



AIRCRAFT SERIOUS INCIDENT FINAL REPORT SI 07/20

**Air Accident Investigation Bureau (AAIB)
Ministry of Transport, Malaysia**

**Textron 172P Registration 9M-AZP
at Kota Kinabalu International Airport
Kota Kinabalu, Sabah
on the 18 November 2020**



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AIR ACCIDENT INVESTIGATION BUREAU (AAIB)

ACCIDENT REPORT NO. : SI 07/20

**OPERATOR : LAYANG-LAYANG FLYING
ACADEMY SDN BHD**

AIRCRAFT TYPE : TEXTRON 172P

NATIONALITY : MALAYSIA

REGISTRATION : 9M-AZP

**PLACE OF OCCURRENCE : KOTA KINABALU
INTERNATIONAL AIRPORT
KOTA KINABALU, SABAH**

DATE AND TIME : 18 NOVEMBER 2020 AT 0840 LT

This investigation is carried out to determine the circumstances and causes of the accident with a view to the preservation of life and the avoidance of accident in the future: It is not the purpose to apportion blame or liability (Annex 13 to the Chicago Convention and Civil Aviation Regulations 2016).

INTRODUCTION

The Air Accident Investigation Bureau of Malaysia

The Air Accident Investigation Bureau (AAIB) is the air accident and serious incident 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 serious incidents.

The AAIB conducts the investigations in accordance with Annex 13 to the Chicago Convention and Civil Aviation Regulations of Malaysia 2016.

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 : **Textron 172P**

Model : **Textron 172P**

Owner : **Sabah Flying Club**

Nationality : **Malaysia**

Year of Manufacture : **1983**

Aircraft Registration : **9M-AZP**

Serial Number : **17275854**

State of Registration : **Malaysia**

Place and State of Occurrence : **Kota Kinabalu International Airport,
Kota Kinabalu, Sabah**

Date and Time of Occurrence : **18 November 2020 (08405 LT)**

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

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SYNOPSIS

The flight was first solo training flight for a student pilot. Prior to this incident, the student had accumulated sufficient flight hours supervised by a flying instructor. The weather was fine with light variable wind. Flight was scheduled for one circuit and landing on Runway 02 at WBKK Airfield.

On the initial approach to land, the student was given clearance to land but at 400' AGL, she was later instructed by Air Traffic Controller (ATC) to commence a go-around. The student was also instructed to turn right (dead-side) instead of the usual left-hand circuit pattern.

The student then initiated a second approach to land but bounced upon landing. She immediately commences a go-around and was instructed by the ATC on duty to carry out a tight circuit and to hold on the dead side of the airfield for approximately 10 minutes.

The student eventually managed to land on the third approach and was understood to notice that the aircraft was vibrating.

During the taxi back to the apron, the engine parameters were normal and no abnormality was noticed. However, on physical observation, the crew noticed that the nosewheel has burst and scrape marks were noticed on the rear bottom section of the tailplane. It was suspected that the nosewheel burst during student's second attempt to land.

1. FACTUAL INFORMATION

1.1 History of the flight

Previous maintenance activities were performed on the aircraft together with main and nose wheel assembly activities. Based on the worksheet review, it was found that:

- a. Last Inspection was carried out on 12 November 2020 for Scheduled Inspection Operation 3, Scheduled Inspection Engine 50 Hourly and Engine Ground Run Test where it was release without any defer defect and serviceable.
- b. Last Inspection on Landing Gear and Brakes was carried out on 02 November 2020 and was release without any defer defect and serviceable.
- c. Nose Wheel assembly was replaced on 07 October 2020.
- d. Left Hand Main Wheel Assembly was replaced on 08th October 2020.
- e. Right Hand Main Wheel Assembly was replaced on 29 November 2020.

As per narrative in the MOR, it is suspected tire burst during the second approach as the aircraft was reported to bounced during 2nd attempt which lead to this incident; hard landing.

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1.2 Injuries to persons.

Nil.

1.3 Damage to aircraft

Firewall Assembly, Part Number: 0553006-207. Wrinkled mostly on attachment area.

Tip Rudder Lower, Part Number: 0533155-1. Found score marking on the surface.

Skin Aft Fuselage Lower, Part Number: 0512008-4. Found score marking on the surface.

Eyebolt - mooring, Part Number: 0422344. Found missing, detached due to impact.

Shock strut assembly – Nose Wheel, Part Number: 0543062-206. Collapse due to hard landing impact.

Main Gear Wheel assembly, Part Number: 1241156-12. Suspected damage as the tire burst during impact and the aircraft was taxi back to hangar on this assembly.

Main and Nose Wheel Tyre Burst. Tire burst with sign of impact wear and tear apart.

Tube Assembly, LH (nose wheel steering rock), Part Number: 0543022-1. Damaged as part of nose landing gear.

Tube Assembly, RH (nose wheel steering rock), Part Number: 0543022-2. Damaged as part of nose landing gear.

Dampener Assembly (Shimmy Damper – Nose wheel), Part Number: 0442512-1. Damaged as part of nose landing gear.

Fitting Assembly (Upper Nose Gear Fitting), Part Number: 0543013-1S. Damaged as part of nose landing gear.

Fitting (Lower Nose Gear Fitting), Part Number: 0543016-1. Dmaged as part of nose landing gear.

1.4 Other damage

No report any other damage to third party property and equipment.

1.5 Personal Information

Pilot in command

Status	Student
Nationality	Malaysian
Age	20 years old
Gender	Female
License Type	CPL Student
License Validity	31 March 2021
Medical Examination	Nil
Aircraft Rating	Cessna/Textron 172
Instructor Rating	Nil
Certificate of Test	Nil
Flying Hours	Total exp. : 22 Hours (Cessna/Textron 172)

1.6 Aircraft Information

Aircraft	Textron 172
Owner	Sabah Flying Club
Registration	9M-AZP
Serial No.	17275854
Permit to fly	9M-AZP/172-75854
Permit Expiry	31 December 2021
C of R Expiry	16 May 2022
Year of Manufacture	1983
Manufacturer	Cessna Aircraft Corporation 172P

1.7 Meteorological Information

The weather was fine during the occurrence.

1.8 Aids to navigation

Not applicable.

1.9 Communications

Nil access to ATC's recording.

1.10 Aerodrome information

Runway Dimension : 2987 Meter X 46 Meter
THR Elevation : 3.05 Meter
THR Coordinates : Lat 055543.78N, Long 1160251.57E

1.11 Flight Recorders

There is no flight recorders installed.

1.12 Wreckage and impact information

As listed in paragraph 1.3.

1.13 Medical and pathological information

Not applicable.

1.14 Fire

There was no fire before, during and after the accident.

1.15 Survival aspects

Pilot in Command evacuate through normal procedure (pilot door) after taxi the aircraft back to LLA Facility.

1.16 Tests and research

After the incident, aircraft has been inspected in accordance with Aircraft Maintenance Manual.

1.17 Organisational and management information

The aircraft was owned by Sabah Flying club and operated by Layang-layang Aerospace Sdn Bhd.

1.18 Additional information

Not applicable.

1.19 Useful or effective investigation techniques

Inspection on the aircraft has been carried out in accordance with Aircraft Maintenance Manual. The inspection carried out listed below:

- a. Repair After Hard Landing (Inspection Section of the Worksheet)
- b. Rudder Inspection
- c. Landing Gear Inspection
- d. Wing Inspection

During this inspection, found 3 area was exposed to the impact as stated below:

- a. Nose Landing Gear and Fire Wall
- b. Main Landing Gear
- c. Aft Tail Section

Besides that, airworthiness records have been reviewed for any sign of maintenance related factors that may lead to this incident. Based on the evidence gather on the aircraft after incident, the damages found consistent with the excessive force introduced from nose landing gear due to "aircraft bounced" as reported. No anomalies found at aircraft system.

2.0 ANALYSIS

2.1 General

Nil maintenance issues found to be the related factor of this incident as the aircraft found to be serviceable and comply to current maintenance standard as approved through AMP by CAAM. Furthermore, there is nil deferred defect found prior to the incident during worksheet review. Result of the damage assessment carried out to the aircraft and found there are no impact expose to the major part of the aircraft structure. Visual inspection on the floor board's rivet found it were satisfactory and nil evidence of shear load exist. Inspection on the rudder found that rudder's attachments were not damage and nil evidence of force or shear load found. It suggesting that tail section only exposed a minor impact which resulting score marks on the lower tail section and detached the Eye-Bolt for mooring from the tail section. Tail boom section has been inspected for rivet detachment and found nil rivet detached and nil mis-alignment of the tail boom found. Inspection on the main gear assembly found that the bearings was still smooth when turned and nil scoring marks on both LH and RH wheel strut. The inspection on the wheel strut assembly attachment to main structure found no sign of rotary movement as the lock tide is still visible and intact. The nose wheel inspection suggesting that, it was this part that exposed with major impact as the sign of impact load visible on the firewall resulting the firewall to wrinkle. The impact force has been absorbed by the firewall which damaged it (wrinkled) and found the load was not transfer to floor board as there is no sign of mis-alignment found on the floor board and all rivet is in place. Besides that, all 3 doors (Right hand, left hand and Cargo) can be closed normally without any stuck which suggest that the major structure of the aircraft was not exposed to the impact force.

Aircraft has been analysed for:

- a. Fuel
- b. Electrical Problem
- c. Engine
- d. Control cable movement for the control surface

It was found that there was nil defect reported and the control cable movement found to be satisfactory during post-incident. This suggested that, the incident was not due to engine, electrical or control surface failure.

2.2 Pilot competency

This was the first Solo Flight Training after completing compulsory syllabus as per LLFA TPM to be eligible for Solo Flight Training. The student has been proven to be competence for such flight by the Instructor. and she is under close monitoring by the instructor during this flight. Interview carried out on both individuals separately and both narrative structures found to be same.

The Student Solo Flight was usually being given simplest way on approaching the airport for landing with minimum potential for go-around instruction by the ATC. However, during this incident the student was instructed to commence a go-around by ATC at 400' AGL after clearance for landing has been given and she need to carry out a tight circuit on dead side of the aircraft. Besides the tight circuit, she was instructed to hold for about 10 minutes before being given another clearance for landing and was not given with any reason to commence the go-around. All of the situations mentioned in this paragraph has put a lot of stressor to the student which make her not comfortable in commencing the flight and lead to this incident.

3.0 CONCLUSION

3.1 Findings

Human Error was the sole contributing factor for this incident which need to be treated carefully by Layang Layang Flying Academy to avoid future incident.

4.0 SAFETY RECOMMENDATIONS

In order to avoid the future incident, LLFA shall treat this risk accordingly and suggested to:

Include dead side of airport familiarization exercise to the student.

To regularly meet with CAAM ATC (Bi-Monthly) to review latest LLFA flight operation's needs and hold discussion for improvement of the LLFA's Flight Operations.

**CHIEF INSPECTOR
Air Accident Investigation Bureau
Ministry of Transport
MALAYSIA
29 September 2021**