



**Aviation Safety Council
Taipei, Taiwan**

**FAR EASTERN AIR TRANSPORT
FLIGHT EF182 AIRCRAFT TYPE MD-82
NATIONALITY MARK AND
REGISTRATION NO.B-28021 VEERED
OFF RUNWAY AFTER LANDING IN
SONGSHAN AIRPORT**

Executive Summary

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On August 24, 2004, Far Eastern Airlines (hereinafter called Far Eastern) flight EF182 (hereinafter called the aircraft), aircraft type MD-82, nationality mark and registration number B-28021 , at 0809 Taipei time¹, departed from Magong Airport to Songshan Airport to conduct a scheduled passenger flight, the aircraft carried 2 pilots, 4 cabin crew, 94 passengers, total 100 people were on board, the aircraft landed on Runway 28 in Songshan Airport at around 0920, the aircraft veered off the runway during landing roll, the passengers on board were safe and the aircraft has no substantial damage.

The Safety Council presents the findings derived from the factual information gathered during the investigation and the analysis of the occurrence. The findings are presented in three categories: findings related to probable causes, findings related to the risk, and other findings.

Findings related to the probable causes identify elements that have been shown to have operated in the accident, or almost certainly to have operated in the accident. These findings are associated with unsafe acts and conditions, or safety deficiencies that are associated with safety significant events that played a major role in the circumstances leading to the accident.

Findings related to the risk identify elements of risk that have the potential to degrade aviation safety. Some of the findings in this

category identify unsafe acts and conditions, or safety deficiencies that made this accident more likely; however, they can not be clearly shown to have operated in the accident. They also identify risks that increase the possibility of property damage and personnel injury and death. Further, some of the findings in this category identify risks that are unrelated to the accident, but nonetheless were safety deficiencies that may warrant the future safety actions.

Other findings identify elements that have the potential to enhance aviation safety, resolve an issue of controversy, or clarify an issue of unresolved ambiguity. Some of these findings are of general interest and are not necessarily analytical, but they are often included in ICAO format accident reports for informational, safety awareness, education, and improvement purposes.

Findings related to the probable causes

1. The aircraft encountered wind shear affect during the approach and tail wind before landing, causing a touchdown at around 2,500feet from the runway threshold, plus the runway was wet and slippery, which affected the deceleration performance, and the friction was poor and runway surface was wet and slippery between 5,500feet to 8,000 feet from the threshold of Runway 28, probably causing partial hydroplaning affect therefore unable to control directions and conduct effective deceleration. During that time period, the flight crew suspected the brake system was not functioning normally due to the brake pedals angles and aircraft deceleration status, in order to decelerate, the pilots used the maximum reverse thrust recommended by the manufacturer, which lower the direction control capability of

the aircraft, and veered off the runway at 7,800 feet from the threshold of Runway 28.

Findings related to the risk

1. When holding above Reifan, the aircraft deviated away from Reifan holding pattern due to incorrect crosswind correction, the aircraft had deviated around 6 nm south of the Reifan holding pattern before the approach.
2. The stable approach speed stated by the captain, first officer of the accident aircraft and the related flight operation supervisors of the company were different from the regulations of the flight operation manual, the pilots were unable to make stable approach judgment during the approach and conduct a Go-around whenever necessary.
3. When the aircraft approached, the airport visibility was less than the landing minimum of MD-82 aircraft; the LDA DME instrument approach of Runway 28 should not be conducted. However the aircraft veering off the runway after landing had no relations with it.
4. There were no runway skid resistance evaluation standards for Songshan Airport in FIR.
5. Before the accident , the skid resistance value of first sector of Runway 10 was lower than the minimum, the alert of “Runway wet possible slippery” should be provided, however, during this period, Songshan Airport did not publish NOTAM with “Runway wet possible slippery” or in any way announced the alert of which the skid resistance value was lower than minimum.

6. Before the accident, Songshan Airport conducted skid resistance inspection, and discovered that on the first sector near Runway 10, 5 groups of the 100-meter-average value of runway skid resistance were lower than minimum, however, till the accident happened, runway tire scraps elimination or runway pavement skid resistant capability enhancement were not conducted according to the related airport maintenance operation regulation and the recommendations from the inspecting agent.

Other findings

1. The flight crew possessed qualified pilot qualifications and valid licenses according to the Civil Aviation Laws, work and rest time was normally 72 hours before the accident, no evidence showed that before the accident, they were affected physically, mentally or by drugs or alcohol.
2. The aircraft was in an airworthiness condition, weight and balance was within limits, no evidences showed that the aircraft had existed mechanical malfunction or other structural, flight control system, engine related problems etc. which could cause the accident.
3. Parts of Songshan Airport runway horizontal slop were not complied with the regulations.

Safety Recommendations

To FAR EASTERN AIR TRANSPORT

1. Strengthen the pilots with the knowledge and operate ability when landing on wet and slippery runways.

(ASC-ASR-05-10-001)

2. Strengthen on the propaganda to pilots about maintaining the aircraft on the holding pattern when a holding is required.

(ASC-ASR-05-10-002)

3. Strengthen on the propaganda about the definition of stable approach and the timing to execute a go-around, and ensure all pilots can use the same stable approach criteria.

(ASC-ASR-05-10-003)

4. Strengthen on the propaganda to all pilots to pay attention to the landing visibility limitations for all kinds of aircrafts in IFR flights.

(ASC-ASR-05-10-004)

To Civil Aeronautics Administration, CAA

1. Supervise Far Eastern Airlines to strengthen the training of their pilots, when flying on the holding pattern, ensure aircrafts stay on the holding pattern. (ASC-ASR-05-10-005)

2. Supervise Far Eastern Airlines to strengthen the propaganda about the definition of a stable approach and the executing timing for a go-around, and ensure all pilots can use the same standards for stable approaches. (ASC-ASR-05-10-006)

3. List detailed runway skid resistant evaluation standards of all airports in AIP and strengthen the execution of publishing alerts for “Runway wet, possible slippery” and enhance the wet / slippery resistance of runway surfaces. (ASC-ASR-05-10-007)