

Maintenance Failure and Management of Civil Aviation Aircraft

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ABSTRACT. *According to the actual situation, the civil aviation aircraft in our country will inevitably encounter faults and problems in the daily operation, which needs scientific and technical level to maintenance. Aircraft fault maintenance plays an important role in ensuring the safe operation of the aircraft, so enough attention should be paid by the relevant responsible personnel. According to the current situation of modern civil aviation aircraft operation, there is still much room for improvement in maintenance fault technology, and measures and methods need to be taken to improve its management.*

KEYWORDS: *Failure maintenance; Management and improvement; Failure analysis*

1. Introduction

With the continuous progress of China's economic strength, scientific and technological level, civil aviation enterprises ushered in the golden age of development. The number of civil aviation enterprises is increasing, the service quality is improving, and the development scale is expanding. However, some problems also come with it. There will be some problems and faults in the operation of civil aviation aircraft, which need to be repaired and dealt with in time. By fully understanding and familiar with the civil aviation aircraft, we can fully grasp the structure and operation principle of the aircraft, so as to better solve the faults and problems that are easy to occur. This paper will briefly discuss the fault maintenance technology and management improvement measures of civil aviation aircraft, so as to better promote the development of civil aviation enterprises.

2. The Significance of Maintenance Management of Civil Aviation Aircraft

Combined with the role and significance of civil aviation aircraft, its main function is to carry guests to their destination and ensure their safety and itinerary. Therefore, civil aviation enterprises should be able to comprehensively grasp this point, deeply understand their own tasks, ensure the operation safety of the aircraft, and timely solve and deal with the existing problems and faults. Combined with the

characteristics of the high-altitude operation of the aircraft, it is not difficult to find that there is a greater risk in its flight, and it is easy to have some uncontrollable factors, so there is a very high demand for the quality of the aircraft itself, which also requires that the failure of the aircraft can be analyzed and timely solved by maintenance. In order to effectively avoid the accident risk caused by aircraft failure, we should pay full attention to aircraft maintenance and fault management, and enhance the overall level of maintenance technology. According to the relevant data, with the improvement of the overall manufacturing level, the performance and quality of the aircraft have also been enhanced, so the frequency of aircraft failure has also been reduced, but it is still necessary to enhance the technical level of fault maintenance to minimize the probability of failure, manage and improve the links prone to problems, so as to improve the integrity of aircraft operation in civil aviation enterprises. Body mass and level[1].?

3. Analysis of the Maintenance Failure of Civil Aviation Aircraft in China

3.1 Complexity Characteristics of Civil Aviation Aircraft Structure

With the rapid improvement of science and technology level in China, the aerospace industry has also made great achievements, which has also led to great progress and development in the manufacturing of aerospace vehicles, the demand for imports is also shrinking, and some enterprises in China are also constantly innovating and developing the technology of aircraft manufacturing. Thirdly, the civil aviation enterprises of our country have also obtained certain development opportunities and potential. With the emergence and innovation of various technical levels, the fault maintenance technology of civil aviation aircraft is also constantly updated and developed. Combined with the complexity of aircraft itself, there are great difficulties in the maintenance work. The difficulties and challenges of aircraft maintenance are incomparable to those of general machinery maintenance work, and the complexity of aircraft itself directly leads to the maintenance difficulties[2].

3.2 Storage of Maintenance Equipment

The structure of a civil aviation aircraft is very complex and the number of replaceable parts is huge, and its cost is relatively high. Therefore, the requirements for capital of civil aviation aircraft maintenance enterprises are relatively large, so they need to do a good job in the storage of aircraft related parts. Combined with the general situation, an aviation maintenance unit cannot fully have all the aircraft parts, which is also one of the examination and research of maintenance work. If the civil aviation aircraft has some fault problems, it needs to use relevant parts. But if the maintenance base does not have the required parts, it will have a greater impact on the maintenance work, so it needs to reserve the maintenance equipment[3].

3.3 Technical Level of Maintenance Personnel

When the aircraft is working at height, the consequences and effects caused by the failure are unpredictable. The malfunction of aircraft components and links may cause the interruption of normal flight or even lead to serious disasters. Therefore, it is necessary to carry out maintenance or repair work on the fault systems in time. The maintenance and repair process cannot be separated from the professional technical repair personnel. Through the troubleshooting and maintenance of the repair personnel, the fault can be solved. This puts forward certain requirements for the technical level of maintenance personnel. It is necessary to strengthen the technical training and upgrading of maintenance personnel, so as to ensure that they can combine the technical level with past experience, fully grasp the causes and problems of the fault, and further handle and repair[4].

4. Maintenance Technology and Method of Civil Aviation Aircraft

4.1 Traditional Aircraft Maintenance

Compared with modern aircraft maintenance, the traditional maintenance technology is simple and simple. Usually, the causes of the problems and failures directly caused by the aircraft are also very single, most of which are caused by the wear and failure of some machinery and equipment due to the long time of operation and use of the aircraft, so in this case, the requirements for maintenance work are not difficult. In the traditional maintenance mode, preventive maintenance is more common. By carrying out corresponding inspections and maintenance work according to a certain time, the probability of failure is reduced, and the quality and safety of aircraft operation is further guaranteed[5].

4.2 High Tech Maintenance Mode

With the continuous improvement of science and technology, the structure of the aircraft has also been correspondingly changed, which also leads to the increased probability of aircraft failure, and the types of problems are becoming more and more diversified. Simply speaking, aircraft faults are becoming more and more diversified, related and complex. It is obviously difficult to meet the needs of modern aircraft fault handling with the help of traditional maintenance methods. In combination with this situation, high and new maintenance technology is produced. At present, the aircraft high-tech maintenance technology mostly depends on the high-tech mode of airborne and ground, the new maintenance technology developed by innovation and the newly developed equipment. With the help of computer technology and other new technologies, the comprehensive application can better deal with the aircraft fault maintenance work[6].

5. Management Improvement Measures of Civil Aviation Aircraft Fault Maintenance

5.1 Strengthen the Professional and Technical Training of Maintenance Staff

Aircraft quality assurance plays an important role in the safe operation of aircraft, so it is necessary to ensure that the faults of civil aviation aircraft can be solved in time, and the key to solve the problem lies in the ability and level of maintenance technicians. Therefore, civil aviation enterprises should pay enough attention to the maintenance skill training of maintenance workers. It need to require maintenance workers to have a comprehensive grasp and understanding of the basic structure and flight principle of the aircraft, to be fully familiar with all aspects of the aircraft, and to fully set up some specific practical contents during the training of professional skills to enrich the practical ability and experience of maintenance technicians in the training process. Only when the maintenance personnel have the ability of practical operation and with the help of systematic training content, can they solve the existing faults and problems in the real fault maintenance work, and implement the corresponding post authorization management system to strengthen the management level. In addition, with the continuous development of aviation enterprises, the better communication and association of aircraft systems has been promoted. The previous technical level has been difficult to meet the needs of modern aircraft fault maintenance. Therefore, it is necessary to combine the characteristics of modern aircraft, electronic technology and cross training for maintenance personnel, so as to comprehensively guarantee the professional technical level of maintenance personnel[7].

5.2 Strengthen the Arrangement and Compilation of Aircraft Operation Fault Analysis

According to the development status of modern civil aviation enterprises, if you want to guarantee the overall level of aircraft fault maintenance, you need to build a professional organization. By organizing the analysis and integration of the relevant fault information and maintenance methods of different types and categories of aircraft, further summarize more experience and data, and have a full range of difficult problems and faults. To understand, so as to have a targeted grasp of the causes of various faults and solutions, so as to reduce repeated faults and problems. With the help of the organization's summary, arrangement and compilation of relevant experience and practice, it can better promote the professional maintenance ability of maintenance personnel, provide great help for their troubleshooting, and provide corresponding information and experience for the training of future technical personnel[8].

6. Conclusion

To sum up, the maintenance of civil aviation aircraft is of great significance to

the safe operation of the aircraft. Relevant departments should pay enough attention to the relevant maintenance work of the aircraft, make comprehensive preparations, increase investment in technology, and better carry out prevention and maintenance work through in-depth analysis and research on the failure. The structure of the aircraft is very complex, and the components and systems involved are extremely complex. It is a great challenge for the maintenance work, which requires the maintenance personnel to have professional level and ability to better solve the failure through analysis and management improvement measures.

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