



**Aviation Safety Council
Taipei, Taiwan**

**FAR EASTERN AIR TRANSPORT
FLIGHT EF185 AIRCRAFT TYPE MD-82
NATIONALITY MARK REGISTRATION
NO.B-28021 TEMPORARILY VEERED
OFF RUNWAY WHEN LANDING IN
MAGONG AIRPORT**

Executive Summary

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On August 22, 2007, Far Eastern Air Transport Corp. (hereinafter called Far Eastern) flight EF185, aircraft type MD-82, nationality mark and registration no.B-28021, conducted a scheduled passenger flight from Taipei/Songshan Airport to Penghu/Magong Airport. The Captain(CM-11) of the flight was Pilot Flying, the First Officer(CM-22) was Pilot Monitoring, and CM-33 was the observation crewmember. The aircraft carried 3 pilots, 4 cabin crewmembers, 128 passengers, total 135 people on board.

The schedule departure time was 1250; the actual departure time was 1304. After departed from Taipei everything was normal, at around 60nm northeast of Magong, ATC notified that Magong Airport was closed due to thunderstorms, the aircraft request to continue flying to Magong and hold 13 nm north of Magong. After the clearance was received, the aircraft continued to fly to Magong and descended to FL140. After Magong Airport opened, the aircraft was radar-vectored to conduct Magong Airport VOR DME RWY 20 approach, and got visual of the runway at 2000 feet, at 1339 the aircraft landed. After landing checks did not reveal any abnormalities, the aircraft waited on the ground due to the weather condition was lower than the takeoff/landing minimum in Songshan Airport. After Songshan Airport reopened, the aircraft continued conducting EF186 duty.

At 1530, Magong Airport staff discovered that 3 groups (6) of runway lights were damaged between Runway Distance Signs of 1,500ft~2,000ft west of Runway 20 during routine airport patrol, and suspected aircraft tire tracks rolling inwards from the outside of the runway to the inside of the runway were discovered in that area.

After the aircraft returned to Songshan Airport and landed at 1612, the pilots were notified that three groups of runway lights were damaged in Magong Airport, the maintenance personnel discovered that there were multiple scratches on the right main wheel, and after the inspection and the confirmation by Songshan Flight Operations, the scratches were related to the damages of runway lights in Magong Airport.

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. After the aircraft passed the Final Approach Fix, PM called out two degrees to the right, PF could not make effective corrections, and did not follow Far Eastern Manual “PM should use standard phraseology “UNSTABLE”, PF should reply “Go Around” and conduct a go around.
2. After the aircraft passed runway threshold, bank to the downwind side was established and rudder of the downwind side was used, causing the track to continue shifting to the right, even though corrections were started to be made after 5~6 seconds, the aircraft still shifted to the right due to corrections could not be made in time, the aircraft rammed into runway edge lights and caused the accident.

Findings related to the risk

1. The aircraft approached and landed in crosswind, and did not

keep the track on the extension of runway centerline or parallel to the runway centerline.

2. The flight crew did not have sufficient situation awareness that the touchdown point could be off the runway, and after landing the maintenance personnel were not informed to practice special checks; the flight crew as well did not conduct detailed inspection to the possible damages on the tires.

Other findings

1. The damages on main wheel tire no.3 and no. 4 of the aircraft had all reached the replacement limits.
2. The 2 Far Eastern maintenance personnel of Magong out station did not indeed carry out the transit checks.
3. When making random inspections on all the licensed duty ground mechanics that day, 3 out of 4 mechanics could not correctly identify the replacement standards of tires which were punctured and cut.
4. Far Eastern disregarded the requirements of professional cultivation for ground mechanics, causing the failure to implement the transit checks.
5. The average friction coefficient value of the three sections of the runway during the accident was higher than the minimum value and the conservation value of "Civil Aerodrome Design and Operation Standard"; the factor of poor runway condition which could affect the manipulation of the aircraft was excluded.
6. There were 2 ground mechanics of Far Eastern Magong Airport

who possessed qualified mechanic licenses issued by CAA.

7. The licenses and duty dispatches of the pilots were conformed to the requirements of Civil Aviation Act; the work and rest time 72 hours before the accident was normal, no evidence showed they were affected physically, mentally, by medication or alcohol.

Safety Recommendations

To FAR EASTERN AIR TRANSPORT

1. Require pilots to continue maneuvering the aircraft to keep the track on the extension of runway centerline on final; when passing FAF, if the aircraft could not maintain on the extension of runway centerline, miss approach procedure should be conducted. (ASC-ASR-08-09-001)
2. Require pilots to conduct a miss approach immediately if a landing could not be made safely in the touchdown zone. (ASC-ASR-08-09-002)
3. Strengthen the pilots with the trainings of crosswind landing, and the horizontal stability against crosswind variations during approach and landing phase. The requirements and examinations of maneuvering skills. (ASC-ASR-08-09-003)
4. Require pilots to notify maintenance personnel for inspections if a touchdown outside the touchdown zone is suspected, the 360 degree inspection after landing should be implemented conscientiously and carefully. (ASC-ASR-08-09-004)
5. Do require the full implementation of transit checks and defects corrections. (ASC-ASR-08-09-005)

6. Strengthen educations and trainings of tire replacement standards for all type of aircrafts to ground mechanics.
(ASC-ASR-08-09-006)

To Civil Aeronautics Administration, CAA

1. Strictly require and supervise the quality of transit checks.
(ASC-ASR-08-09-007)