Human Factor in JAL123 Accident

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Abstract

The Boeing 747SR crash is considered to be one of the infamous air crashes in the aviation history. Studying this incidence in detail enables aviation students to realise the sensitivity of human errors in aviation control. It signifies that human factor plays a crucial role in the development, maintenance and operation of the aircraft. Aviation maintenance is the key to ensure safety of a flight; however, human errors in aircraft control contribute a great deal to air crash incidents. This paper intends to study the role of skilled technicians responsible for aircraft maintenance to reduce the probability of air crash. The comprehensive study of the air-crashes in the aviation history suggests that these incidents are caused by human errors more or less. This paper examines many journals and articles that deduce results based on the data presented in them. The paper concludes by evaluating the significance of involvement of human factor in air-crashes and accidents.

Keywords: Aviation, Aviation Maintenance, Boeing 747SR, JAL123, Air-crash, Aviation technician.
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The flight JAL-123 of Japan Airlines was a passenger flight scheduled on 12th August, 1985. It took off from Tokyo Airport and was supposed to reach Osaka when the aircraft crashed into the Mount Takamagahara 32 minutes after take-off.

Purpose of the Study

JAL-123 of the Japanese Airlines continues to be one to the devastating aircraft crashes in the history. This accident claimed the lives of all 15 members of the aircraft crew and 505 passengers, sparing the lives of only 4 of the 509 passengers on board (Rutherford, 1988).

Problem Statement

A great amount of research work has been conducted regarding the pilot’s involvement in the aviation accidents. The study also highlighted the human factor in these aerial mishaps; however, little attention has been paid to the errors caused by the aviation maintenance staff that resulted in the accident.

Aims and Objectives

This research paper aims to:

- Identify the causes and types of human errors in aviation maintenance.
- Evaluate the factors that trigger humans to cause errors in the setting of an aviation organisation.
- Evaluate the degree of threat posed by the human errors in aviation operations.
- Suggest methods and techniques to minimise human error in aviation maintenance to ensure flight safety.
Literature Review

Despite a great deal of automation processes in the aviation industry, human contributions are an essential component of this industry as they are responsible for operating and maintaining the automation technology. Even a minor human error can cause havoc in aviation control. There are several aviation incidents in history, the major reason being the human inabilities. The investigations on these accidents reveal that the human errors vary in many categories and a variety of factors that result in each error. It was only after this incidence that the Federal Aviation Administration (FAA) realised the importance of conducting an official meeting for ensuring the safety of aircraft regarding the maintenance (Lu, 2003).

The study deals with human errors, factors and categories, and the techniques to minimise such errors (Drury, 2001). It is estimated that in every aircraft accident, there is a 30% to 90% involvement of human error (Marx, 1998). Almost 12% of all air crashes have been caused due to the poor maintenance and human negligence of aircraft and its parts (Graeber and Marx, 1993). According to the reports, whenever an air-crash occurs because of the malfunction of aircraft operations, there is a 33% chance that those failures are caused by the poor aircraft maintenance (Allen, Rankin, 1995). Similarly, maintenance errors become a cause of nearly 50% engine delays encountered by the airlines (Khan, 2016). The ratio of these human errors can be mitigated by taking various measures such as employing skilled technicians and upgrading the maintenance processes. (Mannan, 2014).
Methodology

Overview

This research paper will follow the qualitative methodology, and uses secondary data extracted from certain scholarly articles and evaluates the solution of the problem. Previous studies are used to find how the human factors in aviation maintenance have affected the flight safety around the World. Furthermore, the adverse impacts of aviation errors in different aviation accidents are analysed and how to reduce the occurrence of such accidents in the future is anticipated. However, the implications of these human factors in aviation currently can be recorded by using surveys conducted by other scholars.

Collection of Data

The data will be collected through qualitative tools. Qualitative data tools include reflective journals, focus groups, field notes, investigative reports and observations. The secondary study includes individual information from another research that is collected at the various points of time in the history.

Identification of Error

Types of Human Errors

To study the types, we must first learn the types of errors these technicians and maintenance personnel commit. There are different types of human errors depending upon the intention and understanding of the person who commits the error (Rasmussen, 1982). This knowledge of error classification greatly helps in investigating the mishap caused due to the human error. It can also assist in identifying how these errors can be avoided.
Conclusion

The maintenance error in aircrafts is a contributing factor in these incidents faced by the aviation authorities during air-crashes. The air crash of JAL123, in the perspective of its maintenance failures and the consequences, is an eye-opener for the aviation authorities. In the light of JAL-123 and similar accidents met by aircrafts is due to the minor maintenance issues. The problems faced by maintenance technicians and the causes of these problems have been discussed in detail. Based upon the discussion, the suitable recommendations have been suggested to the aviation authorities to help them develop policies to mitigate errors in aviation.
References


