

Occurrence Report

B7901

| | | | |
|--------------------------|-------------------|-----------------------------|----------------------|
| State reporting | Taiwan Island | Date entered | 2012/2/22 |
| Reporting org. | Taiwan (ASC) | Report last modified | 2014/7/9 PM 04:54:08 |
| State file number | ASC-AOR-09-09-002 | Report status | Data |

Headline Burst Tire during rotating on RWY 06 of TPE Airport, UNI Air B7901, B-17913, MD-90

| | | | |
|---------------------------------|-----------------------|----------------------------|------------------------------|
| Occurrence class | Serious incident | Occurrence category | ARC: Abnormal runway contact |
| Local date | 2008/4/15 AM 08:44:00 | UTC date | 2008/4/15 AM 12:44:00 |
| State/area of occurrence | Taiwan Island | Latitude of occ | 25:05 North |
| Location of occ | RCTP Airport | Longitude of occ | 121:13 East |

Aircraft Involved

| | | | |
|---------------------------|-----------------------------|------------------------------|----------------------------------|
| Manufacturer/model | MCDONNELL-DOUGLAS - MD90-30 | Aircraft registration | B-17913 |
| Call sign | GLORY | Operator | Taiwan - Uni Air - (to be coded) |
| Flight phase | Take-off | | |

TAIWAN ISLAND, ASC-AOR-09-09-002**Filing information**

| | | | |
|--------------------------|--|-----------------------|--------------|
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When

| | | | |
|-------------------|-----------------------|-----------------|-----------------------|
| Local date | 2008/4/15 AM 08:44:00 | UTC date | 2008/4/15 AM 12:44:00 |
|-------------------|-----------------------|-----------------|-----------------------|

Where

| | | | |
|---------------------------------|---------------|-------------------------|-------------|
| State/area of occurrence | Taiwan Island | Latitude of occ | 25:05 North |
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Classification

| | | | |
|-------------------------|------------------|----------------------------|------------------------------|
| Occurrence class | Serious incident | Occurrence category | ARC: Abnormal runway contact |
|-------------------------|------------------|----------------------------|------------------------------|

Severity

| | | | |
|---------------------------|-------|-------------------------|------|
| Damage aircraft | Minor | Damage aerodrome | None |
| Third party damage | No | Injury level | None |

Injury totals

| | Fatal | Serious | Minor | None | Unknown | Total |
|--------------------------|--------------|----------------|--------------|-------------|----------------|--------------|
| Total on ground | 0 | 0 | 0 | 0 | 0 | 0 |
| Total on aircraft | 0 | 0 | 0 | 43 | 0 | 43 |
| Grand total | 0 | 0 | 0 | 43 | 0 | 43 |

ATM relation

| | | | |
|-------------------------|------|------------------------------|-----------|
| ATM contribution | None | Effect on ATM service | No effect |
|-------------------------|------|------------------------------|-----------|

NARRATIVE (ENGLISH)

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

NARRATIVE (ENGLISH)

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.

EVENTS**Main landing gear related event (ATA Code:3210) , during Take-off. {Occurrence}**

Flight crew's operation of landing gear : Improper timing

Flight crew., Psychological action-procedure violation : Not followed

Aircraft manufacturing company., Automatic defences/warnings : Inadequate design

Main landing gear door : Scratched

Main landing gear tyre : Burst

Damage to aircraft , during Take-off run. {Occurrence}

WEATHER**General weather conditions**

| | | | |
|---------------------------|-----|-------------------------|----------|
| Weather conditions | VMC | Light conditions | Daylight |
| Weather relevant | No | Wind speed | |
| Speed measured at | | Visibility | |

MCDONNELL-DOUGLAS - MD90-30, B-17913**Aircraft identification**

| | | | |
|-------------------------------|-----------------------------|------------------------------|---------------|
| Manufacturer/model | MCDONNELL-DOUGLAS - MD90-30 | State of registry | Taiwan Island |
| Year built | 1996 | Aircraft registration | B-17913 |
| Aircraft serial number | 53537 | Call sign | GLORY |
| | | Flight number | B7901 |

Aircraft Operation

| | | | |
|----------------------|----------------------------------|-------------------------|---|
| Operator | Taiwan - Uni Air - (to be coded) | Operation type | Commercial Air Transport - Scheduled revenue ops - Domestic - Passenger |
| Operator type | | ICAO information | |

Aircraft description

| | | | |
|--------------------------|-----------------------|------------------------------|----------------------|
| Aircraft category | Fixed wing | Wake turb. category | Medium |
| Propulsion type | Turbofan | Mass group | 27 001 to 272 000 Kg |
| Number of engines | 2 | Maximum take-off mass | 70760.414 kg |
| Landing gear type | Tricycle, retractable | GNSS installed | |
| EFIS | Yes, full | | |

Aircraft status

| | | | |
|----------------------------|---------------|----------------------------|---------|
| Total cycles a/c | 27679 | Maintenance docs. | Current |
| Aircraft total time | 20217 Hour(s) | Airworthiness cert. | Valid |

HISTORY OF FLIGHT**Itinerary**

| | | | |
|-----------------------------|--|---------------------------|--------------|
| Last departure point | Taiwan - RCTP (TPE): Taipei/Taiwan Taoyuan International Airport - (to be coded) | Flight phase | Take-off |
| Planned destination | Taiwan - RCKH (KHH): Kaohsiung International Airport - (to be coded) | Duration of flight | 42 Minute(s) |
| | | Occ. on ground | Yes |

ATS route

| | | | |
|-------------------------|------|------------------|--|
| ATS route name | A-1 | SID route | |
| ATS route type | RNAV | STAR | |
| Relevant segment | | | |

Speed and altitude at first event

| | | | |
|----------------------------|--|----------------------|--|
| Speed (first event) | | True airspeed | |
| Type of speed | | | |

INJURIES**Injuries**

| | Fatal | Serious | Minor | None | Unknown | Total |
|-------------------|----------|----------|----------|-----------|----------|-----------|
| Pilot | 0 | 0 | 0 | 1 | 0 | 1 |
| Co-pilot | 0 | 0 | 0 | 1 | 0 | 1 |
| Cabin crew | 0 | 0 | 0 | 4 | 0 | 4 |
| Other flight crew | 0 | 0 | 0 | 1 | 0 | 1 |
| Crew Total | 0 | 0 | 0 | 7 | 0 | 7 |
| Passengers | 0 | 0 | 0 | 36 | 0 | 36 |
| Other on Aircraft | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 43 | 0 | 43 |

Injury types

| | Fatal injuries | Non-fatal injuries | Unknown |
|----------------|----------------|--------------------|---------|
| Burns | 0 | 0 | 0 |
| Drowning | 0 | | 0 |
| Fumes/gases | 0 | 0 | 0 |
| Impact | 0 | 0 | 0 |
| Shock exposure | 0 | 0 | 0 |
| Other reasons | 0 | 0 | 0 |
| Unknown | 0 | 0 | 0 |

Autopsy

| | |
|-------------------|------|
| Persons autopsied | None |
|-------------------|------|

AIRCRAFT RECORDINGS**Cockpit voice recorder**

| | | | |
|-------------------------------|---------------|---------------------------------|---------------------|
| CVR location | Rear fuselage | CVR recovery | Recovered |
| CVR Recording medium | Solid state | Underwater locator (CVR) | |
| Number of channels | 4 | CVR Reason for data loss | None/not applicable |
| CVR Recording duration | 120 Minute(s) | CVR Recording quality | Good |
| Hot microphone | yes | | |

Flight data recorder

| | | | |
|-----------------------------|---------------|---------------------------------|----------------------|
| FDR location | Rear fuselage | FDR recovery | Recovered |
| FDR Recording medium | Solid state | Underwater locator (FDR) | |
| Number of parameters | 87 | Reason for data loss | |
| FDR Recorder type | Digital FDR | FDR data recovery | Completely recovered |
| | | FDR Data usefulness | Useful |

AIR TRAFFIC SERVICES**Flight level, altitude**

| | Height | Altimeter (QFE) | Altitude | Altimeter (QNH) | Flight level |
|--------------------|--------|-----------------|----------|-----------------|--------------|
| Actual | | | 0 ft | | |
| Cleared | | | | | |
| Requested | | | | | |
| Co-ordinated entry | | | | | |
| Co-ordinated exit | | | | | |

FLIGHT CREW**PILOT-IN-COMMAND****Flight crew member**

| | | | |
|----------------------|------------|----------|------------------|
| Age | 51 Year(s) | Category | Pilot-in-command |
| Gender - Crew Member | Male | | |

Flight crew rest/duty

| | | | |
|--------------------|-------------|------------------|------------|
| Duty last 24 hours | 2.5 Hour(s) | Rest before duty | 17 Hour(s) |
|--------------------|-------------|------------------|------------|

Flight crew experience

| | Last 24 hours | Last 90 days | Total |
|--------------------|---------------|--------------|---------------|
| This Aircraft type | 2.5 Hour(s) | 221 Hour(s) | 7290 Hour(s) |
| All types | 2.5 Hour(s) | 221 Hour(s) | 11140 Hour(s) |

Flight crew licences

| License type | Ratings | Validity | Registry State issued | Instructor rating | Instrument rating |
|---|----------------------|-------------------|-----------------------|-------------------|-------------------|
| Aeroplane pilot - Airline transport pilot | Held required rating | Valid, no waivers | Yes | Yes | |

CO-PILOT**Flight crew member**

| | | | |
|----------------------|------------|----------|----------|
| Age | 53 Year(s) | Category | Co-pilot |
| Gender - Crew Member | Male | | |

Flight crew rest/duty

| | | | |
|--------------------|-----------|------------------|------------|
| Duty last 24 hours | 2 Hour(s) | Rest before duty | 13 Hour(s) |
|--------------------|-----------|------------------|------------|

Flight crew experience

| | Last 24 hours | Last 90 days | Total |
|--------------------|---------------|--------------|---------------|
| This Aircraft type | 1 Hour(s) | 226 Hour(s) | 6076 Hour(s) |
| All types | 1 Hour(s) | 226 Hour(s) | 13349 Hour(s) |

Flight crew licences

| License type | Ratings | Validity | Registry State issued | Instructor rating | Instrument rating |
|---|----------------------|-------------------|-----------------------|-------------------|-------------------|
| Aeroplane pilot - Airline transport pilot | Held required rating | Valid, no waivers | Yes | | |

MANAGEMENT

Occurrence report

| | | | |
|------------------------------|---------------------------------|-----------------------------|----------------------|
| Report identification | B7901 | Report last modified | 2014/7/9 PM 04:54:08 |
| Report moderator | | Report status | Data |
| Report source | Accident/Incident investigation | Reporting form type | ICAO - Final Report |
| Date report created | 2012/2/22 PM 02:49:11 | | |