

Aircraft Accident Preliminary Investigation Report

KNKT 09.08.03.02

**NATIONAL  
TRANSPORTATION  
SAFETY  
COMMITTEE**

**PT. Lion Air  
PK – LIL  
Boeing McDonnell Douglas MD-90  
Sukarno Hata Airport  
Jakarta  
Republic of Indonesia**

**9 March 2009**



**REPUBLIC OF INDONESIA  
MINISTRY OF TRANSPORTATION  
NATIONAL TRANSPORTATION SAFETY COMMITTEE  
2009**



This Preliminary Factual Report was produced by the National Transportation Safety Committee (NTSC), Karya Building 7<sup>th</sup> Floor Ministry of Transportation, Jalan Medan Merdeka Barat No. 8 JKT 10110, Indonesia.

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## **GLOSSARY OF ABBREVIATIONS**

AD	Airworthiness Directive
AFM	Airplane Flight Manual
AGL	Above Ground Level
ALAR	Approach-and-landing Accident Reduction
AMSL	Above Mean Sea Level
AOC	Air Operator Certificate
ATC	Air Traffic Control
ATPL	Air Transport Pilot License
ATS	Air Traffic Service
ATSB	Australian Transport Safety Bureau
Avsec	Aviation Security
BMG	Badan Meterologi dan Geofisika
BOM	Basic Operation Manual
CAMP	Continuous Airworthiness Maintenance Program
CASO	Civil Aviation Safety Officer
CASR	Civil Aviation Safety Regulation
CPL	Commercial Pilot License
COM	Company Operation Manual
CRM	Cockpit Recourses Management
CSN	Cycles Since New
CVR	Cockpit Voice Recorder
DFDAU	Digital Flight Data Acquisition Unit
DGCA	Directorate General of Civil Aviation
DME	Distance Measuring Equipment
EEPROM	Electrically Erasable Programmable Read Only Memory
EFIS	Electronic Flight Instrument System
EGT	Exhaust Gas Temperature
EIS	Engine Indicating System
FL	Flight Level
F/O	First officer or Copilot
FDR	Flight Data Recorder
FOQA	Flight Operation Quality Assurance
GPWS	Ground Proximity Warning System
Hrs	Hours
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules

IIC	Investigator in Charge
ILS	Instrument Landing System
Kg	Kilogram(s)
Km	Kilometer(s)
Kts	Knots (NM/hour)
Mm	Millimeter(s)
MTOW	Maximum Take-off Weight
NM	Nautical mile(s)
KNKT / NTSC	Komite Nasional Keselamatan Transportasi / National Transportation Safety Committee
°C	Degrees Celsius
PIC	Pilot in Command
QFE	Height above aerodrome elevation (or runway threshold elevation) based on local station pressure
QNH	Altitude above mean sea level based on local station pressure
RESA	Runway End Safety Area
RPM	Revolution Per Minute
SCT	Scattered
S/N	Serial Number
SSCVR	Solid State Cockpit Voice Recorder
SSFDR	Solid State Flight Data Recorder
TS/RA	Thunderstorm and rain
TAF	Terminal Aerodrome Forecast
TSN	Time Since New
TT/TD	Ambient Temperature/Dew Point
TTIS	Total Time in Service
UTC	Coordinated Universal Time
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

## **SYNOPSIS**

On 9 March 2009, a Boeing McDonnell Douglas MD-90 aircraft, registered PK-LIL, operated by Lion Air as flight number LNI-793, departed from Makasar Airport (Ujung Pandang), Sulawesi at 13.36 LT (06.36 UTC) for Sukarno Hata Airport, Jakarta. The estimated arrival time was 08.36. The crew consisted of two pilots and four flight attendants. There were 166 adult passengers.

The co-pilot was the handling pilot for the sector, and the pilot in command was the support/monitoring pilot.

During the approach to runway 25L, the weather conditions at the airport were reported as wind 200 degrees at 20 knots, visibility 1,500 meters, and rain. Based on this information, the PIC decided to take over control from the co-pilot for the landing.

The PIC later reported that he had the runway in sight passing through 1,000 feet on descent, so disengaged the auto pilot at 400 feet. At about 50 feet the aircraft drifted to the right and the PIC initiated corrective action to regain the centreline. The aircraft touched down to the left of the runway 25 centerline and then commenced to drift to the right. The PIC reported that he immediately commenced corrective action by using thrust reverser, but the aircraft increasingly crabbed along the runway with the tail to the right of runway heading.

The aircraft stopped at 08.35 on the right side of runway 25L, 1095 meters from the departure end of the runway on a heading of 152 degrees; 90 degrees from the runway 25L track. The main landing gear was off the sealed runway surface and the nose gear was on the runway.

The aircraft's right landing light was found at 45 meters from the runway 25L threshold mark, and the right outer wing had scratches that indicated that it had contacted the runway surface.

The passengers and crew evacuated via the front left door escape slide. None of the occupants were injured.

The investigation is continuing and will include an analysis of the weather at the time and the weather reporting to flight crews, the operational procedures used during the approach and landing, and the operator's check and training.

# **1 FACTUAL DATA**

## **1.1 History of the Flight**

On 9 March 2009, a Boeing McDonnell Douglas MD-90 aircraft, registered PK-LIL, operated by Lion Air as flight number LNI-793, departed from Makasar Airport (Ujung Pandang), Sulawesi at 06:36 UTC<sup>1</sup> for Sukarno Hata Airport, Jakarta. The estimated arrival time was 08:36. The crew consisted of two pilots and four flight attendants. There were 166 adult passengers.

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<sup>1</sup> The 24-hour clock in Coordinated Universal Time (UTC) is used in this report to describe the local time as specific events occurred. Local time Jakarta, Western Indonesian Standard Time (WIB) is UTC+ 7 hours. Local time in the area of the serious incident, Central Indonesia Standard Time (Waktu Indonesia Tengah (WITA)) is UTC +8 hours.



**Figure 1: View from right side of PK-LIL after the accident**



**Figure 2: PK-LIL at Soekarno-Hatta Airport, Jakarta after accident**

## **1.2 Injuries to Persons**

Injuries	Flight Crew	Cabin Crew	Passengers	Total
Fatal	Nil	Nil	Nil	Nil
Serious	Nil	Nil	Nil	Nil
Minor	Nil	Nil	Nil	Nil
None	2	4	166	172
Total	2	4	166	172

### **1.3 Damage to Aircraft**

The left main landing gear separated from the aircraft. The right main landing gear collapsed and the landing gear assembly was significantly damaged. Tire number 3 (inboard right main wheel) exploded. The right landing light was broken and was found 45 meters from the landing threshold.

### **1.4 Other Damage**

The surface of the runway had scouring 1 centimetre deep, for a length of about 213 meters.

There was no damage to other property.

### **1.5 Aircraft Information**

Aircraft Registration	PK-LIL
Aircraft Serial Number	53573
Aircraft Manufacturer	Boeing McDonald Douglas
Aircraft Type/Model	MD-90
Year of Manufacture	1998
Certificate of Airworthiness Valid Until	18 April 2009
Certificate of Registration Valid Until	14 April 2009
Total Airframe Hours	18,604 TSN
Total Cycles	14,464 CSN

#### **1.5.1 Weight and Balance**

The aircraft was being operated within the approved weight and balance limitations.

### **1.6 Meteorological Information**

The weather conditions reported on the aerodrome terminal information service were wind 200 degrees at 20 knots, visibility 1,500 meters, and rain.

### **1.7 Aids to Navigation**

Not relevant to this accident

### **1.8 Communications**

The crew had no difficulty communicating with air traffic control during the occurrence.

## **1.9 Aerodrome Information**

Airport Name	: Soekarno Hata Airport, Jakarta
Airport Identification	: WIII
Elevation	: 21 feet
Airport Operator	: Directorate General Civil Aviation
Class	: 1
Runway Direction	: 07/25
Runway Length	: 3,600 meters
Runway Width	: 60 meters
Surface	: Asphalt

## **1.10 Wreckage and Impact Information**

The aircraft remained intact apart the left main landing gear, which separated from the aircraft and the right landing light was found 45 meters from the landing threshold.

## **1.11 Medical and Pathological Information**

Not relevant to this accident.

## **1.12 Fire**

There was no pre-or post-accident fire.

## **1.13 Survival Aspects**

Not relevant to this accident.

## **1.14 Tests and Research**

Not relevant to this accident.

## **1.15 Organizational and Management Information**

### **1.15.1 P.T Lion Mentari Airlines**

Aircraft Owner	: P.T Lion Mentari Airlines
Aircraft Operator	: P.T Lion Mentari Airlines
Trading as	: Lion Air

## **2 CONCLUSION**

The investigation is continuing and will include an analysis of the weather at the time and the weather reporting to flight crews, the operational procedures used during the approach and landing, and the operator's check and training.