

**PRELIMINARY**  
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**NATIONAL  
TRANSPORTATION  
SAFETY  
COMMITTEE**

**Aircraft Accident Investigation Report**

**PT. Derazona Air Service  
Bell 406 Helicopter; PK-DAL  
Berastagi, Sumatera Utara  
Republic of Indonesia  
30 December 2013**



**NATIONAL TRANSPORTATION SAFETY COMMITTEE  
MINISTRY OF TRANSPORTATION  
REPUBLIC OF INDONESIA  
2014**

This Preliminary Report was produced by the National Transportation Safety Committee (NTSC), Ministry of Transportation Building 3<sup>rd</sup> Floor, Jl. Medan Merdeka Timur No. 5, Jakarta 10110, INDONESIA.

The report is based upon the initial investigation carried out by the NTSC in accordance with Annex 13 to the Convention on International Civil Aviation Organization, the Indonesian Aviation Act (UU No.1/2009), and Government Regulation PP No. 62/2013.

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## GLOSSARY OF ABBREVIATIONS

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AirNav Indonesia	:	The air traffic services provider within Indonesian airspace or <i>Lembaga Penyelenggara Pelayanan Navigasi Penerbangan Indonesia</i> (LPPNPI)
AME	:	Aircraft Maintenance Engineer
AOC	:	Air Operator Certificate
BMKG	:	<i>Badan Meteorologi Klimatologi dan Geofisika</i> (Meteorological Climatological and Geophysical Agency)
CASR	:	Civil Aviation Safety Regulations
CPL/H	:	Commercial Pilot License (Helicopter)
CVR	:	Cockpit Voice Recorder
DGCA	:	Directorate General of Civil Aviation
ELT	:	Emergency Locator Transmitter
EOB	:	Engineer on Board
FDR	:	Flight Data Recorder
ICAO	:	International Civil Aviation Organization
Kgs	:	Kilograms
Km/h	:	Kilometre per hour
KNKT (NTSC)	:	<i>Komite Nasional Keselamatan Transportasi</i> (National Transportation Safety Committee)
m	:	Metres
mb	:	Millibars
Mhz	:	Mega hertz
Nm	:	Nautical Miles
QNH	:	Height above mean sea level based on local station pressure
SBU	:	<i>Sertifikat Bandar Udara</i> (Airport Operator Certificate)
SOP	:	Standard Operating Procedures
USA	:	United States of America
UTC	:	Universal Time Coordinate
WIB	:	<i>Waktu Indonesia Barat</i> (West Indonesia Standard Time)

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## **INTRODUCTION**

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### **SYNOPSIS**

On 30 December 2013, a Bell 206 helicopter registered PK-DAL was operated by PT. Derazona Air Service on a spot charter flight. The route of charter flight was departed from Efarina Etaham Hospital, Berastagi to Simalungun area, Sumatera Utara. Person on board were one pilot, one engineer on board (EOB), and 3 hospital employees as passengers.

At 0330 UTC (1030 WIB), the helicopter started engines and departed from Efarina Etaham Hospital heliport, Berastagi. A few seconds later, the helicopter hits a 7 metres height electrical pole in front of the hospital yard.

At 0335 UTC, the hospital team rescued and evacuated all occupants from the helicopter wreckage to hospital.

The Engineer on board was fatality, four occupants were serious injured and the helicopter was destroyed.

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# 1 FACTUAL INFORMATION

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## 1.1 HISTORY OF THE FLIGHT

On 30 December 2013, a Bell 206 helicopter registered PK-DAL was operated by PT. Derazona Air Service on a spot charter flight. The route of charter flight was departed from Efarina Etaham Hospital, Berastagi to Simalungun area, Sumatera Utara. Person on board were one pilot, one engineer on board (EOB), and 3 hospital employees as passengers.

This flight was the second flight of the day. The first flight was from Simalungun area to Efarina Etaham Hospital, Berastagi and only two occupants (one pilot and one engineer on board) for this flight.

At 0330 UTC (1030 WIB)<sup>1</sup>, the helicopter started engines and departed from Efarina Etaham Hospital heliport, Berastagi. The eye witnesses said that they saw the helicopter rotated 3 or 4 times before forward to Simalungun direction.

A few seconds later, the helicopter hits a 7 metres height electrical pole in front of the hospital yard.

At 0335 UTC, the hospital team rescued and evacuated all occupants from the helicopter wreckage to hospital. They found that the engineer was fatality and the four occupant suffer serious injured. All injured occupant was treated on the Efarina Etaham Hospital.



**Figure 1: Derazona Air Service, Bell 206 registered PK-DAL**

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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. Waktu Indonesia Barat (WIB) is UTC +7 hours.



## 1.2 INJURIES TO PERSONS

Injuries	Flight crew	Passengers	Total in Helicopter	Others
Fatal	1	-	1	-
Serious	1	3	4	-
Minor	-	-	-	-
Nil Injuries	-	-	-	-
<b>TOTAL</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>-</b>

## 1.3 DAMAGE TO HELICOPTER

The helicopter was destroyed.

## 1.4 OTHER DAMAGE

There was an electrical pole broken due to hit by the helicopter and the electrical was shut down for about 30 minutes in Kabanjahe District.



**Figure 2: Bell 206 registered PK-DAL after the accident**

## 1.5 PERSONNEL INFORMATION

### 1.5.1 Pilot in command

Gender : Male  
Age : 35 years  
Nationality : Indonesian  
Date of joining company : 1 August 2013  
License : CPL/H  
Date of issue : 24 April 2013  
Type rating : Bell 206B and Bolkow BO 105  
Medical certificate : First Class  
Date of last medical : 22 October 2013  
Valid to : 22 April 2014  
Medical Limitation : None  
Last proficiency check : 17 December 2013

#### FLIGHT TIME

Total time : 1,789 hours  
This make & model : 21 hours 15 minutes  
Last 90 days : 17 hours 1 minutes  
Last 60 days : 13 hours 4 minutes  
Last 24 hours : 1 hour

### 1.5.2 Engineer on Board

Gender : Male  
Age : 38 years  
Nationality : Indonesian  
Date of joining company : 1 September 1997  
License : AME  
Type rating : Bell 206B and Allison 250-C20

## 1.6 HELICOPTER INFORMATION

### 1.6.1 General

Registration Mark : **PK-DAL**  
Manufacturer : Bell Helicopter Textron  
Country of Manufacturer : United States of America

Type/ Model : Bell 206B  
 Serial Number : 1624  
 Year of manufacture : 1975  
 Certificate of Airworthiness  
     Category : Normal  
     Limitation : None  
     Validity : 28 September 2014  
 Certificate of Registration  
     Validity : 6 February 2015  
 Time Since New : 21.810 hours 54 minutes  
 Cycles Since New : 85.697 cycles  
 Last Major Check : 100 hours Inspection dated 18 September 2013  
 Last Minor Check : Lubrication Inspection dated 20 December 2013

### 1.6.2 Engines

Manufacturer : Allison Engine Company, USA  
 Type/Model : Allison 250 C-20  
 Serial Number : CAE 821052BA  
 Time Since New : 25.059 hours 18 minutes  
 Cycles Since New : 31.828 cycles

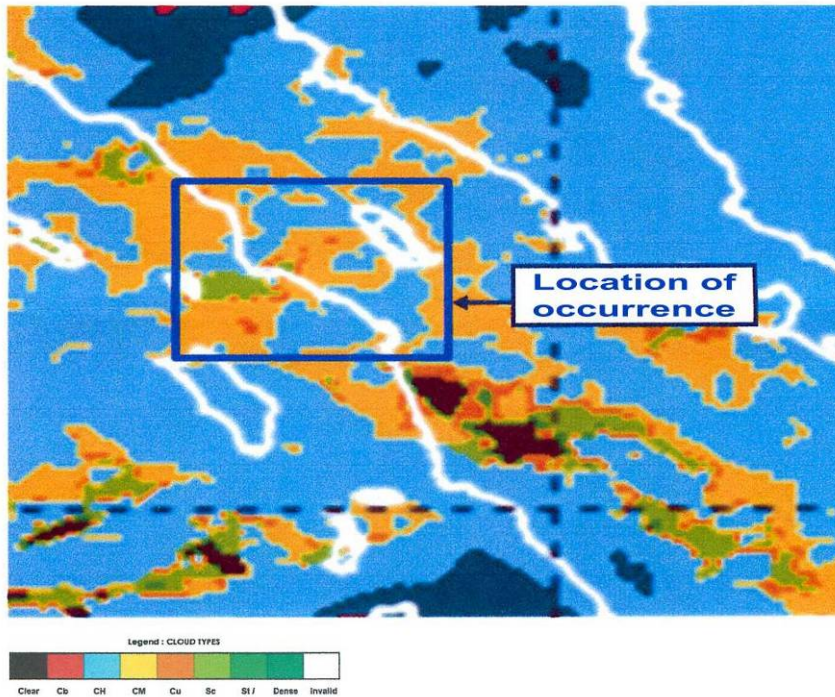
## 1.7 METEOROLOGICAL INFORMATION

### 1.7.1 Weather Observation From BMKG Kualanamu Medan Office

The BMKG Kualanamu Medan observation office is the nearest meteorology station to the accident site, approximately 36.5 Nm.

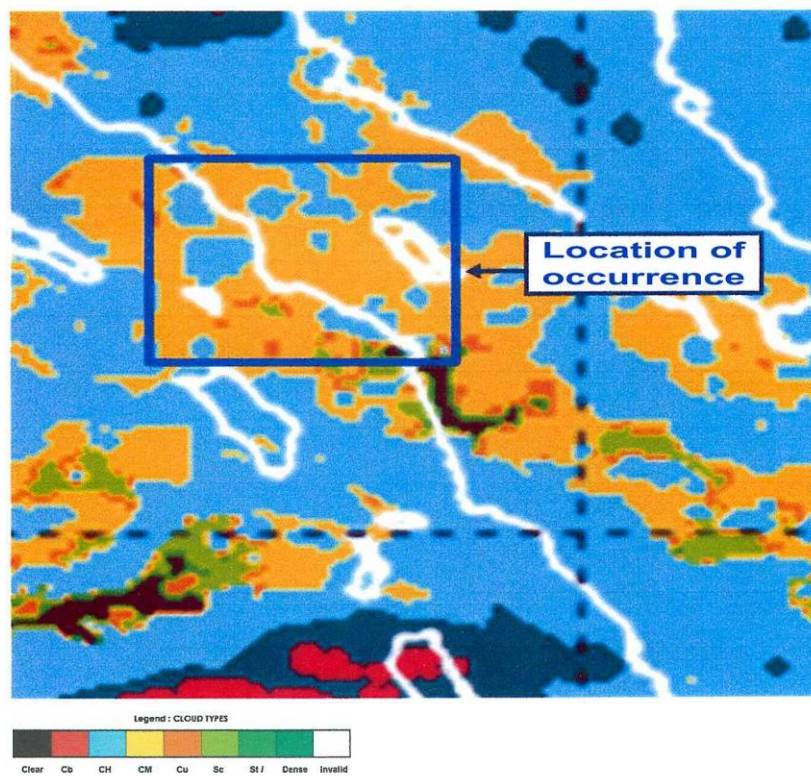
	<b>0300 UTC</b>	<b>0400 UTC</b>	<b>0430 UTC</b>
Wind	West at 11 km/h	West at 14 km/h	West at 9 km/h
Visibility (m)	5000	6000	6000
Weather	Cloudy	Cloudy	Cloudy
Cloud	5/8 - 7/8	5/8 - 7/8	5/8 - 7/8
Cloud Base (m)	450	450	450
QNH (mb)	1013	1013	1012

### 1.7.2 Satellite Image



*Image courtesy of Indonesia BMKG*

**Figure 3: Satellite image at 0300 UTC**



*Image courtesy of Indonesia BMKG*

**Figure 4: Satellite image at 0400 UTC**

Refer to Satellite image (figure 2 and figure 3) shown that at the time of occurrence, the area weather was Cumulus could.

### 1.7.3 Eye witnesses

The investigation course found that according to eye witnesses, the weather during the accident was cloudy and strong wind.

## 1.8 AID TO NAVIGATION

Not relevant to this accident.

## 1.9 COMMUNICATIONS

Not relevant to this accident.

## 1.10 AERODROME INFORMATION

Heliport Name	:	Efarina Etaham Hospital Heliport
Heliport Address	:	Efarina Etaham Hospital Jl. Jamin Ginting, Tanah Karo, Berastagi Sumatera Utara, Indonesia
Heliport Location	:	03° 08' 43.3" N , 98° 30' 25.6"E
Heliport Certificate (SBU) No.	:	-
Heliport dimension	:	12 x 12 meters
Surface	:	Cement concrete
Facilities	:	windsock (wind cone)

The heliport was not inspected or certified by the authority prior to be used, base on the current Indonesian Civil Aviation Safety Regulations (CASR).

The current Indonesian CASR Part 139.101 only required an aerodrome, included heliport/ helideck and waterbase, that uses by an aircraft having a maximum passenger-seating capacity 30 seats or maximum takeoff weight 5,700 kgs, may apply for registered by the regulator.

Most of the helicopters operated in Indonesia are passenger-seating capacity less than 30 seats configuration.

## 1.11 FLIGHT RECORDERS

The helicopter was not equipped with a Flight Data Recorder (FDR) or Cockpit Voice Recorder (CVR). Neither recorder was required by current Indonesian Civil Aviation Safety Regulations.

## 1.12 WRECKAGE AND IMPACT INFORMATION

The helicopter was impacted with a 7 metres height electrical pole and fall to the road side-walk with 3 metres wide.

Most of the wreckage such as cockpit area, cabin area, main rotor blades, gear box and landing skid, were found at in one main wreckage. The tail boom and tail rotor was detached due to ground impact.

No debris spread on the ground near the main wreckage. There was no evidence of any part detached from the helicopter.

One of the main rotor blade was burn into ground, shown that the helicopter engine still running for a few seconds after impacted.

The helicopter was destroyed by ground impact forces.



Figure 5: The accident site viewed from heliport



**Figure 6: The accident site and heliport**



**Figure 7: The first impact with an electrical pole**

### **1.13 MEDICAL AND PATHOLOGICAL INFORMATION**

No medical or pathological investigations were conducted as a result of this accident, nor were they required.

## 1.14 FIRE

There was no evidence of fire in flight or before the helicopter impact.

The first responder of the Efarina Etaham Hospital staff was spray portable fire extinguishers because they saw smoke from the helicopter.

The interview session with Efarina Etaham Hospital staff found that they not sure about any fire from the helicopter. They sprayed fire extinguisher in according to the Hospital procedures related to an event involved smokes.

## 1.15 SURVIVAL ASPECT

The helicopter was equipped with an emergency locator transmitter (ELT) 406 MHz. The attached inspection tag shown the ELT last inspection was 13 June 2013 and next inspection due is 13 June 2014.

The ELT was found with antenna detached due to the high magnitude of impact/deceleration. The separation of the antenna from the ELT unit explained the reason of no distress signal was transmitted.



Figure 8: Emergency Locator Transmitter with antenna detached.



A crew (engineer on board) was not survivable likely due to his head impacted with broken the cockpit roof assembly. The left cockpit roof assembly was broken and pushed into the cockpit area due to stuck with the rotating main rotor blades.

The other occupants (a pilot and three passengers) were serious injured.

## **1.16 TESTS AND RESEARCH**

When appropriate will be included in the final report.

## **1.17 ORGANISATIONAL AND MANAGEMENT INFORMATION**

### **1.17.1 The Helicopter Operator**

Helicopter Owner	:	PT. Derazona Air Service
Helicopter Operator	:	PT. Derazona Air Service
Address	:	Halim Perdanakusuma Airport Jakarta Timur 13610, Indonesia
AOC Number	:	AOC 135-010

### **1.17.2 The Heliport Operator**

Heliport Owner	:	Efarina Etaham Hospital
Heliport Operator	:	Efarina Etaham Hospital
Address	:	Jl. Jamin Ginting, Tanah Karo, Berastagi Sumatera Utara, Indonesia
Heliport Certificate (SBU) No.	:	-

## **1.18 ADDITIONAL INFORMATION**

### **1.18.1 Flight Plan Submitted**

During the investigation course, the investigator did not find any flight plan form for the occurrence flight. The submitted and recorded flight plan in AirNav Indonesia Medan Office was for 29 December 2013 flight that planned from Kualanamu International Airport (WIMM) Medan to Simalungun area with duration of flight about one hour 30 minutes.

According to General Manager of AirNav Indonesia, Medan Office interviewed results, the PK-DAL flight crew submitted flight plan to AirNav Indonesia Medan Office prior to flight on 29 December 2013 and the flight crew did not reported to AirNav Indonesia, Medan Office after they reached their destination (Simalungun area).

## **1.19 USEFUL OR EFFECTIVE INVESTIGATION TECHNIQUES**

The investigation was conducted in accordance with NTSC-approved policies and procedures, and in accordance with the standards and recommended practices of Annex 13 to the Chicago Convention.

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## **2 ANALYSIS**

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To be included in the final report.

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### **3 CONCLUSION**

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To be included in the final report

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## **4 SAFETY ACTION**

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At the time of issuing this Preliminary Accident Investigation Report, the National Transportation Safety Committee had been informed of safety actions resulting from this accident from the parties.

### **4.1 PT. Derazona Air Service**

- Issued Safety Notice No. DA/SS/notice/1/0114 dated 9 January 2014 about "Safety Notice Post Accident PK-DAL" as follows:
  - 1) Operation Department:
    - to ensure the hazard identification, risk assessment and proving flight of the surface level heliport, elevated heliport and helideck on the present long term period contract services have been performed,
    - to ensure the training program and induction program for the new hire personnel is reviewed and fully implemented.
  - 2) Operation / Maintenance / Business Development Department:
    - to ensure that all parties, including "user/customer" perform the pre-operational tool box meeting,
    - to ensure that on spot charter services / confined area(s) pilot(s) shall perform "dummy approach" procedure on the landing site.

### **4.2 AirNav Indonesia, Medan Office**

- Issued Safety Circular No. LPPNPI.026/OP.03/I/014/GMA-B dated 22 January 2014 about "Compulsory Report after an Aircraft Landing" to all aircraft operator, civil and military, must be report to Airnav Indonesia Medan Office as soon as practicable by the most suitable and quicker means available after the aircraft has landed or reached their destination.

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## **5 RECOMMENDATION**

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According to factual information and initial finding, the National Transportation Safety Committee issued the following recommendations to address safety issues identified in this preliminary report.

### **5.1 Recommendation to PT. Derazona Air Service**

- a. To enforce the SOP of radio communication procedure both inside and outside control airspace
- b. To evaluate the minimum requirement flight experience for pilot. More particular on type experience, before assigning pilot to carry out mission as PIC

### **5.2 Recommendation to Directorate General of Civil Aviation, Ministry of Transportation**

Should review the CASR Part 139: Aerodrome; to accommodate certification requirements for an elevated heliport that is suitable and available for use by the helicopter having passenger-seating capacity below 30 seats or takeoff weight below 5,700 kgs.