Aviation Safety Council

Taipei, Taiwan

Left Wing Tip Impact with Runway during a Visual Approach to Kaohsiung Airport UNI Airways Flight B7660 MD-90, B-17922 September 2, 2005

Executive Summary

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On September 2, 2005, at 1211 Taipei Local Time, UNI Airways (UNI) flight B7660, a MD-90 aircraft, registered B-17922, departed from Magong Airport (RCQC) with two pilots (CM1 and CM2), four cabin crews, and 17 passengers. At 1235, the aircraft conducted a go-around during a visual approach to runway 27 of Kaohsiung Airport (RCKH). After successfully landing at RCKH, at 1247, the aircraft taxied to the apron and shut down the engines. When conducting an after landing check, some damages were identified as following: scratches on the lower left wing tip, broken landing light and position light on left wing. There was not any crew or passenger injured in this occurrence.

This investigation identified important learning opportunities for pilots, operators and regulatory agencies to improve future aviation safety and to seek to ensure such an occurrence never happen again. The Aviation Safety Council (ASC) has issued interim flight safety bulletin on 27 October 2005, and two safety recommendations to UNI to correct the safety deficiencies identified during the investigation.

According to the Republic of China (ROC) Aviation Occurrence Investigation Act, and the content of Annex 13 to the Convention on International Civil Aviation, the ASC, an independent aviation occurrence investigation agency, was responsible for conducting the investigation. The investigation team also included members from Civil Aeronautics Administration (CAA) Taiwan and UNI.

The 'Final Draft Report' of the occurrence investigation was reviewed at ASC's Council Meeting and then sent to relevant organizations and authorities for comments on 26 July 2006. After comments were collected and integrated, the investigation report was reviewed and approved by ASC's 96th Council Meeting on 28 November 2006. The Final Report of the occurrence was published on 4 December 2006.

There are a total of 8 findings from the Final Report, and 3 safety recommendations issued to UNI.

Findings as the result of this investigation

The ASC 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 risk**, and **other findings**.

The **findings related to probable causes** identify elements that have

been shown to have operated in the occurrence, or almost certainly operated in the occurrence. These findings are associated with unsafe acts, unsafe conditions, or safety deficiencies associated with safety significant events that played a major role in the circumstances leading to the occurrence.

The **findings related to risk** identify elements of risk that have the potential to degrade aviation safety. Some of the findings in this category identify unsafe acts, unsafe conditions, and safety deficiencies including organizational and systemic risks, that made this occurrence more likely; however, they cannot be clearly shown to have operated in the occurrence alone. Furthermore, some of the findings in this category identify risks that are unlikely to be related to the occurrence but, nonetheless, were safety deficiencies that may warrant future safety actions.

Other findings identify elements that have the potential to enhance aviation safety, resolve a controversial issue, or clarify an ambiguity point which remains to be resolved. Some of these findings are of general interests that are often included in the ICAO format accident reports for informational, safety awareness, education, and improvement purposes.

Findings related to the probable causes

1. The flight crew did not conduct an appropriate flight controls from the glide path to flare phase, and then not had an adequate ailerons control input when encountering a wind direction change during flare, resulting in an excessive left bank and left wing tip ground impacts at six feet radio altitude.

Findings Related to the Risks

1. The flight crew took an early turn from downwind leg to base leg. This shortened the distance of final leg and adversely influenced subsequent landing controls.

2. The flight crew increased the descent rate to intercept glide path during the final approach due to the shortened distance of the final leg, which resulted that the descent rate of the aircraft exceeded the upper limit recommended in the manual.

Other Findings

1. The flight crew were properly certificated and qualified in accordance with the Civil Aeronautics Administration (CAA) requirements. The duty and rest period within 72 hours prior to the occurrence were in compliance with the CAA regulations. No evidence indicated any

preexisting physical and psychological conditions, or the uses of alcohol or drugs that might have adversely affected the flight crew's performance during the occurrence flight.

2. After landing, the flight crew pressed "ERASE" button on the cockpit voice recorder (CVR) control panel after the mechanic informed them of left wing tip damages, which resulted the voice data in the CVR was overlapped. The voice data was recovered after the ASC sent the CVR to the manufacturer.

3. After engines shut down, the flight crew did not comply with the regulations to pull out the circuit breakers of the cockpit voice recorder (CVR) and flight data recorder after receiving the aircraft damage information from the mechanic, which delayed the timing for preservation of the CVR data.

4. The mechanic only pulled out two circuit breakers (CB) of the flight data recorder, and did not put out the CB of the cockpit voice recorder (CVR) simultaneously, which delayed the timing of effective preservation of the CVR data.

5. The UNI Airways did not effectively deliver the regulations related to data preservation of cockpit voice recorder to mechanics.

Interim Flight Safety Bulletin

The Aviation Safety Council has published an Interim Flight Safety Bulletin (ASC-IFSB-05-10-001) of the occurrence investigation on 27 October 2005 as follows:

1. All aircraft operators shall ensure the compliance of the Aviation Occurrence Investigation Act and related regulations for protections of the integrity of the data preserved in the cockpit voice recorder.

Safety Recommendations

To UNI Airways

1. Require all flight crews to comply with the standard operating procedures, including the following items: (ASC-ASR-06-12-001)

   - All flight crews shall fly the aircraft from downwind leg to base leg on right timing;
   - All flight crews shall initial a go-around during the final approach when encountering unstable conditions.

2. Enhance the crosswind landings skills in the flight crew training and

check. (ASC-ASR-06-12 -002)

3. Promote and ensure all flight crews and mechanics to comply with the regulations related to data preservation of the flight recorders. (ASC-ASR-06-12-003)