Aviation Safety Council

Taipei, Taiwan

FAR EASTERN AIR TRANSPORT FLIGHT EF184 AIRCRAFT TYPE MD83 LEFT MAINWHEEL AND ITS SPRAY DEFLECTOR STRUCK ON A RUNWAY END LIGHT AND CAUSE DAMAGE TO ENGINE ONE DURING TAKEOFF IN MAGONG AIRPORT

Executive Summary

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On July 8, 2002, at 1710 Taipei time, Far Eastern flight EF184, nationality mark and registration no.B-28023, aircraft type MD-83, departed with two pilots, three cabin crew and 152 passengers from PengHu Magong Airport to Taipei Songshan Airport.

Due to the taxiway constructions in Magong Airport, Runway 02 was shortening 2000 feet from the runway threshold. The relevant NOTAM was published on June 21, 2002. The flight crew had received relevant NOTAM and the cockpit was equipped with Runway Analysis Manual of Far Eastern Air Transport.

The aircraft taxied out from the apron. The pilot requested an intersection takeoff to the tower when near taxiway no.2. Air Traffic clearance was received and dated engine thrust was used for takeoff. During take off the left landing gear and its spray deflector struck on a runway end light during the last phase of rolling. The light lid was struck away and hit to the lower bottom part of engine one cowling. The pilot during climb out discovered the oil pressure and oil quantity of engine one gradually decreased. At 1728 when aircraft approached Songshan Airport and engine number one was shut down in air. The pilot landed with single engine at 1746 Song Shan Airport with no casualties.

A dent was found on the left landing gear and spray deflector by the ground crew. The lower part of engine one cowling and oil pipes etc. were damaged by the runway end light lid was stocked inside of engine one cowling.

Findings related to the probable causes

1. Before the flight crew left the airport, they did not follow SOP or study the dispatching information, did not refer to the Runway Analysis Manual, and neglected the preflight procedures and other restrictions.

2. Under the psychological stress of flight delay and the intension to depart as early as possible, the crew resource management was not well managed the flight crew conducted an intersection takeoff at taxiway no.2 as usual.

Findings Related to the Risks

1. The dispatcher of the aircraft in Kaohsiung provided weather information, weight and balance and NOTAM etc. to the captain, however the runway shortening information and other NOTAM of Magong Airport were not briefed to the pilot according to procedures, and the AIP supplement of the partially closed runway information of Magong Airport was not provided to the pilots either.

2. When the aircraft taxied to near the taxiway intersection and before takeoff, the Tower inquired whether the intersection takeoff was adopted. The first officer did not inquire the opinions of the captain and replied to tower that they accept taxiway 2 of Runway 20 by his own decision. It revealed that the communication between the flight crew was insufficient. Besides, the first officer did not question the captain about the decision making an intersection takeoff, which was not conformed to crew resource management requirements.

3. The captain did not declare emergency to the ATC when encountering one engine out situation to conform the company

regulations.

4. The air traffic control procedures did not require the controllers to provide the remaining length of the runway when aircraft adopted an intersection takeoff.

5. The relevant units responsible for publishing flight information did not publish NOTAM in accordance with the time of scheduled publishing system from AIP supplements.

6. CAA did not follow “Civil Aerodrome Design and Operation Standards” or international standards to establish relevant visual aids for navigation in Magong Airport.

Other Findings

1. The flight crew possessed qualified pilot licenses issued by CAA.

2. The pilots’ duties, flights, rest time and personal lives etc. did not reveal any medical, behavioral or mental problems that could affect the performances that day.

3. The aircraft’s certification, leading and maintenance were conformed to Civil Aviation Act of our country and obtained airworthiness certificate of CAA. No evidence showed that the aircraft had existed mechanical malfunction or other structural, flight control system, engine problems etc. which could affect the takeoff performance of the aircraft.

4. The CRM training material of Far Eastern did not fully contain the CRM content recommended by ICAO.

5. Relevant units (Air Force, CAA, and Magong Airport) did not file

in the related flight information to CAA ATS Division 56 days before the effective date of AIP Supplements.

6. CAA did not regulate in detail the time which the flight information should be delivered to the users in advance. By the time the summary report notification of AIP Supplements delivered when close to the effective date that caused consequent reaction time in urgent.

7. The effective date recommended by Air Force was not conformed to the regulations of scheduled publishing procedures. The CAA had no objection to it. The coordination of CAA and Air Force was ineffective before the flight information was published.

8. CAA did not require the construction units to be equipped with certified movable light equipments of airport visual aids for navigation, for the needs of construction.

9. The flight crew of the aircraft did not cut off CVR power immediately according to article 103 of Aircraft Flight Operation Regulations.

10. After the aircraft landed, CAA did not confirm that the flight crew had cut off CVR power immediately after aircraft engine shutdown according to article 11 of “Regulation for Aircraft Accident and Serious Incident Investigation”.

11. Appendix 7 of Aircraft Flight Operation Regulations lacked for FDR system maintenance plan of Annex 6 section 6.3 of ICAO, therefore unable to confirm the correctness of two statutory parameters in FDR records.

12. The FDR Routine Maintenance Work Sheet of Far Eastern Airlines was conformed to the maintenance requirements of the manufacturer and the domestic Civil Aviation Act at that time., However, it did not comply with item c of section 6.35.4.1 of Aircraft M/M Program of FAT, the FDR decoded data was not analyzed with Transcription and Parameter Evaluation.

13. The flight parameters Far Eastern Airlines provided to decode the FDR documents were unable to decode the statutory recording parameters of radio altitude, flap position from the FDR records. (The parameters were correctly decoded using another decoding document provided by Boeing.)

14. The Automatic Terminal Information Service of among Airport Control Tower did not have the capability of recording energy.

Safety Recommendations

<u>To FAR EASTERN AIR TRANSPORT</u>

1. Require flight crew to follow standard operating procedures when conducting flying duties.

2. Review the current dispatching and briefing procedures by dispatchers. Require dispatchers to actually follow standard operating procedures to conduct dispatching duties.

3. Refer to ICAO recommendations, strengthen crew resource management training, enrich related training materials, and implement advanced crew resource management trainings.

4. After flight incidents happen, follow article 103 of “Aircraft Flight Operation Regulations”, implement CVR power cutoff procedures by related crew members.

5. Review Far Eastern Airlines FDR system maintenance plan to comply with Appendix 7 of “Aircraft Flight Operation Regulations”

To Civil Aeronautics Administration, CAA

1. Require flight, ground crewmembers of Far Eastern Airlines to carry out operations in accordance with the standard operating procedures.
2. Require Far Eastern Airlines to implement crew resource management trainings, be aware of the advance development and in-time amendment of crew resource management plans.
3. Review the “Aeronautical Information Publication” published by CAA, to comply with current international standards.
4. Implement the observance by relevant members to follow “Aeronautical Information Publication” to publish NOTAMs and AIP Supplements.

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