BR056 Occurrence Investigation

Executive Summary

On November 22nd, 2017, EVA Airways passengers flight number BR056, aircraft model B777-300ER, registration number B-16718, took off from Taoyuan International Airport to O'Hare International Airport, the United States. There were three pilots and 15 cabin crew members with 181 passengers, 199 in total on board. While the aircraft were passing through Fukuoka, Japan, at altitude of 31,000 feet, the aircraft encountered turbulence, there were 3 passengers and 8 cabin crew members suffered abrasion and contusion injuries, two of the cabin crew members suffered severe injuries.

Pursuant to the Aviation Occurrence Investigation Act of Republic of China (ROC) and refer to the Annex 13 of the Convention on International Civil Aviation, the Aviation Safety Council (ASC) an independent aviation occurrence investigation agency, is responsible for conducting the investigation. The investigation groups included Civil Aeronautical Administration (CAA) and EVA Airways. The investigation report of this occurrence was drafted in October 2018. In accordance with the processes, it was reviewed at ASC's 72nd Council Meeting on 18th October, 2018 and distributed to the relevant organizations and authorities to request for comments. After collected and integrated the comments, the final investigation report was reviewed and approved by ASC's 75th Council Meeting on 25 January 2019. This report concluded with 4 findings and 4 safety recommendations comprehensively to the related organizations as the items below.

Findings related to the probable causes

1. According to the recorded FDR data, during the cruise altitude were at 31,000 feet, the maximum magnitude of vertical acceleration was between 1.68g to -0.13g, the maxima of Eddy Diffusion cube root was over than 0.7, which indicated the aircraft was encountering severe turbulence. Since the cabin crew received the turbulence waring during the period of dinning service, they were unable to return and lock up the trollies back in the galley, then be seated. It resulted in 3 passengers and 8 cabin crew members received injuries during the turbulence, 2 were subjected serious injuries among them.

Findings related to the risks

1. There is no procedure for responding predictable turbulence during dining service in relevant the EVA Airways cabin crew manual, only be seated as soon as possible is requested. It takes time to be seated after returning the trollies back to the galley and locking it up, the current procedure is unable to lowers the risk of cabin crew subjected injury in practical.

2. There is no current procedure for turbulence encounters in cruise in EVA Airways to report the moderated or severe turbulence events to the flight dispatching department, this indicates it is not in compliance with the third element of the Advisory Circular which advises to establish an efficient pilot report and communication system for clear air turbulence (CAT) avoidance (not ATC communications), the systems of CAT avoidance were insufficient.

Others

1. There were no abnormal finding related to the flight crew and the licenses, weight and balance or system functions of the occurrence aircraft.

Recommendations

To EVA Airways

1. Improve the procedures of cabin crew manual and the cabin crew training, emphasize upon the reactions of turbulence encountering during service, and educate the risks of the turbulence danger. (ASC-ASR-19-03-001)

2. Comply with the relevant aviation advisories to establish an efficient pilot report and communication system for CAT avoidance in flight. (ASC-ASR-19-03-002)

To Civil Aeronautics Administration, Ministry of Transportation and Communications

1. Supervise EVA Airways and other national operators to improve the procedures of cabin crew manual and training, emphasize upon the reactions of turbulence encountering during service, and educate the risks of the turbulence danger. (ASC-ASR-19-03-003)

2. Supervise EVA Airways and other national operators to implement the relevant aviation advisories for CAT avoidance in flight. (ASC-ASR-19-03-004)