

**FINAL**

KNKT.07.11.31.04

**NATIONAL  
TRANSPORTATION  
SAFETY  
COMMITTEE**

**Aircraft Accident Investigation Report**

**Admal Sdn. Bhd. Malaysia**

**9M – BDI**

**Cessna 172M**

**42 NM north west of Depati Amir Airport,  
Pangkal Pinang**

**Republic of Indonesia**

**16 November 2007**



**NATIONAL TRANSPORTATION SAFETY COMMITTEE  
MINISTRY OF TRANSPORTATION  
REPUBLIC OF INDONESIA  
2010**



This 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.

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

Readers are advised that the NTSC investigates for the sole purpose of enhancing aviation safety. Consequently, NTSC reports are confined to matters of safety significance and may be misleading if used for any other purpose.

As NTSC believes that safety information is of greatest value if it is passed on for the use of others, readers are encouraged to copy or reprint for further distribution, acknowledging NTSC as the source.

When the NTSC makes recommendations as a result of its investigations or research, safety is its primary consideration.

However, the NTSC fully recognizes that the implementation of recommendations arising from its investigations will in some cases incur a cost to the industry.

Readers should note that the information in NTSC reports and recommendations is provided to promote aviation safety. In no case is it intended to imply blame or liability.



# TABLE OF CONTENT

<b>TABLE OF CONTENT</b> .....	<b>I</b>
<b>TABLE OF FIGURES</b> .....	<b>III</b>
<b>TABLE OF APPENDIX</b> .....	<b>IV</b>
<b>GLOSSARY OF ABBREVIATIONS</b> .....	<b>V</b>
<b>SYNOPSIS</b> .....	<b>1</b>
<b>1 FACTUAL DATA</b> .....	<b>2</b>
1.1 History of the Flight.....	2
1.2 Injuries to Persons.....	3
1.3 Damage to Aircraft .....	3
1.4 Other Damage .....	3
1.5 Personnel Information.....	3
1.5.1 Pilot in Command .....	3
1.6 Aircraft Information.....	4
1.6.1 General.....	4
1.6.2 Engine data.....	4
1.6.3 Weight and balance.....	4
1.7 Meteorological information .....	4
1.8 Aids to Navigation .....	5
1.9 Communications .....	5
1.10 Aerodrome Information .....	6
1.11 Flight Recorders.....	6
1.12 Wreckage and Impact Information .....	6
1.13 Medical and Pathological Information.....	7
1.14 Fire .....	7
1.15 Survival Aspects .....	7
1.16 Tests and Research.....	8
1.17 Organizational and Management Information.....	8
1.18 Additional information.....	8
1.18.1 Carriage of dangerous goods .....	8
1.18.2 Flight Approval document.....	8
1.18.3 General Declaration .....	9
1.18.4 Information from Pilot and documentation.....	9
1.18.5 Global Positioning System flight track information .....	10

1.19	Useful or Effective Investigation Techniques .....	11
<b>2</b>	<b>ANALYSIS.....</b>	<b>18</b>
<b>3</b>	<b>CONCLUSIONS.....</b>	<b>20</b>
3.1	Findings .....	20
3.2	Causes.....	20
<b>4</b>	<b>SAFETY RECOMMENDATION.....</b>	<b>22</b>
4.1	Admal SDN. BHD.....	22
4.2	Malaysia Department of Civil Aviation .....	22
<b>APPENDIX</b>	<b>.....</b>	<b>23</b>

## TABLE OF FIGURES

Figure 1: File photograph of Cessna 172M Skyhawk II, 9M-BDI.....	2
Figure 2: 9M-BDI inverted on the beach.....	6
Figure 3: Arrow points to fractured nose landing gear .....	7
Figure 4: Flight track of 9M-BDI from its on-board Global Positioning System .....	10

## **TABLE OF APPENDIX**

Appendix A:	Flight Plan .....	23
Appendix B:	Angkasa Pura II Briefing Form .....	24
Appendix C:	Flight Approval 07-03723 .....	25
Appendix D:	Flight Approval for Indonesia Territory .....	26
Appendix E:	General Declaration.....	27

## 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
°C	Degrees Celsius
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
hPa	Hectopascals
ICAO	International Civil Aviation Organization

IFR	Instrument Flight Rules
IIC	Investigator in Charge
ILS	Instrument Landing System
Kg	Kilogram(s)
Km	Kilometer(s)
Kt	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
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 16 November 2007, a Cessna 172 aircraft operated by Admal SDN. BHD Malaysia, registered 9M-BDI, departed from Hang Nadim Airport, Batam, on a ferry flight to Pangkal Pinang (Depati Amir) Airport, Indonesia. There were two persons on board. The flight had originated at Subang Airport, Selangor, Malaysia and tracked via Johor Bahru and Batam, landing at each airport, but only refueling at Batam.

About an hour after departure from Batam, the pilot reported climbing above 1,500 feet, and 3 minutes later the pilot broadcast a MAYDAY, stating that he was looking for a place to land. At that time he reported that he was 49 miles from Pangkal Pinang and passing 7,500 feet. The pilot did not give a reason for the Mayday broadcast until 5 minutes later. He said that he had found a place to land, and then made a passing reference to a fuel leak, and that he would refuel and take off from the landing position. The aircraft was carrying three jerry cans of avgas in the passenger cabin.

The pilot subsequently landed on a beach 42 NM north west of Pangkal Pinang. During the landing roll the nose wheel sank into soft sand and collapsed, resulting in the aircraft overturning.

The pilot's passing reference to refuelling and taking off from the forced landing position, indicated that following the forced landing he intended to refuel from the on-board jerry cans of avgas, and take off from the beach. It was evident that the pilot knew that the engine had failed due to fuel exhaustion.

The pilot informed the investigators that he had not leaned the fuel mixture during the climb to, and subsequent cruise at 9,000 feet. The investigation determined that the pilot did not operate the aircraft in accordance with the engine leaning procedures specified by the operator and the aircraft manufacturer. If the pilot had used the same procedures for the flight sectors from Subang to Johore Bahru and Batam, it is likely that after refueling at Batam there was considerably less fuel in the aircraft's wing tanks than estimated by the pilot.

The investigation determined that under the operating procedures used by the pilot, the aircraft did not have sufficient useable fuel on board to complete the planned flight when it departed from Batam.

The National Transportation Safety Committee issued recommendations to the operator, Admal Sdn. Bhd. Malaysia, and the Malaysian Department of Civil Aviation. The recommendations seek to ensure that appropriate guidance documentation, training, and supervision are provided in the areas of engine handling/fuel management procedures; the carriage of avgas and other dangerous goods in the passenger cabin when carrying passengers; and filing of flight plans and other required documents.

# 1 FACTUAL DATA

## 1.1 HISTORY OF THE FLIGHT

On 16 November 2007, a Cessna 172 aircraft operated by Admal SDN. BHD Malaysia, registered 9M-BDI, departed from Hang Nadim Airport, Batam, on a ferry flight to Pangkal Pinang (Depati Amir) Airport, Indonesia. There were two persons on board; one pilot in command (pilot), and one passenger.

The flight plan<sup>1</sup> indicated that the pilot planned to depart from Batam at 0515 UTC<sup>2</sup>, with an estimated flight time of 2 hours and 50 minutes, cruising at 1,500 feet. The Angkasa Pura II Briefing Form<sup>3</sup> showed details for flight at 9,000 feet. The air traffic control flight strip indicated that the aircraft departed from Batam at 0500.

At 0600 the pilot reported climbing above 1,500 feet, and 3 minutes later the pilot broadcast a MAYDAY<sup>4</sup> stating that he was looking for a place to land. At that time he reported that he was 49 miles from Pangkal Pinang and passing 7,500 feet. The pilot did not give a reason for the MAYDAY broadcast until 0608, when he made a vague reference to a fuel leak.

The pilot subsequently landed the aircraft on a beach 42 NM north west of Pangkal Pinang. During the landing roll the nose wheel sank into soft sand and collapsed, resulting in the aircraft overturning. Both occupants evacuated the aircraft unaided.



Figure 1: File photograph of Cessna 172M Skyhawk II, 9M-BDI

---

<sup>1</sup> See Appendix A.

<sup>2</sup> The 24-hour clock used in this report to describe the time of day as specific events occurred, is in Coordinated Universal Time (UTC). Local time, Western Indonesian Standard Time (WIB) is UTC+ 7 hours.

<sup>3</sup> See Appendix B.

<sup>4</sup> MAYDAY: International call for urgent assistance.

## 1.2 INJURIES TO PERSONS

**Table 1: Injuries to persons**

Injuries	Flight crew	Passengers	Total in Aircraft	Others
Fatal	-	-	-	-
Serious	-	-	-	-
Minor	1	-	1	Not applicable
Nil Injuries	-	1	1	Not applicable
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>-</b>

The occupants were citizens of Malaysia.

## 1.3 DAMAGE TO AIRCRAFT

The aircraft was substantially damaged. The nose landing gear, engine mount and firewall, cowling, windscreen, propeller and propeller spinner, wings, fin and rudder were all fractured or substantially distorted.

## 1.4 OTHER DAMAGE

There was no other damage to property and/or the environment.

## 1.5 PERSONNEL INFORMATION

### 1.5.1 Pilot in Command

Age : 23  
Gender : Male  
Type of licence : Malaysia Private Pilot License  
Valid to : 30 June 2011  
Rating : Cessna 150/152/172  
Total flying time : 1,800 hours  
Total on type : 500 hours  
Total last 90 days : 150 hours  
Total on type last 90 days : 50 hours  
Total on type last 7 days : 10 hours  
Total on the type last 24 hours : 4 hours  
Last recurrent training : 24 April 2009  
Last proficiency check : 24 April 2009  
Medical class : Class 2

Last medical examination : May 2009  
Valid to : 30 June 2009  
Medical limitation : Nil

## **1.6 AIRCRAFT INFORMATION**

### **1.6.1 General**

Registration mark	9M-BDI
Aircraft Manufacturer	Cessna Aircraft Corporation
Model	C-172M Skyhawk II
Serial number	17273772
Nationality and registration mark	Malaysia. 9M-BDI
Country of manufacturer	USA
Certificate of Airworthiness	M.0887
Date issued	5 October 2007
Valid to	24 August 2008
Certificate of Registration	M.1071
Date issued	1 March 2001

### **1.6.2 Engine data**

Manufacturer	Lycoming
Type/ model	O-320

There was no evidence of a defect with the aircraft's engine. Engine data were not relevant in this occurrence.

Based on the available evidence, the aircraft was certified, equipped and maintained in accordance with existing regulations and approved procedures.

### **1.6.3 Weight and balance**

Weight and balance were not considered to be factors in this accident.

## **1.7 METEOROLOGICAL INFORMATION**

The prevailing meteorological conditions were not a factor in the accident.

## 1.8 AIDS TO NAVIGATION

Ground-based navigation aids, onboard navigation aids, and aerodrome visual ground aids and their serviceability were not a factor in this accident.

## 1.9 COMMUNICATIONS

All communications between air traffic services (ATS) and the crew were recorded by ground based automatic voice recording equipment for the duration of the flight. The quality of the aircraft's recorded transmissions was mostly good.

From 0600 the following are relevant excerpts of communications recorded by air traffic control.

0600 PK-PGI Amir PGI passing 150.

ATC PGI [BDI] continue climb contact to Jakarta 124.35.

9M-BDI Roger 124.35 continue climb thank you

ATC Anytime sir

0603 BDI MAYDAY, MAYDAY, this is Cessna 9M-BDI looking for airport field to land.

ATC and 9M-BDI

Brief discussion about the pilot's intentions, and that he had "no landing area in sight". There was no comment by pilot, and no question from ATS, about the nature of the problem requiring the MAYDAY broadcast at that time.

ATC Roger sir, request DME, DME from Pangkalpinang.

BDI We are 49 NM and on radial 340, passing 7,500 feet.

0606 ATC 9M-BDI request your radial from PKP now.

BDI Radial 340 and 47 NM.

ATC Roger copied radial 340 and 47 NM and continue descent and report when found the land area sir.

0608 After communicating with the controller and providing mobile telephone contact numbers:

BDI We area, found the landing area and about [pause] passing 5,000 feet and [pause].

ATC Roger sir, copied message and request DME now.

BDI 45 NM and [pause] fuel leak and the fuel available [pause] and take off from landing position.

ATC Roger sir, the fuel leak and we area inform the airport authority.

BDI Roger sir, if I identified the problem to inform you.

### **1.10 AERODROME INFORMATION**

The pilot conducted a forced landed on a beach; it was not an authorised landing area.

### **1.11 FLIGHT RECORDERS**

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

### **1.12 WRECKAGE AND IMPACT INFORMATION**

The aircraft came to rest inverted and was substantially damaged, but it remained intact.



Figure 2: 9M-BDI inverted on the beach



Figure 3: Arrow points to fractured nose landing gear

The main and nose landing gear assemblies were substantially damaged. The nose wheel dug into soft sand during the landing roll and folded rearwards, severely distorting the engine mount and firewall. The propeller blades were bent during impact with the sand. The windshield was fractured.

The left wing had damage to the leading edge, wing tip, and upper surface skins. The outboard section of the right wing was twisted with substantial structural damage, and damage to the leading edge, wing tip, and upper surfaces.

### **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 after the aircraft came to rest inverted.

### **1.15 SURVIVAL ASPECTS**

The pilot was reported to have sustained a minor injury, but the passenger was not injured in the accident and both evacuated the aircraft unaided.

## 1.16 TESTS AND RESEARCH

No tests or research were required to be conducted as a result of this accident.

## 1.17 ORGANIZATIONAL AND MANAGEMENT INFORMATION

Aircraft Owner : Low Nyong Meng  
Aircraft Operator : Admal Sdn. Bhd.  
Address : A-4370 Jalan Telok Sisek 25000  
Kuantan, Pahang  
MALAYSIA

## 1.18 ADDITIONAL INFORMATION

### 1.18.1 Carriage of dangerous goods

The aircraft was carrying dangerous goods in the form of one empty (used) and three full 25 liter jerry cans of aviation fuel, and another container aviation engine oil in the passenger cabin. However, the Flight Plan, General Declaration, and Flight Approval documents did not list that cargo was being carried, and did not state that dangerous goods were on board the aircraft.

### 1.18.2 Flight Approval document

The *FLIGHT APPROVAL document*<sup>5</sup> number 07-03723 listed ‘CAPT ...’ with names, alongside questions 2(g) *Name of pilot in command*, and 2(h) *Other crew members*.<sup>6</sup> At question 2(i) *Passengers/cargo*, the document listed ‘NONE’.

The *FLIGHT APPROVAL FOR INDONESIAN TERRITORY document*<sup>7</sup> listed ‘CAPT ...’ with names, alongside questions 2. *CAPTAIN*, and 3. *CREW*. At question 4. *PASSENGERS (NAMES)*, the document listed ‘NONE’.

---

<sup>5</sup> See Appendix C

<sup>6</sup> The Cessna 172 is a single pilot (crew) aircraft, and there was no evidence of the operator’s procedures requiring a second pilot or a Flight Engineer.

<sup>7</sup> See Appendix D

### 1.18.3 General Declaration

The *GENERAL DECLARATION* document<sup>8</sup> dated 16 NOV '09 covering the inward/outward carriage of passengers and cargo indicated the following:

FLIGHT ROUTING under the heading PLACE listed:

JHB; BTH; PKP; PNK; KCH

TOTAL NUMBER OF CREW [listed 'CAPT ...' with name and 'F/E ...' with name]

NUMBER OF PASSENGERS ON THIS STAGE

*Departure place:* JHB

*Embarking:* 00

Through on same flight [left blank]

Arrival Place: KCH

*Disembarking:* 00

CARGO [listed NIL CARGO]

### 1.18.4 Information from Pilot and documentation

The flight plan lodged by the pilot for the sector from Batam indicated that it was a ferry flight, and that it was his intention to cruise at an altitude of 1,500 feet, at a speed of 100 kts. The ATS flight strip showed evidence that the aircraft had been cleared to 9,000 feet. The pilot subsequently informed accident investigators that he had attempted to climb to 9,000 feet to avoid cloud along the planned track.

The flight plan did not indicate a fuel endurance, but listed an estimated flight time of 2 hours and 50 minutes. The plan also indicated that there were two persons on board, and that the aircraft was carrying life jackets and a five-person yellow dingy.

The flight had departed from Subang Airport, Selangor, Malaysia and tracked via Johor Bahru and Batam, landing at each airport, but only refueling at Batam.

The pilot indicated that the aircraft departed Subang with 4 hours fuel endurance. The flight sector from Subang to Johor Bahru was about 173 NM, and from Johor Bahru to Batam was about 30 NM. The aircraft was refuelled during a short turnaround at Batam from one of the four 25 liter jerry cans of avgas carried in the passenger cabin.

---

<sup>8</sup> See Appendix E

The pilot estimated that, after refuelling at Batam, he had a total of 56 gallons in the wing tanks, which he estimated was 4 hours endurance for the 2 hour 50 minute flight to Pangkal Pinang.

The pilot stated that during the climb to, and subsequent cruise at 9,000 feet, he had operated with a full rich mixture setting. He did not lean the fuel mixture setting in accordance with the engine handling procedures prescribed by the operator and the aircraft manufacturer. He subsequently told investigators that “at about 47 NM from WIKK [Pangkal Pinang] we experienced a sudden loss of power and the fan stopped”. He said that he attempted to restart the engine four times and could not, so declared the MAYDAY.

As there was no landing strip in the area, he elected to land on a beach. The accident site was on the flight planned track.

The pilot reported that during the landing on the beach he released back pressure when he felt the tail hit the ground. About 50 meters further along the landing roll, the nose wheel dug into the sand and the aircraft overturned. The landing was conducted with the wing flaps in the fully retracted position.

#### 1.18.5 Global Positioning System flight track information

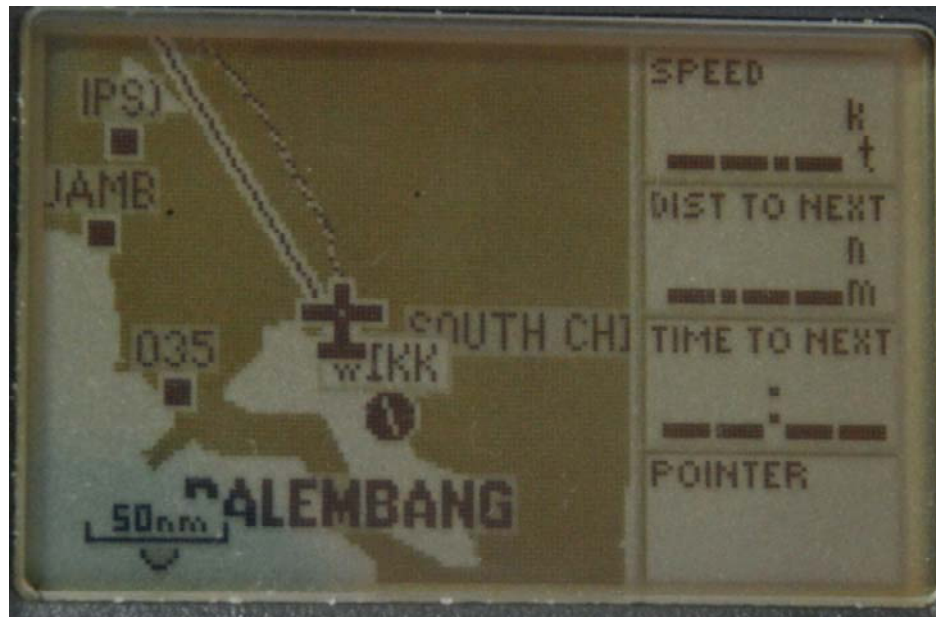


Figure 4: Flight track of 9M-BDI from its on-board Global Positioning System

## **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.

## 2 ANALYSIS

The flight had originated from Subang Airport, Selangor, Malaysia and tracked via Johor Bahru and Batam, landing at each airport, but the pilot only refuelled during a short turn around at Batam.

About 1 hour after departure from Batam, the pilot advised the controller that he was climbing above his planned altitude of 1,500 feet and the controller replied "... continue climb ...", which the pilot acknowledged, saying "... continue climb thank you". Three minutes later, the pilot broadcast a MAYDAY and said that he was 49 miles from Pangkal Pinang and passing 7,500 feet.

The distance between Batam and Pangkal Pinang was 227 NM. At the planned cruising speed of 100 kts, in nil wind and minimal climb, that distance would have required an estimated flight time of 2 hours and 16 minutes. The distance between Batam and the accident site was 189 NM.

The pilot reported that he departed Batam with 4 hours fuel endurance. However, the investigation was unable to conclusively determine the amount of fuel in the aircraft's fuel tanks at the time of departure from Batam for the flight planned 2 hours 50 minute sector.

In broadcasting the MAYDAY message, the pilot did not declare that the aircraft's engine had stopped, nor did he clearly advise the controller of the aircraft's fuel state. At the time of the MAYDAY broadcast, while assisting the pilot, the air traffic controller did not attempt to ascertain the nature of the problem that the pilot was experiencing, and why he was looking for a landing area en route.

At 0608, 5 minutes after broadcasting the MAYDAY, the pilot made a passing reference to the controller "... fuel leak and the fuel available [pause] and take off from landing position".<sup>9</sup>

The pilot subsequently informed investigators that the engine had stopped, and that he attempted to do an in-flight restart, but his attempts were not successful.

The pilot first expressed concern to the air traffic controller when the aircraft was about 49 NM from Pangkal Pinang and descending through 7,500 feet. The investigators were unable to clarify with the pilot if the engine had stopped at that time or if he was concerned about the low fuel state.

---

<sup>9</sup> See Section 1.9 at time 0608.

From the pilot's statements to the investigators about attempting to restart the engine, it is clear that the engine had stopped by the time the aircraft was about 47 NM from Pangkal Pinang. At a cruising speed of 100 kts, that was about 30 minutes from the destination airport.

The pilot's passing reference at 0608 about refuelling and taking off from the [forced] landing position, indicated that following the forced landing he intended to refuel from the on-board jerry cans of avgas, and take off from the beach. It was evident that the pilot knew that the engine had failed due to fuel exhaustion.

The pilot informed the investigators that he had not leaned the fuel mixture during the climb to, and subsequent cruise at 9,000 feet. The investigation determined that the pilot did not operate the aircraft in accordance with the engine leaning procedures specified by the operator and the aircraft manufacturer. If the pilot had used the same procedures for the flight sectors from Subang to Johore Bahru and Batam, it is likely that after refueling at Batam there was considerably less fuel in the aircraft's wing tanks than estimated by the pilot.

The investigation determined that under the operating procedures used by the pilot, the aircraft did not have sufficient useable fuel on board to complete the planned flight when it departed from Batam.

## **3 CONCLUSIONS**

### **3.1 FINDINGS**

- The aircraft was certified, equipped and maintained in accordance with existing regulations and approved procedures.
- The aircraft was airworthy when dispatched for the flight.
- There was no evidence of any defect or malfunction in the aircraft that could have contributed to the accident.
- The pilot was licensed and qualified for the flight in accordance with existing Indonesian regulations.
- The pilot carried out normal en-route radio communications with the relevant ATC units. However, he did not notify the controller of the nature of the emergency that necessitated the Mayday broadcast.
- The air traffic controller did not attempt to ascertain the nature of the problem that the pilot was experiencing, and why he was looking for a landing area en route.
- During the engine out descent, the pilot informed the controller that he would refuel and take off from the landing position.
- The aircraft did not have sufficient fuel for the flight, on departure from Batam.
- The pilot did not operate the aircraft in accordance with the specified engine leaning procedures.
- The engine failed due to fuel exhaustion.

### **3.2 CAUSES**

The pilot did not operate the aircraft in accordance with the specified engine leaning procedures.

The engine failed due to fuel exhaustion.

The aircraft did not have sufficient fuel for the flight on departure from Batam.



## **4 SAFETY RECOMMENDATION**

As a result of the investigation into this accident, the National Transportation Safety Committee made the following recommendation.

### **4.1 ADMAL SDN. BHD**

The National Transportation Safety Committee recommends that Low Nyong Meng review its operations procedures to ensure safety of flight and compliance with international flight approval documentation.

Specifically with respect to:

- engine handling/fuel management procedures;
- the carriage of avgas and other dangerous goods in the passenger cabin when carrying passengers;
- filing flight plans; and
- filing flight approval declarations.

### **4.2 MALAYSIA DEPARTMENT OF CIVIL AVIATION**

The National Transportation Safety Committee recommends that the Malaysian Department of Civil Aviation should note the operational and documentation concerns raised in this report, and review the Admal Sdn. Bhd. operations procedures and practices to ensure that appropriate guidance documentation, training, and supervision are provided.

Specifically with respect to:

- engine handling/fuel management procedures;
- the carriage of avgas and other dangerous goods in the passenger cabin when carrying passengers;
- filing flight plans; and
- filing flight approval declarations.

# APPENDIX

## Appendix A: Flight Plan




REPUBLIC OF INDONESIA  
 BATAM INDUSTRIAL DEVELOPMENT AUTHORITY  
 BATAM AIRPORT

FLIGHT PLAN

PRIORITY	ADDRESSEE(S)		
<< = FF >>			
FILING TIME	ORIGINATOR		
	<< =		
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR			
3 MESSAGE TYPE	7 AIRCRAFT IDENTIFICATION	8 FLIGHT RULES	TYPE OF FLIGHT
<< = IFPL	- 9M-BD1	- V	N
9 NUMBER	TYPE OF AIRCRAFT	WAKE TURBULENCE CAT	10 EQUIPMENT
	C172	1	- V/C
13 DEPARTURE AERODROME	TIME		
- WIDD	0515		
15 CRUISING SPEED	LEVEL	ROUTE	
W 100	A015	VFR - WIDD OCT WICK	
16 DESTINATION AERODROME	TOTAL EFT	ALTN AERODROME	2 <sup>ND</sup> ALTN AERODROME
- WICK	0250	→ WIDD	→ WTPP
18 OTHER INFORMATION			
- OPR : ADMAL. SDN BHD			
DOF : 07116			
AVL : INDONESIA - 10289 / WT / 1511 / 2007			
SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)			
19 ENDURANCE	PERSON ON BOARD		EMERGENCY RADIO
HR MIN	→ P1 002		UHF VHF ELBA
			→ RLU V E
SURVIVAL EQUIPMENT			
POLAR DESERT MARITIME JUNGLE JACKETS LIGHT FLUORES UHF VHF			
→ S / P / B → M → J / L F → U → V			
DINGHIES			
NUMBER	CAPACITY	COVER	COLOUR
→ D	→ 01	→ 005	→ C → YELLOW
AIRCRAFT COLOUR AND MARKINGS			
A1 WHITE			
REMARKS			
→ N1 FERRY FLIGHT			
PILOT IN COMMAND			
C1 CAPT. RAZEEF			
FILED BY			

## Appendix B: Angkasa Pura II Briefing Form



PT. (Persero) ANGKASA PURA II  
BANDAR UDARA DEPATI AMIR BANGKA

DE BRIEFING FORM  
DATE : 16/11/07

AIRCRAFT : EM BDI  
 TYPE : CESNA 172N  
 CAPT. : MOTO RAZEF E. MUSA

FLIGHT NO. :  
 ROUTE : WIKS - WIKK  
 FLIGHT LEVEL : 9000 ft.

I. SERVICE COMMUNICATION													
PROCEDURE & PHRASEOLOGY					ACC/APP					TOWER <u>AMIR</u>			
GOOD FAIR BAD					GOOD FAIR BAD					GOOD FAIR BAD			
COMMUNICATION					READABILITY					DISTANCE			
					1 2 3 4 5					1 2 3 4 5			
					.....NM					.....NM			
					1 2 3 4 5					1 2 3 4 5			
					.....NM					.....NM			

II. VISUAL OBSERVATION													
CALL SIGN		L.O.C.			N.D.B.			V.O.R.			D.M.E.		
		GOOD	FAIR	BAD	GOOD	FAIR	BAD	GOOD	FAIR	BAD	GOOD	FAIR	BAD
MORE THAN 150 NM													
BETWEEN 100 - 150 NM													
BETWEEN <u>60 - 100 NM</u>							✓			✓			✓
..... NM													

III. LANDING AIDS			
I.L.S.	GOOD	FAIR	BAD
APPROACH LIGHTS	GOOD	FAIR	BAD
V.A.S.I	GOOD	FAIR	BAD
..... LIGHTS	GOOD	FAIR	BAD

IV. METEOROLOGICAL INFORMATION

Received info from Amir Tower Vis >10km, weather is good at WIKK. Info received at 100 NM from station.

V. REMARKS & OTHER

SIGNATURE

*[Signature]*

NOTE : 1. INSERT MARK (X)  
2. IF INSUFFICIENT SPACE PLEASE TURN OVER

**Appendix C: Flight Approval 07-03723**

<p>RI 20052349 D</p> <p>Name : <u>MUHAMMAD RAZEEF BIN MUSA</u></p> <p>Passport (2) : <u>A127967-2</u></p> <p>Nationality : <u>MALAYSIA</u></p> <p>Flight : _____</p> <p>Permitted stay /during Aircraft Stay. : <u>7</u> days</p> <p>Date : <u>16 NOV 07</u></p> <p>Company : <u>PT. BAS</u></p>	<p>AJ AVIATION SERVICES SB</p> <p><b>FLIGHT APPROVAL</b></p> <p>005</p> <p>INTERNATIONAL</p> <p>07-03723</p>
--	--

<p>registrations and Call signs</p> <p>2. Penerbangan</p> <p>Flight</p> <p>a) Route</p> <p>Routes</p> <p>b) Tanggal masuk Indonesia</p> <p>Date entering Indonesia</p> <p>c) Tanggal ke luar Indonesia</p> <p>Date leaving Indonesia</p> <p>d) Pendaratan teknis di</p> <p>Technical landing at</p> <p>e) Pendaratan komersial di</p> <p>Commercial landing at</p> <p>f) Sifat/tujuan penerbangan</p> <p>Purpose of the flight</p> <p>g) Nama kokpit</p> <p>Name of pilot in command</p> <p>h) Awak pesawat udara lainnya</p> <p>Other crew members</p> <p>i) Penumpang/barang</p> <p>Passenger/cargo</p> <p>3. Keterangan</p> <p>Remarks</p> <p>NO UFLITE Local traffic between WIDD - WIKK - W100</p>	<p>ADMAL SDN BHD / AJ</p> <p>C 172 N</p> <p>9M- BDI/SUBST</p> <p>WIKK - WIDD - WIKK - W100 - WBGG</p> <p>16 - 25 NOV 2007 (ONE FLT)</p> <p>16 - 25 NOV 2007 (ONE FLT)</p> <p>WIDD - WIKK - W100</p> <p>NONE</p> <p>TECH LAND/STOP FOR REFUELING N CREW REST</p> <p>CAPT. MOHD. RAZEEF BIN MUSA</p> <p>CAPT. MOHD. NOR AIMAN BIN MOKHTAR</p> <p>NONE</p> <p>TECH LAND/STOP FOR REFUELING N CREW REST</p>
---	---

<p>Nota:</p> <p>*1 dan *2 Nama-nama supaya dicantumkan/tercantum</p> <p>Pesawat udara, awak pesawat udara, penumpang, dan barang, kecuali kepada telah dan Konvensi Chicago dan mematu peraturan-operator Indonesia seperti untuk entry clearance, imigrasi, Bea cukai dan karantina, mematu lah penerbangan ini tidak membolehkan operator dari melaksanakan setiap perubahan operasi, atau penyediaan layanan udara dan Director Jenderal Perhubungan Udara lah persetujuan ini dapat dicabut tanpa pemberitahuan terlebih dahulu, dan apabila terjadi keabnormalan pada tanggal tersebut dalam butir 2b) dan 2c) di atas maka lah ini dianggap batal.</p>	<p>Aircraft, crew passengers and load are subject to the terms of the Chicago Convention and have to comply with the Indonesian Regulation as far entry clearance, immigration, customs, and quarantine. Permission of this flight approval does not exempt an operator from compliance with any of the technical operation rules or any work-hour requirements of the Director General of Civil Aviation. This flight approval can be withdrawn without previous notice, should any abnormality occur on the date as prescribed in point 2b) and 2c) this flight will be regarded as cancelled.</p>
--	--

Penerbangan tidak terjadwal tersebut diatas telah diijinkan oleh Pemerintah Republik Indonesia

The above mentioned non scheduled flight has been approved by the Government of the Republic of Indonesia

An. Direktur Jenderal Perhubungan Udara

Nama : HEMLEPAMURAHARDJO

Tanggal : \_\_\_\_\_

Tanda Tangan : \_\_\_\_\_

Jabatan : DIREKTUR ANGKUTAN UDARA

10888/INT/1511/2007

## Appendix D: Flight Approval for Indonesia Territory

2007 FRI 09:30 FAX 60378451758 AJ AVIATION SERVICES SB 008  
 FROM : UJANG SUGANDA PHONE NO. : 006221 8005094 NOJ. 15 2207 37:04PM P3

### REPUBLIC OF INDONESIA FLIGHT APPROVAL FOR INDONESIAN TERRITORY

No. D.F.A. : 3159/Kone-15/XI/2007  
 No. D.D.S. : UD/3003/XI/07/Cps, - 15/XI/2007  
 No. D.A.C. : .....

The following non scheduled flight has been approved by the Indonesian

**Government :**

- |                       |   |  |
|-----------------------|---|--|
| 1. AIRCRAFT           | (a) Company/Owner/Charterer : ADMAL SDN BHD / AJ          |  |
|                       | (b) Type : C 172 N  |  |
|                       | (c) Registration No. : 9M- BDI/SUBST                      |  |
|                       | (d) Call - sign : 9M- BDI/SUBST                           |  |
| 2. CAPTAIN            | CAPT. MOHD. RAZEEF BIN MUSA                               |  |
| 3. CREW               | CAPT. MOHD. NOR AMIN BIN MOKHTAR                          |  |
| 4. PASSENGERS (NAMES) | NONE  |  |
| 5. DATES              | (a) Enter Indonesia (Inward Flight) : 15NOV - 15DEC 2007  |  |
|                       | (b) Leave Indonesia (Outward Flight) : 15NOV - 15DEC 2007 |  |
| 6. ROUTE              | (c) In Country Flight : WOKJ - WIDD - WIKK - WIOO - WEGG  |  |
|                       | (a) Direct Flight : SAME ABOVE                            |  |
|                       | (b) Technical landing at : SAME ABOVE                     |  |
|                       | (c) Remain overnight at : SAME ABOVE                      |  |
| 7. REMARKS            | FERRY FLT/TECH LAND/STOP FOR REFUELING N CREW REST.       |  |



(Signature and name)  
**Fafoadiani Tobing**  
 Kasubdit Jasa Konsuler WNA

APPROVALS :  
 DEPARTMENT OF  
 DEFENCE AND SECURITY

DIRECTORATE GENERAL OF  
 AIR COMMUNICATIONS

(Signature and name)  
  
 UJANG SUGANDA  
 DIRECTOR

(Signature and name)

Aircraft crew, passengers and cargo are subject to the terms of the Chicago Convention and have to comply with Indonesian regulations as to entry, clearance, immigration, customs and quarantine. Possession of this flight approval does not exempt an operator from compliance with any of technical operating rules of aircraft and equipment of the Directorate of Civil Aviation.

**Appendix E: General Declaration**

**GENERAL DECLARATION**

I.C.A.O Annex 9 Appendix 1  
(Outward / Inward)

Owner or Operator ADMAL SDN BHD - MALAYSIA  
 Mark of Nationality and Registration 9M-BDI Flight No. PRIVATE Date 16 NOV 07  
 Departure from JHOP BANU Arrival at BATAM  
(Place and Country of Origin) (Place and Country of Destination)

PLACE	FLIGHT ROUTING <small>(PLACE' Column always to list origin, every en-route stops and destination ) TOTAL NUMBER OF CREW (1)</small>	NUMBER OF PASSENGERS ON THIS STAGE (2)
JHB	CAPT MOHAMAD RAZEEF BIN MUSA MAL/A18379602 F/E MOHAMMAD NOR AIMAN BIN MOKHTAR MAL/A18379601	Departure Place: JHB Embarking: 00
BTH		Through on Same flight:
PKP	<u>9M-BDI</u>	Arrival Place: KCH Disembarking: 00
PNK	<u>9M-BDI</u> <u>16 NOV 2007</u>	<b>CARGO</b> NIL CARGO
KCH	<u>ISLAN</u>	<b>FOR OFFICIAL USE ONLY</b>
DECLARATION OF HEALTH 003957 Person on board known to be suffering from illness other than airsickness or effect of accidents, as well as those cases of illness disembarked during the flight. <u>N I L</u> Any other conditions on board which may lead to the spread of disease. <u>N I L</u> Details of each disinfecting or sanitary treatment (Place, Date, Time & Method) during the flight. If no disinfecting has been carried out during the flight, give detail of most recent disinfecting. <u>N O N E</u> Signed if required _____ <small>Crew member concerned</small>		

I declare that all statements and particulars contained in this General Declaration, and in any supplementary forms required to be presented with this General Declaration are complete, exact and true to the best of my knowledge and that all through passengers will continue/have continued on the flight.

Signature \_\_\_\_\_  
Authorized Agent or Pilot in command