are released without being tethered, allowing them to float freely in the air [2].

The flying of balloons must obtain permission from the local authorities, and the balloons must comply with the relevant regulations. However, in reality, the unmanned balloons flown by the community in Central Java do not meet the established requirements. This is reflected in the pilot reports regarding unmanned balloons, as shown in the data below:

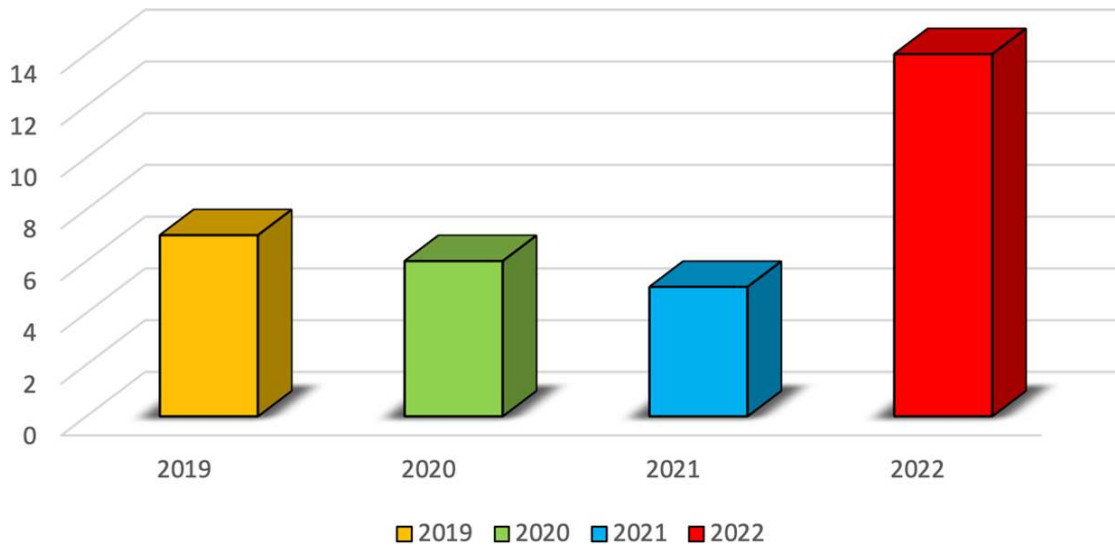


Figure 1 Recapitulation Pilot Report Data About Unmanned Free Balloons

In 2019, there were 7 pilot reports regarding unmanned balloons. In 2020, there were 6 pilot reports, while in 2021, there were 5 pilot reports. The highest surge in pilot reports regarding unmanned balloons occurred in 2022, with 14 reports.

The community's activity of flying unmanned balloons without tethering them can potentially disrupt flight safety. Furthermore, balloons flown by the community that do not comply with regulations can affect pilot visibility and disrupt flight paths, posing a danger to aviation safety. In addition to the impact on balloon pilots who do not adhere to regulations, it also poses risks to the community. For example, balloons getting entangled in electrical poles may cause electrical short circuits. Balloons filled with fireworks that explode in the air can also damage residential roofs [3].

## II. LITERATURE REVIEW

In the journal "Legal Sanctions for Illegal Air Balloons in Wonosobo Regency" (Sundoro & Hananto, 2020), it was mentioned that the tradition of flying unmanned balloons had been passed down through generations since ancient times as a symbol that the sins committed by humans were forgiven during the festive season, and humans were purified as if they were reborn. Referring to the journal "Balloon Tradition in Bringin Village, Ponorogo" (Utami & Siswandari, 2022), it was stated that the balloons flown had to comply with the regulations established in Ministerial Regulation (PM) No. 40 of 2018.

## III. RESEARCH METHODS

In this research, the researcher used a descriptive qualitative research method. Descriptive qualitative research was a research method based on post-positivist philosophy, typically used to investigate objective and natural conditions where the researcher played a key role as an instrument [4]. Qualitative research is an inquiry approach that uses a naturalistic setting to interpret a phenomenon and aims to interpret or describe, in a narrative form, the activities conducted and the impact of actions taken in people's lives [5].

In this research, the researcher used an analytical descriptive method with a qualitative approach. The data used in this

research consisted of primary and secondary data. The primary data was obtained through interviews. The primary data sources were interviews conducted with the Semarang Branch of Air Traffic Control (ATC). The secondary data were obtained through a literature review, including Law No. 1 of 2009 on Aviation, Ministerial Regulation (PM) No. 40 of 2018 on the Use of Balloons in Community Cultural Activities, and relevant journals related to this research. The method used to analyze the data was qualitative descriptive, employing a deductive reasoning process. It began with examining regulations regarding the permissible use of balloons and their connection to flight safety, which were then applied to the problem being investigated.

#### IV. ANALYSIS AND DISCUSSION

The tradition of hot air balloons initially originated from European culture and was brought to Indonesia during the colonial period. This led to the acculturation between European and Islamic cultures in Indonesia, resulting in the practice of flying hot air balloons. The community flies these balloons to celebrate significant Islamic holidays, such as Eid al-Fitr. Initially, this tradition was called "umbalan," which means flying like the moon [6].

Usually, balloons are flown by the community after they perform the Eid al-Fitr prayer, and it is done collectively and cooperatively. These balloons can reach heights of over 28.000 feet [7]. However, due to their uncontrolled movements, they pose a potential danger to flight safety. The balloons can inadvertently enter aircraft engines, leading to engine failure, or obstruct the pilot's visibility by colliding with the cockpit area [8]. Therefore, these balloons pose a significant risk to aircraft safety and can endanger the passengers onboard.

During the Eid al-Fitr holiday, AirNav Semarang Branch received pilot reports regarding unmanned balloons flying within the Semarang control zone. This situation has a significant impact on flight routes and can potentially lead to accidents in the air. As a result, the Air Traffic Controllers (ATCs) are responsible for providing information to pilots flying in areas where unmanned balloons might be present. This proactive approach aims to prevent aircraft accidents and ensure flight safety [9].

Flight safety refers to the condition in which the safety requirements for the utilization of airspace, aircraft, airports, air transportation, flight navigation, and supporting facilities are fulfilled [10]. AirNav Indonesia, through the Director of Safety, Security, and Standardization of the Semarang Branch, has informed that in May 2022, they received 14 reports from pilots regarding the presence of unauthorized balloons flying in several airspace points. These balloons flew freely at altitudes ranging from 7,000 to 35,000 feet above sea level. The size of these balloons flying in the Semarang control zone was quite large, requiring pilots to avoid them to prevent accidents. In fact, many pilots had to deviate from their flight routes to avoid these balloons [11]. Considering the potential dangers and impacts of balloons that do not adhere to proper procedures, it is crucial for relevant authorities to oversee and secure the community's compliance with procedures to maintain flight safety [12].

According to Ministerial Regulation (PM) No. 40 of 2018, the supervision of the use and operation of balloons is carried out by the Directorate General of Air Transportation, the Police, local government authorities, and Airport Authority Offices [13]. The regulation also specifies the conditions for balloons that are allowed to be flown. The provisions are as follows:

- a. Reporting the use of Balloons;
- b. Balloon Colors and Sizes;
- c. Limits on Balloon Usage Areas;
- d. Supplementary Equipment for Balloon Usage;
- e. Balloon Usage Locations; and
- f. Balloon Usage Time.

Based on interviews with the Semarang ATC, it was evident that the responsible parties involved in overseeing balloon usage needed to intensify their efforts to educate and raise awareness among the community. By providing proper education and socialization, non-compliant balloon usage could be reduced, leading to a decrease in pilot reports about balloons. Ultimately, this would have contributed to an improved level of flight safety.

As a result of these impacts, air navigation service providers must increase their vigilance when faced with hazards that endanger flight safety [14]. Air traffic service providers are also obligated to make improvements that ensure the smooth

operation of flight safety [15]. Another factor in achieving flight safety is the awareness of the importance of a safety culture to strive for zero accidents [16].

## V. CONCLUSION

In conclusion, from the issues discussed, it can be inferred that the practice of flying balloons as a cultural tradition to celebrate significant Islamic holidays is permissible. However, it is essential that the balloons flown adhere to the regulations set forth in Ministerial Regulation (PM) No. 40 of 2018. By adhering to these regulations, the number of pilot reports regarding unmanned balloons can be reduced, thus ensuring flight safety.

## VI. ACKNOWLEDGMENT

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