

**FINAL**  
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# NATIONAL TRANSPORTATION SAFETY COMMITTEE

Aircraft Accident Investigation Report

**Federasi Aero Sport Indonesia (FASI)**  
**Pelikan; PK-SKI**  
**Pamulang Village, Tangerang**  
**Republic of Indonesia**  
**16 March 2008**



NATIONAL TRANSPORTATION SAFETY COMMITTEE  
MINISTRY OF TRANSPORTATION  
REPUBLIC OF INDONESIA  
2013

This Final report was produced by the National Transportation Safety Committee (NTSC), 3<sup>rd</sup> Floor Ministry of Transportation, Jalan Medan 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 Organization, the Indonesian Aviation Act (UU No. 1/2009) and Government Regulation (PP No. 3/2001).

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## TABLE OF CONTENTS

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<b>TABLE OF CONTENTS .....</b>	<b>i</b>
<b>TABLE OF FIGURES .....</b>	<b>iii</b>
<b>ABBREVIATIONS AND DEFINITIONS .....</b>	<b>iv</b>
<b>INTRODUCTION .....</b>	<b>1</b>
<b>1 FACTUAL INFORMATION .....</b>	<b>2</b>
1.1 History of the Flight .....	2
1.2 Injuries to Persons .....	2
1.3 Damage to Aircraft .....	2
1.4 Other Damage.....	2
1.5 Personnel Information .....	3
1.5.1 Pilot in Command.....	3
1.6 Aircraft Information .....	3
1.6.1 General .....	3
1.6.2 Engines .....	3
1.6.3 Carburetor.....	3
1.6.4 Magneto.....	3
1.6.5 Maintenance .....	4
1.7 Meteorological Information.....	4
1.8 Aids to Navigation .....	4
1.9 Communications.....	4
1.10 Aerodrome Information.....	4
1.11 Flight Recorders .....	4
1.12 Wreckage and Impact Information .....	4
1.12.1 General .....	4
1.12.2 Engine damaged .....	5
1.13 Medical and Pathological Information .....	7
1.14 Fire.....	7
1.15 Survival Aspects .....	7
1.16 Tests and Research .....	7
1.17 Organizational and Management Information.....	7
1.18 Additional Information .....	7
1.18.1 Carburetor.....	7

1.18.2	Fuel booster pump .....	7
1.18.3	Fuel strainer .....	7
1.18.4	Magneto.....	8
1.18.5	Cylinder assembly .....	8
1.18.6	Civil Aircraft Safety Regulation.....	8
1.19	Useful or Effective Investigation Techniques .....	8
<b>2</b>	<b>ANALYSIS.....</b>	<b>9</b>
2.1	Technical .....	9
<b>3</b>	<b>CONCLUSIONS.....</b>	<b>11</b>
3.1	Findings .....	11
3.2	Causes .....	11
<b>4</b>	<b>SAFETY ACTION .....</b>	<b>12</b>
<b>5</b>	<b>SAFETY RECOMMENDATIONS .....</b>	<b>13</b>
5.1	Federation Aero Sport Indonesia (FASI).....	13
5.2	Directorate General Civil Aviation.....	13

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## TABLE OF FIGURES

---

Figure 1: The Pelikan aircraft Reg. PK-SKI .....	2
Figure 2: The damaged house.....	3
Figure 3: The aircraft wreckage.....	5
Figure 4: The aircraft wreckage.....	5
Figure 5: Basic magneto circuit.....	9
Figure 6: The left magneto harness broken .....	9
Figure 7: The carbon brush spring was weak .....	10

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## ABBREVIATIONS AND DEFINITIONS

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AD	: Airworthiness Directive
AOC	: Air Operator Certificate
ATC	: Air Traffic Control
BMKG	: <i>Badan Meteorologi Klimatologi dan Geofisika</i> / Meteorology Climatology and Geophysics Agency Indonesia
CASR	: Civil Aviation Safety Regulation
DGCA	: Directorate General Civil Aviation
FASI	: Federation Aero Sport Indonesia
ICAO	: International Civil Aviation Organization
KNKT/NTSC	: <i>Komite Nasional Keselamatan Transportasi</i> / National Transportation Safety Committee
OC	: Operation Certificate
P/N	: Part number
S/N	: Serial number
UTC	: Universal Time Coordinate

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## **INTRODUCTION**

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### **SYNOPSIS**

On 16 March 2008, a Pelikan aircraft registered PK-SKI was an experimental aircraft and being operated by Federasi Aero Sport Indonesia (FASI) has experience as a joy flight operation in Pondok Cabe area.

The pilot departed from Pondok Cabe Airport. During flight, the engine has ignition problem and then losses power. The aircraft crash at the Pamulang village and four houses damaged.

The pilot was fatal injured.

The National Transportation Safety Committee issued safety recommendations to address safety issues identified in this report for the Federation Aero Sport Indonesia (FASI) as an operator and the Directorate General Civil Aviation as a regulator.

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# 1 FACTUAL INFORMATION

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## 1.1 History of the Flight

On 16 March 2008, a Pelikan aircraft registered PK-SKI was being operated by Federasi Aero Sport Indonesia (FASI) has experience as a joy flight operation in Pondok Cabe area.

The witness informed that he heard the unstable engine sound during run-up.

The pilot departed from Pondok Cabe Airport and at 07:30 UTC, the aircraft was crash to the Pamulang village.

The pilot was fatal injured.



Figure 1: The Pelikan aircraft Reg. PK-SKI

## 1.2 Injuries to Persons

Injuries	Flight crew	Passengers	Total in Aircraft	Others
Fatal	1	-	-	-
Serious	-	-	-	-
Minor/None	-	-	-	-
TOTAL	1	-	-	-

## 1.3 Damage to Aircraft

The aircraft was destroyed.

## 1.4 Other Damage

The aircraft was crashed in the residential area in Pamulang village and four house damaged due to this accident.





**Figure 2: The damaged house**

## **1.5 Personnel Information**

### **1.5.1 Pilot in Command**

There was no evidence that the pilot has a license and medical certificate. The pilot was an owner the aircraft and the investigation have informed that the aircraft maintain by him

This information was not made available to this investigation.

## **1.6 Aircraft Information**

### **1.6.1 General**

The investigation did not found valid aircraft airworthiness certificate.

### **1.6.2 Engines**

This information was not made available to the investigation.

### **1.6.3 Carburetor**

Model	: MA – 3SPA/ Marvel Schleber
Part number	: 10 - 4252
Serial number	: 0 6 1538

### **1.6.4 Magneto**

Manufacturer	: Bendix
Part number	: 10 – 51360 – 26
Serial number	: 812376

### **1.6.5 Maintenance**

The Pelikan was the experimental aircraft. There was no evidence that the aircraft or the engine has been maintained properly.

### **1.7 Meteorological Information**

Not relevant to this accident.

### **1.8 Aids to Navigation**

Not relevant to this accident.

### **1.9 Communications**

Not relevant to this accident.

### **1.10 Aerodrome Information**

Not relevant to this accident.

### **1.11 Flight Recorders**

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

### **1.12 Wreckage and Impact Information**

#### **1.12.1 General**

The aircraft occurred in the village and destroyed.

The investigator has been investigated the aircraft damaged, as follows:

- a. The aircraft wings was loose and destroyed;
- b. The cockpit was destroyed;
- c. The fuselage was destroyed;
- d. The elevator and fin was destroyed and found at the house number 11;
- e. The landing gear was damaged;



**Figure 3: The aircraft wreckage**



**Figure 4: The aircraft wreckage**

#### **1.12.2 Engine damaged**

<b>No.</b>	<b>PART</b>	<b>SECTION</b>	<b>CONDITION</b>
1.	ENGINE BAFFLE	ALL SECTION	SERIOUS DAMAGE, DENTED
2.	INTAKE MANIFOLD	ALL SECTION	BROKEN AND SHATTERED
3.	OIL COOLER	INLET PORT OUTLET PORT	BROKEN BROKEN
4.	OIL PRESSURE SENSING	HOUSING CASE	BROKEN DENTED
5.	OIL FILTER	SCREEN COVER	OUT FROM CASING BROKEN

No.	PART	SECTION	CONDITION
6.	WATER TRAPPED	HOUSING BUFLE DRAIN PIPE	LEAK DENTED BROKEN
7.	FIRE WALL		BROKEN
8.	ROCKER BOX	CYLINDER 1 ✓ ROCKER ARM ✓ ROCKER PIN ✓ SPRING VALVE ✓ VALVE ✓ INTAKE SRHOUD TUBE ✓ EXHAUSE SRHOUD TUBE CYLINDER 2 ✓ ROCKER ARM ✓ ROCKER PIN ✓ SPRING VALVE ✓ VALVE ✓ INTAKE SRHOUD TUBE ✓ EXHAUSE SRHOUD TUBE CYLINDER 3 ✓ ROCKER ARM ✓ ROCKER PIN ✓ SPRING VALVE ✓ VALVE ✓ INTAKE SRHOUD TUBE ✓ EXHAUSE SRHOUD TUBE CYLINDER 4 ✓ ROCKER ARM ✓ ROCKER PIN ✓ SPRING VALVE ✓ VALVE ✓ INTAKE SRHOUD TUBE ✓ EXHAUSE SRHOUD TUBE	GOOD GOOD GOOD GOOD GOOD DENTED DENTED GOOD GOOD GOOD GOOD GOOD GOOD DENTED GOOD GOOD GOOD GOOD DENTED GOOD DENTED GOOD GOOD GOOD GOOD BROKEN BROKEN
9.	MOTOR STARTER		GOOD
10.	EXHAUSED MANIFOLD	ALL SECTION	BROKEN
11.	SPARK PLUG <i>CAHMPION REM 37 BY</i>	CYLINDER 1 ✓ UPPER ✓ UNDER CYLINDER 2 ✓ UPPER ✓ UNDER CYLINDER 3 ✓ UPPER ✓ UNDER CYLINDER 4 ✓ UPPER ✓ UNDER	LOST GOOD LOST GOOD BROKEN GOOG BROKEN BROKEN BROKEN
12.	MOUNTING CARBURATOR		
13.	CARBURATOR		SPECIALY INSPECTON
14.	OIL SUMP		BROKEN AND DENTED
15.	MAGNETO P/N 10-51360-26 S/N 812410		SPECIALY INSPECTON

No.	PART	SECTION	CONDITION
	BENDIX ENGINE MOUNT		BEND
16.	CYLINDER HEAD	CYLINDER 1	BROKEN, DENTED
17.	PROPELLER	ALL BLADE	BROKEN
18.		FLAGE	GOOD
		SPINNER	DAMAGE

### **1.13 Medical and Pathological Information**

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

### **1.14 Fire**

There was no evidence of fire in-flight or after the aircraft impacted terrain.

### **1.15 Survival Aspects**

The aircraft was damaged in village and destroyed four houses. The pilot was fatal injured and found at the house number 11. The villagers sent the pilot to the hospital.

### **1.16 Tests and Research**

Not relevant for this investigation.

### **1.17 Organizational and Management Information**

The pilot was as an aircraft owner, and organized by FASI (Federation Aero Sport Indonesia), under OC 91.

There was no evidence for aircraft worthiness certificate. There was no evidence that the aircraft has maintenance document.

There was no information related to the pilot and flight operation document organized by FASI.

### **1.18 Additional Information**

#### **1.18.1 Carburetor**

The carburetor has been inspected by investigator and found that the filter was clean. The float and gasket were damaged due to impact. The rich & lean mixture adjustment damaged due to impact. The adapter and intake manifold damaged due to impact. The accelerating pump valve damaged due to less maintenance.

#### **1.18.2 Fuel booster pump**

The filter was clean and the electrical component functioned. The fuel tank and the carburetor were installed with series.

#### **1.18.3 Fuel strainer**

The strainer was clean and the drain valve was damaged due to impact.

#### **1.18.4 Magneto**

The number 4 left magneto harness was broken, measured by high tension lead tester. The right magneto has unstable ignition due to the spring carbon brush was weak and the internal magneto was dirty caused oil inside the magneto. The plastic or Teflon washer was not attaching in the right magneto.

#### **1.18.5 Cylinder assembly**

The engine baffle was damaged. The intake manifold was damaged.

The investigation found that oil filter was damaged and made by personal. The number 4 cylinder head was broken. The spark plug was damaged. The mounting carburetor was broken by pieces. The oil sump was damaged. The all propeller blade was destroyed.

#### **1.18.6 Civil Aircraft Safety Regulation**

The experimental aircraft has under OC 91 (CASR 91).

Paragraph 91.319 aircraft having experimental certificates: operating limitation.

- (a) No person may operate an aircraft that has an experimental certificate\_\_\_\_
  - (1) For other than the purpose for which the certificate was issued; or
  - (2) Carrying persons or property for compensation or hire.
- (b) No person may operate an aircraft that has an experimental certificate outside of an area assigned by the Director until it is shown that\_
  - (1) The aircraft is controllable throughout its normal range of speeds and throughout all the maneuvers to be executed; and
  - (2) The aircraft has no hazardous operating characteristics or design features.
- (c) Unless otherwise authorized by the Director in special operating limitations, no person may operate an aircraft that has an experimental certificate over a densely populated area or in a congested airway. The Director may issue special operating limitations for particular aircraft to permit takeoffs and landings to be conducted over a densely populated area or in a congested airway, in accordance with terms and conditions specified in the authorization in the interest of safety in air commerce.
- (d) Each person operating an aircraft that has an experimental certificate shall\_\_\_\_
  - (1) Advise each person carried of the experimental nature of the aircraft;
  - (2) Operate under VFR, day only, unless otherwise specifically authorized by the Director; and
  - (3) Notify the control tower of the experimental nature of the aircraft when operating the aircraft into or out of airports with operating control towers.
- (e) The Director may prescribe additional limitations that the Director considers necessary, including limitations on the persons that may be carried in the aircraft.

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

The investigation was 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

### 2.1 Technical

The number 4 left magneto ignition harness has been broken and the carbon brush spring on right magneto weak or did not press properly the distributor to the carbon most likely produced and unstable ignition.

The number 4 cylinder did not produce power, so that the engine was not produce sufficient power for operating the aircraft.

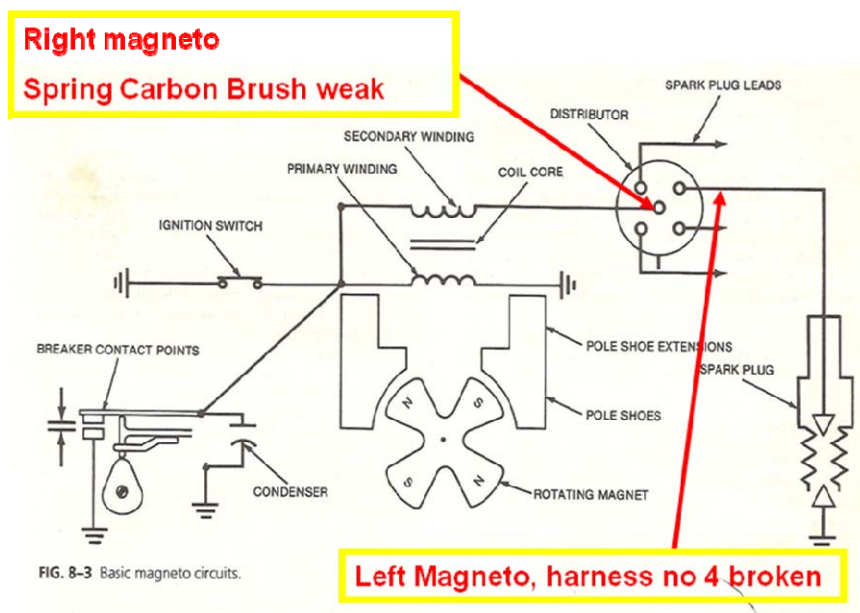


Figure 5: Basic magneto circuit



Figure 6: The left magneto harness broken



**Figure 7: The carbon brush spring was weak**



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## **3 CONCLUSIONS**

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### **3.1 Findings**

- a. The Pelikan was no evidence of a valid experimental aircraft airworthiness certificate.
- b. There was no evidence of a valid pilot license.
- c. There was no evidence maintenance record.
- d. The left magneto harness was broken.
- e. The carbon brush spring on right magneto weak or did not press properly.
- f. The aircraft was crashed in the residential area and there were four house damaged.

### **3.2 Causes**

The aircraft was crashed due to losses power due to ignition problem.

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## **4 SAFETY ACTION**

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At the time of issuing this final investigation report, the National Transportation Safety Committee had not been informed of any safety actions resulting from this occurrence.

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## **5 SAFETY RECOMMENDATIONS**

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

### **5.1 Federation Aero Sport Indonesia (FASI)**

The National Transportation Safety Committee recommends that the Federation Aero Sport Indonesia (FASI) should manage the operation and maintenance of the aircraft belong to the member of FASI.

### **5.2 Directorate General Civil Aviation**

The National Transportation Safety Committee recommends that the Directorate General Civil Aviation assure that the experimental aircraft operated under FASI was accordance CASR 91 paragraph 91.319.