

## **Socialization of Unmanned Aircraft Operation on Flight Safety in Palembang Airspace**

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**Abstract:** This socialization is carried out as a form of the application of the Tridharma of Higher Education, namely making research and compiling Scientific Journals within the Palembang Aviation Polytechnic. In addition, the purpose of this activity is to increase the knowledge and awareness of the people living around Sultan Mahmud Badaruddin II Airport Palembang. This activity aims to inform how to operate unmanned aircraft around the airport area, how safe distance is needed and what permits need to be made when operating unmanned aircraft. This activity was made based on reports from several pilots to the Air Traffic Controller about the many obstacles such as kites, drones, hot air balloons and as in Palembang airspace. The method used in this community service activity is the participatory method. So that the results are expected so that participants know the results of socialization related to how to operate unmanned aircraft that do not endanger flights. Then the results of the socialization were published on the social media of Palembang Aviation Polytechnic.

**Keywords:** Dangerous Activities, Socialization, Unmanned Aircraft

### **A. Introduction**

Over the past few years, drones have become very popular. A drone is a small, uncrewed aerial aircraft that is navigated using a GPS tracking system from the ground and controlled remotely by radio frequency. Drones operate with different levels of autonomy through software-controlled flight plans; in short, drones are remotely controlled; thus, these drones can fly unaided. Drones are also referred to as Unmanned Aerial Vehicles (UAVs). This drone system has the potential to reach the most remote areas without the need for human resources. The use of drones is now carried out with various needs such as aerial photography for journalism, film, and hobbies, security purposes (e.g., building safety inspections), delivery and express delivery, rescue victims of disasters (e.g., typhoons), mapping and so on (Hirsan et al., 2023).

Uncrewed Aircraft (PTTA) can generally be defined as a device used for airborne flight having an on-board pilot, programmed with an autopilot system and guided by a remote operator (Utama & Anwar, 2021). There are two types of unmanned aircraft control, namely the first using remote control (remote control) and second, the aircraft flying independently or autopilot, based on programs or commands given into the aircraft system. The autopilot system was created to replace the duties of the pilot. Because without this automatic pilot, the aircraft must be controlled by a pilot continuously, so that for a long period of time, the pilot will be tired (Saroinsong et al., 2018). Unmanned aerial vehicles or drones are increasingly being used for various purposes. The rise of this use encourages the Ministry of Transportation of the Republic of Indonesia to regulate the operation of unmanned aircraft. The arrangement of unmanned aircraft in Indonesia has undergone several changes (Sri 2021). According to Article 210 of Law Number 1 of 2009, it is unlawful for anyone to create obstacles or take other actions in the field of flight operation safety that can endanger flight safety (Yuniar et al., 2022).

Uncrewed aerial vehicles or drones are increasingly being used for various purposes. The rise of this use encourages the Ministry of Transportation of the Republic of Indonesia to regulate the operation of unmanned aircraft. The arrangement of unmanned aircraft in Indonesia has undergone several changes. The initial effort to regulate this activity was initially regulated in the Regulation of the Minister of Transportation of the Republic of Indonesia Number 90 of 2015 concerning Control of Unmanned Aircraft Operations in Airspace served by Indonesia issued on May 12, 2015. Then this Ministerial Regulation was revoked through the Minister of Transportation Regulation Number 180 of 2015 with the same title. And on May 13, 2016 this Ministerial Regulation was amended by Ministerial Regulation Number 47 of 2016.

They were further refined in the Regulation of the Minister of Transportation Number 37 of 2020 concerning the Operation of Uncrewed Aircraft in Airspace served by Indonesia. On June 2, 2020, the Regulation of the Minister of Transportation Number 37 of 2020 concerning the Operation of Uncrewed Aircraft in Airspace served by Indonesia was stipulated by the Minister of Transportation of the Republic of Indonesia Budi Karya Sumadi. This Ministerial Regulation aims to provide guidance in standards and procedures on the operation of unmanned aircraft in order to realize national aviation safety in Indonesia (Sri, 2021; Nainggolan & Karamoy, 2021)

Socialization to the community through the transportation office is one of the efforts to provide understanding to the public about the aviation operational safety area with all the rules that must be understood and obeyed as well as various impacts that may occur that can harm the safety and loss of all parties, both human lives and property and also have an impact on applicable law. Community Service Activities Through this socialization activity, it is hoped that participants know that safety is a top priority

and must be provided in every flight activity. Community service is an activity of the academic community that utilizes science and technology to advance community welfare and educate the nation's life. Community service is a media that connects the world of education with the surrounding community (Prasetyo et al., 2021; Rohman et al., 2022). Similar socialization activities have also been carried out in several regions in Indonesia, but socialization activities related to aviation safety areas must still be carried out throughout Indonesia (Amren et al., 2022; Octavianie & Louis, 2022; Rinaldi et al., 2021; Yuniar et al., 2021). This socialization is also done to prevent the construction of mosques with inappropriate heights in the aviation safety area in Sedati Sidoarjo, an area of flight operational safety at Juanda International Airport Surabaya (Handayani & Rahmawan, 2015).

Based on regulations that have been made by the Ministry of Transportation of the Republic of Indonesia, this activity was carried out to socialize how the operation of the unmanned aircraft. This activity was also based on reports from several commercial aircraft pilots regarding the many obstacles in Palembang airspace such as drone markings, hot air balloons, and kites. With this activity, it is hoped that the public can know the dangers of operating unmanned aircraft in the Flight Operation Safety Area.

## **B. Methods**

Based on the problems described in the introduction, the most effective method is sought to provide a solution. The method used is a participatory method, this method is one way to formulate the needs of the population (Muslim, 2007). This concept places the community as a planner and determinant of development policies at the local level (Sangian et al., 2018). Participatory methods are assistance to empower these community groups in solving problems (Mustanir et al., 2019). Participation is also a form of mental and emotional motivation that urges them to jointly achieve goals and take responsibility together (Muslim 2017). Activities carried out are in the form of socialization. Socialization is a process of instilling or transferring habits or values and rules from one generation to another in a group or society (Goraph & Sengi, 2020).

The targets of this service activity are several community leaders such as sub-districts, sub-districts, RT and RW leaders and several people from the drone community in the area around Sultan Mahmud Badarudin II Airport Palembang. The stages of activities carried out include preparation, implementation, and evaluation. The stages of preparation carried out are: (1) A preparatory meeting to coordinate technically with partners which will be held on September 1, 2023 which will be held in the MBU Study Program room of the Palembang Aviation Polytechnic, (2) preparation of training presentations for community leaders in the area around Sultan Mahmud Badaruddin II Airport by resource persons, namely Mr. Hendiyanto and Mr. Sugama as

representatives of the Indonesia Air Traffic Controller Association Palembang, (3) preparation of presentation and discussion rooms in the Palembang Aviation Polytechnic Auditorium Room. It was determined from the results of this coordination meeting that this activity would be held on September 5, 2023 with 20 participants.

The implementation phase was carried out for 1 day starting with a speech by the General Manager of the Palembang Branch Airnav Office Mrs. Shellya Yunita, S.AP., M.A. and continued by the Director of the Palembang Aviation Polytechnic who in this case was represented by the Head of the Academic Administration and Cadets Section of the Palembang Aviation Polytechnic. Mr. Parjan S.SiT., M.T. Then the presentation related to the explanation of the operation of unmanned aircraft was carried out by representatives of the Palembang branch of the Indonesian Air Traffic Controllers Association, Mr. Hendiyanto and Mr. Sugama. After the presentation of the material, then the participants actively discussed and asked questions with the resource persons to solve problems related to drone operations that they usually face (Hancock et al., 2001; Krueger, 1991; Pretty, 1995). Furthermore, in the third stage, namely evaluation, to measure the results of achieving training objectives.

### **C. Results and Discussion**

The activity, which was located in the Palembang Aviation Polytechnic Auditorium Room, was officially opened by the General Manager of Airnav Palembang Branch accompanied by the Head of the Academic Administration and Cadets of Palembang Aviation Polytechnic on September 5, 2023 at 09.00 WIB which was attended by the Head of the Airport Management Study Program, the implementation team, resource persons, and all participants.



**Figure 1. Opening of PKM Activities**



**Figure 2. Remarks by General Manager of Airnav Palembang and Head of Academic and Cadet Administration**

Then the opening of the training activity, followed by delivery from 09.30 WIB to 10.30 WIB by two speakers representing IATCA Palembang branch. The training material covers several things, namely in the form of the Legal Basis for Control of Growing and Moving Objects at KKOP, which includes Law No.1 of 2009 concerning Aviation, besides that the resource person also explained related to Regulations related to Unmanned Aircraft that have been issued by the Ministry of Transportation of the Republic Indonesia is the Regulation of the Minister of Transportation of the Republic of Indonesia Number 90 of 2015 concerning the Control of Unmanned Aircraft in Airspace served by Indonesia (Setiawan et al., 2022; Iriansyah et al., 2022) issued on May 12, 2015, this regulation was later revoked through the Regulation of the Minister of Transportation Number 180 of 2015. On May 13, 2016 the Regulation was amended by the Regulation of the Minister of Transportation Number 47 of 2016 which was later refined again and used until now, namely, Regulation of the Minister of Transportation Number 37 of 2020 concerning the Operation of Aircraft in Airspace Served by Indonesia which was stipulated on June 2, 2020 (Wijono, 2022).

In PM 37 of 2020 it is explained that (1). Operation of unmanned aircraft in the space served in the form of: Controlled Airspace, must have the approval of the Director General and Uncontrolled Airspace, at a height of less than 400 feet (120 m) without the approval of the Director General, at altitudes above 400 feet (120 m) must have the approval of the Director General. (2) Operation in the Flight Operation Safety Area (KKOP) of an airport which is an area with horizontal and vertical boundaries determined by the Director General, and an area within a radius of 3 (three) Nautical Miles from the helipad coordinate point located outside the KKOP of an airport must be approved by the Director General. (3) Unmanned aircraft systems operated in prohibited areas, restricted areas must have the approval of the competent authorities in the area (Amin et al., 2022).



**Figure 2. Material Submission**

In the final session, participants held discussions and questions and answers related to the operation of unmanned aircraft (Valavanis et al., 2008; Cummings et al., 2007), besides that the speakers also added information related to the dangers of kites, laser beams, and hot air balloons around the airport area (Hardison et al., 2017). Some of the participants asked how to arrange the permits needed to fly an unmanned aircraft and what papers were needed. After the question-and-answer session, the speakers also provided merchandise for several participants who could answer the questions they asked. The resource person also suggested flying kites and unmanned aircraft in places that are not a safety concern for flight operations so as to reduce the risk of aircraft accidents (Weibel & Hansman, 2006; Neff, 2019; Henderson, 2022).



**Figure 3. Photo with All Participants**

#### **D. Conclusion**

Some conclusions that can be drawn from the implementation of this socialization effort include: 1) increasing public knowledge of actions that threaten aircraft

operations including the operation of drones, kites, hot air balloons and the use of laser light in the Flight Operation Safety Area (KKOP); and 2) the implementation of this socialization by the community can improve flight safety.

### E. Acknowledgement

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