AIRCRAFT SERIOUS INCIDENT

FINAL REPORT

SI 01/24

Air Accident Investigation Bureau (AAIB)

Ministry of Transport Malaysia

Fixed Wing Aircraft Piper PA28-181 Archer III

Registration 9M-ITX

at Malacca International Airport, Malacca

on 23 January 2024

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FINAL REPORT SI 01/24

AIR ACCIDENT INVESTIGATION BUREAU (AAIB)
MALAYSIA

REPORT NO: SI 01/24

OPERATOR	**: INTERNATIONAL AERO TRAINING ACADEMY (IATAC)**
AIRCRAFT TYPE	**: PIPER PA 28-181 ARCHER III**
NATIONALITY	**: MALAYSIA**
REGISTRATION	**: 9M-ITX**
PLACE OF OCCURRENCE	**: MALACCA INTERNATIONAL AIRPORT, MALACCA**
DATE AND TIME	**: 23 JANUARY 2024 AT 1507 LT (0707 UTC)**

The sole objective of the investigation is the prevention of accidents and incidents. In accordance with Annex 13 to the Convention on International Civil Aviation, it is not the purpose of this investigation to apportion blame or liability.

All times in this report are Local Time (LT) unless stated otherwise. LT is Coordinated Universal Time (UTC) + 8 hours.

INTRODUCTION

The Air Accident Investigation Bureau of Malaysia

The Air Accident Investigation Bureau (AAIB) is the authority responsible for investigating air accidents and incidents in Malaysia, operating under the Ministry of Transport. The AAIB's mission is to promote aviation safety through independent and objective investigations into air accidents and serious incidents. Additionally, the AAIB investigates incidents that reveal potential safety issues.

The AAIB conducts these investigations in accordance with Annex 13 to the Chicago Convention, the Civil Aviation Act of Malaysia 1969, and the Civil Aviation Regulations of Malaysia 2016.

It is inappropriate that AAIB reports should be used to assign fault or blame or determine liability since neither the investigations nor the reporting processes have been undertaken for that purpose.

In accordance with ICAO Annex 13 paragraph 4.1, notification of the serious incident was sent to the National Transportation Safety Board (NTSB) of the United States, the State of Design and Manufacture, and the Civil Aviation Authority of Malaysia (CAAM) on 26 January 2024. The Preliminary Report was submitted on 19 February 2024 to the aforementioned organisations and the aircraft operator.

In accordance with ICAO Annex 13 paragraph 6.3, a copy of the Draft Final Report was sent on 10 September 2024 to CAAM as the State of Registry, the NTSB as the State of Design and Manufacture, and the Aircraft Operator inviting their significant and substantiated comments on the report.

Unless otherwise indicated, recommendations in this report are addressed to the investigating or regulatory authorities of the State responsible for the matters concerning the recommendations. It is up to those authorities to decide what actions to take.

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ABBREVIATIONS

AAIB	Air Accident Investigation Bureau
AFRS	Airport Fire & Rescue Service
AFTO	Approved Flight Training Organisation
ATC	Air Traffic Control/Controller
CAAM	Civil Aviation Authority of Malaysia
CP	Cadet Pilot
CVR	Cockpit Voice Recorder
DME	Distance Measuring Equipment
EFIS	Electronic Flight Instrument System
FDR	Flight Data Recorder
FI	Flight Instructor
IATAC	International Aero Training Academy
IMC	Instrument Meteorological Conditions
km	Kilometre
LT	Local Time
MKZ	Malacca International Airport (IATA Designator)
MOR	Mandatory Occurrence Reporting
N/A	Not applicable
NLG	Nose Landing Gear
RTB	Return to Base
SOP	Standard Operating Procedures
SP	Student Pilot
SPL	Student Pilot License
WMKM	Malacca International Airport (ICAO Designator)

FINAL REPORT SI 01/24

SYNOPSIS

On 23 January 2024, a Cadet Pilot (CP) was conducting a solo training flight in a Piper PA-28-181 Archer III, registration 9M-ITX. The flight proceeded to the designated training area. Shortly after arrival, the CP observed adverse weather conditions at the departure aerodrome and decided to return to base. The CP contacted aerodrome Air Traffic Control (ATC) and requested re-entry into the circuit for a standard approach and landing.

During the landing phase, the aircraft experienced a series of bounces, leading to the collapse of the nose landing gear and contact between the propeller and the runway surface. The aircraft eventually came to rest slightly right of the runway centreline.

The CP transmitted a Mayday call, performed an emergency shutdown of the aircraft, and safely evacuated. Although the CP sustained no physical injuries, the CP were reported to be in a state of shock. Airport Fire and Rescue Services (AFRS) personnel responded to the incident, escorted the CP to a safe location, and the CP was subsequently transported by ambulance to the hospital for a post-accident medical assessment.

The aircraft operator submitted a Mandatory Occurrence Report (MOR) to the Civil Aviation Authority of Malaysia (CAAM) and notified the Air Accident Investigation Bureau Malaysia (AAIB). An AAIB investigation team was dispatched to the scene the following day to initiate an investigation into the occurrence.

1.0 FACTUAL INFORMATION

1.1 History of the Flight

On 23 January 2024, a Piper PA-28-181, registration 9M-ITX, piloted by a Cadet Pilot (CP), departed from the International Aero Training Academy (IATAC) apron for his fifth solo flight in the General Handling 7 sortie to the training area. The CP, using the call sign EXCEL 1352, was cleared by the ATC tower controller for take-off from Runway 03 at Malacca International Airport (WMKM) to proceed to the flying training area R239 A1. At that time, the CP had accumulated 22 hours and 20 minutes of flight time, including 3 hours and 30 minutes of solo flight time.

The aircraft took off at 1432 LT and climbed to an operating altitude of 3000 feet. After approximately 15 minutes in the training area, the CP observed deteriorating weather conditions at WMKM. Rain was approaching from the west and moving towards the airfield. The CP decided to return to base (RTB) and requested clearance from ATC to rejoin the circuit for a standard approach and landing.

The ATC controller cleared the aircraft to RTB and to join the left-hand circuit pattern at 1000 feet for Runway 03. Upon reaching the early downwind leg, the CP observed a patch of cloud with rain ahead at mid-downwind position. The CP continued towards the cloud and entered an area of poor visibility. After exiting the adverse weather, the CP turned onto final approach. The ATC controller cleared the CP to land. At this point, visibility was 7 km, and the surface wind was from 210 degrees at 3 knots.

During the landing phase, the aircraft bounced several times upon touchdown, leading to the collapse of the nose landing gear and the propeller striking the runway. The aircraft eventually came to rest slightly to the right of the runway centreline.

The ATC controller activated the crash alarm at 1507 LT, prompting an immediate response from Airport Fire and Rescue Services (AFRS). An AFRS vehicle was dispatched to the crash site, arriving at 1508 LT. By this time, the CP had already vacated the aircraft. The AFRS Commander reported that the CP was conscious but

in a state of shock, with no physical injuries. The CP was transported to Melaka Hospital for a post-accident medical assessment upon the arrival of the ambulance.

The aircraft was removed from the runway and repositioned on Taxiway Echo by 1550 LT before being towed to the IATAC hangar. It was subsequently impounded for investigation by the Air Accident Investigation Bureau (AAIB). Following the runway inspection, which concluded at 1612 LT, normal runway operations resumed.

1.2 Injuries to Persons

There was no report of injuries to the CP.

Injuries	Crew	Passengers	Others	Total
Fatal	NIL	NIL	NIL	NIL
Serious	NIL	NIL	NIL	NIL
Minor/None	One	Nil	Nil	One

Figure 1: Injuries to persons

1.3 Damage to Aircraft

Following the occurrence, a comprehensive visual inspection was conducted to assess the extent of damage sustained by the aircraft. The findings include:

- **Propeller**: Both propeller tips showed significant damage, including scratches and visible bends. The scratches indicate contact with the runway surface, while the bends suggest substantial impact forces.

- **Nose Landing Gear (NLG)**: The NLG was severely damaged, with complete collapse observed. This damage resulted from the repeated bouncing of the aircraft upon touchdown, with notable deformation and fractures compromising its structural integrity.

- **Aircraft Belly Skin**: The belly skin exhibited deformation, including dents and abrasions, likely caused by contact with the runway surface. Scraping along the belly was also observed, consistent with the aircraft's movement across the runway after the gear collapse.

The inspection also included a review of the aircraft’s fuselage and other structural components to identify any additional impacts or stress points resulting from the incident. Photographs documenting the damage to these components are provided below for further reference.

1.3.1 Bent Propellers. The propeller tips were significantly bent, indicating impact with the runway surface. Scratches and deformation on both tips suggest that the propeller absorbed substantial forces during the incident.

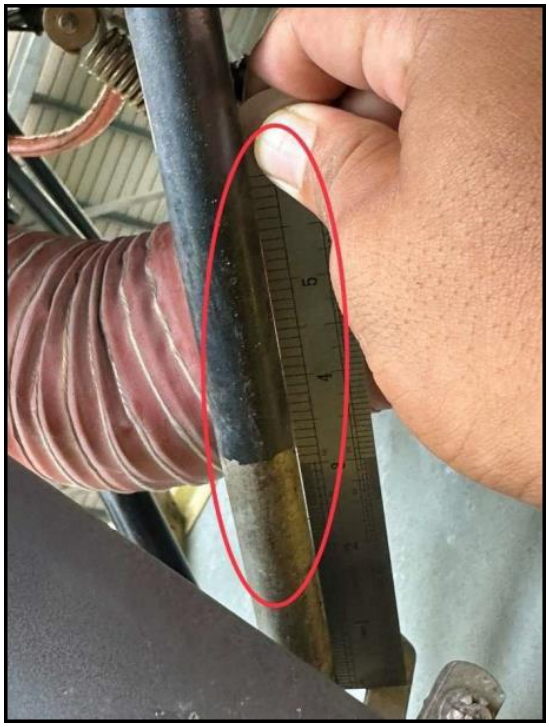
1.3.2 Nose Landing Gear Sheared. The NLG was sheared off, resulting in a complete collapse. This damage resulted from the aircraft's repeated bouncing upon touchdown, causing severe deformation and failure of the gear assembly.

1.3.3 Belly Skin Damaged. The belly skin of the aircraft exhibited noticeable damage, including dents and abrasions. This damage was consistent with contact and scraping against the runway surface.

1.3.4 Distance Measuring Equipment (DME) Antenna Broken. The DME antenna was found to be broken. The damage to the antenna suggests it may have been impacted or subjected to forces during the landing.

1.3.5 Dented Firewall. The aircraft's firewall showed signs of denting. This damage may have been caused by the impact forces transmitted through the aircraft structure during the incident.

1.3.6 Bent Engine Frame. The engine frame was observed to be bent, indicating that the engine experienced substantial forces during the occurrence. The deformation of the frame could affect engine alignment and operation.



1.4 Other Damage

There were no reports of damage to the runway or airport facilities.

1.5 Personnel Information

1.5.1 Pilot in Command

Nationality	Malaysian
Age	19
Gender	Male
License Type	SPL
License Expiry	30 September 2024

Medical Expiry		30 September 2024
Aircraft Rating		PA-28
Instructor Rating		N/A
Flight Hours	Total Hours	22:20
	Total on Type	22:20

Figure 2: Personnel Information – Pilot in Command

1.6 Aircraft Information

1.6.1 The Piper PA-28-181 Archer III is a single-engine aircraft designed and manufactured by Piper Aircraft, Inc., based in Florida, United States. It features a low-wing design, fixed landing gear, and a fixed-pitch propeller. The aircraft is powered by a 180-horsepower Lycoming IO-360-B4A engine.

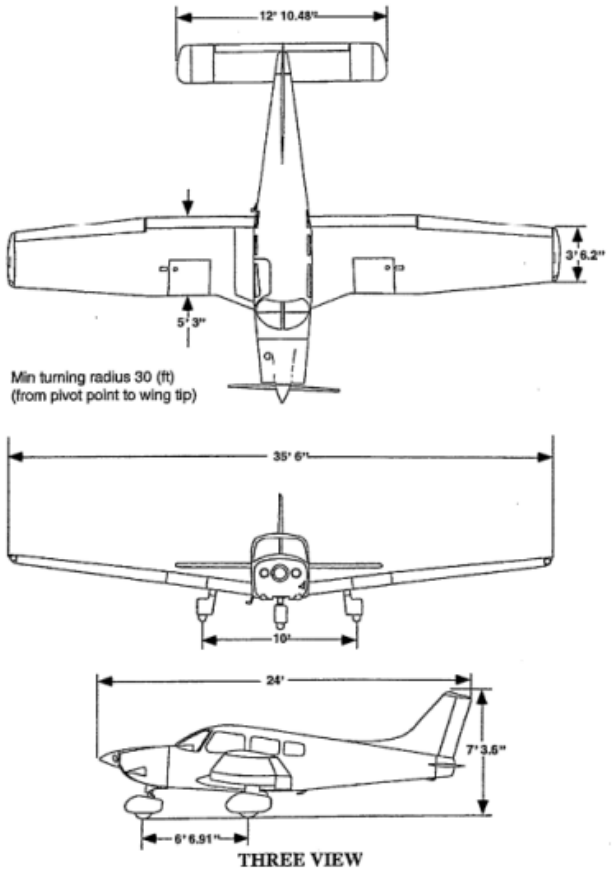


Figure 3: Three views of the aircraft

1.6.2 The aircraft flown on the day of the incident was in airworthy condition. There was no indication of any aircraft system or component failure or malfunction during the flight prior to the incident.

Aircraft Type	PA 28-181 Archer Iii
Manufacturer	Piper Aircraft
Year of Manufacture	2019
Owner	IATAC Sdn. Bhd.
Registration No.	9M-ITX
Aircraft Serial No.	2881270
Certificate of Airworthiness Issue / Expiry date	02 Jan 2024/12 Dec 2024
Certificate of Registration Issue / Expiry date	21 Sep 2023/30 Sep 2026
Total Flight Hours	455:17

Figure 4: Aircraft Data

1.7 Meteorological Information

The incident occurred at 1507 LT. At that time, Runway 03 was in use, with visibility reported at 7 kilometres. The wind was from 210 degrees at 3 knots. Rain was observed approaching from the western side and moving towards the airfield.

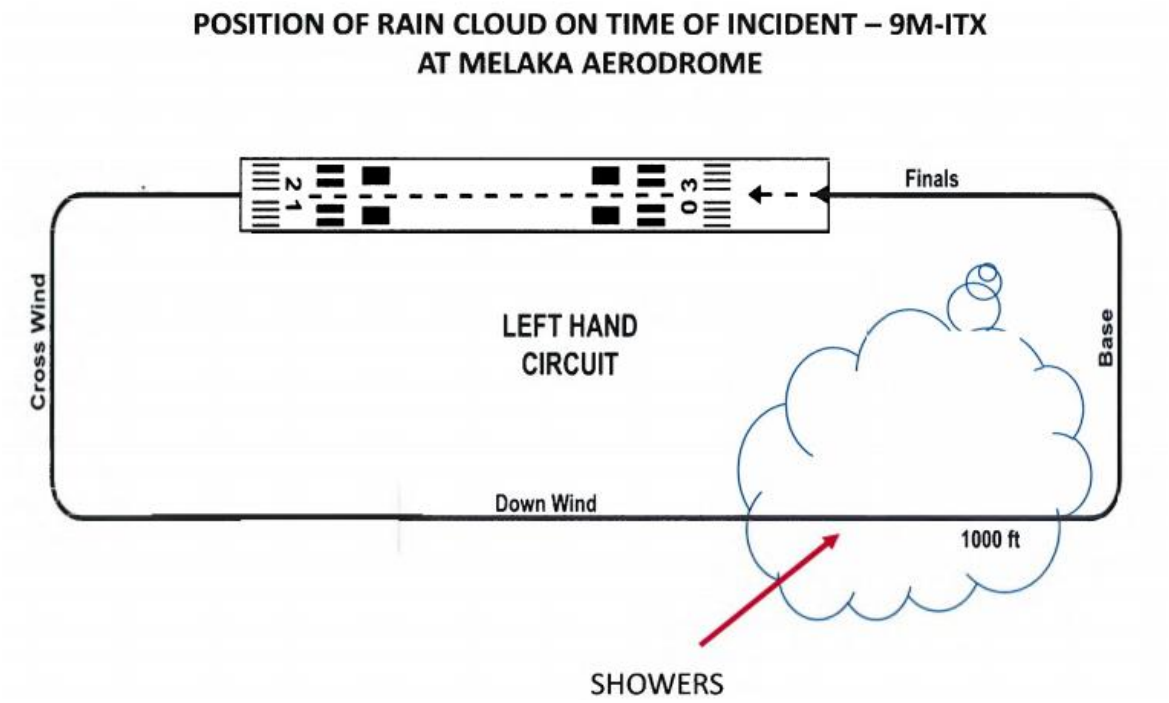


Figure 5: Cloud and rain showers position

1.8 Aids to Navigation

All navigation aids were functioning normally.

1.9 Communications

All communications systems were operating normally. The crash alarm was successfully activated by the ATC controller in accordance with standard operating procedures (SOP). Crash information was transmitted from the ATC tower to the AFRS Watch Room via direct telephone line and radio.

1.10 Aerodrome Information

Airfield	Malacca International Airport
Runway	03/21
Length	2135 metres

Width	45 metres
ICAO Designator	WMKM
IATA Designator	MKZ
Elevation	12 metres

Figure 6: Malacca Aerodrome Information

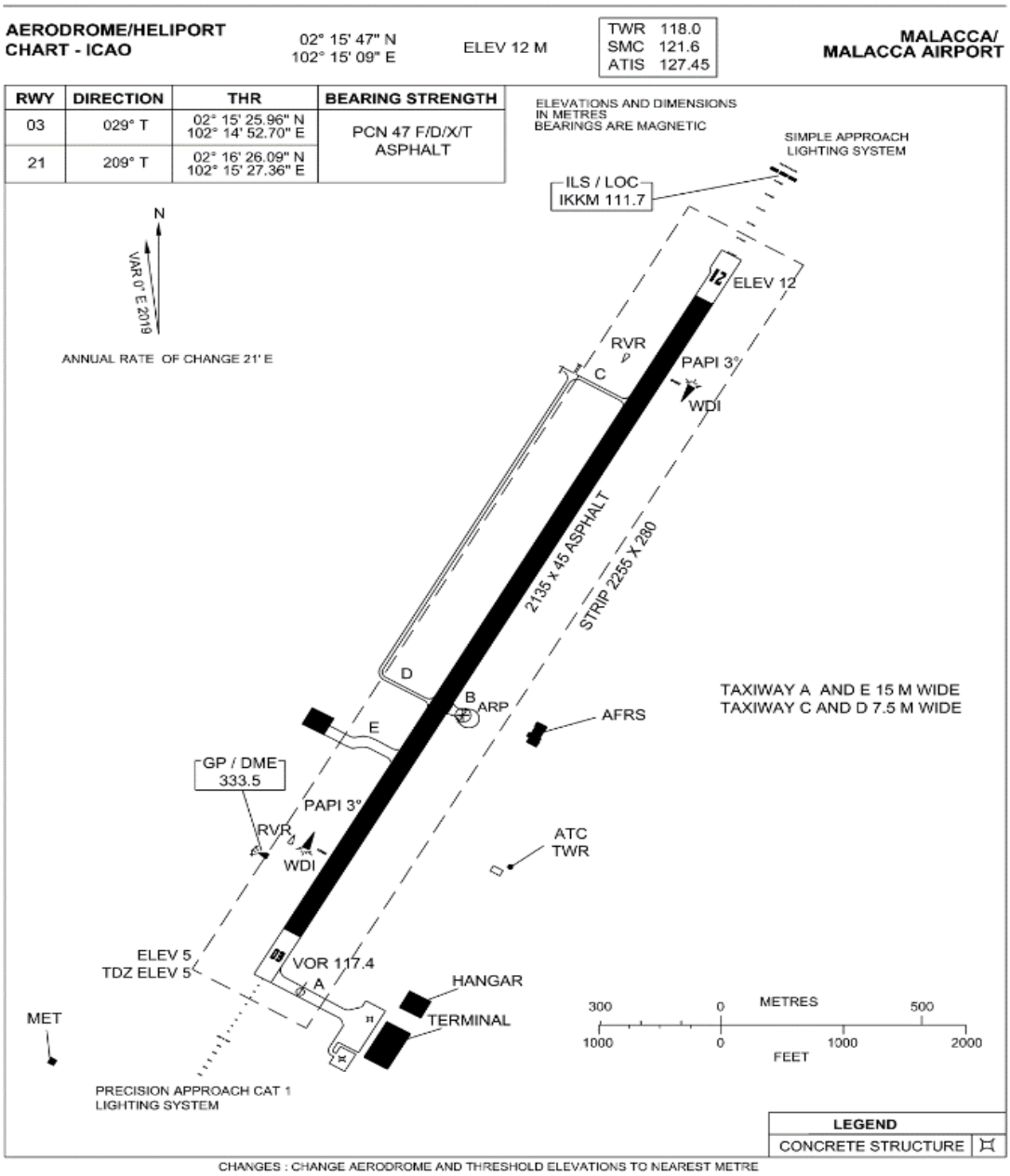


Figure 7: Malacca International Airport

Figure 8: Aerial view of Malacca International Airport (WMKM)
(Source: Google Earth)

1.11 Flight Recorders

The aircraft was not equipped with a Flight Data Recorder (FDR) or a Cockpit Voice Recorder (CVR), as these systems are not required for this type of aircraft.

1.11.1 Garmin G1000

The aircraft was equipped with a Garmin G1000 integrated avionics system, which recorded various flight parameters throughout the flight, including altitude, airspeed, engine performance, and navigational data. The recorded data was retrieved and analysed to provide a detailed understanding of the flight's progression and the circumstances leading up to the occurrence.

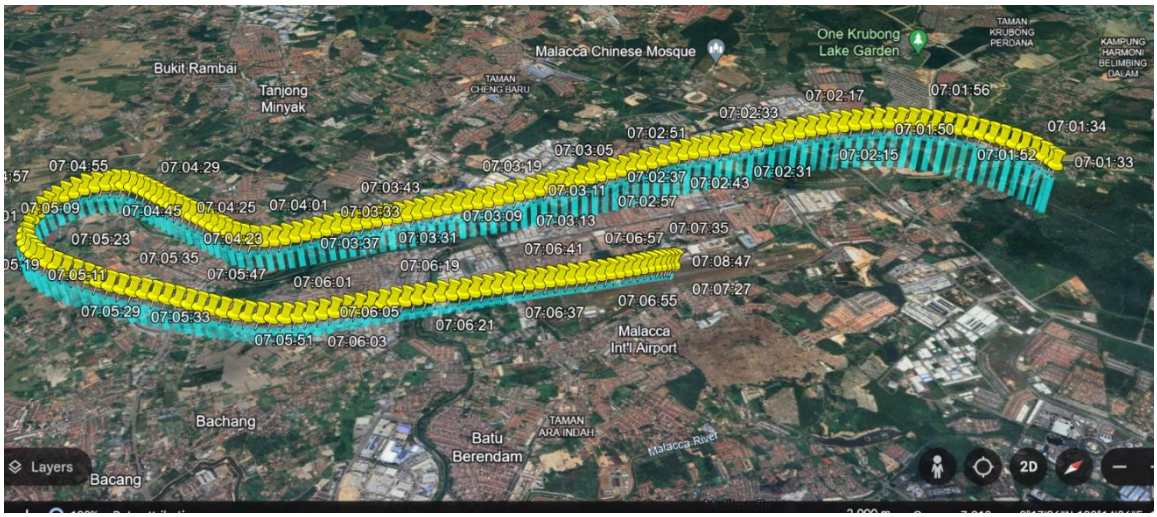


Figure 9: Data from the Garmin G1000 displaying the flight path of the aircraft during the circuit and final approach to landing.

1.11.2 **Cockpit View Video**

In addition to the Garmin G1000 data, the CP recorded video footage using an iPhone mobile telephone. The recording commenced shortly after engine start-up and continued until the CP evacuated the aircraft, capturing a total duration of 49 minutes and 30 seconds. This video offers a valuable visual perspective of the cockpit environment and the CP's actions during the flight, including the occurrence.

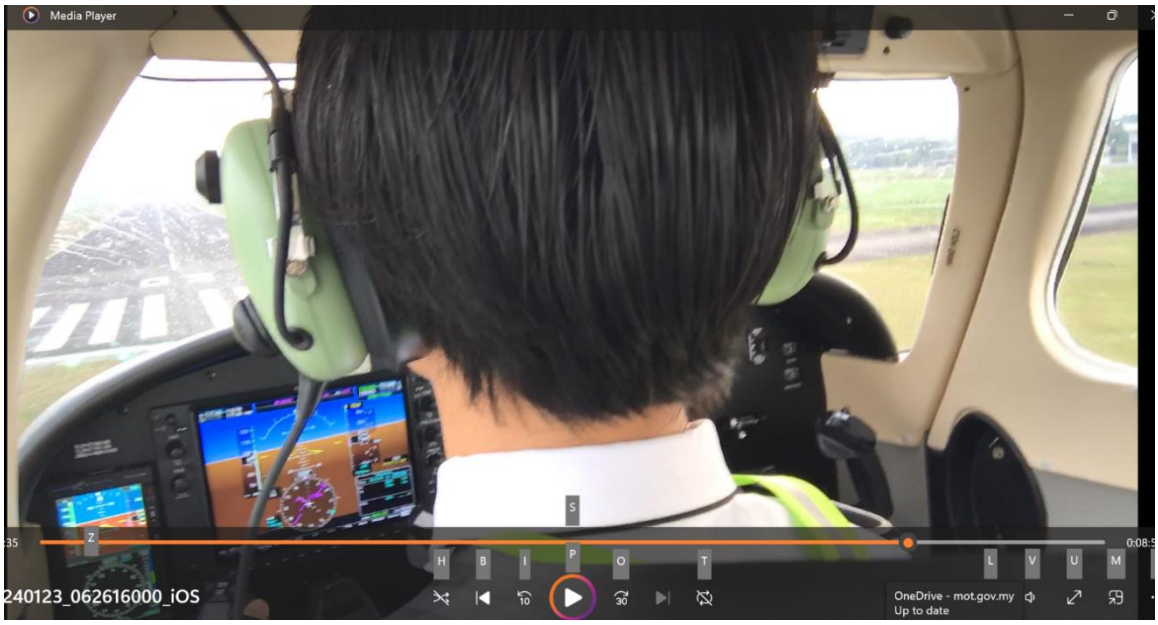


Figure 10: Cockpit View Video

1.12 Wreckage and Impact Information

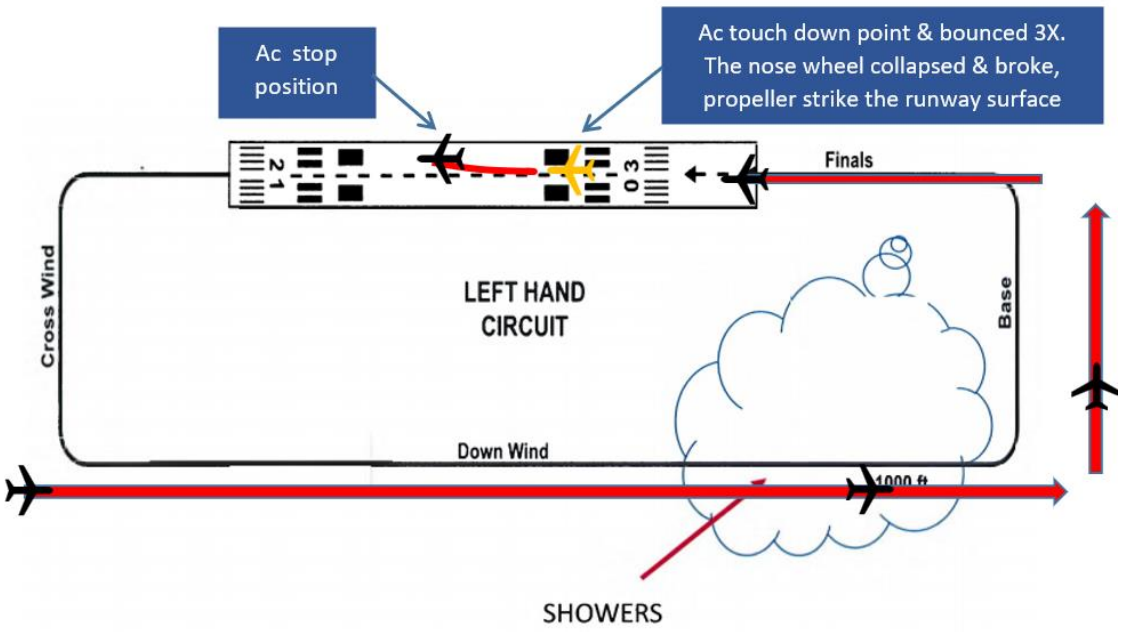


Figure 11: Landing path and final position of aircraft (Diagram not to scale)

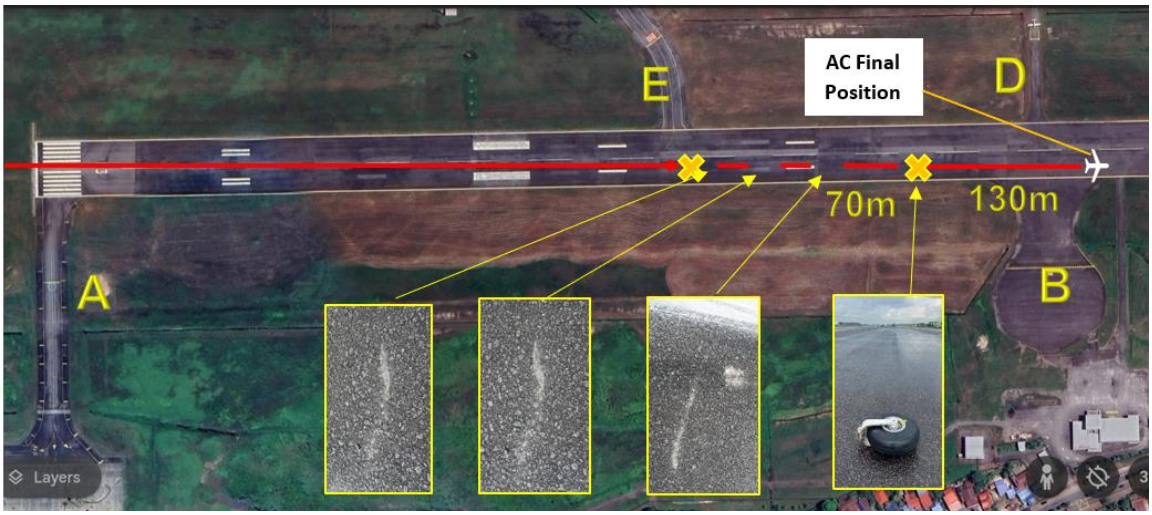


Figure 12: General map of the 9M-ITX incident

1.13 Medical and Pathological Information

The CP underwent a urine drug test, which returned negative results for substance abuse.

1.14 Fire

There were no reports of pre- or post-impact fire.

1.15 Survival Aspects

The CP exited the aircraft after shutting down the engine by opening the aircraft door.

1.16 Tests and Research

N/A.

1.17 Organisational and Management Information

International Aero Training Academy (IATAC) is a Malaysian Approved Flight Training Organisation (AFTO), based at WMKM. IATAC offers a comprehensive flight training programme, utilising a fleet of single- and twin-engine aircraft. All aircraft in the fleet are equipped with Garmin 1000 EFIS (Electronic Flight Instrument System) for enhanced situational awareness and flight management. IATAC also operates an advanced flight simulator, which is also integrated with Garmin 1000, providing cadet pilots with realistic training scenarios in a controlled environment.

1.18 Additional Information

1.18.1 Witness Interviews and Statements

The AAIB investigation team conducted separate interview sessions with the CP, his Flight Instructor (FI), IATAC executives, related personnel, and the ATC on duty. These interviews were recorded with the express consent of the witnesses.

A key piece of information obtained from the interviews with the CP, his FI, and flight operation personnel was that, although the CP was scheduled for his solo flight in the General Handling 7 sortie, the FI was unaware that the CP had taken off on the day of the incident. The FI stated that, upon arriving at work and noticing no entry for the

sortie in the authorisation sheet in the flight operation room, he presumed the flight had been cancelled. The FI's statement revealed that he had not provided a pre-flight briefing for the solo flight and assumed the cancellation was due to deteriorating weather conditions and the absence of a duty instructor. Upon later discovering that the CP was airborne, the FI confirmed with a duty cadet that the CP was on final approach. This lack of prior supervision, briefing, and awareness of the CP's flight status was significant in understanding the chain of events leading to the incident.

1.19. Useful or Effective Investigation Techniques

The investigation relied on several sources of tangible evidence to determine contributing factors and the cause of the incident. These include the CP’s iPhone video recording, which captures key moments from engine start-up to evacuation, witness accounts and statements from relevant personnel, and data from the aircraft’s Garmin G1000 system, providing essential flight details. Together, these sources enabled a detailed analysis of the incident.

2.0 ANALYSIS

2.1 On-Site Investigation

In cases of hard landings or abnormal runway contacts, physical evidence such as tire tracks and impact marks are typically crucial for understanding the event. These marks often provide clear indications of the aircraft's contact with the runway and are essential for determining the sequence of events leading to the incident.

During the runway inspection, the AAIB investigation team identified three distinct scratch marks on the runway. These marks, consistent with propeller strikes as confirmed by the CP, validate the CP's description of the hard landing and provide tangible evidence of the impact that occurred (see Figure 12). This evidence, combined with the flight data and video recording, is used to determine the cause and contributing factors of the incident.

In addition to the physical evidence, the analysis of the incident focuses on:

- **The CP's Statement**: The CP's account provided a first-hand description of the events leading up to and during the incident. This statement is crucial for understanding the pilot's actions, decision-making process, and any deviations from standard procedures.

- **Garmin G1000 System Data**: The aircraft was equipped with a Garmin G1000 system that recorded flight data throughout the incident. This data was reviewed to reconstruct the flight path, altitude, and other critical parameters during the approach and landing phases.

- **CP's iPhone Video Recording**: The CP recorded a video from engine start-up until the aircraft was vacated. This recording offered a visual account of the flight and provided additional context to confirm the CP's statements regarding the flight's progression and the conditions encountered.

2.2 Aircraft Operation Analysis

2.2.1 Approach and Landing Configuration

The analysis of video footage and Garmin G1000 data revealed several critical issues during the aircraft's approach and landing. The footage shows that the landing attitude was incorrect, with the approach appearing too shallow and fast. The aircraft contacted the runway in a three-point landing, and the nose was pushed slightly after an initial bounce. The CP did not correct this initial bounce effectively, causing the aircraft to bounce progressively higher with each subsequent impact, ultimately resulting in a hard landing and the collapse of the nose landing gear.

The Garmin G1000 data supports these findings, showing that the aircraft approached the runway at 95 knots—approximately 20 knots above the recommended approach speed of 75 knots. This excessive speed was a significant factor in the hard landing.

A major contributing factor was the CP's failure to extend the flaps. Both the video footage and post-landing photographs confirm that the flaps remained retracted

throughout the landing sequence. The absence of flap deployment significantly increased the landing speed, making it difficult to reduce to an appropriate level, worsening the severity of the bounces, and finally leading to the collapse of the nose landing gear.

2.2.2 Confusion and Stress

The CP's confusion and stress during the flight likely contributed to these errors. While on the downwind leg, the CP encountered poor visibility and adverse weather, resulting in a temporary loss of visual reference as the aircraft entered cloud cover. The sudden entry into Instrument Meteorological Conditions (IMC) likely caused the CP to become overwhelmed, leading to a lapse in following proper landing procedures.

After regaining visual reference upon exiting the cloud during the late downwind and base turn, the CP was likely still flustered, causing him to forget critical landing checks, including the extension of the flaps. This oversight, coupled with the incorrect approach speed, indicates that the CP was under significant stress and confusion, contributing to improper decision-making during the landing sequence.

GO ROUND PROCEDURE:

The go round is initiated when for any reason by 200' agl a landing cannot be achieved or you have not received landing clearance. Refer to the SOP.

MIS-LANDING PROCEDURE:

If the aircraft is below 200' agl and for any reason a safe landing could not be made e.g.: during the flare aircraft balloons, floats, the stall horn continuously sounds / the stall buffet is felt, after touchdown the aircraft bounces back into the air or aircraft direction is going towards the side of the runway, then a mis-landing procedure is to be actioned. Refer to the SOP.

Figure 13: Excerpts from IATAC Training Manual
Student Study Guide – Single Engine

2.2.3 Failure to Adhere to SOP

The investigation finds that the CP's failure to adhere to SOP after the initial bounce was a major contributing factor to the incident. After the first bounce, the CP should have initiated a missed landing procedure to stabilise the situation and avoid further

instability. However, instead of executing the correct procedure, the CP attempted to regain control of the aircraft and bring it to a stop, leading to a hard landing and the eventual collapse of the nose landing gear.

2.3 Human Factors Analysis

Human factors played a critical role in the sequence of events leading to the incident. The CP's performance and decision-making were influenced by several factors, including stress, confusion, procedural lapses, and inadequate supervision.

2.3.1 Stress and Confusion. The CP encountered rapidly deteriorating weather conditions, including reduced visibility and approaching rain, which created a high-stress environment. This stress likely contributed to confusion and impaired decision-making. The transition into IMC can severely impact situational awareness, especially for inexperienced pilots, compromising their ability to make sound decisions under pressure.

2.3.2 Loss of Visual Reference. During the downwind leg, the CP entered cloud cover, causing a temporary loss of visual reference. Upon regaining visual contact after exiting the cloud on the base turn, the CP was likely disoriented. This sudden shift in visual conditions likely led to errors in the landing configuration and an omission of key pre-landing checks. The inability to clearly assess the runway environment contributed to the excessive approach speed and incorrect landing configuration.

2.3.3 Failure to Follow SOP. The CP's failure to extend the flaps before landing was a critical procedural error. Flaps are essential for reducing the aircraft's speed to an appropriate level for a stable landing. Without flaps, the aircraft approached the runway at a significantly higher speed than recommended, making it difficult to control. Additionally, the CP did not execute a missed landing procedure after the initial bounce, further deviating from standard operating procedures and increasing the risk of a hard landing.

2.3.4 Pre-Flight Briefing and Supervision. The FI was unaware of the CP's departure and had not provided a pre-flight briefing. This lack of supervision and

preparation played a significant role in the CP's oversight of critical pre-landing checks. Proper briefing and close supervision are essential, especially for cadet pilots, to ensure they are prepared for solo flights and adhere to all procedural requirements. The absence of these elements highlights deficiencies in training and oversight.

2.3.5 Impact of Experience Level. With only 22 hours and 20 minutes of total flight time, the CP had limited solo flying experience. The high-stress environment, combined with inexperience, likely impaired the CP's ability to effectively manage the situation. Psychological stress may have further contributed to the CP's inability to handle the landing properly, exacerbating the incident.

2.3.6 Summary of Human Factors Analysis. In summary, the incident resulted from a combination of human factors, including the CP's stress and confusion under adverse weather conditions, failure to follow standard procedures, lack of adequate supervision and briefing, and the CP's limited experience. Addressing these human factors through enhanced training, stricter adherence to SOPs, and improved supervision will be key to mitigating similar risks in future operations.

2.4 Organisational Factors Analysis

Organisational factors were significant in the incident, affecting oversight, training, and supervision of cadet pilots. Systemic issues within the flight training organisation and operational processes contributed to the hard landing.

2.4.1 Lack of Supervision. A major issue was the lack of supervision of the CP's solo flight, highlighted by the absence of a pre-flight briefing and the FI's unawareness of the CP's departure. Proper pre-flight briefings are essential for preparing pilots for flight conditions and procedures. The absence of adequate supervision and briefing left the CP unprepared, leading to missed pre-landing checks such as flap deployment. The FI's assumption of a cancelled flight due to weather and the absence of a duty instructor reflects a failure in communication and operational oversight.

2.4.2 Deficiencies in Flight Training and Procedures. Gaps in SOP adherence suggest deficiencies in the training curriculum. The CP's failure to perform pre-landing

checks and a missed landing procedure indicates that critical skills and protocols may not have been adequately taught or reinforced. Concerns about the CP's limited experience and stress response highlight issues with preparing cadets for solo flights under varying conditions.

2.4.3 Weather and Operational Decision-Making. Allowing the CP to fly in deteriorating weather conditions raises concerns about the organisation's risk management and decision-making. Permitting a cadet with limited experience to fly in impending IMC conditions demonstrates a lack of rigorous risk assessment and oversight, revealing an organisational gap in ensuring flight safety.

2.4.4 Communication and Coordination. The lack of communication between the FI and flight operation staff about the CP's flight status points to systemic coordination issues. The FI's unawareness of the CP's departure signifies a breakdown in internal communication channels, preventing critical oversight that could have mitigated factors leading to the incident.

2.4.5 Supervision Policies and Oversight. The lack of awareness regarding the CP's flight status reveals broader issues with supervision policies. There seems to be no clear mechanism for informing instructors of cadet flights or ensuring proper briefing and supervision. Stricter protocols for flight authorisations, especially during adverse weather, are needed to address these shortcomings and prevent future incidents.

2.4.6 Summary of Organisational Factors Analysis: In summary, organisational factors such as inadequate supervision, deficiencies in training, poor communication and coordination, and insufficient risk management regarding weather significantly influenced the incident. Reviewing supervision policies, enhancing communication channels, and improving cadet training for adverse weather and emergency procedures are necessary to mitigate risks and improve safety in cadet flight operations.

3.0 CONCLUSION

3.1. Findings

3.1.1 Aircraft Operation and Configuration. The investigation found that the aircraft approached the runway at an excessive speed of 95 knots, approximately 20 knots above the recommended 75 knots. This high speed was primarily due to the failure to extend the flaps before landing, which made it difficult to reduce speed and significantly worsened the impact on the runway, ultimately leading to the collapse of the nose landing gear.

3.1.2 Human Factors. The CP faced significant stress and confusion due to rapidly deteriorating weather conditions and a temporary loss of visual reference upon entering cloud cover. This stress impaired the CP's ability to adhere to standard landing procedures. The CP did not perform critical pre-landing checks, including the extension of flaps, resulting in an incorrect landing configuration and excessive landing speed. The CP's limited experience, with only 22 hours and 20 minutes of total flight time, negatively impacted the CP's decision-making and handling of the landing.

3.1.3 Organisational Factors. The investigation identified several organisational issues contributing to the incident. There was a lack of adequate supervision and pre-flight briefing for the CP, with the FI being unaware of the CP's departure and failing to provide necessary oversight. The flight training programme exhibited deficiencies, particularly in preparing cadet pilots for adverse weather conditions and emergency procedures. Furthermore, there were communication and coordination gaps between instructors and flight operation staff, which led to lapses in ensuring the CP followed proper procedures.

3.2 Cause/Contributing Factors

3.2.1 Cause. The cause of the incident was the Cadet Pilot's failure to extend the flaps before landing, which resulted in an excessive approach speed, followed by an inadequate response to the initial aircraft bounce. This was influenced by stress and confusion due to adverse weather conditions, compounded by a lack of effective

supervision and pre-flight briefing. The Cadet Pilot's limited experience further contributed to the mishandling of the landing.

3.2.2 Contributing Factors. The contributing factors to the incident include inadequate supervision due to the lack of pre-flight briefing and oversight by the Flight Instructor, deficiencies in the flight training programme which failed to adequately prepare the Cadet Pilot for adverse weather and emergency procedures, and poor communication and coordination between instructors and flight operation staff.

3.2.3 Classification. This aviation occurrence is classified as an **Abnormal Runway Contact (ARC)**.

4.0 SAFETY RECOMMENDATIONS

To prevent similar incidents, the following safety recommendations are proposed for the aircraft operator, International Aero Training Academy (IATAC):

4.1 Supervision Policies. Review and enhance flight supervision policies to ensure that all solo flights are properly briefed and monitored.

4.2 Training Program Improvements. Improve the flight training programme to better prepare cadet pilots for adverse weather conditions and emergency procedures.

4.3 Communication Enhancements. Strengthen communication channels between instructors and operational staff to ensure proper coordination and oversight.

4.4 Risk Management Practices. Implement better risk management practices to address weather conditions and ensure compliance with procedural requirements.

CONCLUDING STATEMENT

This investigation has revealed instances of non-compliance and errors; however, it is crucial to emphasise that these findings are not intended for the purposes of apportioning blame or liability. Rather, they are solely for the purpose of preventing accidents in the future and improving aviation safety on the whole. Addressing the identified findings and implementing the recommended safety measures will enhance aviation safety and mitigate risks associated with operational lapses and regulatory gaps. It is imperative that all stakeholders prioritise safety and commit to implementing the necessary measures to prevent recurrence.

Investigator In-Charge
Air Accident Investigation Bureau
Ministry of Transport, Malaysia