

The Need for Letter of Agreement Aerodrome Control Tower Unit and Helicopter Operator to Improve Flight Safety

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Abstract — LOCA is a written agreement between two or more adjoining aviation traffic service providing units where aviation traffic services are carried out by the parties concerned stating the conditions, methods and procedures used to regulate cooperation between these units. The problem of this research is the occurrence of coordination problem between Tower unit and radio operator unit of PT NUH in Kariangau which is not optimal and will give impact on flight operation service in Balikpapan. The research method is descriptive qualitative. The result of this research is the creation of LOCA (*Letter of Coordination Agreement*) whose content and agreement will be further discussed regarding the problems that have occurred when the aircraft conduct training flight and Departure (*takeoff/airbone*) in Kariangau Area.

Keywords- LOCA, training area, Coordination

I. INTRODUCTION

Aviation is a system consisting of the use of airspace, aircraft, airport infrastructure, air transportation, flight navigation systems, safety and security efforts, environmental impacts, as well as various other supporting and general facilities.[1][2][3] Aviation Safety is a condition of fulfilling safety requirements in the utilization of airspace, aircraft, airports, air transportation, flight navigation, as well as supporting facilities and other public facilities.[2][3] In line with the development of today's aviation world, it is certainly important for us as a business entity in the field of air traffic management to continue to update and provide optimal services.

Perum LPPNPI or better known as Airnav Indonesia is a company owned by the Indonesian government and is responsible for regulating air traffic. One of its branches is Perum LPPNPI Balikpapan Branch.[4]

Sultan Aji Muhammad Sulaiman Sepinggan International Airport is an airport that serves scheduled and non-scheduled flights, both domestic and international. Therefore, it is necessary to improve the facilities and

quality of services at the airport to ensure optimal safety and efficiency in flight operations.[3]

LOCA is a guideline for the implementation of flight operational coordination and is a complementary regulation that regulates more technically all previously agreed provisions contained in the Operational Coordination Agreement (OCA) and aims to create synergy in order to improve flight navigation services.[5][6]

Air Traffic Controller (ATC) is a service provided for the purpose of preventing collisions between aircraft, in the area of movement between aircraft and obstructions as well as facilitating and maintaining orderly flow of air traffic.[7]

One of the duties and responsibilities of the Aerodrome Control Tower is to prevent collisions between aircraft and vehicles operating in the movement area, in accordance with PANS-ATM document 4444. To prevent collisions between aircraft, ATC can give a clearance to pilots after ensuring the movement area is clear. In addition to continuous watch, ATC must communicate with the various vehicles operating in the movement area to prevent collisions between aircraft and these vehicles. [8][9]

With the level of traffic density every day that continues to increase at Sultan Aji Muhammad Sulaiman Sepinggan International Airport, we can conclude that a control unit, in this case the author discusses the Aerodrome Control Tower unit, has full responsibility for traffic operating on the ground and in the air area. In its service, the coordination of each unit regarding all matters related to traffic must be fulfilled, because coordination is one form of responsibility of a control unit for ensuring the safety and comfort of flight traffic.[9][10]

One of the obstacles related to flight traffic services at Sultan Aji Muhammad Sulaiman Airport, Sepinggan which has an impact on flight safety at this time is the absence of LOCA (Latter of Operation Coordination Agreement) which regulates between Aerodrome Control Tower Sepinggan and local training flights in Kariangau Area operated by PT NUH (National Utility Helicopter).[5] Several times there was no good communication between the ATC and the NUH Radio Operator, causing a breakdown of coordination. In essence, coordination is very



important in the world of aviation between one party and another.[11]

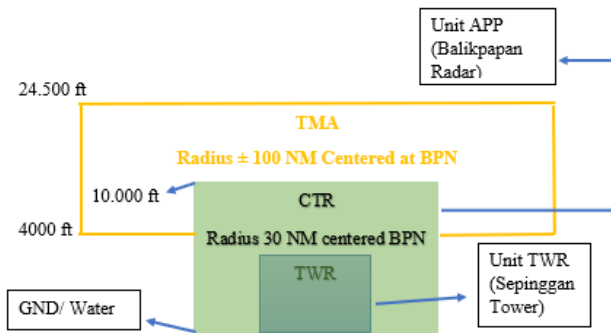


Fig. 1. Division of Responsibility

Because until now it has not been listed on the LOCA (Letter of Operational Coordination Agreement) between the App and twr, the cariangau area is included in the sepinggan tower or balikpapan Radar (CTR) responsibility area, so during the author's on the job training the author experienced various obstacles regarding traffic that would operate in the cariangau area. When the author conducted On the Job Training, traffic originating from Kariangau often directly contacted the sepinggan tower frequency at the airborne position without prior notification to the tower. [6][5]

Based on the memorandum of understanding between PT National Utility Helicopter and Perum Lembaga Penyelenggara Pelayanan Navigasi Penerbangan Indonesia (LPPNPI) Balikpapan Branch Regarding Technical Coordination of Flight Plan Delivery Implementation Through Web Based Flight Plan (WBF), it is written that the radio operator PT NUH kariangau and ARO (ATS Reporting Office) only made an agreement limited to sending flight plans but for coordination to the sepinggan tower unit has not been discussed in the memorandum of understanding. [12][2]

The delegation of traffic outside the jurisdiction has a huge impact on the Tower Unit because it cannot be monitored directly visually and because there is no loca between TWR and Kariangau, TWR often does not get information when the helicopter will operate in the area. Although there is a Memorandum of Agreement between Perum LPPNPI Balikpapan Branch and PT NUH, but in fact several times the Tower did not get information from the Radio Operator of PT NUH or ARO (ATS Reporting Office) related to helicopters that will conduct flight operations, in some cases it was found that the Pilot conveyed information about the training he was doing when the helicopter was already airborne, this is a Hazard which if allowed to continue will have a significant impact on flight safety. [12][13]

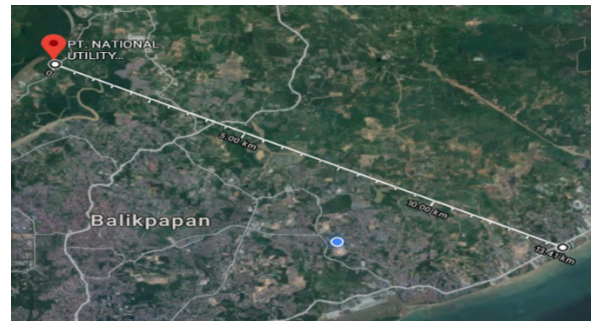


Fig. 2. Distance between NUH and BPN VOR

- The following is an example of a case that occurred On January 13, 2022, at 23.10 utc, Tower Sepinggan experienced a breakdown of coordination due to the absence of notification from NUH regarding a Helicopter with callsign PK-URA that wanted to fly from Kariangau to Balikpapan, Tower Sepinggan did not get information about the estimated helicopter take off and airborne so that it made it difficult for the tower controller to manage traffic departure/arrival from SAMS Sepinggan Airport..
- On January 25, 2022, at 07.40 utc, Tower Sepinggan experienced a breakdown of coordination due to the absence of notification from NUH regarding a Helicopter with callsign PK-URQ that wanted to conduct a Training Flight in the Kariangau area to Tower Sepinggan, regarding the addition of endurance to conduct training again. Whereas in the flight plan submitted it is written that the training flight is carried out for 2 hours. The pilot provides information that will conduct training again for 30 minutes without prior coordination with the ATS unit.

NO.	NAME	SUPERVISOR	IN	OUT	CONTROLLER	ASSISTANT	IN	OUT
01	PK-URA		23:10	00:00	0100	0100	01:00	01:00
02	PK-URA		00:00	00:00	0100	0100	01:00	01:00
03	PK-URA		01:00	01:00	0100	0100	01:00	01:00
04	PK-URA		02:00	02:00	0100	0100	02:00	02:00
05	PK-URA		03:00	03:00	0100	0100	03:00	03:00
06	PK-URA		04:00	04:00	0100	0100	04:00	04:00
07	PK-URA		05:00	05:00	0100	0100	05:00	05:00
08	PK-URA		06:00	06:00	0100	0100	06:00	06:00
09	PK-URA		07:00	07:00	0100	0100	07:00	07:00
10	PK-URA		08:00	08:00	0100	0100	08:00	08:00

Fig. 3. PK-URA issues daily logbook tower record

Based on the problems described above, the author will conduct the need for LOCA between aerodrome control tower sepinggan and radio operator PT. NUH in kariangau area to improve flight safety at Perum LPPNPI Balikpapan Branch.

II. METHODOLOGY

For this study, a qualitative descriptive approach was chosen as the best way to conduct the research. This approach is suitable when the main objective is to provide a simple and clear explanation of something. With a qualitative descriptive approach, researchers focus on

understanding the basic details. With a qualitative descriptive approach, researchers focus on understanding the basic details. To find out things like who was involved, what happened, and where it all happened. This approach is good for getting a clear picture of things.[14]

A descriptive qualitative approach should be the design of choice when a direct description of a phenomenon is desired. This approach is particularly useful when the researcher wants to know, about the event, who was involved, what was involved, and where the event occurred.[15]

This study uses observational data collection techniques, which are defined as the activity of recording a symptom with the help of an instrument and recording it for scientific or other purposes. Furthermore, it is said that observation is a collection of impressions of the surrounding world based on all human sensory abilities. By using a qualitative approach and utilizing observational data collection, it will provide a deeper understanding and solution. This method allows researchers to dig deeper and gain a deep understanding of the subject matter.[16]

During the author's research at Perum LPPNPI Balikpapan branch, the author observes and records things needed to support this research.

III. RESULT

Coordination between aviation traffic service units and related aviation traffic service units: The aviation traffic service provider unit must establish a Letter of Operational Coordination Agreement (LOCA) with adjacent and other related traffic service provider units that includes procedures for coordination and transfer of control of aircraft from one unit to another.[5]

- Further improve coordination between the tower unit and the comm unit in terms of information submitted by PT NUH radio operators.
- A meeting was held between the ATS Unit of AirNav Balikpapan and the radio operator of NUH to create a LOCA (Letter of Coordination Agreement) whose contents and agreements will be further discussed regarding the problems that have been occurring when aircraft conduct training flights and Departure (takeoff / airborne) in the Kariangau Area.

IV. DISCUSSION

Based on ICAO Document 4444, Air Traffic Management, Chapter 7 Procedure for Aerodrome Control Tower, point 7.1 Function of Aerodrome Control Tower, it is explained that Aerodrome Control Tower must monitor continuously all movements of flight operations in the vicinity of aerodrome. This monitoring can be done by visual observation, or assisted by the ATS Surveillance system. [8]

Coordination between the aviation traffic service unit and the aviation traffic service unit according to the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 65 of 2017 concerning Civil Aviation Safety Regulation Part 170 (Civil Aviation

Safety Regulation Part 170) concerning Air Traffic Rules Chapter II Coordination Procedures, Handling Emergency and Contingency Conditions is that the aviation traffic service unit must make a Letter of Operational Coordination Agreement (LOCA) with adjacent and other related traffic service units that include coordination procedures and transfer of control of aircraft from one unit to another.[17] [9]

The procedure for making LOCA based on the Regulation of the Director General of Civil Aviation Number KP 41 of 2020 concerning Technical and Operational Standards of Civil Aviation Safety Regulations Part 170-05 (Manual Of Standard Part 170-05) Guidelines for the Preparation of Letter Of Operational Coordination Agreement (LOCA) Between Aviation Traffic Service Units (ATS UNIT) is as follows[5] :

- In order to improve aviation traffic services and accelerate coordination between aviation traffic service organizing units, the aviation traffic service organizing unit must make a letter of operational coordination agreement (LOCA) with the relevant Ats unit.
- The Letter of Operational Coordination Agreement (LOCA) referred to in Paragraph 1 shall contain at least the following matters:
 - Inter-Unit Coordination Procedure
 - Transfer Of Control Point (TCP) of Aircraft Flying From One Unit To Another (For Aviation Traffic Guidance Service Unit).
 - Separation Settings Used (For Aviation Traffic Guidance Service Unit).
- The Letter of Operational Coordination Agreement (LOCA) as referred to in Paragraph 1 shall be prepared in accordance with the provisions and format set out in this Regulation.

V. CONCLUSION

The conclusion that can be drawn from the problems described is that the author can conclude that Sultan Aji Muhammad Sulaiman Sepinggan International Airport, in carrying out an aviation service, Air Traffic Control must be supported by supporting equipment and good and complete coordination procedures in order to work optimally, to create flight safety, comfort and efficiency. Legal procedures or documents must be provided in each unit or between 2 (two) parties to know the boundaries of each unit.

The absence of documents or incomplete procedures can have direct or indirect effects on flight safety, comfort and efficiency which can result in an Incident or Accident. To avoid this, then, the author can conclude that it is necessary to create a legal document in this case a memorandum of understanding or Letter of Operating Coordination Agreement (LOCA) which contains an agreement on coordination procedures between related units which so far there are no clear boundaries when coordinating and the responsibilities of each unit.[18][5]

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