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**NATIONAL  
TRANSPORTATION  
SAFETY  
COMMITTEE**

**Aircraft Accident Investigation Report**

**PT. Alfa Trans Dirgantara  
PA 34-200T ; PK-SUV  
Halim Perdanakusuma Airport, Jakarta  
Republic of Indonesia**

**20 June 2010**



**NATIONAL TRANSPORTATION SAFETY COMMITTEE  
MINISTRY OF TRANSPORTATION  
REPUBLIC OF INDONESIA  
2011**



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

The report is based upon the investigation carried out by the NTSC in accordance with Annex 13 to the Convention on International Civil Aviation, the Indonesian Aviation Act (UU No. 1/2009) and Government Regulation (PP No. 3/2001).

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## **GLOSSARY OF ABBREVIATIONS**

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AGL	:	Above Ground Level
AOC	:	Air Operator Certificate
ATC	:	Air Traffic Control
CAMP	:	Continuous Airworthiness Maintenance Program
CASR	:	Civil Aviation Safety Regulation
CPL	:	Commercial Pilot License
CSN	:	Cycles Since New
CVR	:	Cockpit Voice Recorder
DGCA	:	Directorate General Civil Aviation
FDR	:	Flight Data Recorder
ICAO	:	International Civil Aviation Organization
KNKT / NTSC	:	Komite Nasional Keselamatan Transportasi / National Transportation Safety Committee
S/N	:	Serial Number
TSN	:	Time Since New
UTC	:	Universal Time Coordinate



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## **INTRODUCTION**

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### **SYNOPSIS**

On 20 June 2010, a Piper 34-200T aircraft, registered PK-SUV, operated by Alfa Trans Dirgantara (ATD) as charter flight, departed from Halim Perdanakusuma Airport, at 0731 LT (0031 UTC) for Semarang Airport. The estimated arrival time was 0215 UTC. There were four persons on board consisted of one Pilot (single pilot), and three passengers (one company pilot, one company Engineer and one company Mechanic)

During the final approach to runway 13 Semarang Airport, the landing gear was selected down, main landing gears were down and lock, but the nose landing gear was not extended. Pilot made go around, and holding left down wind runway 13, tried to do manual extension the landing gear by using free fall control, but nose landing gear still not extended, and decided return to Halim Perdanakusuma.

At 0401 UTC the aircraft was flying overhead Halim Perdanakusuma Airport, pilot requested tower to check the landing gears visually, and the tower confirmed that only two main landing gears extended.

At 0410 UTC after the second trial of over-flying Halim Perdanakusuma airport, the pilot decided to land on the grass strip of runway 06 Halim Perdanakusuma Airport.

The landing was successful using 100 meters grass strip, the engines were shut and feathered.

The nose section of the aircraft was damaged, and the left engine propeller blades were bent.

Pilot and 3 passengers disembarked normally without injuries.

In this accident the NTSC recommend the ATD to assure the aircraft hydraulic system was properly check and maintained clean for safe operation.



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# 1 FACTUAL INFORMATION

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## 1.1 History of the Flight

On 20 June 2010, a Piper 34-200T aircraft, registered PK-SUV, operated by Alfa Trans Dirgantara as charter flight, departed from Halim Perdanakusuma Airport, at 0731 LT (0031 UTC) to Ahmad Yani Airport Semarang. There were four persons on board consisted of one Pilot (single pilot) and three passengers (one company pilot, one company Engineer and one company Mechanic)

During the final approach to runway 13 Ahmad Yani Airport, the landing gear was selected down, the main landing gears were down and lock, but the nose landing gear was not extended. Pilot made go around, and held on left down wind runway 13. The pilot tried to extend the landing gear manually by free fall control. The nose landing gear was not extended. The pilot decided to return to Halim Perdanakusuma.

At 0401 UTC the aircraft was flying overhead Halim Perdanakusuma Airport. The pilot requested ATC to check the landing gears visually, and the ATC confirmed that only two main landing gears were extended.

At 0401 UTC the aircraft was flying overhead Halim Perdanakusuma Airport, pilot requested tower to check the landing gears visually, and the tower confirmed that only two main landing gears extended.

Prior to touchdown both engines were shut down and propellers were feathered. The aircraft landed and rolled approximately 100 meters on the grass strip.

The nose section of the aircraft was damaged, and the propeller blades of the left engine were bent.

Pilot and 3 passengers disembarked normally without injuries.



**Figure 1: PK-SUV accident site, nose section on runway, nose landing gear was not extended**



Date of medical : 3 May 2010  
Valid to : 3 November 2011  
Last proficiency check : Not provided

**Flight Time**

Total hours : 16,750 hours  
Last 90 days : 240 hours  
Total on this type : 2,576 hours  
on this type last 90 days : 40 hours  
on this type last 30 days : 20 hours  
on this type last 24 days : 4 hours

**1.6 Aircraft Information**

**1.6.1 General**

Aircraft Registration : PK-SUV  
Manufacturer : Piper Aircraft Company  
Type/ Model : PA 34-2005  
Serial Number : 34-7670263  
Year of Manufacture : 1976  
Certificate of Airworthiness valid until : 24 August 2010  
Certificate of Registration valid until : 11 October 2010  
Time Since New (TSN) : 1,970 hours  
Cycles Since New (CSN) : 3,959 cycles

**1.6.2 Engines**

Engine type : Piston engine  
Manufacturer : Continental

**Left engine**

Model : Continental TSIO-360E  
Serial Number : 225101R  
Time Since New (TSN) : 600 hours 42 minutes  
Cycles Since New (CSN) : 885 cycles  
Engine Time Between Overhaul : 1,400 hours

**Right engine**

Model : Continental LTSIO-360E  
Serial Number : 225612R

Time Since New (TSN) : 600 hours 42 minutes  
Cycles Since New (CSN) : 885 cycles  
Engine Time Between Overhaul : 1,400 hours

### **1.6.3 Propellers Information**

Propeller type : Variable Pitch Prop  
Manufacturer : Hartzell Propeller

#### **Left propeller**

Model : BHC-C2YF-2CKUF  
Serial Number : AN-6486  
Time Since New (TSN) : 304 hours  
Time Since Overhaul (TSO) : 19 hours

#### **Right propeller**

Model : BHC-C2YF-2CLKUF  
Serial Number : AN-3461  
Time Since New (TSN) : 304 hours  
Time Since Overhaul (TSO) : 19 hours

### **1.6.4 Weight and Balance**

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

### **1.7 Meteorological Information**

Not relevant to this occurrence.

### **1.8 Aids to Navigation**

Not relevant to this occurrence.

### **1.9 Communications**

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

### **1.10 Aerodrome Information**

Aerodrome Name : Halim Perdanakusuma  
Aerodrome Identification : WIIIH  
Coordinate : 06° 16.0' S and 106° 53.0' E  
Elevation : 84 feet

Airport Operator	:	PT. (Persero) Angkasa Pura 2
Runway Direction	:	06/24
Runway Length	:	3000 meters
Runway Width	:	45 meters
Surface	:	Asphalt

### 1.11 Flight Recorders

The aircraft was not fitted with a flight data recorder (FDR) or cockpit voice recorder (CVR). Neither recorder was required by current Indonesian civil aviation regulations.

### 1.12 Wreckage and Impact Information



**Figure 3: The aircraft was intact, left engine propeller blades were bent, nose section was damaged**

### 1.13 Medical and Pathological Information

Medical or pathological investigations on the pilot were not required.

### 1.14 Fire

There was no indication of pre or post impact fire.

### 1.15 Survival Aspects

This accident was survivable.

## **1.16 Tests and Research**

Not relevant for this investigation.

## **1.17 Organisational and Management Information**

Aircraft Owner : PT. Alfa Trans Dirgantara  
Aircraft Operator : PT. Alfa Trans Dirgantara  
Halim Perdanakusuma Airport No.27 RK  
Jakarta Timur 13610, Indonesia  
Air Operator Certificate number : AOC/135-012

## **1.18 Additional Information**

### **1.18.1 Aircraft System**

The investigation revealed some dirt in the hydraulic system pipe between nose landing gear actuator up line and restrictor on the up line pipe. The dirt diameter was bigger than the restrictor hole one.

### **1.18.2 Maintenance**

Approved Aircraft Inspection Program/Aircraft Maintenance Program of Alfa Trans Dirgantara was not available during this investigation.

## **1.19 Useful or Effective Investigation Techniques**

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

## 2 ANALYSIS

The investigation revealed some dirt in the hydraulic system pipe line between nose landing gear actuator up line and restrictor on the up pipe line. The down line flow of landing gear hydraulic system was block at the nose landing gear actuator restriction valve “0.31 diameter”, may cause the nose gear stuck at up position. The nose landing gear could not be extended, even though the pilot using the free fall control, due to unreleased hydraulic pressure in the up chamber of nose landing gear actuator.

The investigation was unable to find the source of the dirt in the hydraulic up line to the nose landing gear actuator which blocked the restrictor.

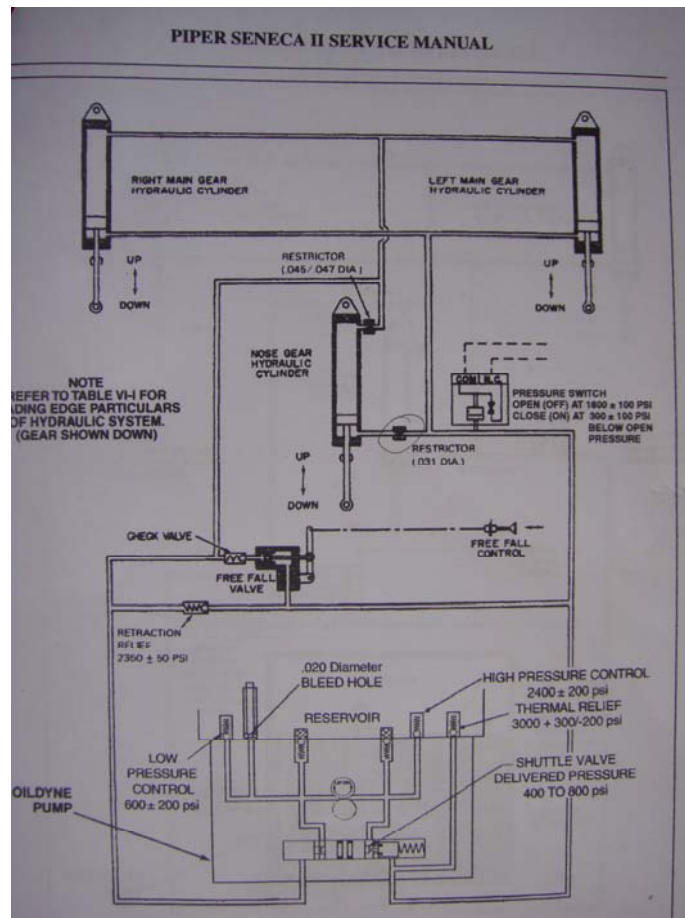


Figure 4: Hydraulic system diagram.



**Figure 5: Dirt revealed on the hydraulic line between restrictor and actuator of nose landing gear**



**Figure 6: Hydraulic restrictor 0.31 diameter**

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## **3 CONCLUSIONS**

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### **3.1 Findings**

The hydraulic system pipe line between nose landing gear actuator up line and restrictor on the up pipe line. The down line flow of landing gear hydraulic system was block at the nose landing gear actuator restriction valve “0.31 diameters” by some dirt.

Approved Aircraft Inspection Program/Aircraft Maintenance Program of Alfa Trans Dirgantara was not available during this investigation.

### **3.2 Causes**

The nose landing gear could not be extended due to the down line flow of landing gear hydraulic system was block at the restriction valve 0.31 diameters.



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## **4 SAFETY ACTIONS AND RECOMMENDATIONS**

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### **4.1 Safety Actions**

On 31 December 2010, PT. Alfa Trans Dirgantara informed the National Transportation Safety Committee about one safety action has been taken. This safety action should be included in their Aircraft Inspection Program/Continuous Airworthiness Maintenance Program.

### **4.2 Recommendations**

As a result of this investigation, the National Transportation Safety Committee issues the following recommendations to address safety issues identified in this report.

#### **4.2.1 Directorate General Civil Aviation (DGCA)**

The National Transportation Safety Committee recommends that DGCA should review the Approved Aircraft Inspection Program and maintenance task related to the hydraulic system for the Piper Seneca aircraft maintained and operated by Indonesian Register/Operators.

#### **4.2.2 PT. Alfa Trans Dirgantara**

The National Transportation Safety Committee recommends that PT. Alfa Trans Dirgantara, should use an approved Aircraft Inspection Program/Continuous Airworthiness Maintenance Program to maintain the aircraft.