



AIRCRAFT ACCIDENT REPORT SI 06/14

**Air Accident Investigation Bureau
Ministry of Transport, Malaysia**

**Final Report on the Serious Incident involving
Fixed wing aircraft ATR72-600 Registration 9M-LMH
in Subang, Malaysia on 26th March 2014**



INTRODUCTION

The Air Accident Investigation Bureau of Malaysia

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

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

In carrying out the investigations, the AAIB will adhere to 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 AAIB 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.

AIRCRAFT ACCIDENT/SERIOUS INCIDENT REPORT

Aircraft Type : **ATR72-600**

Model : **ATR72-212A**

Owner : **Malindo Air**

Nationality : **Malaysia**

Year of Manufacture : **2013**

Aircraft Registration : **9M-LMH**

Serial Number : **1089**

State of Registration : **Malaysia**

State of Operator : **Malaysia**

Place and State of Occurrence : **Subang International Airport, Selangor, Malaysia**

Date and Time of Occurrence : **26.03.2014 0742hrs (LT)**

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

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SYNOPSIS

Malindo Airways Sdn Bhd, an ATR72-600 aircraft bearing Malaysian registration number 9M-LMH having ‘Left Engine nacelle fire and in-flight shut down’ while climbing to cruise altitude en-route to Terengganu International Airport on 26 March 2014 at approximately 0742hrs (LT). Department of Civil Aviation Malaysia (DCAM) was promptly notified of the incident via telephone by Malindo Airways. DCA had then notified Air Accident Investigation Bureau Malaysia (AAIB) of the incident. A Mandatory Occurrence Report (MOR) was also raised by the Air Operator, ref QA/MOR/14/12.

The flight crew secured the affected engine and executed a successful single engine landing at the point of departure. There were no injuries and all the crew and passengers managed to escape unassisted from the aircraft. Upon inspection, the engine nacelle displayed severe fire damage.

1.0 FACTUAL INFORMATION

1.1 History of the flight

The aircraft bearing Malaysian registration 9M-LMH was on a scheduled flight from Subang Airport (SZB) to Terengganu International Airport. The aircraft was doing a scheduled commercial flight. It departed Subang Airport at 0700hrs and was scheduled to land at Terengganu Airport an hour and 5 minutes later. There was no significant weather detected on the radar screen prior to take off.

During climbing at 7,000ft with the Captain on the flight controls, the Master Warning Engine 1 Fire came on. The Captain initiated a procedure as per checklist and co-pilot transmitted a ‘mayday’ call. Captain requested Air Traffic Controller Tower for emergency landing at SZB airport and it was accepted immediately. The passengers were informed about the problem and asked to be seated.

Both fire agents were discharged and after few minutes there was no visible fire persist. The pilot started to descent with the single engine in operation and carried out procedure as per checklist. The no.1 engine was

secured. The aircraft was configured as per normal for single engine landing. Aircraft landed safely with fire rescue on standby on taxiway.

Captain was informed by the cabin crew and control tower that there was no visible fire and was asked to taxi to the bay.

No evacuation was required and passenger disembarked normally after confirmation of no visible fire. No passenger and crews were injured in the incident.

1.2 Injuries to persons

Injuries	Crew	Passengers	Others
Fatal	Nil	Nil	Nil
Serious	Nil	Nil	Nil
Minor	Nil	Nil	Nil

1.3 Damage to aircraft

During the visit at the bay where the aircraft was parked, it was noted that there was no damage to the aircraft except the left engine (engine no.1) displayed severe fire damage from the mid-section (Engine Turbine Support Case) aftwards. Signs of burn can be seen on the components which included fuel nozzles, igniter plus, fuel lines connection, hoses, wire harness insulations, lower cowling and side cowling.

1.4 Other damage

Nil.

1.5 Personal Information

1.5.1 Captain

Status	Commander
Nationality	Malaysian
Age	59 Years old
Gender	Male
Licence Type	ATPL – 646/H
Licence Validity	Valid until 21 st May 2014
Initial Date of Operating S76C	31 st January 2001
Total Operating Hours on S76C	2,877:35
Flying Hours	Total hours : 17,529:05hrs
Rest Period Since Last Flight	17:45hrs
Last Base Check	08 th November 2013
Last Line Check	09 th September 2013
Last Instrument Rating Check	06 th June 2013

1.6 Aircraft Information

The aircraft was purchased new from ATR France. The aircraft model is ATR-72 with Serial Number 1095. It was manufactured in 2013 and registered in Malaysia as 9M-LMH on 06th August 2013 and has been put into active service since then.

The aircraft was maintained by Malindo Airways Sdn. Bhd. 9M-LMH had clocked-in 1,934:20hrs and 2,243 cycles as of 26th March 2014.

The aircraft had undergone a 4A Check at TSN 1,832:48hrs and CSN 2,123 cycles at Airod Hangar. The last activity done on the aircraft is a replacement of 14 fuel nozzles at No.1 engine. This is a scheduled change as per maintenance schedule at every 1000H interval. The task was performed prior the said flight OD1804 SZB-TGG that the same day in the early morning, around 0030hrs.

The aircraft technical log book, airframe, engines and propellers log books, are quarantined at Quality Assurance Department, KLIA, Sepang. They

were thoroughly reviewed with no significant defects to the aircraft, engines and propeller systems.

The following aircraft certificates are available in the Aircraft Certificate File. They are current and valid (at the time of this review):

CofA No.	M.1577
CofA expiry	05 th August 2014
CofR No.	M.1812
CofR expiry	N/A
Radio License expiry	31 st December 2014
CMR Last Reviewed	20 th November 2013
Next CMR Review Due	19 th March 2014
CRS-SMI Issue Date	11 th December 2013

Details of the engines and propellers that ere fitted on 9M-LMH at the time of incident are as follows:

Engine Serial Number / Position	S/N:PCE-ED0683(LH) ENGINE NO.1	S/N:PCE-ED0731(RH) ENGINE NO.2
Time Since New	1,934:20hrs	1,934:20hrs
Time Since Overhaul (TSO)	N/A	N/A
Time Since Fitted (TSF)	1,934:20hrs	1,934:20hrs
Cycles Since Overhaul (CSO)	N/A	N/A
Cycles Since Fitted (CSF)	2,243:00	2,243:00
Date Fitted	14 th April 2013	10 th July 2013
Time Between Overhaul (TBO)	HSI 6,000 Cycles	HSI 6,000 Cycles

Aircraft Weight and Centre of Gravity	
Basic weight	7,377LBS
Crew weight	363LBS (02 crews)
Passenger weight (include hand carry)	1,210LBS (06 passengers)
Baggage weight (checked in)	199LBS
USL equipment	N/A
Fuel weight	1,270LBS
Take-off weight on departure	10,419LBS
Minimum authorised Take-off Weight	11,000LBS

1.7 Meteorological Information

The weather report obtained at its location on 26th March 2014 at 0607LT:

Wind velocity	280°/14kts
Temperature	27° C
Visibility	04Nm (7.4km)
Clouds	Overcast/rainsquall
Relevant weather	Good weather situation (No rain/fog/thunderstorm)

1.8 Aids to navigation

Nota Applicable.

1.9 Communications

Nil.

1.10 Aerodrome information

Nil.

1.11 Flight Recorders

The aircraft is fitted with L-3 COMM Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR).

1.12 Wreckage and impact information

Nil.

1.13 Medical and pathological information

Nil.

1.14 Fire

Left engine caught fire during climbing out of Subang Airport. Both fire agents were discharged and after few minutes there was no visible fire persist. Aircraft landed safety with fire rescue on standby on taxiway.

1.15 Survival aspects

Not applicable.

1.16 Tests and research

Please refer attachments.

1.17 Organisational and management information

Nil.

1.18 Additional information

Nil.

1.19 Useful or effective investigation techniques

Not applicable.

2.0 ANALYSIS

2.1 The cockpit and the cabin crew were qualified to perform their duties under the Malaysian Civil Aviation Regulation (MCAR) and company regulations.

2.2 The cockpit crew were well rested prior to the flight.

2.3 Aircraft operated out of SZB to TGG and was scheduled to land at Sultan Mahmud Airport, Terengganu an hour and 05 minutes later.

2.4 There was no significant weather detected and good weather situation was reported with the visibility up to 7.4km.

2.5 After airborne while climbing at 7,000ft, the Master Warning Engine 1 Fire came on. Due to the warning light, the Captain initiated procedure as per checklist and co-pilot conducted a 'mayday' call.

2.6 Both fire agents were discharged and the pilot started to descent with the single engine operation with the procedure as per checklist was performed to secure the engine. Aircraft was configured as per normal for landing.

2.7 Captain requested to Air Traffic Controller for emergency landing at SZB airport and it was accepted immediately and aircraft landed safely with fire rescue on standby on taxiway.

3.0 CONCLUSIONS

3.1 Findings

3.1.1 The engine fire was due to the fuel leakage from the No. 6 position fuel nozzle adapter secondary manifold fitting. The fitting was discovered at a torque significantly below the specified value. At specified torque the fitting displayed no leakage.

3.1.2 The leakage of the flow divider valve was determined to be due to fire and heat damage resultant from the event.

3.1.3 No other conditions were observed that would contribute to fuel leakage or engine external fire.

Findings were made by: Thomas Berthe, (Investigator) and R. Benoit, Eng. (Service Investigation Manager).

3.2 Probable cause

The probable cause of the engine fire was due to the leakage from the No.6 position fuel nozzle adapter secondary manifold fitting.

4.0 SAFETY RECOMMENDATIONS

Based on the Engine / Component Investigation Report No.: 14GA00002 P&WC 1076 (03-04) Ref. No. 14-028 Paragraph 3.0, Malindo Engineering to provide a proper solution and preventive measure as to prevent the same incident in future.

AAIB MALAYSIA

Date of Report: 19th December 2017