Republic of the Philippines
CIVIL AVIATION AUTHORITY OF THE PHILIPPINES

AIRCRAFT ACCIDENT INVESTIGATION AND INQUIRY BOARD

FINAL REPORT

RP-C9986
CESSNA 152

OPERATOR: STRIKE WING AVIATION TRAINING CENTER INC.

TYPE OF OPERATION: FLIGHT TRAINING

DATE OF OCCURRENCE: FEBRUARY 26, 2019

PLACE OF OCCURRENCE: PLARIDEL AIRPORT, PLARIDEL, BULACAN

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(Cessna 152, RP-C9986 Final Report)

FOREWORD

This report was produced by the Aircraft Accident Investigation and Inquiry Board (AAIIB), Civil Aviation Authority of the Philippines, MIA Road, Pasay City, Philippines.

The report is based upon the investigation carried out by the AAIIB in accordance with Annex 13 to the Convention on International Civil Aviation, Republic Act 9497 Section 42, and Philippine Civil Aviation Regulation Part 13.

Readers are advised that the AAIIB investigates for the sole purpose of enhancing aviation safety. Consequently, AAIIB reports are confined to matters of safety significance and may be misleading if used for any other purpose. It should be noted that the information in AAIIB reports and recommendations is provided to promote aviation safety, and in no case is it intended to imply blame or liability.

Furthermore, no part of the AAIIB report or reports relating to any accident or investigation shall be admitted as evidence or used in any suit or action for damages arising out of any matter mentioned in such report or reports.

FINAL REPORT

TITLE: Incident involving a Cessna 152 type of aircraft with Registry Number RP-C9986 owned and operated by Strike Wing Aviation Training Center Inc. (SWATC) that had a runway overrun during landing at RWY 17 of Plaridel Airport, Plaridel, Bulacan on February 26, 2019/1026H.

Notification of Occurrence to National Authority

The notification of incident to AAIIB CAAP was relayed by the Operator of the aircraft at 1100H (LOCAL) on February 26, 2019.

Identification of the Investigation Authority

The Aircraft Accident Investigation and Inquiry Board (AAIIB), the mandated accident investigation organization within the Civil Aviation Authority of the Philippines (CAAP) as the state of Occurrence/Registry/ Operator is conducting the investigation.

Organization of the Investigation

In accordance with provisions of Philippine Civil Aviation Regulation (PCAR) Part 13, an Investigator-In-Charge and Deputy Investigator-In Charge were appointed.

Authority Releasing the Report

The Final investigation report was released by Aircraft Accident Investigation and Inquiry Board (AAIIB) and published at the CAAP website on **19 December 2024.**

Synopsis:

On February 26, 2019 at about 1026H, a Cessna 152 aircraft with registry number RP-C9986 operated by Strike Wing Aviation Training Center (SWATC) sustained minor damage following a runway overrun event during landing at runway 17 of Plaridel Airport, Plaridel, Bulacan. Both the flight instructor (FI) and the private pilot trainee (PPT) did not sustain any injuries as a result of the incident. Visual Metrological Condition (VMC) prevailed at the time of the incident. The cause of the occurrence was attributed to the Flight Instructor's improper recovery techniques from a bounced landing resulting in a runway overrun.

LIST OF ACRONYMS AND ABBREVIATIONS

AAIIB	:	Aircraft Accident Investigation and Inquiry Board
ATOC	:	Approved Training Organization Certificate
CAAP	:	Civil Aviation Authority of the Philippines
CPL	:	Commercial Pilot License
FI	:	Flight Instructor
LCD	:	Licensing and Certification Division
OFSAM	:	Flight Surgeon and Aviation Medicine
PPL	:	Private Pilot License
PPT	:	Private Pilot Trainee
SWATC	:	Strike Wing Aviation Training Center
TPQSM	:	Training and Procedures Quality and Safety Manual
VFR	:	Visual Flight Rules
VMC	:	Visual Meteorological Condition

1. FACTUAL INFORMATION

Aircraft Registration No.	:	RP-C9986
Aircraft Type/Model	:	Textron Aviation Inc. Cessna 152
Operator	:	Strike Wing Aviation Training Center Inc.,
Address of Operator	:	12D Riverview Mansion, Escolta, Manila
Place of Occurrence	:	Plaridel Airport, Plaridel, Bulacan
Date/Time of Occurrence	:	February 26, 2019/1026H
Type of Operation	:	Flight Training
Phase of Flight	:	Landing
Type of Occurrence	:	Runway overrun during landing

1.1 History of Flight

On February 26, 2019 at about 1026H, a Cessna 152 aircraft with registry number RP-C9986 operated by Strike Wing Aviation Training Center (SWATC) sustained minor damage following a runway overrun event during landing at runway 17 of Plaridel Airport, Plaridel, Bulacan. Both the flight instructor (FI) and the private pilot trainee (PPT) did not sustain any injuries as a result of the incident. A visual metrological condition (VMC) prevailed at the time of the incident, and a VFR flight had been filed.

The aircraft took off around 0830H to perform various maneuvers over Hagonoy, Bulacan. The flight lasted for 1 hour and 15 minutes. The aircraft took off again for the second time to perform one (1) traffic pattern and a full stop. The third flight was scheduled to perform a 90-degree base approach. During the initial climb, while passing 300 feet, the engine began to run rough and partially loss power. The FI took over the controls and advised the tower controller of their intention to re-land immediately. Upon landing, the aircraft bounced four (4) times, overran the end of runway 17, and nosed over. The aircraft came to a complete stop in a nose-down position in the airport perimeter fence, heading 180 degrees with grid coordinates of 14 53.215 N and 120 51.196 E.

The aircraft sustained minor damage to the nose wheel assembly and dents on the leading edges. Following the impact, no post-crash fire ensued.

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Fig 1-Final resting place of RP-C9986 at the end of RWY 17 Plaridel Airport

1.2 Injuries to Person (s)

Injuries	Crew	Passengers	Others	TOTAL
Fatal	0	0	0	0
Serious	0	0	0	0
Minor	0	0	0	0
None	2	0	0	2

1.3 Damage to Aircraft

The aircraft sustained minor damage.

1.4 Other Damages

No other damages recorded.

1.5 Personnel Information

1.5.1 Flight Instructor (FI)

Gender	:	Male
Date of Birth	:	December 25, 1992
Nationality	:	Philippines
Civil Status	:	Single
License Type	:	125527-CPL
Date Issued	:	August 17, 2017
Type Rating	:	Single Engine Land C-152, C-172
Medical Certificate Validity	:	August 31, 2022
Total Flying Time	:	228 + 00 Hours
Total Flying Time C-152	:	117 + 36 Hours

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1.5.2 Private Pilot Trainee (PPT)

Gender	:	Male
Date of Birth	:	May 5, 1978
Nationality	:	Philippines
Civil Status	:	Married
License Type	:	118833-PPL
Date Issued	:	February 21, 2017
Type Rating	:	Single Engine Land C-152
Medical Certificate Validity	:	February 28, 2019
Total Flying Time	:	90 + 22 Hours
Total Flying Time C-152	:	90 + 22 Hours

1.6 Aircraft Information

1.6.1 Aircraft Data

Registration Number	:	RP-C9986
Manufacturer	:	Textron Aviation Inc.
Country of Manufacturer	:	Kansas, USA
Type/Model	:	Cessna 152
Serial Number	:	15284578
Owner/Operator	:	Capt. David Arvin L. Wong
Address of Owner/Operator	:	12D Riverview Mansion, Escolta, Manila
Gross Weight	:	727.0 Kilograms (Kgs)
Total Time in Service	:	22,889 + 50 Hours as of February 26, 2019
Last 100 hours Inspection Performed	:	January 22, 2019

1.6.2 Engine Data

Manufacturer	:	AVCO Lycoming
Type	:	Piston
Model	:	0-235-L2C
Engine Serial Number	:	RL-24747-15
Time Since Overhaul	:	1,706 + 18 Hours as of February 26, 2019
Last 100 Hours Inspection Performed	:	January 22, 2019

1.6.3 Propeller Data

Manufacturer	:	McCauley
Type/Model	:	1A103/TCM6958
Propeller Serial Number	:	VA43030
Propeller Time Since New	:	New
Propeller Time	:	374 + 43 Hours as of January 10, 2019
Last 100 Hours Inspection Performed	:	January 22, 2019

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1.7 Meteorological Information

The following data were taken from RPUX tower on February 26, 2019 at the time of the incident:

Wind	:	Calm
Visibility	:	5 Kilometers
Wind Condition	:	5 Knots
Temperature/Dew Point	:	27/20
Clouds	:	Brk 040
Pressure	:	1014 mbs
RWY Condition	:	Dry

1.8 Aids to Navigation

The flight was carried out under Visual Flight Rules (VFR). In using the VFR, the pilot must be able to operate the aircraft with visual reference to the ground and visually avoid obstructions and other aircraft.

1.9 Communications

Plaridel Control Tower

Primary-122.4 MHz
5447.5 KHz
3834 KHz

1.10 Aerodrome Information (AIP as of November 2018)

Airport Name	:	Plaridel Airport
Airport Identification	:	RPUX
Airport Operator	:	CAAP
Runway Direction	:	17/35
Runway Dimensions (17)	:	900 Meters
Runway Dimensions (35)	:	900 Meters
Runway Width	:	30 Meters
Runway Elevation (AMSL)	:	6.20 Meters
Surface	:	PCN 8 F/C/Y/U Asphalt
ARP Coordinates and Site at AD	:	14 53 29.5445 N ; 120 51 11.1410 E

1.11 Flight Recorders

The aircraft is not equipped with flight recorders and existing CAAP regulation does not require it.

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1.12 Wreckage and Impact Information

The aircraft came to a complete stop in a nose-down position in the airport perimeter fence, heading 180 degrees with grid coordinates of 14 53.215 N and 120 51.196 E. The aircraft sustained damage to the nose wheel assembly, the RH main wheel was misaligned, and there were dents on the wings leading edges and ailerons.

1.13 Fire

There was no post fire reported at the incident site.

1.14 Medical and Pathological Information

The pilots did not suffer any injuries from the incident. However, they were subjected to a medical examination and drug test at La Consolacion University General Hospital in Plaridel, Bulacan, on February 26, 2019 with the results showing no significant findings. Furthermore, the CAAP Office of Flight Surgeon and Aviation Medicine (OFSAM) conducted a post-incident medical examination on February 27, 2019, which also revealed no significant findings.

1.15 Organization and Management Information

The Strike Wing Aviation Training Center, Inc. is an Approved Training Organization with ATO Certificate number 2009-22 valid to operate up to March 02, 2021. As part of the Training Specifications, RP-C9986 is included in the list of authorized aircraft for training.

2.0 ANALYSIS

2.1 General

The scheduled training flight was to conduct different maneuvers for the Private Pilot Trainee (PPT) to gain time towards acquiring his CPL. After doing different flight maneuver lessons for 1 hour and 15 minutes, the PPT decided to return to the airport, made one (1) touch-and-go pattern and landed before making a full stop. During the third take-off, while performing a 90-degree side approach and passing 300 feet, the Private Pilot Trainee (PPT) reportedly experienced engine roughness and vibration. As a result, he transferred control to the flight instructor (FI) to re-land the aircraft. During landing, the aircraft touched down about 100 to 200 feet after the threshold of RWY 35 bounced four (4) times and made a runway overrun at the end of RWY 17. The aircraft continued to roll for another 100 feet and came to a complete stop in a nose-down position near the airport perimeter fence. At the time of occurrence, visual meteorological conditions (VMC) prevailed.

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2.2 Pilot Qualifications

2.2.1 Flight Instructor (FI)

The FI completed his training with Strike Wing Aviation Training Center, Inc. He had a total flying time of 228+00 hours, with 117+36 hours spent on C152 aircraft. He had accumulated a total of 25+00 hours as an FI. According to available records, the pilot received his FI license on June 27, 2018, with a rating for the C152 type of aircraft. On August 17, 2017, the pilot received his CPL license with ratings for the C152 and C172 types of aircraft.

2.2.2 Private Pilot Trainee (PPT)

The PPT holds a Private Pilot License (PPL) and has accumulated a total of 90+22 hours. During the time of the incident, the PPT was accumulating flying time to qualify for a Commercial Pilot License. According to available records, the PPT completed his pilot training at Strike Wing Aviation Training Center Inc. and received his PPL on February 21, 2017, with a rating on the C152 type of aircraft, which was renewed it on February 17, 2019.

2.3 Maintenance of Aircraft

According to the Aircraft Flight Logbook, the aircraft was released for flight on the day of the incident and showed no maintenance discrepancy for the last five (5) days from February 20–24, 2019.

2.4 Bounced Landing Recovery Options

An interview with the FI revealed that the PPT allegedly experienced engine roughness, vibration, and a momentary loss of power to climb upon the third take off, resulting to passing the control to the FI to re-land the aircraft. After relaying the situation to the tower, the aircraft was granted permission to land on RWY 17. During the tail wind approach, the tower witnessed the aircraft touchdown RWY 17, 100 to 200 feet from the threshold of RWY 35, bounced four (4) times, overran RWY 17, veered to the left on the airport perimeter fence, and stopped 100 feet past the RWY end in a nose-down position.

Many bounced landings can still end with a smooth touchdown. As per POH, aircraft for landing should be configured; if the aircraft bounced upon landing, the first thing pilots should do is hold back pressure to keep the aircraft in a nose-high landing attitude. If the nose is too high, pilots might need to release some back pressure on the yoke or stick, but they should not push the nose down. If pilots forced the nose down, the aircraft could land even harder than the first time, or worse, land on the nose gear. As the aircraft starts descending back to the runway, it might also need to add some power to reduce the descent rate, but overcorrecting with power should be avoided. Adding small amounts of power is all it takes to safely reduce the descent rate for a soft touchdown. Furthermore, executing a go-around is recommended if you're well beyond your intended landing spot or if you're uncomfortable with the amount of runway remaining.

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The most likely reason for overshooting the runway was a lack of situational awareness on the part of the FI, who concentrated on the landing despite a tailwind component and touched down beyond the threshold.

2.5 Vapor Lock

An additional interview with the flight instructor revealed that they reportedly encountered vapor lock during the flight, likely due to extended ground time, hot weather, and frequent weather changes.

When liquid fuel transforms into vapor in the fuel delivery system of gasoline-fueled internal combustion engines, it causes a vapor lock problem. This disrupts the operation of the fuel pump, causing a loss of feed pressure to the carburetor or fuel injection system, resulting in a transient loss of power. As fuel travels to the injector nozzles to spray into the intake manifold, the fuel injector lines after the flow divider are most likely to experience vapor lock. (Figure 2.4A). Vapor lock is typically experienced when you try to start your plane after a quick turn (shut down and restart within 30 minutes), but in some rare cases, it can occur in flight.

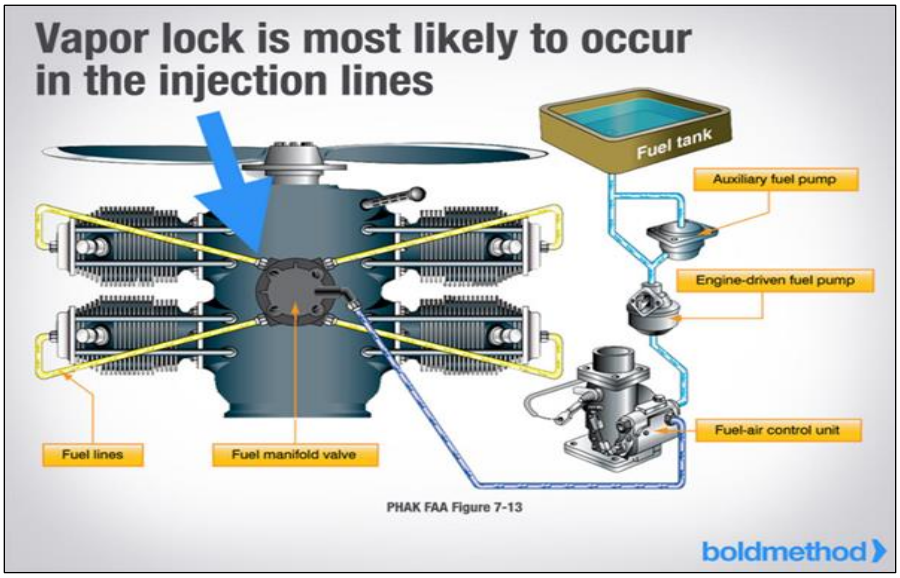

Figure 2.4A -The vapor lock process

In this case, the loss of aircraft power was likely temporary because of the presence of vapor. It appears that the pressure release mechanism on the fuel cap on the right wing could have caused the vapor to develop.

After the recovery of the aircraft from the incident site, it was towed to the ramp and subjected to further inspection. A run-up was conducted on the aircraft to further determine the cause of the momentary engine power loss. During the run-up (Figure 2.4B), the aircraft engine parameters were normal and did not display any discrepancies.

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Figure 2.4B- The aircraft performing run-up after the incident

3.0 CONCLUSIONS

3.1 Findings

1. The Flight Instructor (FI) and Private Pilot Trainee (PPT) have valid pilot licenses and medical certificates issued by CAAP Licensing and Certification Division (LCD) and OFSAM, respectively.
2. The aircraft has a Certificate of Registration valid until April 14, 2023, and a Certificate of Airworthiness valid until January 13, 2020, both of which were issued by CAAP.
3. As of February 26, 2019, the aircraft had accumulated a total time of 22,889 + 50 hours.
4. The engine has accumulated a total time since overhaul of. 1,706 + 18 hours as of February 26, 2019.
5. The propeller has accumulated a total time since overhaul of 374 + 43 hours as of January 10, 2019.
6. The aircraft was properly released for flight, and no significant remarks were listed on the aircraft logbook for the last five (5) days.
7. A visual meteorological condition prevailed at the time of the occurrence.
8. The aircraft engine parameters were normal and did not display any discrepancies during the run-up following the incident.

3.2 Probable Cause Factor

3.2.1 Primary Cause Factor

a. The Flight Instructor's improper recovery techniques from a bounced landing resulted in a runway overrun.

3.2.2 Contributory Factor

a. Fast approach during landing because of the tail wind.

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4.0 SAFETY RECOMMENDATION

4.1 The safety deficiencies detailed in this report have been fully addressed as a result of the safety measures implemented by the Operator, Strike Wing Aviation Training Center Inc. (SWATCI). Consequently, no further safety recommendations are being proposed.

5.0 SAFETY ACTIONS

5.1 Following the occurrence, Strike Wing Aviation Training Center Inc. (SWATCI) initiated the following safety corrective actions:

a. Conducted re-training and proficiency check to the FI focusing on emergency procedures.

b. Replaced the fuel cap with pressure value release mechanism.

------END-----

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