

Aloha airlines flight 243 aircraft accident report

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Case Study of Aloha Airlines Flight 243 AIRCRAFT ACCIDENT REPORT ALOHA AIRLINES, FLIGHT 243 BOEING 737-200, N7371I, NEAR MAUI, HAWAII APRIL 28, 1988

The damage to Aloha Airlines Flight 243 estimated to be about \$5 million, it was beyond repair after being dismantled it was sold for parts and scrap.

Due to an explosive decompression of the cabin the upper crown skin and structure of section 43 separated during the flight, the damaged area which was near the main cabin entrance door extended all the way up to the forward of the wings (about 18 feet) and from the left side of the cabin at floor level to the right side window level.

The National Transport Safety Board in its report said that the probable causes for the accident were two reasons, (i) Fuselage Attachment Fatigue and (ii) Fuselage Attachment Separation.

A few of the reasons for this was - Maintenance, Inspection, Improper Company Maintenance Personnel, Inadequate Operator Management and Inadequate Surveillance of Operation by FAA.

Mechanical and Structural

The NTSB stated in its report that the accident was caused by metal fatigue exacerbated by crevice corrosion which means that the aircraft was operating in salt water conditions. The main cause being the failure of an epoxy adhesive which is used to bond aluminum sheets of the fuselage together. Two sheets not bond properly creates a gap through which water seeps in and corrosion begins, as the corrosive parts have a greater volume than the underlying metal, the two sheets are forced apart resulting in the increase of stress on the rivets (which are also used) for holding them together. Taking into account that the aircraft was 19 years old at the time <https://assignbuster.com/aloha-airlines-flight-243-aircraft-accident-report/>

of the accident it had already surpassed its takeoff-landing cycles , it should have been subjected to a full uninterrupted inspection rather than the longer and extensive “ D Check” which was performed in morning installments, furthermore “ eddy-current testing’ inspection on the fuselage skin was lacking. A crack was noticed by a passenger who didn’t notify anyone, as the aircraft had already surpassed its takeoff-landing cycles (compression and decompression cycles), this crack inevitable due to metal fatigue.

Alternate explanation

Matt Austin came up with another reason for the accident after studying the disintegration of the fuselage of the aircraft. This states that at first the fuselage failed opening a 10 inch vent through which the cabin air escaped at 700mph, flight attendant C. B. Lansing got sucked into the vent instead of being thrown off the aircraft. This blockage instantly caused an increase in pressure which inadvertently acted as a fluid hammer and tore the jet apart.

Conclusion

The structural failure of the 19year old Boeing 737 stressed on creating awareness of aging aircraft throughout the aviation industry. The multiple site fatigue was the cause for the structural damage which primarily was due to the failure and negligence of the operator maintenance program which is supposed to track and detect corrosion damage. A similar incident occurred in 1981 where the aircraft was damaged in-flight resulting in more than one hundred fatalities. Corrosion accelerated fatigue of the fuselage skin panels was the reason behind the accident even then.

To avoid such mishaps in future the aviation industry needs to take the aging aircraft problem seriously considering the safety issues and the necessary safety programs need to be put into practice and adhered to consistently for <https://assignbuster.com/aloha-airlines-flight-243-aircraft-accident-report/>

safety measures.

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