

JTSTB Digests

JTSTB (Japan Transport Safety Board)

(Issued in January, 2015)

Digest of Aircraft Accident Analyses For Prevention of Accidents due to the Shaking of the Aircraft

1. Preface.....	1
2. Statistics	2
3. Case Studies of Serious Accidents (four cases).....	7
4. Conclusion	18

1. Preface

In July 2014, the Japan Transport Safety Board (JTSTB) released the Aircraft Accident Investigation Report concerning serious and slight injuries of three passengers in August 2012 when an aircraft was shaken over Matsue City, Shimane Prefecture en route from Honolulu International Airport (The United States of America) to Incheon International Airport (The Republic of Korea).

When research was conducted on the injuries of passengers and cabin attendants due to the shaking of the aircraft while in flight excluding takeoff and landing (hereinafter referred to as “aircraft shaking accidents”) similar to this accident in preparation for the release of the report, it was found that of the 245 aircraft accidents that have occurred since October 2001, when the Aircraft and Railway Accidents Investigation Commission was established, to June 2014, about 20 aircraft accidents involving large aircraft were aircraft shaking accidents.

While there have been no fatal accident, the injury occurrence rate is high for aircraft shaking accidents when compared to aircraft accidents overall, and there was a case of injuries being caused to almost 40 people in one accident.

Moreover, while aircraft shaking accidents are caused by encounters with sudden turbulence in-flight, it is believed that there are many lessons to be learned in terms of the responses and actions taken before and after the occurrence of these accidents in order to prevent the occurrence of similar accidents in the future.

In light of this situation, in this digest we have decided to introduce various statistical information and cases from accident investigations conducted by JTSTB in an aim to prevent the recurrence of and mitigate the damage caused by aircraft shaking accidents.

We hope that this digest will facilitate measures to further ensure safety and will contribute to the prevention of the recurrence of similar accidents through its use as a teaching tool for people involved with safety seminars and similar purposes.

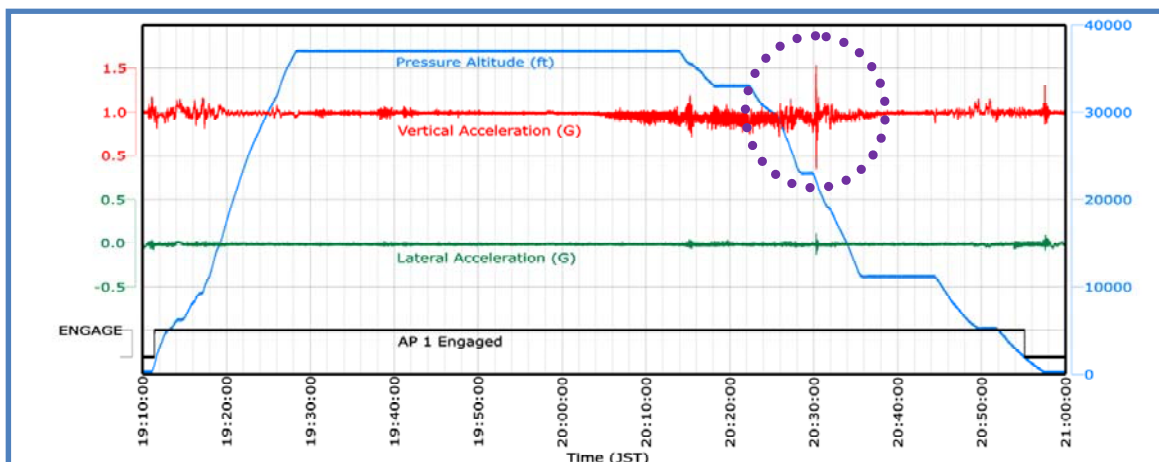


Figure 1 Example of Recording by DFDR (Digital Flight Data Recorder) (a large change in vertical acceleration (G) can be seen in aircraft shaking accidents)



Aircraft shaking accidents as defined in this digest

Refers to aircraft accidents investigated by JTSTB (including the former Aircraft and Railway Accidents Investigation Commission) from October 2001 to June 2014 involving large aircraft (maximum takeoff weight of at least 5,700 kg) in which passengers and cabin attendants suffered injuries from the shaking of the aircraft. Note that the data stated include an accident that is still under investigation.