

## Statistical Analysis of Failure Cases in Aerospace

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**Abstract :** The major concern in the aviation industry is the flight safety. Although great effort has been put onto the development of material and system reliability, the failure cases of fatal accidents still occur nowadays. Due to the complexity of the aviation system, and the interaction among the failure components, the failure analysis of the related equipment is a little difficult. This study focuses on surveying the failure cases in aviation, which are extracted from failure analysis journals, including Engineering Failure Analysis and Case studies in Engineering Failure Analysis, in order to obtain the failure sensitive factors or failure sensitive parts. The analytical results show that, among the failure cases, fatigue failure is the largest in number of occurrence. The most failed components are the disk, blade, landing gear, bearing, and fastener. The frequently failed materials consist of steel, aluminum alloy, superalloy, and titanium alloy. Therefore, in order to assure the safety in aviation, more attention should be paid to the fatigue failures.

**Keywords :** aerospace, disk, failure analysis, fatigue

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