

CHAPTER 5: CONCLUSIONS

5.1 Summary of Findings

Flight operations of airlines are quite complex, and challenges. There are many complex interactions, which exists among the maintenance personnel, technology pilots, along with flight dispatchers and uncontrollable parameters like, passengers and weather. This research had clearly explained about the chances of errors, accidents or mishaps taking place in airline operations, which are even unpredictable and there are many factors responsible for it. But simultaneously, all these incidences provides opportunities to flights to undertake self-correcting actions on the part of machines, humans as well as procedural errors. According to the above research, it's clearly explained that database pilot errors had resulted in 50% of accidents. This section will cover the results which have been achieved by performing:

5.1.1 Errors detection

Through secondary research, it's explored that companies like airlines have the vast amount of tools and strategies, whose primary purpose is to manage the errors and the results of these errors. However, before effectively managing the issues, it is important to delete it. Detection of errors is referred as the first stage of import in the flight error management as well as a system of safety management.

5.1.2 Common error types

It is examined from the research that common types of re-occurring errors happened from the dataset, which was selected as well as subdivided into subgroups. These errors are NOTAMS errors, charts and documentation errors, routing, software, technology, take-off and landing calculations, and weight and balance calculation errors. This type of

error happens due to the deviation in the accuracy or either through callousness, lack of judgment as well as forgetfulness.

5.1.3 Preceding error type

In the secondary research, other errors are highlighted, which usually happens due to lapse, miscommunication, slip, high workload, violation, and from mistakes. By analysing the other errors, it can be determined that when safety system is a bypass, airlines have to face these errors. It's analysed from the analysis and finding a section that, 768 errors were detected, and among them, the fundamental reason behind the occurrence of secondary preceding error was due to company policies that account for 29.6% and other factors that account to 11.3%, which includes airport failure in implementing safety measures. It's also noted that 6.4% of the preceding error took place due to weather conditions, 5.07% was due to procedures, 3.65% was linked with human factors, 5.5% was due to breaking the systems, 4.94% was due to publications, and 1.30% was associated with failures in log booking entry.

5.2 Implications of Findings

In the aviation industry, many studies already have been done, which were based on errors and the expected ways for preventing them from taking place and it had caused undesirable compromises on safety standards. This research emphasizes over the central focus placed on human errors by studying the human factors, because of its quite apparent that, compromising it can result in wide aviation accidents. Furthermore, this research directs two subfields, such as flight crew performance as well as maintenance environment of aircraft. This research had also emphasized on the errors, which had taken place in the operations department of airline flights, along with flight dispatch duties as well as rules of flight dispatchers, which undertake flight planning

activities. This research had also emphasized over the use of statistics, and standard errors, which occur in the flight departments, during planning and dispatching. In exploring this errors, quantitative method used in this research is entirely supportive.

5.3 Importance of Research

The study has provided comprehensive understanding on error management, through the analysis of the data from the three databases. It is very clear these findings that errors detected during flight operation are generally due to failures in communication, proficiency, procedures, compliance as well as decision making as contributing factors to errors. Further analysis of the collected data found that skill errors though uncommonly, are the most with high consequential effects. This research with no doubts will assist flight dispatchers to develop standardized ways of documenting, investigating and disseminating errors across the aviation industry. Error management strategy will be prepared first to tackle those errors with significant consequential outcomes including those detected in-flight.

Also, the results of this research projects represent a new model of error management that focuses on prioritizing errors based on the likelihood of occurrence and severity of the consequences of risk resulting from the error.

5.4 Recommendation for Future Research

Future research into this area can be undertaken so that error reduction techniques can be applied. It is recommended that stakeholders should try to embrace the in-cockpit technology, to enable the safe operations within the crowded skies, and at the same time, they should permit the appropriate data collection based on trends, so that data-drove decisions could be taken. It's also recommended that valuable incentives should

be provided to pilots so that they could undergo safety training and quality recurrent, and work towards reducing the loopholes and focus on incentives that don't compromise safety. It is also important that institution should be formed that includes a system of checks and try to ensure that pilots hold enough safety net through human errors. The road to enhancement in the airline flight management system is long and filled with many bureaucratic, logistic as well as political barriers. The information mentioned in this research will lead towards the ideas and inspiration, which could support in building the base for safe future in the aviation industry.

5.5 Closing Remarks

The main aim of this study is not to reach the safety level as that followed by commercial aircraft, but rather it seeks to present the ideas for improvement in safety standards. The primary emphasis is placed on the learning through operations and to explore the appropriate measures for preventing the repetitive errors and to enhance the security measures. The ongoing efforts taken by the aviation industry need to be continued, and they should also recommend the further improvement areas. This research to a real extent has tried to explain about flight plan quality, available resources, flexibility, as well as government regulations.

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