Aviation Safety Council

Taipei, Taiwan

CHINA AIRLINES FLIGHT CI150D AIRCRAFT TYPE A300B4-600R ENCOUNTERED SEVERE CLEAR AIR TURBULENCE OVER JAPAN WHEN FLYING FROM TAIPEI TO NAGOYA

Executive Summary

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On February 7, 2005, China Airlines flight CI150D, aircraft type A300B4-600R, nationality mark and registration no.B-18579, at 0948 Taipei time, conducted a passenger flight from Taipei CKS international Airport to Nagoya International Airport, Japan. The aircraft carried 2 pilots, 11 cabin crew and 264 passengers, with totally of 277 people on board.

After the aircraft departed from Taipei CKS International Airport, it flew to Japan along M750 airway according to the flight plan, with the cruising altitude of 33,000 feet. According to the Flight Data Recorder information, the aircraft encountered light turbulence 20nm west of northwest of Lu Hung Island at 1108, at 1110:12. The unstable airflow aggravated. Three seconds later (1110:15) the Autopilot System was tripped off. The turbulence lasted for 28 seconds. The accelerating force changed rapidly. The vertical acceleration was between +1.744G to +0.015G, and lateral acceleration between +0.13G to -0.11G.

The Pilot Flying who sat on the right seat stated that, before the accident, he felt minor shakings of the aircraft initially. Then the indicated airspeed and the speed trend indication changed more roughly. He said the seatbelt sign was turned on and off for twice. Several seconds later, the aircraft started to shake violently. Meanwhile the cabin crew made announcement to the passengers about the turbulences. Some of the cabin crewmembers were still cleaning the tables and some of the passengers were still not turning back to their own seats in time. After the severe turbulence,

4 cabin crewmembers suffered minor injuries, 2 passengers suffered bone fractures. The pilots followed the original flight plan and continued to fly to the destination of Nagoya Airport after the turbulence, and landed at 1212:48.

After the aircraft landed, the injured passengers were sent to the hospital immediately for treatments. The maintenance personnel conducted structural inspection according to the Aircraft Maintenance Manual and released the aircraft after the confirmation that the turbulences had no effect on the aircraft.

Findings related to the probable causes

1. The aircraft encountered clear air turbulence above the low-level jet stream, that was caused by gravity wave from the rupture of the outer circle of the jet stream.

Findings Related to the Risks

1. China Airlines did not get any SIGMET message from any effective sources to provide the pilots with the en-route turbulence information.
2. After the encounter of the turbulences, the flight crew did not provide AIREP to ATC.
3. The way cabin crewmembers to arrange the injured passengers to get off the plane was not complied with the Operation Procedures to the Immediate Sick Passengers' of China Airlines.

Other Findings

1. When the severe turbulence occurred, two passengers were injured with no seatbelt fastened due to their leaving seats for the toilets.

2. The regulations of cabin announcement while encountering sudden turbulences were different in Cabin Crew Operation Manual, Flight/Cabin Crew Communication Coordination Operation of China Airlines and the company's duty briefing procedures.

3. The research results and the recommendations from America Turbulence Joint Safety Implementation Team (JSIT) and the recommendation of Advisory Circular AC120-88 from FAA could references to supervise authority and domestic enterprises with operation procedures to encounter the turbulence and to mitigate the turbulent damages.

4. After the accident, the occupational hazard safety propagandas of cabin abnormalities in the Cabin Safety Bulletin which China Airlines published in response to this accident need reinforcements.

Safety Recommendations

<u>To Civil Aeronautics Administration, CAA</u>

1. Refer to the contents of section 5.5, Annex no.3 of the Convention on International Civil Aviation; strengthen t the propaganda to the pilots of providing AIREP to ATC when encountering adverse weathers. (ASC-ASR-06-09-006)

2. Refer to the research results from America Turbulence Joint Safety Implementation Team (JSIT) and the information of

Advisory Circular AC120-88 from FAA; provide advices of relevant civil aviation notices to domestic enterprises. (ASC-ASR-06-09-007)

To CHINA AIRLINES

1. Efficient procedures should be established to obtain weather information which could affect flights, and provide them to crewmembers in flight as soon as possible to increase the ability to deal with contingencies. (ASC-ASR-06-09-008)
2. Require pilots to provide AIREP according to the regulations when encountering adverse weather during flights. (ASC-ASR-06-09-009)
3. Require the cabin crew to actually conduct injury disposal in accordance with the emergency disposal principles of the Operation Manual and the Operation Procedures to the Immediate Sick Passengers'.(ASC-ASR-06-09-010)
4. Review the requirements for announcement guidelines when encountering unexpected turbulences in the flight/cabin crew communication coordination operation and duty briefing in the Cabin Crew Operation Manual. (ASC-ASR-06-09-011)
5. Review the research results of America Turbulence Joint Safety Implementation Team (JSIT) and the contents of Advisory Circular AC120-88 from FAA, as references for amending turbulence disposal procedures in the future. (ASC-ASR-06-09-012)
6. From the cabin abnormal incident and flight safety examples published by China Airlines, the disposal, review, prevention

advices of the incident and the occupational hazard propagandas should be strengthened. (ASC-ASR-06-09-013)

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