Aviation Safety Council

Taipei, Taiwan

UNI Air Flight B7 901, Aircraft Type MD-90-30, Registration no. B-17913 Burst Tire during Rotating on RWY 06 of TaoYuan Intl. Airport. On April 15th, 2008

Executive Summary

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About 0844 Taipei local time, Taiyuan International Airport Tower cleared the aircraft to depart from Runway 06; therefore the Captain (CM-1) started to increase thrust to take off. Everything was normal during the rolling phase, when VR speed is reached, the First Officer (CM-2) called out “rotate”, and the Captain started to rotate, meanwhile The CM-2 moved the landing gear control lever to the UP position. When the aircraft was about to leave the ground, the CM-1 and CM-2 heard the abnormal sound - “bang, bang”. After the landing gears were retracted, the flight crew discovered 2 landing gear position indicator lights were illustrated in red color.

During the departure, the CM-2 lower the landing gear control lever again, and discovered the landing gear position indicator lights were 3 green lights, the landing gear doors position indicator lights were yellow, then the CM-2 retracted the landing gear again, and it turned out the landing gear position indicating lights were still 2 red lights, and the landing gear doors position indicating yellow light extinguished. Meanwhile, Taipei Approach informed the flight crew that ground staffs had heard abnormal sounds and saw smoke, and found burst tires and metal scraps on Runway 06. After occurrence happened, during the interview, the CM-1 mentioned that he knew it was the landing gear doors which struck the ground may due to early retraction of the landing gear control lever, but the actual damage of the aircraft was not known, and they still continued the duty flying to Kaohsiung, meanwhile they still performed the checklist procedure of “Red Light Illuminated With

Landing Gear Handle Up” in QRH (Quick Reference Handbook).

Since the extent of aircraft damage was still uncertain, before the occurrence aircraft arrived in Kaohsiung International Airport, two low approaches were conducted, after the visual check of the landing gear by the Air Traffic Tower controllers, and ground staffs, they confirmed that tire no.4 was abnormal, the left landing gear door could not be completely retracted, since the landing gear position indicating lights showed 3 green lights The Captain decided to approach and land, and stopped the aircraft on the runway.

About 0954, the aircraft landed at 6,110 ft from RWY 09 threshold. All crew and passengers onboard were no injury.

The aircraft damage includes - LH/RH gear doors and gear hub severely damaged. Three tires burst (no.1/3/4), and left gear door actuator crooked.

Findings related to the probable causes

1. When the aircraft was takeoff rolling, after CM-2 called out “Rotate“, the flight crew did not followed the takeoff procedure and standard callouts of MD-90 Flight Crew Operation Manual, confirming the aircraft has positive climb rate, then called out “Positive Climb”. Under the condition which CM-1 did not command “Gear Up”, CM-2 moved the landing gear control lever to “UP” position in advance.

2. During the takeoff rolling phase and main wheels were still on the ground, the landing gear control lever was lifted, causing the landing gear door open. Since the aircraft altitude was low

causing the landing gear door scratched on the ground and damaged; the brake de-spin cylinder activated causing the tire burst and damages to the main wheel assembly.

Findings Related to the Risks

1. When the flight crew performed the procedures of “Red Light Illuminated With Landing Gear Handle Up”, they did not confirm airspeed according to QRH, and under the condition where the landing gear could be damaged, conducted again the extension, retraction of the landing gear.

2. When the flight crew performed procedures from the QRH, the degrees of understanding, familiarity, accuracy and integrity all had spaces for improvements.

3. The flight crew could not comply with the regulations of the company in following SOPs, and multiple omissions revealed that the company did not achieve the results and requirements of the SOP training when conducting duties for parts of the flight crew members.

4. The landing gear extend/retract mechanism for the aircraft type did not consider the main wheel status, as long as the nose wheel left the ground and the landing gear control lever was retracted would the mechanism be triggered.

Other Findings

1. The Flight Data Recorder comply with the regulation of ICAO ANNEX 6 TYPE I, 32 mandated parameter records were satisfied.

2. The right main wheel of the aircraft was on fired after fully

stopped in Kaohsiung International Airport, fire trucks put off the fire with water and were on standby alert.

3. The functionality test of the landing gear system indicated that the normal condition with no failures.

4. The flight crew of the occurrence aircraft, discussed about subjects irrelevant to safety operation during taxi phase. Therefore, the regulation of the sterile cockpit policy was not practiced.

Safety Recommendations

To UNI AIR

1. Strengthen flight crew to actually follow SOPs to conduct flight duty training and requirement, and study and develop measures to ensure that pilots comply with SOPs to conduct flight duties. (ASC-ASR-09-09-009)

2. Require flight crew to first refer to relevant manuals if no immediate actions are required when encountering abnormal situations, after evaluating actual conditions, then follow procedures to conduct steps to exclude abnormal conditions. (ASC-ASR-09-09-010)

3. Strengthen flight crew with the training of conducting procedures of abnormal conditions, to enhance flight crew the extent of understanding and familiarity of the disposal procedure contents, and the accuracy and integrity when conducting procedures. (ASC-ASR-09-09-011)

To CIVIL AERONAUTICS ADMINISTRATION, CAA

1. Supervise UNI Air to study and develop measures to ensure that pilots comply with SOPs to conduct flight duties. (ASC-ASR-09-09-012)

2. Supervise UNI Air to strengthen the training of flight crew with the training of conducting procedures of abnormal conditions, to enhance flight crew the extent of understanding and familiarity of the disposal procedure contents, and the accuracy and integrity when conducting procedures. (ASC-ASR-09-09-013)

3. Require aircrafts operators whose aircraft types have the same design logic as MD-90 in landing gear automatic lever locks to provide pilots with information propagandas of hidden risks of relevant designs, to prevent the landing gear being mistakenly retracted under the condition when the nose wheels have already left the ground but the main wheels still on ground. (ASC-ASR-09-09-014)

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