

ORGANIZATIONAL CHANGE MANAGEMENT: AN IMPLEMENTATION OF AIRPORT SAFETY RISK ASSESSMENT

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Abstract

In achieving goals in an aviation company or organization is not just a leadership problem, another problem that needs to be considered in a company is about change management. The company's ability to read and deal with change must be accompanied by a thorough evaluation of all aspects that will be faced. Based on the applicable regulation it is explained that in dealing with changes that occur in an aviation service provider, it must be accompanied by the Safety Risk Management process for the changes that occur. This research intends to analyze and study the extent to which the application of change management in an aviation service provider. This study uses a qualitative approach which is descriptive and uses analysis. It can be concluded that existing Hazard Identification and Risk Assessment (HIRA) in Safety Management System documentation of airport x shall be reviewed. The mitigation measures in reducing the risks that arise are increasing the capacity and knowledge of HIRA by Safety Management System training and reviewing the existing SOPs related to the HIRA process for changes that occurred in the aviation service provider.

Keywords: management of change; hazard identification; risk assessment

Introduction

Management is an act that regulates processes or facilities in order to utilize resources effectively and efficiently to achieve certain goals. As a process of utilizing organizational resources, mobilizing, and controlling with all its aspects by using all available potential in order to achieve organizational goals effectively and efficiently (Haya & Tambunan, 2022).

One of the important factors that determine the achievement of organizational goals is the management of the organization concerned, in the form of applying a number of basic organizational principles, determining the organizational structure or pattern of cooperation, division of labor, coordination, smooth communication, decision-making processes, and organizational survival (Handayani, 2010).

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Another problem related to achieving goals in a company or organization is not just a leadership problem, another problem that needs to be considered in a company is about change management (Lestary, Aswia, & L, 2021). The company's ability to read and deal with changes in an environment full of uncertainty must be balanced with the readiness of employees to face change. An employee in carrying out his role and position requires competence in it.

Based on the Safety Management Manual (SMM) Document 9859 [International Civil Aviation Organization year 2018](#), it is explained that in dealing with changes that occur in an aviation service provider, it must be accompanied by the Hazard Identification and Risk Assessment (HIRA) process for the changes that occur. This is done so that operations and services at the organization can run according to plan (Paramita, 2021).

When referring to the SMM, the modern aviation system is always undergoing development, which requires employees who have competence in implementing a safety management system. The established safety risk image of a system will alter when changes are made to it. Hazards introduced by changes may reduce the efficacy of current defenses. This might bring up new risks or alter current safety risks. States should assess and control how changes to their aviation systems will affect them (Amalia, 2019).

In implementing the Safety Management System (SMS), Examples of changes with potential for significant impact to the safety risks of the State include, but are not limited to reorganization of State aviation authorities (including downsizing); changes in the SSP processes, Safety Risk Management and safety assurance processes; changes in the regulatory environment, such as changes in existing State safety policies, programs, and regulations; changes in the operational environment, such as introduction of new technologies, changes in infrastructure, equipment and services; rapidly changing industry (expanding, contracting, morphing) and its potential impact on the State oversight and performance monitoring capabilities (Martadinata, 2021).

Airport x is one of the aviation service providers in the airport sector, which was previously an airport managed by the Ministry of Transportation. Airport x was officially handed over its management from the Ministry of Transportation to State-Owned Enterprises, through the Joint Utilization Scheme of State-Owned Assets. These changes cause the existing SMS documents to be no longer relevant to the actual conditions that are currently happening.

This research intends to analyze and study the extent to which the application of change management in an aviation service provider has been determined by applicable regulations. and second, the author tries to identify hazards and assess the risks that can arise from changes that occur to the course of operations.

Research Methods

This study uses a qualitative approach which is descriptive and uses analysis. The method used in this study is a descriptive qualitative method to describe an event or events which are then described as they are without manipulating (Sugiyono, 2010). Collecting data using literature study, collecting references in the form of data in the form of

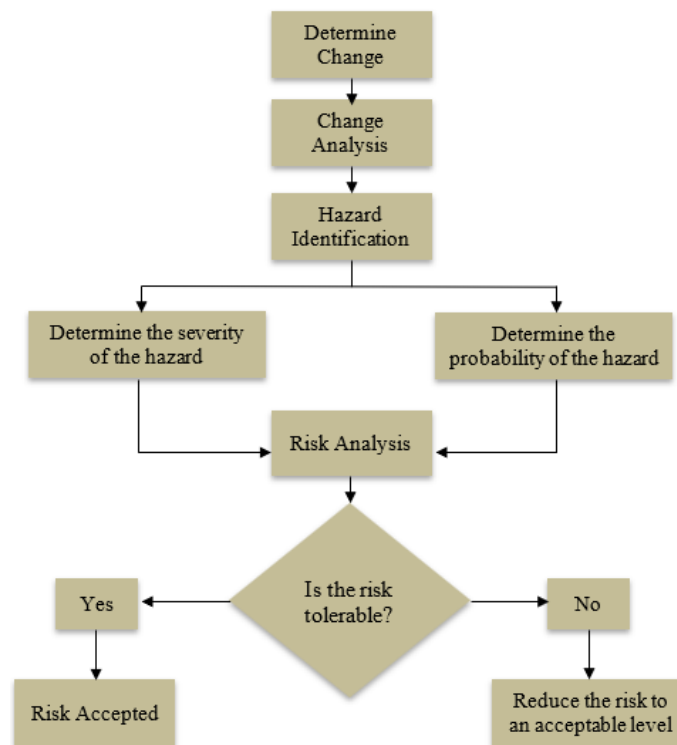
narratives or sentences, documents, theories of opinion, pre-existing ideas and then analyzed using data analysis techniques.

Data analysis, managing data from theoretical opinions or ideas from previous data. The first thing to do in analyzing the data is to reduce the data, select or retrieve important things from the existing data (Rijali, 2018). Next, display the data, describe the data in the form of narrative text in the form of graphs, charts, notes or brief descriptions and finally draw conclusions.

Data were taken from respondents using interview and questionnaire methods. Interviews are carried out as a data collection technique if we want to conduct a preliminary study to find problems that must be faced, examined and also if the researcher wants to know something from the respondents in more depth (Soleh, 2021).

Results and Discussion

From observations it is known that at airport x there is a system change procedure mentioned in the safety management system manual, that allow it to affect the operational performance of the airport as shown in the figure below:



Picture 1
Management of Change Flowchart

From the flowchart above, there are several stages that are carried out to follow up on various kinds of changes that occur, starting from determining the type of change to determining whether the risk that occurs due to the change is acceptable or not.

A risk assessment is carried out to determine the level of risk of each potential hazard so that it can be determined what hazards require further action. By combining the level of probability of the occurrence of a hazard and the severity that can result from the hazard (Maubere & Panjaitan, 2014).

The procedure is in accordance with the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 62 of 2017, which states that: The formal process for the management of change shall (1) identify changes within the organization which may affect established processes and services, (2) describe the arrangements to ensure safety performance before implementing changes, (3) eliminate or modify safety risk controls that are no longer needed due to changes in the operational environment.

The Risk Assessment in the management of change procedure is based on comparing 2 (two) determining factors, namely Probability and Consequence. Each of these factors has certain criteria and numbers, as shown in the table below.

Table 1
Risk Level Probability Scale

| <i>Likelihood</i> | <i>Meaning</i> | <i>Value</i> |
|----------------------|---|--------------|
| Frequent | Likely to occur many times (has occurred frequently) | 5 |
| Occasional | Likely to occur sometimes (has occurred infrequently) | 4 |
| Remote | Unlikely to occur, but possible (has occurred rarely) | 3 |
| Improbable | Very unlikely to occur (not known to have occurred) | 2 |
| Extremely improbable | Almost inconceivable that the event will occur | 1 |

Table 2
Consequence Scale of Risk Level

| <i>Severity</i> | <i>Meaning</i> | <i>Value</i> |
|-----------------|--|--------------|
| Catastrophic | <ul style="list-style-type: none"> • Aircraft / equipment destroyed • Multiple deaths | A |
| Hazardous | <ul style="list-style-type: none"> • A large reduction in safety margins, physical distress or a workload such that operational personnel cannot be relied upon to perform their tasks accurately or completely • Serious injury • Major equipment damage | B |
| Major | <ul style="list-style-type: none"> • A significant reduction in safety margins, a reduction in the ability of operational personnel to cope with adverse operating conditions as a result of an increase in workload or as a result of conditions impairing their efficiency • Serious incident • Injury to persons | C |
| Minor | <ul style="list-style-type: none"> • Nuisance • Operating limitations • Use of emergency procedures • Minor incident | D |
| Negligible | <ul style="list-style-type: none"> • Few consequences | E |

Related to the implementation of the assessment/evaluation of each SMS risk that has been identified using the SMS risk analysis matrix as shown in the table below.

**Table 3
Risk Matrix**

| Safety Risk | | Severity | | | | |
|----------------------|---|-------------------|----------------|------------|------------|-----------------|
| Probability | | Catastrophic A | Hazardous B | Major C | Minor D | Negligible E |
| Frequent | 5 | 5A | 5B | 5C | 5D | 5E |
| Occasional | 4 | 4A | 4B | 4C | 4D | 4E |
| Remote | 3 | 3A | 3B | 3C | 3D | 3E |
| Improbable | 2 | 2A | 2B | 2C | 2D | 2E |
| Extremely improbable | 1 | 1A | 1B | 1C | 1D | 1E |

The Safety & Risk Management Unit evaluates all identification of hazards and consequences proposed by the relevant work units, then an assessment is carried out by comparison with applicable procedures and regulations to determine whether the level of hazard of work activities or existing conditions is in accordance with the desired standard or not (Riyadi, Hendra, Sadiatmi, Nugraha, & Amalia, 2021).

From the results of observations and interviews conducted by researchers on the safety & risk management unit, the results obtained by researchers are contained in a gap analysis table as below.

**Table 4
Management of Change Gap Analysis**

| No | Performance Compliance Indicators | Performance Achievements | | | | Problem Identification |
|----|---|--------------------------|---|---|---|---|
| | | P | S | O | E | |
| 1 | The organisation has established a process and conducts formal hazard analyses and risk assessments for major operational changes, major organisational changes and changes in key personnel. | | | | | The indicators are appropriate based on the size, nature, complexity of the organization and the risks inherent in the activity, including industrial sector considerations |
| 2 | Safety Case/Risk assessments are aviation safety focused. | | | | | There is evidence that indicators are being used and outputs are being produced |
| 3 | During the change management process previous risk assessments and existing hazards are reviewed for possible effect | | | | | There is evidence that the 'indicators' are clearly visible and documented in |

| | | |
|---|--|---|
| | | the organization's SMS Documentation |
| 4 | Validation of the safety performance after organisational and operational changes have taken place to assure assumptions remain valid and the change was effective | The indicators are appropriate based on the size, nature, complexity of the organization and the risks inherent in the activity, including industrial sector considerations |
| 5 | All organisational and operational changes are subject to the change management process | There is evidence that indicators are being used and outputs are being produced |
| 6 | Safety accountabilities, authorities and responsibilities are reviewed as part of the change | The indicators are appropriate based on the size, nature, complexity of the organization and the risks inherent in the activity, including industrial sector considerations |

From the results of the gap analysis above, there are two points that must be addressed by the management regarding the implementation of management of change in the safety management system, namely related to the implementation of previous risk assessments and existing hazards are reviewed for possible effects. This happened because the implementation of the management of change procedure only focused on identifying new hazards and paid less attention to the relation to the risk assessment that had been done previously.

The risks that can arise from these weaknesses, the author tries to identify them with a hazard identification and risk assessment scheme as shown in the table below.

Table 5
Hazard Identification And Risk Assessment With
Variable X = Probability; Y = Severity; Z = Risk Scale

| Activities | Hazard | Risk | Risk Assessment | | |
|---------------------------|--|---|-----------------|---|----|
| | | | X | Y | Z |
| Change management process | During the change management process, previous risk assessments and existing hazards are not reviewed for possible effects | Operational limitations due to hazards that are not completely identified | 4 | D | 4D |

The risks that may occur in the table above are operational limitations due to hazards that are not completely identified with a risk scale of 4D which is in the yellow zone or moderate in terms of acceptable after review of operations. So, the next thing to do is to

reduce the value of the risk that arises by planning mitigation steps so that the probability or severity level can go down as in the table below.

Table 6
Hazard Identification And Risk Assessment
With Variable X = Probability; Y = Severity; Z = Risk Scale

| Activities | Hazard | Risk | Risk Assessment | | |
|--|--|--|-----------------|---|----|
| | | | X | Y | Z |
| During the change management process, previous risk assessments and existing hazards are not reviewed for possible effects | Operational limitations due to not completely identified hazards | <ol style="list-style-type: none"> 1. Provide training or refresher related to the implementation of SMS to safety officers 2. Organizing and compiling SOPs related to the HIRA process related to changes that occur | 2 | D | 2D |

Risk mitigation is an action to increase opportunities and reduce threats from the likelihood and impact of the risks posed (Ramadhan, Febriansyah, & Dewi, 2020). A liable mitigation strategy may include any of the above approaches or may include multiple approaches. To find the best solution, it is important to consider all possible control measures. The effectiveness of alternative strategies should be evaluated before making a decision.

From the results of table 6, after scenarios with the mitigation process using 2 (two) approaches, namely Providing training or refresher related to the implementation of SMS to safety officers (training) and Arranging and compiling SOPs related to the HIRA process related to changes that occur (procedures), then the scale results obtained risk is at number 4. This shows a decrease in the risk number from the initial 4D to number 2D which is in the green or acceptable zone and operations at the aviation service provider can continue.

Conclusion

Based on the results of the research conducted, it can be concluded that there are still issues that must be considered by the management regarding the implementation of the 3rd pillar in SMS, especially regarding the management of change. Subsequently, a hazard identification and risk assessment (HIRA) process was carried out on deficiencies that resulted in risk mitigation, namely increasing the capacity and knowledge of HIRA by SMS training and reviewing the existing SOPs related to the HIRA process for changes that occurred in the aviation service provider. Therefore, in the event of changes that may affect safety risks associated with aviation products or services, and in order to identify and manage the safety risks that may arise from these changes, existing hazard identification and risk assessment in SMS documentation shall be reviewed.

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