

# **AIRCRAFT ACCIDENT REPORT NUMBER 15/15**

**AIR ACCIDENT INVESTIGATION BUREAU  
MINISTRY OF TRANSPORT  
MALAYSIA**

**ENGINE FAILURE IN-FLIGHT INVOLVING, N9297N, PA-28-181  
AT SENAI AIRPORT GOLF COURSE, JOHOR, MALAYSIA  
15 NOVEMBER 2015**



**BIRO SIASATAN KEMALANGAN UDARA**

**MALAYSIA**

**ACCIDENT REPORT NO.: 15/15**

**OPERATOR : PRIVATE OWNER.**

**AIRCRAFT TYPE : PIPER PA-28-181**

**NATIONALITY : U.S.A.**

**REGISTRATION : N9297N**

**PLACE OF ACCIDENT : SENAI INTERNATIONAL AIRPORT GOLF  
COURSE**

**DATE AND TIME : 20 NOVEMBER 2005 AT 12:40 LT**

All times in this report are Local Time (LT) (UTC + 8 hours).

This investigation is carried out to determine the circumstances and causes of the accident with a view to the prevention of accidents and incidents in the future. It is executed not for the purpose of apportioning blame or liability (Annex 13 to the Chicago Convention and Civil Aviation Regulations 1996).

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- Appendix 5 - Certificate of Test (Aircraft Rating)

## **ABBREVIATION**

AAIB	Air Accident Investigation Bureau
AFRS	Airfield Fire and Rescue Services
ATC	Air Traffic Control
PPL	Private Pilot License
CVR	Cockpit Voice Recorder
DCA	Department of Civil Aviation
e.g.	For Example
FDR	Flight Data Recorder
Ft	Feet
ie.	That is
LT	Local Time (UTC + 8 hours)
POB	Persons on Board
UTC	Coordinated Universal Time

## INTRODUCTION

### ***The Air Accident Investigation Bureau of Malaysia***

The Air Accident Investigation Bureau (AAIB) of Malaysia is the air accidents and incidents investigation authority in Malaysia. The AAIB is responsible to the Minister of Transport. Its mission is to promote aviation safety through the conduct of independent and objective investigations into air accidents and incidents.

The AAIB conducts the air accidents and incidents investigations in accordance with Annex 13 to the Chicago Convention of International Civil Aviation and Civil Aviation Regulations of Malaysia 1996.

In carrying out the investigations, the AAIB will adhere to International Civil Aviation Organization's (ICAO's) stated objective, which is as follows:

“The sole objective of the investigation of an accident or incident shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability.”

Accordingly, it is inappropriate that the AAIB investigation reports should be used to assign fault or blame or determine liability, since neither the investigation nor the reporting process has been undertaken for that purpose.

## **SYNOPSIS**

On 20 November 2015, a United States of America (USA) registered aircraft, N9297N aircraft took off from Senai International Airport, Johor, Malaysia with only 1 (one) pilot or person on board. The pilot was also the Captain of N9297N aircraft. The Captain did the general handling flight on N9297N aircraft.

The flight call sign that the Captain used for N9297N aircraft was FRAS 03. In fact, N9297N was under the maintenance care of FRAS Flying Club, Senai International Airport, Johor, Malaysia.

The Captain of N9297N aircraft took off at about 12:25 LT for local training flight. The training area was to the West of Senai International Airport with fuel endurance of about 3 hours. After completed the operations at the training area, N9297N re-joined the Senai International Airport and to continue with the circuit and landing training for left-hand circuit of Runway 16.

Owing to the scheduled arrival of commercial aircraft, N9297N was directed to hold at the West of Senai International Airport at 1,000 ft.

At 13:04 LT, Captain of N9297 aircraft requested to land and at the same time calling Mayday due to engine failure. Senai International Airport Air Traffic Control copied his message and also cleared Captain to proceed to Final of Runway 16. Subsequent to this message to Captain of N9297N aircraft, all other commercial aircraft were hold at various positions in allowing N9297N aircraft in allowing N9297N aircraft to take immediate priority to land. Crash alarm was pressed/activated for the Airfield Fire and Rescue Services (AFRS) to put on Standby.

At 13:06 LT, Captain of N9297N aircraft informed Senai International Airport Air Traffic Control Tower that N9297N aircraft was making an emergency landing at Senai International Airport Golf Course as the Captain mentioned that he was unable to make and land at Runway 16.

N9297N aircraft was successfully forced landed on the Senai International Airport Golf Course. Captain of N9297N called Senai International Airport Air Traffic Control Tower that he was safe with minor injury.

Although N9297N was successfully landed by the Captain, it ran out of landing space and collided with a tree finally.

N8287N was totally damaged during the final collision with the tree, ie. N9297N aircraft suffered total lost.



Figure 1: Damaged N9297N Aircraft



## **1.0 FACTUAL INFORMATION**

### **1.1 History of the flight**

1.1.1 Piper PA-28-181 aircraft bearing registration N9297N was privately owned by Captain Boo Jiing You, 14, Highgate Walk, Singapore 598760. N9297N aircraft was managed and maintained by the FRAS Flying Club, Senai International Airport, Johor Bahru, Johor, Malaysia.

1.1.2 On 20 November 2015, Captain Boo took the aircraft for a general handling flight. The general handling flight was at and also near to the Senai International Airport.

1.1.3 At about 12:25 LT, the Captain took off from Senai International Airport. At about 13:03 LT, Captain was told to hold at the West of Senai International Airport Runway to offer airspace for two commercial aircraft that were on scheduled flights to arrive at Senai International Airport. The holding height that was offered by the Senai International Airport Air Traffic Control Tower was 1,000 ft.

1.1.4 At about 13:04 LT as N9297N was holding at West of Senai International Airport, Captain declared that N9297N aircraft experienced engine failure. Subsequently, Captain requested to go to Final Runway 16 to execute an emergency landing. The Senai International Airport Air Traffic Control Tower cleared the Captain to proceed as what he requested. At the same time, the other commercial aircraft that were cleared to proceed to land as per schedule were redirected to hold at various locations in allowing N9297N aircraft to land immediately on Runway 16.

1.1.5 Two minutes after the clearance that was given by the Senai International Airport Air Traffic Control Tower, the Captain of N9297N aircraft mentioned that he was not able to make it to Runway 16. Captain of N9297N aircraft stated that he would be making a forced landing at Senai International Airport Golf Course.

1.1.6 Captain of N9297N aircraft forced landed the aircraft safely at Senai International Airport Golf Course. Nevertheless, just before N9297N aircraft came to a complete stop, it hit a tree which is located very near to a golf course green.



Figure 2: N9297N hit a Tree during the Forced Landing

1.1.6 Owing to the severe hit against the tree, N9297N aircraft was severely damaged. In fact, the damage of N9297N aircraft was considered a total lost.

## 1.2 Detection of Distress

1.2.1 Captain of N9297N aircraft detected the engine power loss while he was joining the circuit at Senai International Airport. The severe engine power loss was experienced by the Captain while he was descending from 1,500 ft to 1,000 ft with intention to join the Right Base of Runway 18.

### 1.3 Injuries To Persons

1.3.1 Following are the number of the injury to the crew:

Injuries	Crew	Others
Fatal	nil	nil
Serious	nil	nil
Minor/None	01	nil

### 1.4 Damages To Aircraft

1.4.1 N9297N aircraft was severely damaged during the forced landing. However, the Captain only sustained minor injury.



Figure 3: Real View of Damaged N9297N Aircraft



Figure 4: N9297N Aircraft Collided with A Tree





Figure 5: Engine of Damaged N9297N Aircraft

## **1.5 Other Damages**

1.5.1 Nil

## **1.6 Personnel Information: Captain**

1.6.1 Age : 28 years 5 months.

1.6.2 License Type and No. : PPL (Aeroplanes).

1.6.3 License expiry : 31 July 2016.

1.6.4 Medical Cert. expiry : 31 July 2016.

1.6.5 Captain was well rested on the night before the incident day. On the same issue, he had sufficient sleep just before the day that he was doing the general handling flight on 20 November 2015.

## **1.7 Aircraft Information**

1.7.1	Owner	: Private Owner.
1.7.2	Registration	: N9297N.
1.6.3	Type	: Piper PA 28-181.
1.7.4	Serial No.	: 2843106.
1.7.5	Air Operator Certificate expiry	: 15 July 2016.
1.7.6	Year of manufacture	: 1994.
1.7.7	Operations	: General Handling.
1.7.8	Engine Type	: Lycoming O-360 AM.
1.7.9	Engine Serial No.	: L-35333-36A.

## **1.8 Meteorological Information**

1.8.1 On the day of incident, the weather was reported to be good. At the place of the incident, the weather was good with good visibility.

## **1.9 Navigation Aids**

1.9.1 Nil

## **1.10 Communication**

1.10.1 The Captain did have 2-way communication with Senai International Airport Air Traffic Control Tower.

## **1.11 Aerodrome Information**

1.11.1 Senai International Airport was opened for all flights and the weather was good. All the airport facilities, ie. air traffic, fire and rescue, etc., were available On 15 November 2015.

## **1.12 Flight Recorders**

1.12.1 The Piper PA 28-181, ie. N9297 aircraft was not equipped with flight data recorder. In addition, it was also not equipped with cockpit voice recorder.

## **1.13 Wreckage and Impact Information**

1.13.1 The Captain did the forced landing on the Senai International Airport Golf Course. The forced landing was good on the Senai International Airport Golf Course. Just before N9297N aircraft came to a stop, it hit at tree just next to a green. The collision with the tree caused the aircraft to be severely damaged.



1.13.2 Although the forced landing on the golf course was successful, the collision of N9297N aircraft with a tree caused the aircraft to suffer a Write-Off category, the Captain only suffered slight injury.

#### **1.14 Medical and Pathological Information**

1.14.1 The Captain did not undergo any medical examination subsequent to the incident.

#### **1.15 Fire**

1.15.1 Nil

#### **1.16 Survival Aspects – Search and rescue**

1.16.1 Nil.

#### **1.17 Tests and Research**

1.17.1 Nil



## **2.0 ANALYSIS**

2.1 All the maintenance works related to the preparation of the general handling flight or the flying training in the training area plus circuits and landings was carried out before the Captain took the N9297N aircraft.

2.2 The Captain of N9297N aircraft was the only crew or person in the aircraft. The Captain had valid license (Refer to Appendix 1) and qualified in accordance with the applicable procedures requirements.

2.3 With reference to the general handling flight on 20 November 2015 at Senai International Airport, the flight was ongoing well initially at the training area and also the joining to the West of Senai International Airport for holding at 1,000 ft.

2.4 While the Captain was doing the general handling flight under the control of Senai Air Traffic Control Tower, all aspects of the controlling and coordination were carried out or executed well. No abnormality was encountered during the whole process of controlling.

2.5 In the process of the forced landing on the Senai International Airport Golf Course, N9297N aircraft collided with a tree at the end of the forced landing, ie. during its final stop. The collision with the tree caused the severe damage to N9297N aircraft.

2.6 Owing to collision with the tree, the engine of N9297N aircraft was so severely damaged. Because of this fact, the engine could not be used properly to confirm the cause of the engine power loss.

2.7 The left over fuel in the fuel tank of N9297N aircraft was sent for detailed analysis. It was discovered that there was water contents in the fuel (Refer to Appendix 2).

### **3.0 CONCLUSION**

#### **3.1 FINDINGS**

3.1.1 Captain was licensed and qualified (Refer to Appendix 1) for the general handling flight using N9297N aircraft on 20 November 2015.

3.1.2 Captain held a valid a medical certificate (Refer to Appendix 3) and was medically fit to operate N9297N aircraft on 20 November 2015.

3.1.3 Captain was provided with adequate rest and also in the conducting of the general handling flight.

3.1.4 Piper PA 28-181 aircraft was properly certificated, equipped and maintained in accordance with the applicable regulations.

3.1.5 The weather at the Senai International Airport and its vicinity was suitable for the general handling flight by the Captain of N9297N aircraft.

3.1.6 N9297N was managed and maintained by the N9297N aircraft engineer. Nevertheless, fuel sentiments were discovered in the fuel tank of N9297N aircraft after the forced landing.

#### **3.2 PROBABLE CAUSAL FACTOR**

3.2.1 The probable cause of the engine failure or engine power loss while holding to the West of Senai International Airport at 1,000 ft was owing to presence of fuel sentiments in the fuel tank.

## **4.0 SAFETY RECOMMENDATIONS**

### **4.1 FRAS Flying Club and Private Owner**

4.1.1 The engineering practices and maintenance procedures of the aircraft are to be conducted correctly in continuous manner especially during daily inspection of the aircraft.

4.1.2 Water contamination presence in the fuel tank or fuel system was due to absent of proper fuel check during the preflight by the engineering personnel or Captain prior to taking the aircraft for flying. Future pre flight check has to include fuel sample check for contamination.

Air Accident Investigation Bureau  
Malaysia

**CERTIFICATE OF VALIDITY OF A LICENCE FOR PILOT'S OF FLYING MACHINES****REQUIREMENTS AND VALIDITY OF  
MEDICAL CERTIFICATES**

Licence	Class	Validity in month:
Airline Transport Pilot aged 40 or over . . . . .	1	6
Commercial Pilot aged 40 or over . . . . .	1	6
Airline Transport Pilot under 40 . . . . .	1	12
Commercial Pilot under 40 . . . . .	1	12
FN.Fc . . . . .	1	12
Student/Private Pilot aged 40 or over . . . . .	2	12
Student/Private Pilot under 40 . . . . .	2	24

\* In addition to the remainder of month of issue.

**NOTES:**

- Holders of a class 1 (one) medical certificate, are also entitle for a d (two) medical validity, for those operations requiring only a class 2 medical certificate.
- The Renewal of the Medical Certificate can be obtained in the p commencing one calendar month before expiry. The medical examis should be performed as early in the period as possible.
- The following special examination(s) should be completed on or befor end of the month shown.

Electrocardiogram

Chest X-ray

Audiogram

JS703746—PNMB, K.L.

(DCA8—CVL)

Perakuan Pengesahan mengenai Lesen  
Pemandu-pemandu Pesawat Terbang

Certificate of Validity of a Licence for Pilot's of  
Flying Machines

~~APPROPRIATE~~ (Aeroplanes/Helicopters)

Licences No. 5516 .....

FROM	TO	SIGNATURE	DATE and STAMP
12.09.08	28.02.09	[Signature]	DCA MALAYSIA
20.07.10	31.07.12	[Signature]	DCA MALAYSIA
01.08.12	13.07.13		DCA MALAYSIA
01.08.12	30.07.14	[Signature]	DCA MALAYSIA
28.11.14	31.07.16	[Signature]	DCA MALAYSIA

JS703409—PNMB, K.L.

ter

contents

MALAYSIA CHEMISTRY DEPARTMENT

**JABATAN KIMIA MALAYSIA**  
**KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI**  
 DEPARTMENT OF CHEMISTRY MALAYSIA,  
 MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION  
 Jalan Sultan, 46661 Petaling Jaya, Selangor Darul Ehsan.  
 Tel: 03-7985 3000 Faks: 03-7955 6764 / 03-7958 1173



No. Makmal: 15-FR-B-22592

Tarikh: 11/01/2016

LAPORAN DI BAWAH SEKSYEN 399 KANUN TATACARA JENAYAH

Saya, Muhammad Fauzi Bin Ghazali, Ahli Kimia dalam Perkhidmatan Kerajaan Malaysia dengan ini memperakui bahawa pada jam 1450 pada 10/12/2015, telah diserahkan kepada saya oleh Pegawai Penyiasat Biro Siasatan Kemalangan Udara Khairulnizam Bin Jamaludin, satu bekas kaca bertanda 'N9297N' dan tidak bermeterai.

Saya telah memeriksa bekas kaca tersebut dan mendapati di dalamnya terdapat 84 mililiter cecair berwarna jernih kekuningan.

Keputusan dan pendapat

Setelah dianalisis, saya dapati cecair berwarna jernih kekuningan tersebut adalah konsisten dengan air.

Ketua Setiausaha  
 Kementerian Pengangkutan Malaysia

No. Rujukan: MOT.(S).600-5/4/39(6)

Selepas diperiksa, eksibit-eksibit tersebut telah dimeterai dengan label keselamatan JABATAN KIMIA MALAYSIA dan diserahkan bersama-sama laporan ini kepada

Insp. Kemalangan Udara Khairulnizam Bin Jamaludin  
 pada pukul 9.50 pg pada 11/02/2016

Muka 1(muka akhir)

  
 MUHAMMAD FAUZI BIN GHAZALI  
 Ahli Kimia  
 Jabatan Kimia Malaysia

DCA MALAYSIA: MEDICAL CERTIFICATE

DCA 7—MC—Ptn. 1/91



No 020887

JABATAN PENERBANGAN AWAM  
DEPARTMENT OF CIVIL AVIATION  
MALAYSIA

## MEDICAL CERTIFICATE

Valid Until

31 July 2016

LICENCE NUMBER:

5516

I, the undersigned, being a person approved by the Department of Civil Aviation Malaysia to issue Medical Certificate assess that

FULL NAME: BOO JING YEU

meets the standards for a CLASS TWO Medical Certificate

Limitations:

NIL

ALL DR. PIONG CHEE LIAT (MMC NO 33442)

AMB SIGNATURE MB, BS (India) C. Av. Med (Aust)

DATE (of Signing): DH-52A, Jalan Besar, 81500  
Pekan Nanas, Johor.

30 July 2016 TEL: 07-6996671 Fax: 07-6995452

AME STAMP



NOTE: On this page no entry or alternation may be made except  
authorised by the Department of Civil Aviation Malaysia.

CAPTAIN BOO JING YOU: PRIVATE PILOT'S LICENCE (AEROPLANES)

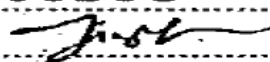
1. **MALAYSIA**

2. **LESEN PEMANDU SENDIRIAN  
(PESAWAT TERBANG)  
PRIVATE PILOT'S LICENCE  
(FLYING MACHINES)  
AEROPLANES/HELICOPTERS**

3. Nombor Lesen **5516**  
Licence Number



Butir-butir mengenai pemegang:  
Particulars of the holder:

4. Nama penuh/Name in Full **BOO JING YOU**
5. Alamat/Address **14 HIGHGATE WALK,**  
**SINGAPORE 598760**
6. Kerakyatan/Nationality **SINGAPOREAN**  
Tarikh Lahir/Date of Birth **29.06.1987**  
Tempat Lahir/Place of Birth **SINGAPORE**  
Kad Pengenalan/NRIC No. **S8718850G**
7. Tandatangan/Signature of holder 

CERTIFICATE OF TEST (AIRCRAFT RATING)

Licence No.: 5516

(DCA 9-CT)


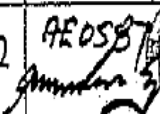
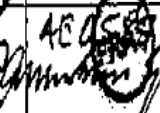
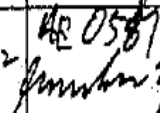
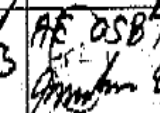
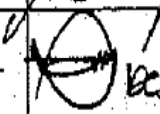
Certificate of Validity

FROM	TO	SIGNATURE	DATE and STAMP

CERTIFICATE OF TEST  
(AIRCRAFT RATING)

LICENCE NO.: 5516

I, the undersigned, being a person authorised by the Department of Civil Aviation Malaysia to sign the Certificate of Test for an aircraft rating, certify that I am satisfied that the holder of this licence has passed a flying test as pilot-in-command (P1) or co-pilot (P2) of the aircraft type or simulator on the date specified below:

Aircraft Type or Simulator	P1 or P2	Date of Test	Signature and Licence No.
CH2	P1	31.08.08	
PA28	P1	15.03.12	
ATH	P1	09.05.12	
CH2	P1	25.05.12	
PA28	P1	27.06.13	
PA28	P1	26.1.14	

JS703407-PNMB, K.L.

All entries to BE MADE IN INK