

Safety Program Evaluation at PT GMF AERO ASIA to Support Safety Management System in The Maintenance Process

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Abstract. The aircraft maintenance aspect plays an important role in the aviation industry in maintaining the quality of service and security of commercial aircraft in terms of safety. The purpose of this study is to evaluate the safety program at PT. GMF Aero Asia in supporting the safety management system (SMS) in the Maintenance process. This study uses descriptive-qualitative method with an instrument for collecting data through observation using a questionnaire via google form and interviews via online. SMS can be said to be going well if the company has made several factors supporting its implementation in the achievement process. One of them is by creating safety programs. Programs that are created and socialization carried out can already enable employees to identify hazards themselves, and report with facilities provided by the company. The results of our research, overall PT GMFAA has run a good safety program in supporting the SMS in its maintenance process. Thus the Safety Management System that has been implemented can run well and also help smooth work, company progress and also the image of the company PT GMFAA but needed some improvements.

Keywords: evaluation, safety program, safety management system

1. Introduction

Workplace accidents have significant costs and affects the productivity, income and public image of the company, therefore the company must implement a good Management System in supporting their company, specially in this research focus on MRO(maintenance, repair, overhaul) activities of the company. [1].With the increase in passenger growth, freight forwarding, the development of flight routes in Indonesia, technological advancements and the sophistication of the current fleet of aircraft, special attention needs to be paid to safety and security factors in various aspects of aviation. There are 3 aspects that are able to influence and contribute to aviation safety, the first of which is the airplane's own fleet, how it is designed, made and maintained. The second is the state flight system, airport, air traffic lane, and air traffic regulator (ATC) itself. And the last one is airlines flight operations related to aircraft control and operation on airlines. [2][3]. Likewise, the growth of the aviation industry, especially in the Asia Pacific region has also contributed to the growth of aircraft maintenance services companies or commonly known as MRO companies.[4]. Seeing the growing growth of airlines in Indonesia, of course a quality MRO is needed. [5][6].

The aircraft maintenance aspect plays an important role in the aviation industry in maintaining the quality of service and security of commercial aircraft in terms of safety.[7][8]. For this reason, the need for optimal safety standards in accordance with the development of aviation technology.[9]. Every individual or institution such as PT. Garuda Maintenance Facility (GMF) Aero Asia must prioritize level of safety in the first place. Which in this study PT. GMFAA must be able to operate according to standards set by international authority regulators such as the International Civil Aviation Organization (ICAO), Federal Aviation Administration (FAA), and the European Aviation Safety Agency (EASA).[10]. PT. GMF Aero Asia is a subsidiary of PT. Garuda Indonesia Airlines. PT. GMFAA is a focus MRO engaged in aircraft maintenance services to maintain and improve the quality of operations and security of

aircraft. PT. GMFAA was established to be one of the best aircraft maintenance solutions providers in the world, which has a reputation for quality, reliability, on-time delivery and affordability.[11].

Currently PT. GMFAA serves maintenance of several airlines consisting of, Garuda Indonesia, Citilink, Sriwijaya Air, Nam Air and various airlines from around the world. In this case, the researcher wants to evaluate the safety program at PT. GMF Aero Asia in supporting the safety management system (SMS) in the Maintenance process. In the MRO industry there are standards that must be met to be able to carry out its service activities, namely Maintenance Aircraft. This standard has been set by the international regulator, namely by the International Civil Aviation Organization (ICAO). One standard that must be met is the need for a Safety Management System (SMS), which is the establishment of a unit led by a Safety Manager along with his staff. Focused on implementing the safety management system based on hazards identification in MRO management.[12].

SMS can be said to be going well if the company has made several factors supporting its implementation in the achievement process. One of them is by creating safety programs.[13]. Basically the safety program is a procedure and steps that are integrated in measuring safety operation effectively. With the safety program, it is expected to be able to identify hazards in the work area as well as handle them quickly so as not to endanger the survival of an organization.[14]. Therefore MRO needs continuous program evaluation. Evaluation of the program itself is a requirement to measure the achievement of a program within the company by controlling it routinely in order to be able to realize and maintain quality, taking into account the established SOP.[15][16][17]. The aviation industry such as MRO has very good prospects, especially in the Asia Pacific region. Besides aiming to produce the desired level of safety and quality, the Safety Program will also motivate employees to work according to manuals and procedures to be able to avoid potential hazards. Safety performance is not only understood by numbers, but also reality that can be seen and felt directly in the field. Therefore, in evaluating the safety program at PT. GMF Aero Asia, PT. GMFAA is expected to be able to support SMS and maintain the quality of services provided with good safety parameters. Because thus the company can see and control the company whether it is in accordance with the procedure and whether it is in accordance with the expected target. That way, performance with good safety parameters will certainly give satisfaction to the company, security to employees, company environment, and of course satisfaction from customers (airlines) for the service maintenance that has been provided so that the fleet of aircraft they have always maintained well and routine, and able to convince passengers that the selected fleet is always well maintained.[18].

2. Research Method

2.1. Types of Research

This research uses a case study approach and field research, where the goal is to intensively study the background, the last status and environmental interactions that occur in a work unit.

2.2. Research Focus

The aim of this research is to evaluate the safety program at PT.GMF Aero Asia in supporting Safety Management System (SMS) in the maintenance process. This research focuses on safety program that already implementation in PT.GMFAA, looks the company's commitment to their safety program and also tries to get the opinions of all MRO company employees about the safety program that we know is one of the important elements that needs to be evaluated in an MRO company. This research uses descriptive qualitative approach.

2.3. Techniques of Data Collection and Data Analysis

This study uses descriptive-qualitative method with an instrument for collecting data through observation using a questionnaire via google form and interviews via online(whatsapp). This research uses data collection techniques such as: use primary data, through conduct by directly observation and interviews to employees.[19][20]. And also secondary data from journal, and another type of study literatures. The data collection carried out for almost 3 weeks, with the help of our survey tool, namely questionnaire to employee with 36 employees with various positions and years of employees work, namely General manager, manager, technician, engineer, inspector, and planner through google form, interviews, some online and literature sources, studies to analyse problems and certainly provide conclusions.

3. Discussion and Result

Based on the results of observations that we conducted at PT. GMF Aero Asia (GMFAA), we obtained primary data in the form of answers in the form of opinions from employees regarding safety programs that already existed at PT. GMFAA, with 36 employees consisting of various work periods, and work positions from various divisions / work units.

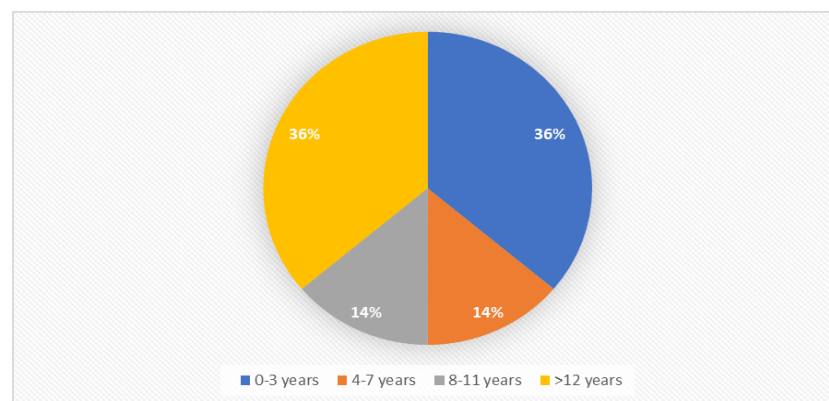


Figure 1. Years of Service Employees PT.GMF Aero Asia

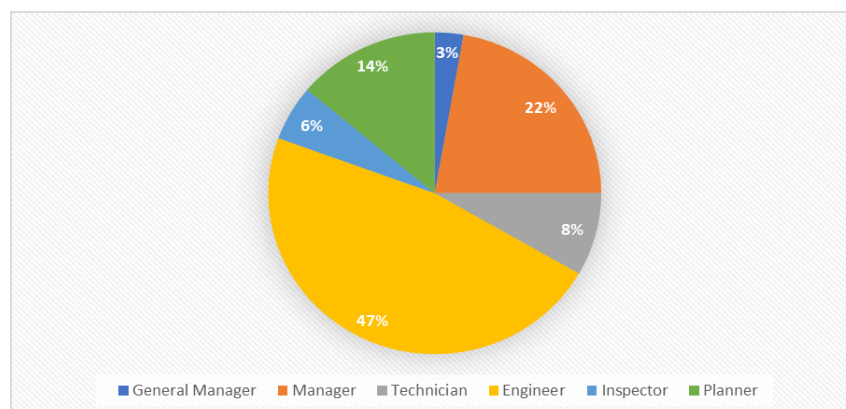


Figure 2. Job Title Employees PT.GMF Aero Asia

According Figure 1, we're get our respondents are employees of PT. GMFAA who have a work period of 0-3 years as many as 13 people(36%) , 4-7 years as many as 5 people(14%), 8-11 year as many as 5 people(14%), and more than 12 years as many as 13 people(36%). Next, in Figure 2 is the job titles of our respondents. General Manager is 1

person(3%), Manager is 8 people(22%), Technician is 3 people(8%), Engineer is 17 people(47%), Inspector is 2 people(6%), Planner is 5 people(14%). According to them it is known that basically PT. GMFAA has implemented a good safety program, but still has to make improvements. According to employees, the safety program is the most important priority in an MRO company such as at PT. GMF Aero Asia, because of the safety is number one. Especially the types of work that are technical in nature, with the safety program the company will be able to avoid hazards that may arise in its business activities so that the company avoids loss of assets, both personal and overall. In addition, safety programs also reflect the product (output) produced in accordance with customer desires, the company's trade mark, and are able to indicate that if a company is aware of the importance of work safety and thus able to improve the sustainability of the MRO business.

In guaranteeing an independent Safety Management System (SMS) as well as for monitoring company organization compliance with authority requirements, meeting national / international civil aviation requirements and requests from customers. Of course the company must create various Safety Programs to support it.

The Safety Program is an implementation step taken by PT. GMFAA in the Safety Management System owned. This is done not only concerned with the profitability of the company, but also to create sustainable services and prove the capabilities of the company in terms of product and service. It is also important to know that the framework of the Safety Management System (SMS) based on ICAO in Annex 19 includes four components and several elements which are the minimum requirements for implementing SMS. The four components and their constituent elements include:

1. Safety policies and objectives: a). Responsibility and management commitment, b). Safety accountability, c). Safety key personnel, d). Coordinating for ERP (Emergency Response Planning),
2. Safety risk management: a). Identification of hazards, b). Assessment and mapping of safety risks.
3. Safety Assurance: a) Safety Monitoring, b). Audit
4. Safety Promotion: a).Education and Training, b).Safety communication, c).SMS documentation.

The safety program at PT. GMF Aero Asia can be said to be very varied, namely the Safety Action Group (SAG), publishing tabloids about safety, Safety Campaign with Banners and Posters, Safety Briefings before each work, applying the 5S principle (Short, Set in order, Shine, Standardize, and Sustain), K3 (Occupational Safety and Health) and others. The following are some points that need to be considered in the process of implementing safety programs to achieve a good Safety Management System, namely:

3.1 Management Responsibility for Safety

The management team becomes something that is considered important in the company and has special responsibility for the operation and management of its safety. In this study, it appears that PT. GMFAA has fostered a culture of caring for its employees, with management who always provide information about safety programs they have. PT. GMFAA also routinely and effectively conducts socialization within a period of 1 week, twice a week or more. The socialization carried out by PT. GMFAA is by making safety campaigns such as posters and banners in the form of pictures, writings placed in several work divisions, even visually through GMF media owned by all employees. However, according to employees there are still some difficult posters or banners. understood and the poster was not installed in all divisions as in the Calibration Unit. Furthermore, with a safety breeding sheet (SBS), according to some employees the company must be more creative towards socialized content safety programs. Not only that, the company also provided information on procedures for using safety equipment such as APAR and APD.

However, before that is done, what is very important is of course the role model of the leaders by giving real examples of behaviour, as well as in the process of working. For example, such as making maintenance error reports in the work unit regularly. According to employees at PT. GMF Aero Asia states that management has been responsive to responses to reports that have been submitted by employees regarding hazards in their work area. But the responsiveness is also measured by the parameters of whether or not the action that should be done is light. If it is light, the action will be fast, but if the action requires money and technical knowledge is a bit complicated, the handling will take a long time. As one respondent said, the response of PT. GMFAA is always reactive / active in follow up unless it involves a large cost, usually initial mitigation will be carried out, then long-term planning is made if using a large budget. Example: a ditch in the lobby area that is too deep and open. Short-term program by providing clear markers and given segregation limits. Long-term follow-up is closed.

3.2 Internal Reporting System in Risk Management:

3.2.1 Identification hazard

The employees at PT. GMFAA have identified several hazards in their work area individually or in groups. And according to observations it was found that there are 2 hazards types namely:

1. Safety hazard, namely awareness of safety equipment (APD), supporting equipment and facility maintenance (work ladder is not in accordance with aircraft type, broken fuselage dock, improper tools and not stored neatly, leaky roof, broken maintenance lights, completeness of service manual instrument, high air pressure.
2. Health hazard, namely the presence of fluid spills such as Hydraulic or oil, pressurized air, chemical pollution, leaky condensation water,

Identification hazard is done by using the Job Hazard Analysis method. This method focuses on the stages of work as a way to identify hazards before an unwanted event occurs (OSHA 3071). PT. GMF Aero Asia also has HIRAM Tools (Hazard Identification, Risk Analize and Mitigation) which are used in the process of identifying hazards.

3.2.2 Risk Assessment

Risk Assestment is carried out by the Quality Assurance & Safety or Safety Action Group after receiving a report from PT.GMFAA employees. Before conducting a risk assessment, an evaluation must be carried out to determine whether the report can be identified as a danger or not. The accident that had occurred at PT. GMFAA can be categorized by its probability and severity as follows:

1. Remote, with a risk parameter occurring 1x in 1 year, which is usually described as green, indicating the risk of an event is not high enough or enough to be controlled
2. Frequent, with risk parameters occurring 1x in 1 month, which is usually described in yellow, Every event that falls in this area is usually considered as an event that needs to be monitored.

3.2.3 Mitigation

From the research that we have done, it shows that the quality and care of employees is very high in their work safety. Because of a total of 36 respondents, almost all answered ever and always reported to the company, one respondent replied that when he encountered hazard, he would report through the IOR (Internal Occurring Report), the IOR was part of the KPI and there was a target. If the employee continuous care to report hazards via IOR, a unit of TQ/ TQY will be recorded and of course company would provide good judgment even rewards.

When they encounter a hazard in the form of an Internal Occurrence Report (IOR) that can be done by hardcopy using forms, IOR databases, e-mail and chat media to the Safety Inspection Unit section. And the IOR itself has actually been entered into the system owned by PT. GMFAA, namely HIRAM Tools. This HIRAM is carried out throughout the unit. In addition, PT. GMFAA in the mitigation process also create a Safety Action Group (SAG) which aims to improve the safety management process in the company. And is one of the implementations of the Safety Management Manual (SMM) required by ICAO annex 19.

3.2.4 Safety Audits and Inspection

According to the results of our research, PT. GMFAA employees stated that each process of carrying out the work must be accompanied by evidence in the form of reports, certificates, etc. that must be prepared in full and clearly. All documents must be stored in a place that is safe and easy to find if asked during the safety audit process. Safety Audit itself is a step in measuring the extent to which the company is running, whether it is in accordance with the safety procedure or not.

PT. GMF Aero Asia itself uses applied quality standards such as, CASR 145- DGCA, FAR 145-FAA, JAR 145-EASA as a company standard in running MRO operations and these standards are usually used according to customer requests. Therefore, at PT. GMF Aero Asia itself routinely carried out safety audits, this audit itself is divided into 2 types, namely Internal Audit (which is usually carried out in the division or unit concerned by the quality assurance PT. GMFAA) internal audit can usually reach 20 times a year, in accordance with the conditions and the division or unit itself and External Audit (usually auditors from outside regulatory agencies such as EASA, FAA, etc.) this external audit is usually carried out once a year and covers all aspects of care such as safety and quality policy, procedure, personnel requirements, facilities, training, equipment, tools & materials, data maintenance, maintenance records, and certification of maintenance.

Safety Audit is also very related to the acceptable level of safety standard from maintenance services. According to the employees of PT. GMFAA itself, the company always strives to keep promoting safety quality that is sustainable. And PT. GMF Aero Asia has also received approval from the authorities EASA, FAA, CASA, CASR and others in the maintenance process. This is one barometer that companies must consistently pay attention to the standard acceptable level of safety and has become a positive issue for global MROs.

3.3.5 Safety Training and Education

According to our observations, PT. GMF Aero Asia has provided training related to safety programs owned by PT. GMF Aero Asia, such as Safety Awareness Management Systems Training, Mandatory Training, APAR / PPE Equipment Training, K3 training, D / G Training etc.

4. Conclusion & Recommendation

The Safety Management System cannot be implemented properly if the parts that supports it are not implemented properly. In this study the Safety Program is one of the supporting factors in supporting the process of implementing the existing Safety Management System. The running of safety programs is also inseparable from the application of good management and also good quality employees. Based on our research, it can be concluded that PT. GMF Aero Asia has carried out its safety program well. The programs created and socialization carried out have been able to enable employees to identify the hazards they encounter and report to the company with an Internal Occurrence report (IOR) in each of their work areas and report directly to the Safety Inspection Unit, and also make Safety Action Group (SAG) which is one of the implementations of the Safety Management Manual (SMM) required by ICAO Annex 19.

However, there are still a number of improvements to be made. Such as posters and banners that are difficult to understand and not all posters are installed in all divisions, making safety campaign content more attractive so that it is not boring, reviving the company's culture of safety, creating good communication and mutual corrective work, giving back training on Awareness Safety Environment, because most accidents are found due to Human Error. Overall, PT GMF Aero Asia has run a good safety program in supporting the Safety Management System (SMS) in its maintenance process. Thus the Safety Management System that has been implemented can run well and also help smooth work, company progress and also the image of the company PT GMF Aero Asia. And if this goes on in a sustainable manner, of course, PT. GMFAA is able to achieve its target of becoming the Top 10 MRO in the world.

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