

**FINAL**  
**AIRCRAFT SERIOUS INCIDENT REPORT**  
**10 OCTOBER 2016**

**SOCATA TB 20, 9M-SOM**  
**CONTROLLED LANDING WITH UNDERCARRIAGE UP**  
**AT SUBANG AIRPORT**  
**10 OCTOBER 2016**



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

**AIR ACCIDENT INVESTIGATION BUREAU  
MALAYSIA**

**SERIOUS INCIDENT REPORT NO.: SI 09/2016**

**OPERATOR : MHS AVIATION**

**AIRCRAFT TYPE : SOCATA TB 20**

**NATIONALITY : MALAYSIAN**

**REGISTRATION : 9M-SOM**

**PLACE OF ACCIDENT : SUBANG AIRPORT, MALAYSIA**

**DATE AND TIME : 10<sup>th</sup> OCTOBER 2016 AT 1605 HOURS**  
**LOCAL TIME**

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## INTRODUCTION

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

The Air Accident Investigation Bureau (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 investigations into air accidents and 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.

## **SYNOPSIS**

On 10 October 2016, at about 1605LT, a single engine airplane (SOCATA TB 20) landed on Runway 15 at Subang Airport with the landing gear retracted. The airplane was piloted by a Senior Pilot and a Trainee Pilot. Both of them escaped without injury.

On final approach, at about 300 feet the Senior Pilot engaged the second stage of landing flap but forget to extend the landing gear. The aircraft contacted the runway, spun 180 degrees and came to rest about 780 meters from the threshold.

The three blades propeller curled after contacted with the runway. The trailing edge flap, part of the belly area and tire rims were slightly damaged.

### **1.0 FACTUAL INFORMATION**

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

- 1.1.1 The aircraft took off at 1520LT for local training flight over Port Klang and Shah Alam area followed by touch and go at Subang Airport. The Pilot on check was flying under supervision by the senior pilot of the same company who was seated on the right hand seat.
- 1.1.2 After the 2<sup>nd</sup> touch and go, ATC instructed the Pilot to join left downwind for tight circuit to join final due to incoming flight.
- 1.1.3 The senior pilot decided to take over control and performed a practice force landing on Runway 15.
- 1.1.4 According to the written statement by the senior pilot, he extended the first stage of the flaps followed by the second stage landing flaps at about 300 feet.
- 1.1.5 The statement also mentioned that the pilot realised the landing gear was not extended until the trainee pilot alerted him "landing gear, landing gear". By this time, the statement added, it was too late go around.
- 1.1.6 The aircraft landed on its belly and rolled about 780 meters from the threshold. It spun 180 degrees when the tip of the propellers contacted the runway surface.
- 1.1.7 Both pilots could not remember if the landing gear warning horn came on prior to the impact.
- 1.1.8 The Subang control tower alerted the Fire and Rescue services who arrived at the scene about 5 minutes later. There was no fire.

## **1.2 Injuries To Persons**

NIL

## **1.3 Damage To Aircraft**

- 1.3.1 All propeller tips found bended due to sudden strike against runway during the controlled landing. (Figure 1)
- 1.3.2 Exhaust found distorted due to rubbing action against the runway. (Figure 2)
- 1.3.3 Nose landing gear oleo inner ram found misalign with respect to the outer body. (Figure 3 & 4)
- 1.3.4 Axle found damaged due to rubbing against runway during landing. (Figure 5)
- 1.3.5 Nose gear bay frame and outer skin found distorted. (Figure 6)
- 1.3.6 Integrity of the nose gear actuator and linkages cannot be determined.
- 1.3.7 Steering linkages cannot be determined for any damages.
- 1.3.8 Based on visual inspection, retraction and extension of Landing Gear found to be satisfactory in term of its functionality.
- 1.3.9 Both Right and Left Main Gear wheel hub badly scratched due to impact during landing. (Figure 7 & 8)
- 1.3.10 Main Gear bay area found to be dented and badly scratched. (Figure 9)
- 1.3.11 Integrity of the nose gear actuator and linkages of the Main Gear cannot be determined.
- 1.3.12 The whole bottom cowling found to be badly scratched. (Figure 10)
- 1.3.13 Dented found at antenna attachment area to the bottom skin. (Figure 11)
- 1.3.14 Body fins found scratched. (Figure 12)
- 1.3.15 Integrity of the wing attachment and wing spar cannot be determined.
- 1.3.16 Right and Left Hand Flaps and its linkages found damaged. (Figure 13 & 14)
- 1.3.17 Fuel drain valve found to be broken.
- 1.3.18 Bottom antenna found to be scratched. (Figure 15)

## 1.4 Other Damages

NIL

## 1.5 Personnel Information

### 1.5.1. Check Pilot

1.5.1.1	Age	: 60 Years Old
1.5.1.2	Medical Certificate validity	: 31 October 2016
1.5.1.3	Licence Validity	: 31 October 2016
1.5.1.4	Total Flying Hours	: 11,812:12 hrs
1.5.1.5	Total Command on Type	: 230 hrs
1.5.1.6	License No.	: ATPL 766
1.5.1.7	Date of Issue	: 15 October 1985
1.5.1.8	Instrument Rating Test	: 31 January 2012
1.5.1.9	Appointment as Instructor Pilot	: NIL
1.5.1.10	Hours Flown Last 28 Days	: 2:15 hrs

### 1.5.2. Pilot on Check

1.5.2.1	Age	: 61 Years Old
1.5.2.2	Medical Certificate Validity	: 31 October 2016
1.5.2.3	Licence Validity	: 31 October 2016
1.5.2.4	Total Flying Hours	: 210:15 hrs
1.5.2.5	Total Command on Type	: 78:50 hrs
1.5.2.6	License No.	: PPL 2179
1.5.2.7	Date of Issue	: 01 October 1981
1.5.2.8	Instrument Rating Test	: 15 December 2016
1.5.2.9	Appointment as Instructor Pilot	: NIL
1.5.2.10	Hours Flown Last 28 Days	: 2:15 hrs

1.5.3. Both crews were well rested before the incident; more than 24 hours at base prior to the incident.

## 1.6 Aircraft Information

### 1.6.1 AIRCRAFT DETAILS

Aircraft type	:	SOCATA TB 20
Serial No.	:	2190
Manufacturer	:	DAHER SOCATA
Operator	:	MHS AVIATION BERHAD
Registration	:	9M-SOM
Engines	:	Lycoming 10-540-C4D5D
Engines Serial No.	:	L-28380-48A
Engine TSN	:	232:50



Engine Cycle : 233  
Aircraft Hours : 232:00HRS  
CofA expiry : 09 December 2016  
CofR issued : 25 February 2005

1.6.2 The aircraft held a valid Certificate of Airworthiness issued by the Department of Civil Aviation Malaysia.

1.6.3 The aircraft was listed as a 2003 SOCATA TB20, with airframe time of 230+ hours.

1.6.4 The aircraft has a tricycle fully retractable landing gear. Retraction and extension is hydraulically operated.

## **1.7 Meteorological Information**

1.7.1 At the time of incident the meteorological weather report for Subang airport was 310/12kts, 26OVO10, 9999, SCT140 BKN290 33/23.

1.7.2 Subang Tower Air Traffic controller reported wind as light and variable.

## **1.8 Navigation Aids**

NIL

## **1.9 Communication**

VHF Radio with Subang Ground Control.

## **1.10 Aerodrome Information**

NIL

## **1.11 Flight Recorders**

NIL

## **1.12 Wreckage and Impact Information**

1.12.1 The aircraft came to a rest about 780 meters from the threshold of runway 15 with a heading of about 330 degrees. There were ground marks on the runway surface. Fig 1 shows the ground mark and approximate position of the aircraft.



Photo of skid marks on runway



Photo of damaged propeller

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

Both crew Medical certifications in their licenses are current.

### **1.14 Fire**

NIL

### **1.15 Survival Aspects**

Not applicable

### **1.16 Tests and Research**

1.16.1 MHS AVIATION BERHAD conducted a test to determine the operational value of the landing gear warning horn. The landing gear warning horn functioned as expected.

### **1.17 Organisational and Management Information**

Not applicable.

## **1.18 Additional Information**

NIL

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

NIL

## **2.0 ANALYSIS**

- 2.1 The airplane bearing registration 9M-SOM operated and owned by MHS Aviation Bhd.
- 2.2 It took off from Subang Runway 15 for a training flight over Port Klang and Shah Alam area. Upon returning from Port Klang, the airplane did 2 touch and go using Runway 15. Suddenly the ATC instructed the pilot to join left downwind for tight circuit for final on Runway 15 due to incoming flight.
- 2.3 At this juncture, the Senior Pilot decided to take over controls with intention to performed practice forced landing training on the runway. While on final approach, the Senior Pilot extended the first stage flaps followed by second stage at about 300 feet.
- 2.4 The pilot then was alerted by the pilot on check that the landing gear was not extended, however it was too late to react either to go-around or to extend the landing gear. It landed on the runway with landing gear in up position and came to a stop 780 meters from the threshold.
- 2.5 The airplane spun 180 degrees upon stopping on the runway. There were extensive damages on the propeller tips due to contact with the runway surface while the airplane gliding on its belly. Both pilots escaped the airplane safely.

## **3.0 CONCLUSION**

### **3.1 Findings**

- 3.1.1 This incident was attributed due to the failure of the pilot to perform the before landing check-list.
- 3.1.2 The instruction by the control tower to do a tight circuit, resulted in the break of the chain event, leading the pilot to “Rush” the approach.

### **3.2 Probable Cause**

3.2.1 Several human factors, including possibly lack of CRM, non-standard calls and lack of crew coordination, may have degraded the crew performance to an extent that the landing check was not initiated or performed by either pilot.

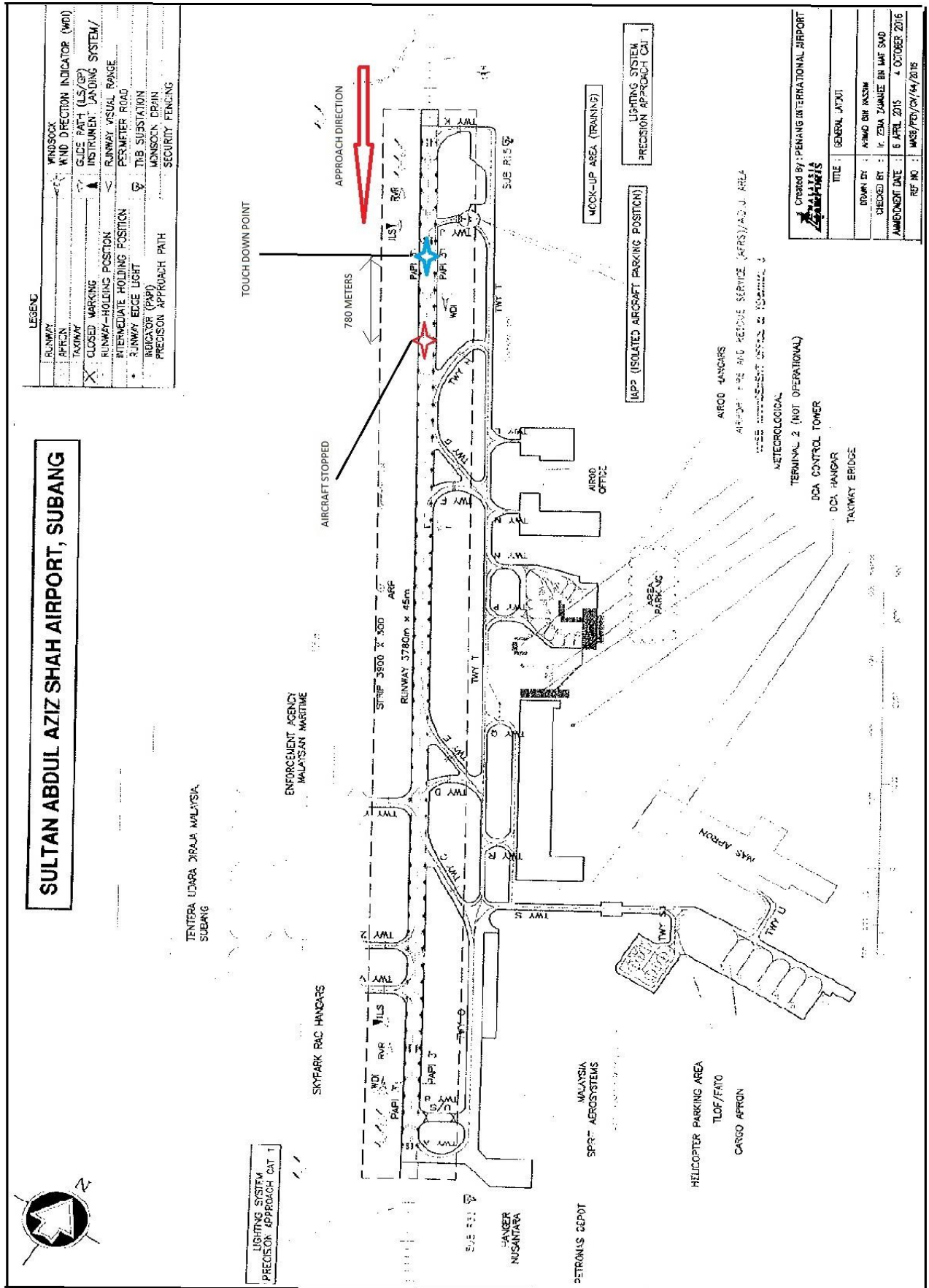
### **4.0 Safety Recommendations**

4.1 It is recommended that the pilot shall perform the landing check as required by the Operation Manual (OM).

4.2 It is recommended that the pilot should decline request by Air traffic controllers to expedite approach, especially during a training flight.

- End of Report –

# Attachment A



**Attachment B**



Figure 1 - Propeller tip bend



Figure 2 – Exhaust distorted



Figure 3 – Nose LG misalignment (1)



Figure 4 – Nose LG misalignment (2)



Figure 5 – Axle damaged



Figure 6 – Nose LG bay frame distorted



Figure 7 – LH MLG scratched



Figure 8 – Wheel hub damaged



Figure 9 – MLG bay area dented



Figure 10 – Bottom cowling scratched





Figure 11 – Antenna attachment area dented



Figure 12 – Bottom fin scratched



Figure 13 – LH flap damaged



Figure 14 – RH flap damaged



Figure 15 – Bottom antenna scratched

**Attachment C**

From:

To:78471089

10/10/2016 14:38

#857 P.001/001

**DEPARTMENT OF CIVIL AVIATION, MALAYSIA**

FLIGHT PLAN			
PRIORITY FF	ADDRESSEE(S)		
FILING TIME			
ORIGINATOR			
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR			
3 MESSAGE TYPE (FPL)	7 AIRCRAFT IDENTIFICATION 9M-SOM	8 FLIGHT RULES V	TYPE OF FLIGHT G
9 NUMBER 01	TYPE OF AIRCRAFT TB20	WAKE TURBULENCE CAT L	10 EQUIPMENT R
13 DEPARTURE AERODROME WMSA		TIME 0700	
15 CRUISING SPEED N0150	LEVEL A050	ROUTE DCT PORT KLANG DCT KAPAR DCT WMSA	
TOTAL EET			
16 DESTINATION AERODROME WMSA	HR. MIN 0038	ALTN AERODROME WJKI	2ND ALTN AERODROME
18 OTHER INFORMATION EET / PORT KLANG / 0005 / KAPAR / 0002 / PORT KLANG / 0002 / WMSA / 0005 //			
REGN : 9M - SOM			
OPERATOR : MHS AVIATION BERHAD			
DOF : 10 - 10 - 16			
REMARK : C OF T FLIGHT TEST			
SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED FPL MESSAGES)			
19 ENDURANCE		EMERGENCY RADIO	
HR. MIN E/ 0400	PERSONS ON BOARD P/ 002	UHF R/ U	VHF V
SURVIVAL EQUIPMENT		JACKETS	
POLAR S / P	DESERT D	MARITIME M	JUNGLE J
DINGHIES		LIGHT J / L	
NUMBER D /	CAPACITY	COVER C	FLUORES F
COLOUR			
AIRCRAFT COLOUR AND MARKINGS A / WHITE BLACK			
REMARKS N /			
PILOT - IN - COMMAND C / CAPT. AZAHARI AHMAD			
FILED BY		SPACE RESERVED FOR ADDITIONAL REQUIREMENTS	
MOHD ZULHIZZI ESMAIL HP 012 650 4220			

## Attachment D

SBA698 100711  
GG WMSAZTZK  
100708 WMKKYMYX  
SAMS32 WMKK 100700  
METAR WBGG 100700Z 28007KT 230V350 9999 SCT020 BKN300 35/23  
Q1007  
NOSIG=  
METAR WBKK 100700Z 23005KT 190V280 9999 FEW014 SCT140 BKN270  
30/25  
Q1007 NOSIG=  
METAR WMKJ 100700Z VRB06KT 9999 SCT020 BKN280 34/27 Q1006=  
METAR WMKK 100700Z 30012KT 250V350 9999 FEW017CB SCT018 BKN280  
33/24  
Q1007 NOSIG=  
METAR WMKP 100700Z 32006KT 9999 FEW020 SCT140 BKN280 31/25  
Q1008  
NOSIG=  
METAR WMSA 100700Z 31012KT 260V010 9999 SCT019 SCT140 BKN290  
33/23  
Q1007=

SBA009 100810  
GG WMSAZTZK  
100808 WMKKYMYX  
SAMS32 WMKK 100800  
METAR WBGG 100800Z 27006KT 230V330 9999 FEW015CB SCT020 BKN300  
35/23  
Q1006 NOSIG=  
METAR WBKK 100800Z 21009KT 190V250 9999 FEW014 BKN140 BKN270  
30/24  
Q1007 NOSIG=  
METAR WMKJ 100800Z VRB06KT 9999 FEW020 BKN280 34/26 Q1006=  
METAR WMKK 100800Z 31013KT 260V010 9999 FEW017CB SCT018 BKN280  
33/23  
Q1006 NOSIG=  
METAR WMKP 100800Z 32006KT 9999 -SHRA FEW017CB SCT020 BKN270  
30/25  
Q1007 TEMPO 7000 -RA=  
METAR WMSA 100800Z 31010KT 9999 FEW017CB SCT140 BKN290 33/24  
Q1007=