FAILTURE AND MAINTENANCE OF AIRCRAFT LANDING GEAR

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Summary. The landing gear of the aircraft is related to the smooth take-off and landing of the aircraft, and is the most basic guarantee to ensure flight safety. Therefore, the maintenance of the aircraft landing gear is particularly important, and the aircraft maintenance technicians must do a good job in this area. In order to improve the quality of aircraft landing gear maintenance work, this paper summarizes the common faults of aircraft landing gear components, analyzes the main reasons for the failure, and puts forward relevant solutions for aircraft landing gear maintenance.

Keywords: Aircraft; Lending Gear; Maintenance; Multifunction repair

INTRODUCTION
Aircraft is an important representative of modern means of transportation. With the continuous development of aviation technology, the safety level of aircraft is increasing day by day. However, during the use of aircraft, attention should also be paid to troubleshooting and maintenance after faults are found. The landing gear (Fig. 1) of the aircraft is related to the smooth take-off and landing of the aircraft. Therefore, the technical staff should pay special attention to the maintenance of the aircraft landing gear in order to ensure the safety of the aircraft to a greater extent [1-3].

COMMON FAULTS OF AIRCRAFT LANDING GEAR COMPONENTS
To do a good job in the maintenance of aircraft landing gear components, we must first understand the common faults of aircraft landing gear components. In this way, technicians can prescribe the right medicine and greatly improve the quality and efficiency of maintenance work. The control of the aircraft landing gear is operated by the landing gear control system in the cockpit [4]. The operating system issues commands to the body's landing gear through human manipulation, and the landing gear can only run under human operation. Therefore, the common faults of aircraft landing gear also exist in these links. First of all, to ensure the accuracy of the landing gear control system's conversion of the operator's operation information, it is necessary to have a flexible operating handle of the control system and a complete interface between the operating system and the conduction command line. Secondly, it is necessary to ensure the integrity of the command transmission line,
Fig. 1. Parts of Landing gear

so that the command can be transmitted to the landing gear system without operating errors due to the blocking of the line. Finally, it is important to pay attention to the problem of the landing gear system. The maintenance of the hardware of the landing gear system is very important. After many uses, the parts of the landing gear will inevitably wear out and must be inspected by technicians in time. In addition, attention should also be paid to the availability of the maintenance fault reminder device. The fault reminder device can timely inform the operator that the aircraft has a fault, which is beneficial for the operator to further plan the flight route and flight status. From operation to communication to execution, a series of maintenance work of the aircraft landing gear system must be carried out accurately to ensure the safety of flight [5].

TROUBLESHOOTING OF AIRCRAFT LANDING GEAR COMPONENTS

Analyzing the failure of aircraft landing gear components requires maintenance workers to find out the causes of aircraft failures and summarize the experience of aircraft maintenance work based on factual analysis. If the operating system is faulty, it means that some parts of the aircraft are faulty when it is manufactured, and the service life of the aircraft is too long, which will inevitably cause failures. Attention must be paid to the failure of the operating system, and it
should be stopped immediately for maintenance. An aircraft conduction line failure may be due to poor contact on a line or a more serious line burnout failure. The conduction line of the aircraft is equivalent to the human blood vessels, like the heart that supplies blood to the human body and transmits the instructions of the operating system to all parts of the body. From this, it can also be seen that the importance of line transmission information, technical staff must also pay attention to the maintenance work in this regard. The failure of aircraft landing gear hardware should be the most frequent failure.

MAINTENANCE PLAN FOR AIRCRAFT LANDING GEAR COMPONENTS

Aircraft landing gear maintenance programs can be divided into three categories. The first is the daily maintenance work. For example, the integrity of the conduction lines and fault alarm lights of the aircraft requires continuous maintenance by technicians to ensure the safety of the aircraft. This daily maintenance work is the basic work of aircraft landing gear maintenance. Must be meticulous. The second is the replacement of hardware, which is mainly about the hardware of the landing gear. During the take-off and landing of the aircraft again and again, the hardware that is constantly being worn out requires timely maintenance and replacement by technical workers. Technicians should carefully overhaul tires and their falling locking and unlocking devices, which is the top priority of aircraft landing gear work. The third type is the emergency rescue work of the aircraft, which is generally a major safety problem in response to the failure of the aircraft's operating system and the burning of most of the conduction lines. At this time, the aircraft needs to cancel all flights, stop for maintenance, check all parts of the body, and correct the faults. Parts take the most insurance maintenance strategy, and strive to eliminate all safety hazards of the aircraft. The aircraft with extremely serious faults should be dealt with in time, and the flight qualification will be canceled according to the scrapped aircraft. In addition, we should also pay attention to the exploration of innovative and practical maintenance measures for aircraft landing gear. For example, there is a problem with the landing gear locking device of the aircraft. Avoiding the replacement measures for the locking device, while also solving the malfunction of the aircraft, is the innovation. During the daily maintenance work, the maintenance personnel cannot appear. With a fixed mind, it is necessary to use maintenance skills flexibly and propose innovative approaches on different fault problems. Aircraft maintenance is the guarantee for the safe flight of the aircraft. Technical workers must strictly require themselves in their daily work, seriously repair the aircraft, actively respond to sudden major failures, and take ensuring the safety of people's flight as the first conduct of their profession. Take care of the difficulty of overhauling the aircraft.

EXPERIENCE SUMMARY OF AIRCRAFT LANDING GEAR COMPONENT FAILURE

In the process of aircraft maintenance, while doing a good job in the maintenance work, we should also pay attention to the experience summary of the maintenance measures for the failure of aircraft landing gear components. The experience summary here includes not only the experience of choosing different maintenance programs, but also the experience summary of the maintenance operation in the maintenance work. In addition, these experience summaries are based on the understanding of common failures of aircraft landing gear
As a qualified maintenance engineer, while understanding the common faults of aircraft landing gear components, it is necessary to accurately analyze the causes of common faults, and make appropriate maintenance work according to work experience. But it should be understood that the cause corresponds to the countermeasures, not the failure phenomenon of the aircraft corresponds to the maintenance measures. That is to say, the maintenance experience is not rigid and organized, and the success of the maintenance work can be achieved only by operating according to the order. For example, for the maintenance of aircraft brake discs, appropriate maintenance measures should be determined according to the different wear conditions of the brake discs. If the wear is slight, it may not be replaced after it is judged that it can continue to be used. If the wear is serious, it should be replaced. At the same time, the fault of the brake disc is also related to the command transmission system. In the case of slight wear, but the aircraft still has a fault, it is necessary to check whether the aircraft circuit is in good condition. The maintenance personnel must flexibly use the maintenance experience summarized by the maintenance work, and do a good job in the maintenance work while rationally analyzing the cause of the failure. After troubleshooting, it is necessary to prepare for review, which also requires maintenance experience, which requires the maintenance personnel to have a specific understanding of the normal operation of aircraft landing gear components. Review work is an important part of aircraft maintenance, and the results of review work are related to the quality of maintenance work.

The problem is also the last line of defense for the normal flight of the aircraft. The maintenance personnel must take good care of this line of defense and make sure that the landing gear components of the aircraft can operate normally, so as to put an end to the maintenance work of the landing gear components of the aircraft.

**CONCLUSION**

The safe flight of an aircraft is nothing more than three stages: take-off, flight, and landing, and the safety of aircraft landing gear is related to the two major links. Therefore, the maintenance of aircraft landing gear is particularly important in aircraft maintenance work. Technical workers must ensure the reliability of the landing gear operating system, the integrity of the command transmission route, the quality of the aircraft landing gear hardware, the performance of the fault alarm, and the safety of the flight crew. Something went wrong.

**References:**


