

Implementation of Safety Management System (SMS) for Helicopter Operational Personnel at PT. Whitesky Aviation

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Abstract

Aviation safety is matters related to aviation security and safety. With the existence of a Safety Management System (SMS), airport service providers, airport transportation, or flight navigation are expected to be able to implement their operational activities as an effort to fulfill aviation safety. The heliport is where helicopters land and take off. Surface Level Heliport is a heliport located above ground level. The purpose of this study is to find out what obstacles hinder the process of implementing the Safety Management System (SMS) for heliport operational personnel at PT. Whitesky Aviation, knows the solutions that are made in overcoming problems that occur in the Safety Management System (SMS). The type of research used is descriptive qualitative research. The data collection technique used was observation in the heliport area, interviews with 3 personnel from the safety, operational, technical and documentation departments. The triangulation used is method triangulation, while the data analysis used is data reduction, data presentation, and drawing conclusions. The results of this research are the obstacles experienced during the process of implementing the Safety Management System (SMS), namely communication barriers, safety culture, and weather. In handling the constraints, the solutions taken have been very good because of the annual work program from the safety department which has been implemented and followed by all personnel in each department.

Keywords: Safety Management System (SMS), Safety, Heliport



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INTRODUCTION

The aviation industry is now growing very rapidly because many service users choose to use air transportation, one of the supporting activities is the presence of airports. According to Annex 14 of ICAO (International Civil Aviation Organization) an airport is a certain area on land or water (including buildings, installations and equipment) which is designated either in whole or in part for arrivals, departures and movements of aircraft.

Heliport is a place for helicopters to land and take off on land (Surface level heliport), on a building (elevated heliport), on offshore platforms/ships (helideck), and (shipboard). Surface Level Heliport is a heliport that is located on the surface of the ground or a structure that is on the surface of the water (Regulation of the Director General of Civil Aviation Number: KP 215 of 2019 concerning Technical and Operational Standards of Civil Regulations Section 139 Volume II Heliport Landing and Taking Off Sites (Heliport) PT Whitesky Aviation is a flight operator company (AOC-135) that has been registered with the General Civil Aviation Directorate (DGCA) operating at Cengkareng Heliport and directly integrated with Soekarno-Hatta International Airport PT Whitesky Aviation is a non- schedule that has high operational and safety standards.

In Law No. 1 of 2009 concerning Aviation, aviation security and safety have a very important and strategic role in flight operations. Aviation safety is matters relating to aviation

security and safety, aviation accident investigation and prevention of aviation accidents through legislation, education and training. In an effort to reduce flight incidents, ICAO has issued International Standards and Recommended Practices Annex 19 Safety Management. Safety Management System (SMS) means a systematic approach to managing safety, including the necessary organizational structure, obligations, policies, and procedures (KM No. 20 of 2009), with the existence of SMS service providers for airports, air transportation, or flight navigation. can implement its operational activities as an effort to fulfill aviation safety.

Activities in the airport area are divided into two, namely the land side and the air side. This area is very prone to disturbances or things that are dangerous so that it will cause incidents and accidents, as cited on the NTSC website: KNKT - GROUND HANDLING, URBAN AIR (BELL 505 PK-WSU); FLY BALI HELIPOINT, UNGASAN, KNKT. 22.07.12.04. In the investigative report on 12 July 2022 "Ground Handling, Urban Air (BELL 505 PK-WSU) Fly Bali, Ungasan" an incident occurred at around 16.15 WITA, during the day, the helicopter landed at the Fly Bali Heliport. Helideck's assistant (HAD) approached the helicopter to help the passengers down to the waiting area. After about a minute, the helicopter engine stopped and stabilized, the pilot turned off the engine, when the main rotor rotation was around 60% RPM (NR), there was a loud sound and the pilot felt the pedals vibrate. Engineer 1 checked the rear of the helicopter and saw that Engineer 2 was lying on the ground face down. After that, engineer 1 asked the pilot to apply the rotor brakes. After the propellers stopped spinning, the ground staff checked Engineer 2 which was lying on the ground behind the helicopter. Engineer 2 suffered injuries to his back and right hand as a result of being hit by the helicopter's Tail Rotor.

Based on the observations made at Cengkareng Heliport PT. Whitesky Aviation, especially on the land side in the operational activities of take off and landing helicopters in the helipad area, there are still several operational personnel who do not use personal protective equipment (PPE) in accordance with the Standard Operational Procedure (SOP). Helicopter take-off and landing operational activities cause a downwash effect caused by helicopter propellers resulting in gravel and sand in the helipad area and can result in work accidents if operational personnel do not use personal protective equipment (PPE) in accordance with the Standard Operational Procedure (SOP). This can be a hazard in the operational activities of an airline operator.

Based on the formulation of the problem that has been stated above, this study aims to: To find out what obstacles hinder the implementation of the Safety Management System (SMS) for heliport operational personnel at PT. Whitesky Aviation, and to find out the solutions that are carried out in overcoming problems that occur in the Safety Management System (SMS).

Relevant Research

Table 1. Relevant Previous Research Results

No	Researcher Name	Research Title	Year	Research result
1	Sandi, Bima Purnomo, S. Yuni, R. Laila.	Case Study of Final Approach and Helicopter Take Off Area on Aviation Safety at Sultan Thaha Airport, Jambi	2020	The results of this study are that according to the average Likert scale questionnaire results from ATC respondents a value of 89.9% is obtained and it can be concluded that ATC respondents strongly agree that changes were made regarding the location of the Final Approach and Take Off Area of the helicopter for flight safety at the airport Sultan Thaha Jambi.

2	Nurjanah, Umi	Implementation of Safety Management System for Operational Personnel at Raden Inten II Lampung International Airport	2020	The results of this study are that the main factors that influence the implementation of sms are human resources who do not understand the function of safety. On policy indicators and safety goals 81%, hazard indicators and safety risk management 2 and 3 variables that have the criteria of "unacceptable in existing conditions", meanwhile 5 and 8 variables that are in "risk control/mitigation require management decisions, can received after reviewing the implementation of operations", indicators of safety assurance have been implemented 73% with 27% of the variables in the in progress stage, indicators of safety promotion there are 73% and 82% of the variables that have been implemented, 27% and 18% of the reactive variables, and Emergency Response Planning indicators (ERP) 100% implemented.
3	Supriyanto, Erlan	Analysis of the implementation of the Safety Management System at UAMTC	2020	<ul style="list-style-type: none"> a. Gap analysis of the safety management system at UAMTC for policy components and safety objectives with 5 elements still has gaps, so UAMTC needs to make some improvements to procedures and risk control and complete the existing sms documents. b. The Safety Management System (SMS) at UAMTC is still not suitable because there are still gaps so that UAMTC needs improvements in its implementation and supporting documents so that SMS at UAMTC can run well.
4	Eka, Adin Fiyanzar, D. Nusraningrum, O. Arofat	Application of Safety Management System in Indonesian Aviation Navigation Services	2016	The research hypothesis which states that the application of SMS has a direct and significant effect on Aviation Safety is acceptable.
5	Sudirman Hi Umar, Hodi, Nur makkie	Evaluation of the Safety Management System at Adi Soemarmo Boyolali International Airport	2018	That the policy indicators and safety objectives have been implemented 100%, the hazard indicators and safety risk management have no variables that have the criteria of "unacceptable in existing conditions", meanwhile 10 variables are under control of "risk control/mitigation requires a management decision, acceptable after reviewing the implementation of operations", and 3 variables are at "acceptable", indicators of safety assurance and promotion of safety have been implemented by 81.82% and 18.18% are in the in progress stage, and indicators for the development of emergency response planning (ERP) have been implemented at 100%

RESEARCH METHODS

This study uses qualitative methods and descriptive research type. As explained by Moleong (in Umi Nurjanah, 2020) that qualitative research is research that has the aim of understanding phenomena related to what is experienced by the research subject, for example perception, behavior, motivation, action holistically, and by means of descriptions in the form of words in language, in a special natural context and by utilizing various scientific methods.

According to Sugiyono (2019) the qualitative research method is a research method based on the philosophy of postpositivism, used to research in natural conditions (as opposed to experiments) where the researcher is the key.

Based on the explanation related to the definition of qualitative research, the authors conclude that this qualitative research is a research procedure that is descriptive in nature or a description of an object carried out by researchers to study a phenomenon or event with a description in words obtained through scientific methods such as interviews, observation, and documents. The use of this qualitative research is intended to obtain an overview of what are the obstacles that hinder the process of implementing the Safety Management System (SMS) and handling in overcoming problems that occur in the Safety Management System (SMS) for heliport operational personnel at PT. Whitesky Aviation.

Place and Time of Research

Research time is the time used by researchers to conduct research on objects that are the center of attention. This research was conducted for two months, from 01 August to 30 September 2022. The research location is the place used to obtain data that is in accordance with the problem under study, the place for conducting this research is at Cengkareng Heliport PT. Whitesky Aviation.

Data Types and Sources

The type of research used is descriptive qualitative research, the data obtained through direct observation of several informants interviewed in order to obtain information, then an analysis of the data obtained is carried out, then the results of the observations are drawn a conclusion, which aims to understand the situation at the location research environment. Sources and types of data in this study use primary and secondary data types, according to Sugiyono (2019) that:

1. Primary Data. Primary data is a source of data originating or data obtained directly from the original source (not through intermediary media). Primary data can be in the form of subject opinions (people) individually or in groups, as well as observations. Then for the methods used in collecting primary data namely interviews, observation.
2. Secondary Data. Secondary data is data originating or data obtained by researchers indirectly or data obtained through intermediaries (obtained and recorded by other parties). Secondary data is generally in the form of evidence, notes, or results of reports that have been compiled in the form of archives or documents.

Data Collection Technique

1. Observation. According to Sugiyono (2017) Observation is a data collection method that has special characteristics related to human behavior, natural phenomena/symptoms, and work processes. Observations apply not only to humans, but also to other natural objects. Researchers are at a certain point in order to obtain evidence that is considered valid in the report that will be submitted. In this observation, the researcher uses participant observation, that is, the researcher directly observes the state of the object. Data collection techniques by way of observation is done by observing a phenomenon that occurs. Observations made later can obtain data that is valid or relevant to the research topic. What will be observed later is the operational activities of the Cengkareng Heliport heliport personnel PT. Whitesky Aviation. Observations that will be carried out are by means of researchers being in the heliport area based on aspects of observation starting from the

initial orientation, core activities, and final research activities, and carrying observation sheets whose indicators are in accordance with Law no. 1 of 2009 in KM 20 of 2019 concerning the Safety Management System (SMS) which the researchers have prepared.

2. Interview. According to Sugiyono (2017) an interview is a meeting between two people who exchange information or ideas through the question and answer method in order to build meaning on a particular topic. The interview has its own characteristics, the main characteristic of the interview is to make direct face-to-face contact between the information seeker and the information source. In the interview several questions have been prepared to be asked but various other questions will arise when conducting research. By means of this interview, researchers can gather information, data, and descriptions of the research subjects. This interview involved three operational personnel namely Safety Manager, Ground Operational Manager, and Technical Manager at Cengkareng Heliport PT. Whitesky Aviation. The interview process in this study was carried out in an unstructured way. Unstructured interviews are free interviews in which the researcher does not use interview guidelines that have been systematically and completely arranged for data collection. The interview guide used was only an outline of the problems asked. The results of the interviews were stored in the form of voice memos and used as a source of research information and compared with direct observation.
3. Documentation. According to Sugiyono (2017) Documentation is a record of past events. Documents can be in the form of writing, drawings, and monumental works. One of the purposes of this documentation is to support data. The things that will be documented in this study are pictures/portraits of operational personnel activities and Gap analysis document archives of the Safety Management System Manual (SMSM) of PT. Whitesky Aviation.

RESEARCH RESULTS AND DISCUSSION

What are the obstacles that hinder the process of implementing the Safety Management System (SMS).

As for the obstacles that hinder the process of implementing the Safety Management System (SMS), namely:

1. Communication Barriers. The communication barrier that occurred was the base of the helicopter PT. Whitesky Aviation is not only at Cengkareng Heliport, but also in Balikpapan, Pontianak, Pulai, etc., so that communication barriers occur when implementing the Safety Management System (SMS) when the Safety Manager socializes the implementation of the Safety Management System (SMS) to all personnel at PT. Whitesky Aviation.
2. Safety Culture. Safety culture or work safety culture that has not grown properly will affect work productivity. During operational helicopter take off and landing activities, all personnel are required to use PPE (Personal Protective Equipment) in accordance with the SOP (Standard Operational Procedure) but there are still operational personnel who have not yet used PPE (Personal Protective Equipment) in accordance with the SOP (Standard Operational). existing procedures. Safety culture comes from the awareness of individuals or groups of people who show commitment to the implementation of the Safety Management System (SMS).
3. Weather. The weather is very influential in the implementation of the Safety Management System (SMS), when handling operational helicopter flights, where helicopters fly using Visual Flight Rules (VFR), which is how to fly an airplane with only sight. One of the limitations of flying in VFR is the weather conditions and visibility which must be good. The relatively high speed of the aircraft requires a fairly far visibility. Weather conditions such as rain and fog can reduce visibility.

What is the solution to overcome the problems that occur in the Safety Management System (SMS)?

Cengkareng Heliport in carrying out operational activities in the heliport/heliport area must implement a Safety Management System (SMS) for the implementation of an operational flight activity. The solution taken by the Safety Department as having authority over the implementation of the Safety Management System (SMS). The programs that have been prepared are carried out based on the safety policy or aviation safety policies that have been signed by the President Director of PT. Whitesky Aviation, namely Mr. Denon Prawiraatmadja in the Safety Management System Manual (SMSM) document for PT. Whitesky Aviation. Based on the results of the interviews that have been conducted, the authors can answer the formulation of the problem with the following results:

1. Communication Barriers. In an effort to overcome communication barriers that are an obstacle to the implementation of the Safety Management System (SMS) the Safety Department has a solution for carrying out work programs through good communication by:
 - a. a. Poster. Posters can be used as a good and interesting communication medium that functions to provide information, convey messages, to all personnel of PT. Whitesky Aviation.



Figure 1. "Friday Inspect Day" Program
Source: Researcher

The Friday Inspect Day work program poster is carried out routinely by Cengkareng Heliport operational personnel from the safety, operational and technical departments. The poster was shared via status and WhatsApps safety manager group messages in order to remind the Friday Inspect Day work program to all heliport operational personnel.

- b. Stickers. Sticker is widely used as a medium of good communication. Through the affixing of stickers in places that have dangerous risks, it is urgently needed to notify the prohibition or order.

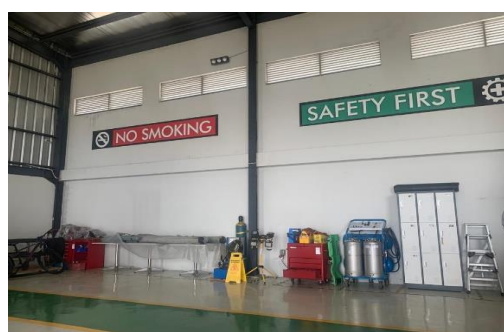


Figure 2. Stickers
Source: Researcher

The sticker in the picture above is on the Cengkareng Heliport helicopter hangar. The hangar area is very at risk of sparks, because in this helicopter hangar there are many tools or materials that are flammable and explosive, so the installation of the sticker is used to inform all personnel and passengers in the heliport area.

c. Dialog. Dialogue or what is meant by direct or face-to-face conversation is very good communication because people will understand and understand more, but at PT. Whitesky Aviation helicopter base is not only at Cengkareng Heliport. Cengkareng Heliport which is the home base and other bases are in Balikpapan, Pontianak, Pulai, etc. Because of this, the implementation of the Safety Management System (SMS) is constrained in conveying or socializing safety department work programs such as:

1) SAG (Safety Action Group). SAG (Safety Action Group) is one of the activities or programs of the safety department as an effort to implement the Safety Management System (SMS), where the SAG (Safety Action Group) activities discuss issues related to regulations, operations and technical aviation navigation services. SAG (Safety Action Group) is conducted once a month. In this activity all personnel of PT. Whitesky Aviation participates in SAG offline when at the Cengkareng Heliport home base and online via the zoom meeting application when outside the home base (Balikpapan, Pontianak, Pulai, etc.) or those who are on leave must join the SAG (Safety Action Group) program. This SAG activity is listed in the GAP analysis of component 4 Safety Promotion, element 4.2 Safety communication.

2. Safety Culture. A company must promote safety as a core value or main value to support the achievement of a positive safety culture. The safety department in promoting safety is by implementing mandatory training for all personnel in each department. This training activity is based on GAP analysis component 4 Safety Promotion element 4.1 Training and education. Each personnel who takes part in the mandatory training will also receive a certificate signed directly by the safety manager as instructor and managing director as BOD (Bod of Director). The certificate aims to prove that participants have carried out mandatory training such as:

a. Basic Indoctrination New Employees For Safety Area. This work program aims to provide basic knowledge about safety areas in the heliport/heliped area. This activity was attended by new employees and apprentices. In basic indoc activities an understanding and procedure will be given regarding the safety areas in the heliport area.

b. Training Safety Management System (SMS). This training activity aims to increase personnel knowledge as an effort to prevent work accidents in their work environment. Safety Management System (SMS) training is conducted every six months which must be attended by all personnel from all departments.

c. Avsec Training (Aviation Security) awareness course Training In House. The purpose of the AVSEC training is to provide knowledge, excellent service, and to create awareness and vigilance for aviation security and safety. AVSEC training activities are carried out every six months and all personnel are required to recurrent.

d. Human Factors Training. Human factor training activities are aimed at introducing the importance of human factors in the aviation industry. This training broadly covers all aspects of human involvement in aviation. Human factor training is needed to increase work efficiency and effectiveness, increase safety culture, reduce stress and fatigue. This activity is carried out every six months and must be attended by all personnel in each department.

e. Dangerous Goods Regulation Course In House Training. DG (Dangerous Goods) training activities are carried out every six months and this activity must be attended by all personnel in each department.

3. Weather. Weather is one of the obstacles in the implementation of the Safety Management System (SMS). The solution provided by the Operational Department is by:
 - a. Wind Direction Indicator Replacement. The replacement of the old Wind Direction Indicator with a new one aims to provide a clearer indication of surface wind direction and wind speed. Wind Direction Indicator must be installed or placed in such a way that it can be seen from an aircraft that is in the air or in the movement area, (KP 326 of 2019 concerning Technical and Operational Standards of Civil Aviation Safety Regulations - Part 139 (Manual of standard CASR - Part 139)).
 - b. Use of the Weather Station Tool. Weather stations are used to determine several parameters that can be measured as well as weather patterns such as to measure wind speed and wind direction, measure visibility, measure rainfall, atmospheric pressure, temperature and humidity, etc.

CONCLUSION

Based on the results of the research that has been carried out, conclusions can be drawn regarding several matters concerning the obstacles that occur during the process of implementing the Safety Management System (SMS) and the solutions made in handling obstacles to the implementation of the Safety Management System (SMS). Obstacles experienced during the process of implementing the Safety Management System (SMS), namely communication barriers considering the helicopter base of PT. Whitesky Aviation exists in various regions, a safety culture that has not grown properly is an obstacle due to a lack of individual awareness of the importance of safety, and the weather is also an obstacle in an aviation operation. In handling the obstacles that occur, the solutions taken are very good because there is a work program from the safety department which was made through prior observations and has been implemented which is followed by all personnel from each department at PT. Whitesky Aviation.

Suggestion: For companies, PT. Whitesky Aviation as an aviation operator company (AOC-135) should further increase the awareness of each personnel or employees of the importance of work safety so that they are not negligent at work and do not violate the SOP (Standard Operational Procedure) rules that have been made and improve safety quality standards so that activities operations run safely and securely. For future researchers, as a reference for conducting similar research, and for future researchers to be able to add variables and develop them again so that further research is even better.

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