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**FINAL INVESTIGATION REPORT ON ACCIDENT TO**  
**M/S FALCON AVIATION ACADEMY, CESSNA 152 AIRCRAFT VT-PTC**  
**AT SULTANPUR, U.P. ON 16 MARCH 2022**

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**Investigator -In- charge**

## **FOREWORD**

*In accordance with Annex 13 to the Convention on International Civil Aviation Organization (ICAO) and Rule 3 of Aircraft (Investigation of Accidents and Incidents), Rules 2017, the sole objective of the investigation of an Accident/Incident shall be the prevention of accidents and incidents and not to apportion blame or liability. The investigation conducted in accordance with the provisions of the above said rules shall be separate from any judicial or administrative proceedings to apportion blame or liability.*

*This document has been prepared based upon the evidences collected during the investigation, opinion obtained from the experts and laboratory examination of various components. Consequently, the use of this report for any purpose other than for the prevention of future accidents or incidents could lead to erroneous interpretations.*

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## GLOSSARY

AAIB	Aircraft Accident Investigation Bureau
AMSL	Above Mean Sea Level
ARC	Airworthiness Review Certificate
ASR	Airport Surveillance Radar
ATC	Air Traffic Control
AUW	All Up Weight
C of A	Certificate of Airworthiness
C of R	Certificate of Registration
Hrs	Hours
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
ILS	Instrument Landing System
LLZ	Localiser
MEL	Minimum Equipment List
MLG	Main Landing Gear
MTOW	Maximum Take Off Weight
NDB	Non Directional Beacon
NLG	Nose Landing Gear
NM	Nautical Miles
PF	Pilot Flying
PIC	Pilot in Command
QRH	Quick Reference Handbook
RA	Radio Altitude
SB	Service Bulletin
SPL	Student Pilot License
TPM	Training & Procedure Manual
VMC	Visual Meteorological Conditions
VOR	VHF Omni directional Range
UTC	Universal Time Coordinated

<b>Aircraft and Accident details of Cessna 152 Aircraft VT-PTC on 16 March 2022</b>			
<b>1.</b>	<b>Aircraft</b>	<b>Type</b>	<b>Cessna 152</b>
		<b>Nationality</b>	<b>Indian</b>
		<b>Registration</b>	<b>VT-PTC</b>
<b>2.</b>	<b>Owner</b>	<b>M/s Falcon Aviation Academy</b>	
<b>3.</b>	<b>Operator</b>	<b>M/s Falcon Aviation Academy</b>	
<b>4.</b>	<b>Country of Manufacture</b>	<b>United States of America</b>	
<b>5.</b>	<b>Pilot</b>	<b>Student Pilot License (SPL) Holder</b>	
<b>6.</b>	<b>No. of Persons on board</b>	<b>01 (Trainee pilot)</b>	
<b>7.</b>	<b>Extent of Injuries</b>	<b>Nil</b>	
<b>8.</b>	<b>Date &amp; Time of Accident</b>	<b>16<sup>th</sup> March 2022/ 0745 UTC</b>	
<b>9.</b>	<b>Place of Accident</b>	<b>Sultanpur Airfield</b>	
<b>10.</b>	<b>Co-ordinates of Accident Site &amp; AMSL</b>	<b>26° 14' 15" N, 82° 02' 38" E &amp; 97 m.</b>	
<b>11.</b>	<b>Last point of Departure</b>	<b>Rewa Airfield</b>	
<b>12.</b>	<b>Intended landing place</b>	<b>Sultanpur Airfield</b>	
<b>13.</b>	<b>Type of Operation</b>	<b>Training Flight</b>	
<b>14.</b>	<b>Phase of operation</b>	<b>Landing</b>	
<b>15.</b>	<b>Type of Occurrence</b>	<b>Aircraft Overshoot (Off-runway landing on unpaved surface)</b>	

(All the timings in this report are in UTC unless otherwise specified)

## **SYNOPSIS**

On 16 March 2022, Cessna 152 aircraft VT-PTC belonging to M/s Falcon Aviation Academy was involved in an accident at Sultanpur Airfield, UP while operating a training flight. The aircraft was under the command of a student pilot holding a valid student pilot license. The trainee pilot was detailed for 300 Nm “solo cross country” flying route Rewa – Overflying (O/F) ALGOB – O/F Ayodhya – Sultanpur and return leg was Sultanpur – O/F Sirathu to Satna and then from Satna to Rewa.

The Trainee Pilot took-off from Rewa for 300 Nm solo cross-country exercise as planned and the *en route* flight was uneventful till the aircraft reached Sultanpur. The weather was fine at Sultanpur and the runway was visible to student pilot from 5 – 4 Nm. The student pilot reported on RT when on finals and was given clearance to land on runway 29 by an instructor (on ground) on RT. The instructor also relayed winds as “variable 5 Kts”. Just after flaring the aircraft, it started drifting towards right of runway 29. The trainee pilot was not able to correct the drift and the aircraft landed on soft ground at about 870 feet from threshold of runway 29 and 110 feet right of runway centerline. The aircraft rolled further on the soft ground for about 80 feet before coming to final rest at the edge of runway at about 950 feet from runway 29 threshold.

The aircraft sustained substantial damages during the accident. The trainee pilot did not receive any injury.

The occurrence was classified as accident and an Investigation was ordered vide Order No. INV.11011/3/2022-AAIB dated 29th March 2022 under Rule 11 (1) of Aircraft (Investigation of Accidents and Incidents) Rules, 2017.

Unless otherwise indicated, recommendations in this report are addressed to the regulatory authorities of the State having the responsibility for the matters with which the recommendation is concerned. It is for those authorities to decide what action is taken.

## **1. FACTUAL INFORMATION**

### **1.1 History of Flight**

As per the practice being followed in the organization, the trainee pilot received the roster in the evening of 15 March 2022 for the flying activities on 16 March 2022. The student pilot was rostered for 300 Nm solo cross-country flight. The route was Rewa – O/F ALGOB – O/F Ayodhya and land at Sultanpur. The return leg was Sultanpur – O/F Sirathu and land at Satna and then from Satna to Rewa.

Accordingly, the trainee pilot reported in the morning at 0300 UTC on 16.03.2022 for the planned flying training exercise. After reporting, the trainee pilot filled the dispatch register and did the BA test/signed the undertaking. Thereafter, the trainee pilot was briefed by one of the instructors. As per the statement of the trainee pilot, during the briefing the instructor briefed about the weather, when & where to report the position, the various ATCs to contact and when & how to contact company aircraft. Further, radials to follow, elevation of the airfield where the aircraft is planned to land, etc. were also discussed. The Trainee Pilot was detailed to carry out the exercise on the aircraft VT-PTC. Other than the trainee pilot there were 02 more trainee pilots who were detailed for “300 Nm solo cross-country flight” on the same route (as that of VT-PTC) on the aircraft VT-PTK & VT-PTF. The trainee pilot thereafter carried out the pre-flight check on aircraft VT-PTC. During the preflight check she observed two loose nuts on the wing tip which was rectified by the technician. Other than that, no abnormality was observed by the trainee pilot on the aircraft. After getting clearance, the aircraft took-off from Rewa airfield at around 0440 UTC. The aircraft flew as per the planned route i.e., overflying ALGOB and Ayodhya. The enroute flight was uneventful and the trainee pilot did not observe any abnormality during this flight. When the aircraft reached 15 Nm inbound Ayodhya the trainee pilot switched to company common frequency to co-ordinate with other trainee aircraft of the organization in the route as there is no ATC at Sultanpur which is an uncontrolled airfield. After reporting the position while overhead Ayodhya, the trainee pilot set course to Sultanpur. The trainee pilot could see the runway while the aircraft was 5-4 Nm inbound Sultanpur. The aircraft was maintaining an altitude of 4500 feet. The instructor who had already reached Sultanpur with another trainee pilot detailed for 250 Nm cross country flight was instructing these solo training aircraft for landing at Sultanpur. The other two aircraft VT-PTK and VT-PTF who were ahead reached Sultanpur before VT-PTC. The instructor also passed on the wind information as “5 Knots/Variable” to these aircraft after observing the wind sock installed in the airfield. The trainee pilot was instructed to descend to 1500 feet and join left hand circuit pattern for landing on runway 29. The trainee pilot then reported position on finals and was cleared to land by the instructor. After reaching threshold of runway 29, the trainee pilot flared the aircraft. Thereafter, suddenly the aircraft started drifting towards right of runway. The trainee pilot could not rectify the drift and the aircraft landed on the soft ground on right side of the runway. The aircraft touched down on soft ground at a distance of about 870 feet from threshold of runway 29 and about 110 feet right of runway centerline. After touchdown the aircraft rolled for another 80 feet on soft ground

before coming to final halt at edge of runway. As per the statement of the instructor on ground who witnessed the occurrence, they rushed towards the spot with ambulance & fire vehicle. They observed that the trainee had already come out of the aircraft on her own. The trainee pilot did not receive any injury. The aircraft received substantial damages, however, there was no fire.

## 1.2 Injuries to persons

Injuries	Crew	Passengers	Others
Fatal	Nil	Nil	Nil
Serious	Nil	Nil	Nil
Minor	Nil	Nil	Nil
None	01	Nil	Nil

## 1.3 Damage to Aircraft

The aircraft sustained substantial damage during the accident. The damage details are provided in Appendix 'A' to this report.

## 1.4 Other damage

Nil

## 1.5 Personnel Information

### 1.5.1 Trainee Pilot

Nationality	Indian
Date of Joining Organisation	18.11.2021
Age	19 Years 04 Months
License	SPL
Date of Issue	14.02.2020
Valid up to	13.02.2025
Category	Aeroplane
Date of Class I Med. Exam	31.10.2021
Class I Medical valid up to	04.11.2022
Date of issue FRTOL License	06.07.2020
FRTOL License valid up to	05.07.2020
Endorsements as PIC	Cessna 152
Total flying experience	130:10 Hrs
Total flying experience on type (Cessna 152)	130:10 Hrs
Last Flown on type	16.03.2022
Total flying experience during last 1 year	130:10 Hrs
Total flying experience during last 6 Months	130:10 Hrs
Total flying experience during last 90 days	114:05 Hrs
Total flying experience during last 30 days	56:15 Hrs



Total flying experience during last 07 Days	10:10 Hrs
Total flying experience during last 24 Hours	03:05 Hrs
Whether involved in Accident/Incident earlier	No
Date of latest Flight Checks, Ground Classes & Refresher	13.03.2022

The trainee pilot joined the flying training organisation on 18 Nov 2021 and did her first flying training exercise with an instructor on the same day. She was released for first solo flying on 4 January 2022 after obtaining dual flying experience of about 21:40 hours. The trainee pilot was released for first solo cross-country flight (Rewa – O/F Damoh - Rewa) on 21<sup>st</sup> Feb 2022 after about 82:30 hours of flying training experience. The trainee pilot had carried out 09 solo cross-country flight before the accidental flight. Before releasing for 300 Nm solo cross-country flight on 16.03.2022 (Accident flight), the trainee pilot was subjected to dual exercise with an instructor on the route Rewa – O/F Saratu – O/F Ayodhya – Sultanpur & Sultanpur – O/F Algob - Rewa on 10.03.2022. All her flying training had been carried out on Cessna 152 aircraft.

## **1.6 Aircraft Information**

### **1.6.1 Aircraft Cessna 152 General Information**

Cessna 152 aircraft is manufactured by Cessna Aircraft Company, USA. The airplane is an all-metal, two-place, high wing, single engine airplane equipped with tricycle landing gear and designed for general utility purpose. The construction of the fuselage is a conventional formed sheet metal bulkhead stringer, and skin design referred to as semi-monocoque. Major items of structure are the front and rear carry-through spars to which the wings are attached, a bulkhead and forgings for main landing gear attachment at the base of the rear door posts, and bulkhead with attaching plates at the base of the forward door posts for the lower attachment of the wing struts. Four engine mounts stringers are also attached to the forward door posts and extend forward to the firewall.

The externally braced wings, containing the tanks, are constructed of a front and rear spar with formed sheet metal ribs, doublers, and stringers. The entire structure is covered with aluminium skin. The front spars are equipped with wing-to-fuselage and wing to strut attach fittings. The aft spars are equipped with wing to fuselage attach fittings and are partial-span spars. Conventional hinged ailerons and single slotted flaps are attached to the trailing edge of the wings. The ailerons are constructed of a forward spar containing balance weights, formed sheet metal ribs and “V” type corrugated aluminium skin joined together at the trailing edge. The flaps are constructed basically the same as the ailerons, with the exception of the balance weights and the addition of a formed sheet metal leading edge section.

The empennage (tail assembly) consists of a conventional vertical stabilizer, rudder, horizontal stabilizer, and elevator. The vertical stabilizer consists of a spar, formed sheet metal ribs and reinforcements, a wrap-around a skin panel, formed leading edge skin

and a dorsal. The rudder is constructed of a formed leading-edge skin containing hinge halves, a wrap-around skin panel and ribs, and a formed trailing edge skin with a ground adjustable trim tab at its base. The top of the rudder incorporates a leading-edge extension which contains a balance weight. The horizontal stabilizer is constructed of a forward spar, main spar, formed sheet metal ribs and stiffeners, a wrap-around skin panel, and formed leading edge skins. The horizontal stabilizer also contains the elevator trim tab actuator. Construction of the elevator consists of a main spar and bell crank, left and right wrap-around skin panels, and a formed trailing edge skin on the left half of the elevator; the entire trailing edge of the right half is hinged and forms the elevator trim tab. The leading edge of both left and right elevator tips incorporate extensions which contain balance weights. The aircraft dimensions are depicted in the picture (Fig. 1) below:

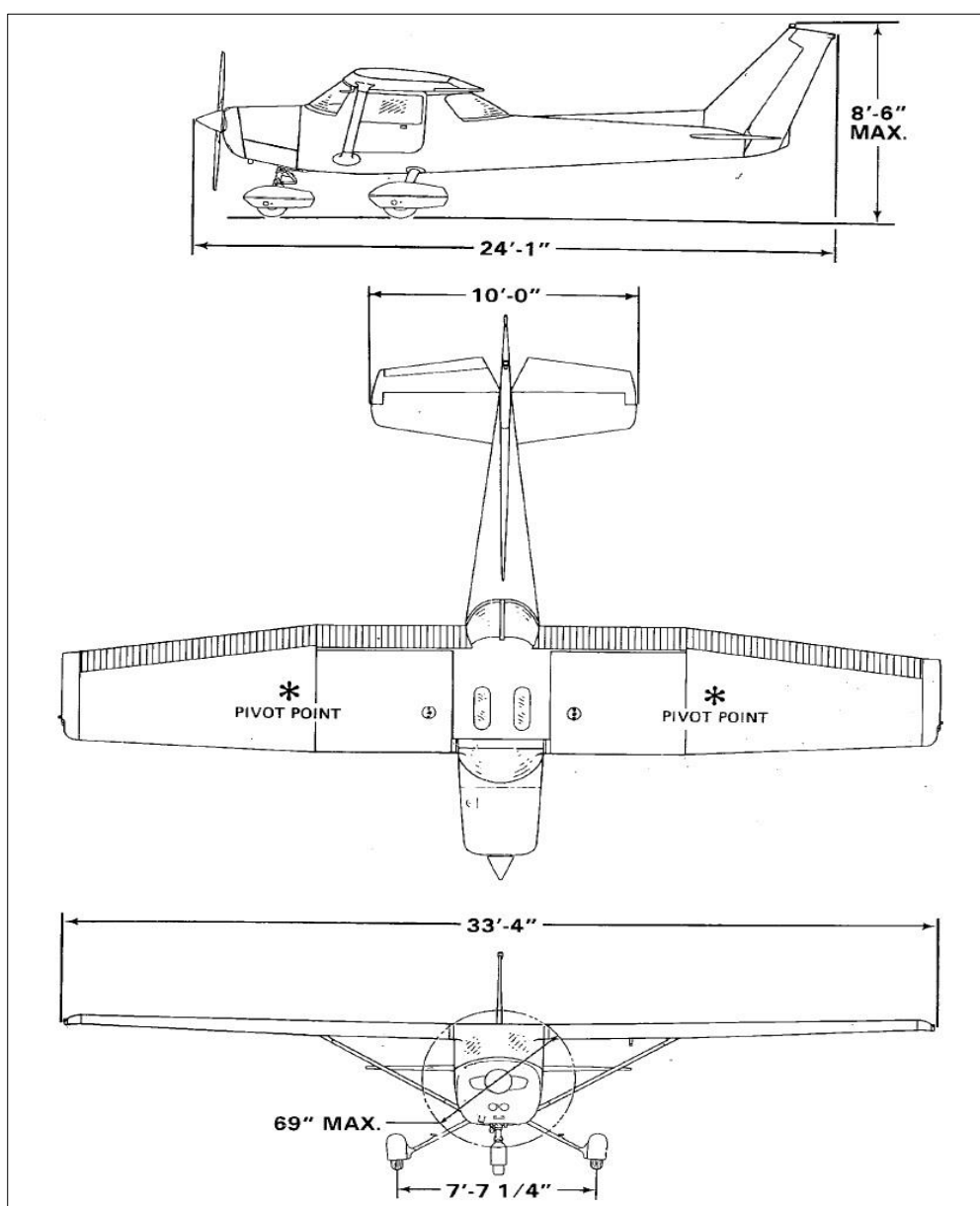


Figure 1: Three view diagram of Cessna 152 showing dimensions

According to Pilot Operating Handbook (POH) of Cessna 152 aircraft the maximum demonstrated cross wind component is 12 Knots and it is also mentioned that 12 knots is not a limitation.

### 1.6.2 Aircraft VT-PTC Maintenance Information

Aircraft Model	Cessna 152
Aircraft S. No.	15285767
Year of Manufacturer	1983
Name of Owner	Falcon Aviation Academy
C of R	No. 4213, Valid
C of A	No. 6322,
Category	Normal
C of A Validity	Valid - subject to valid ARC
ARC issued on	18.08.2021
ARC valid up to	12.08.2022
Aircraft Empty Weight	538.64 Kgs
Maximum Takeoff weight	757.49 Kgs
Date of Aircraft weighing	05.03.2013
Max Usable Fuel	61.20 Kgs
Max Payload with full fuel	72.65 Kgs
Empty Weight C.G	79.43 cm aft of datum
Next Weighing due	N/R
Total Aircraft Hours	9109:51 Hrs
Last major inspection	Operation 4 - 200 hrs/ 12 months inspection (on 12.03.2022)
List of Repairs carried out after last major inspection till date of accident	NIL
Engine Type	Lycoming O-235-N2C
Date of Manufacture (Nose)	05.07.2020 (date of overhaul)
Engine Sl. No. (Nose)	RL-21237-15
Last major inspection (Nose)	Operation 4-200 hrs / 12 months inspection (on 12.03.2022)
List of Repairs carried out after last major inspection till date of accident	NIL
Total Engine Hours/Cycles (Nose)	1324:05 Hrs
Aero mobile License details	A-114/003-RLO(NR) valid till 31.05.2022
AD, SB, Modification complied	COMPLIED

### 1.7 Meteorological Information

There is no MET office located at Sultanpur airfield. However, before operating the flight from Rewa during briefing the weather was reported to be fine with visibility above minima, no significant cloud and no *enroute* approaching weather.

As a routine the organisation obtains weather from IMD website for local and *enroute* weathers for cross country flights. As per procedure they obtained weather for VILK (Lucknow), VERB (Fursatganj, Raebareli) and VEAB (Prayagraj) for the 300Nm authorized route for cross country flight. The weather obtained for VILK (Lucknow) was as follows:

Time (UTC)	Winds (°/Knots)	Weather	Clouds	QNH (HPa)	Temp/DP (°C)
0700	300/08	Haze (HZ)	NSC	1005	32/25
0730	250/05	Haze (HZ)	NSC	1005	32/25
0800	260/07	Haze (HZ)	NSC	1004	33/24

At the time of landing at Sultanpur, the instructor observed the wind sock installed in the airfield and relayed the wind information to the aircraft as “Wind 05 knots variable”.

### 1.8 Aids to Navigation

The aircraft was fitted with ILS, DME, VOR DME, RNAV transponder and GPS. There was no defect reported and all navigational equipment were in serviceable condition.

### 1.9 Communications

The aircraft was in two-way communication with various ATCs *en route* the flight. As there is no ATC in Sultanpur, the trainee pilot switched to company common frequency and was being instructed by the instructor on ground at Sultanpur. There was no abnormality reported to any communication device.

### 1.10 Aerodrome Information

Sultanpur aerodrome is also known as Amhat airstrip situated in Sultanpur district of Uttar Pradesh. The airfield is uncontrolled airfield. The airfield is used mostly for flying training exercise only. The runway description is as below:

Orientation: 11/29

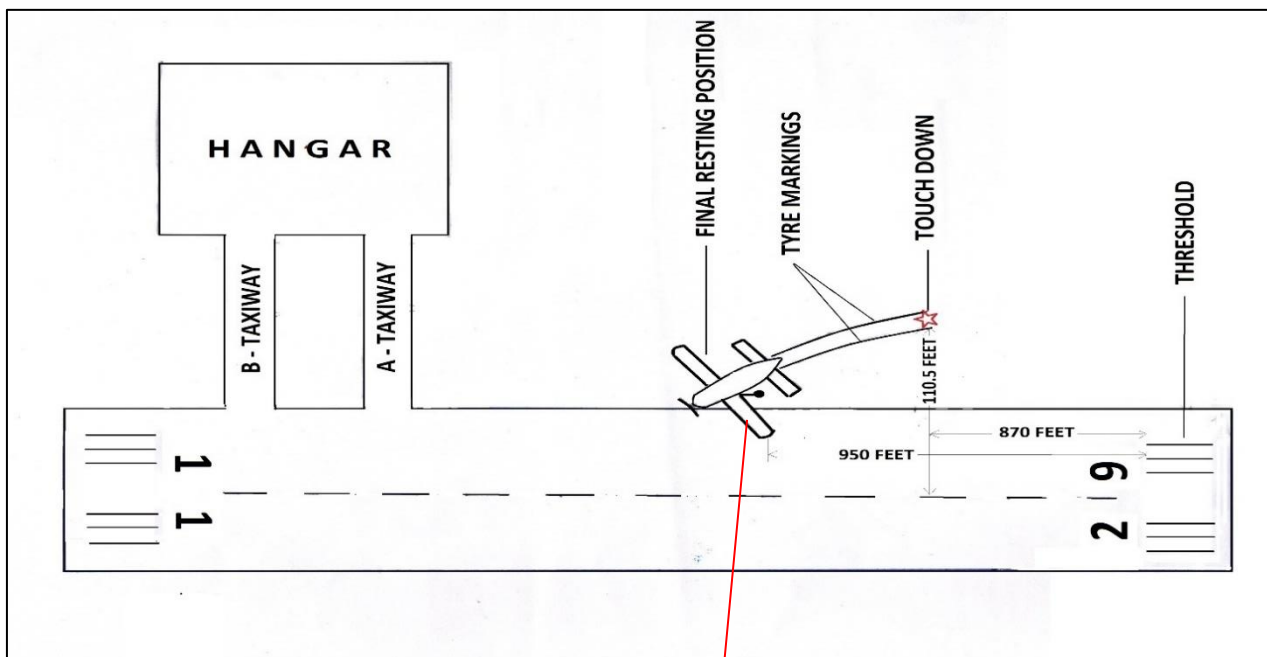
Elevation: 97 meters

### 1.11 Flight Recorders

Cockpit Voice Recorder (CVR) and Digital Flight Data Recorder (DFDR) were neither fitted nor required on this aircraft as per existing Civil Aviation Requirements.

### 1.12 Wreckage and Impact Information

During landing the aircraft touched down on the right side of the runway on soft ground (Unpaved surface). The touchdown point was 110 feet right of runway centerline and approx. 870 feet from threshold of runway 29. The aircraft rolled for another 80 feet on soft ground before coming to the final rest position on the edge of the runway. During onsite investigation following was observed:



**Figure 2: Probable path followed by the aircraft after touchdown**

- In its final resting position, the aircraft was lying on left bank attitude with left wing tip touching runway (Refer Fig.3 below).
- There was white mark on the runway indicating rubbing of left wingtip on runway.
- With the fact that aircraft touched down off the runway at about 110 feet from runway centerline and came to final rest at the edge of the runway indicates that the trainee pilot tried to bring the aircraft back on runway. Further, this was evident from the tyre marks observed on the soft ground.
- During this process the left wheel got stuck at the runway edge and the left strut was broken.



**Figure 3: Final resting place of the aircraft**

- The aircraft was confined to its final resting position and there was no disintegration of any part of the aircraft in air.

The damages sustained by the aircraft during the accident is enclosed in Appendix 'A' of this report.

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

The trainee pilot undergone pre-flight Breath Analyzer (BA) test before operating the flight at Rewa and signed the undertaking. The test result was negative i.e., the trainee pilot was not under the influence of alcohol.

### **1.14 Fire**

There was no fire.

### **1.15 Survival Aspects**

After the accident the trainee pilot came out of the aircraft by herself. The accident was survivable.

### **1.16 Tests and Research**

Nil

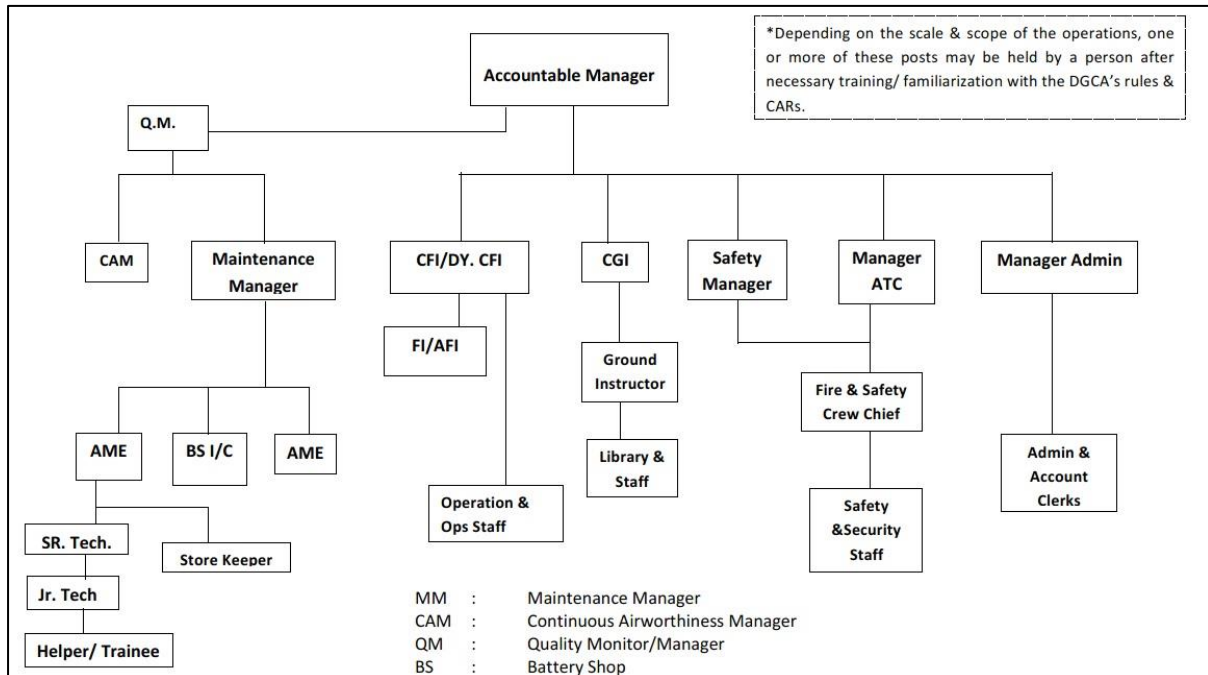
### **1.17 Organizational and management information**

#### **1.17.1 Falcon Aviation Academy (FAA)**

Falcon Aviation Academy (FAA), was established in 2006 to provide integrated Flying and Ground Training to students. Falcon Aviation Academy (FAA) had been granted initial approval to operate as a Flying Training Organization by DGCA vide approval no. AV.22011/8/2005-FG dated 20.12.2013 for Conducting Pilot Training Course as per CAR Section -7, Series 'D' Part-I under the provisions of Rule 133 A of the Aircraft Rules 1937 and the Aircraft Act 1934. The organization provides flying training on both single engine and twin-engine aircraft. FAA has Cessna 152 single engine aircraft and Piper Seneca PA-34 multi-engine aircraft. In addition, FAA provides Ground Training to the students to clear the DGCA written examinations for various Pilots' Licenses and RTR (A) examination in co-ordination (MOU) with another FTO/ External Organisation. FAA has an approved Part 145 Maintenance Organization status from DGCA for maintenance of all types of aircraft on the inventory of the Academy vide DGCA approval no. FAA/F-App/813 dated 09.08.2012.

As per the Certificate of Approval of FTO, the organization has approval for conducting flying training courses for Student Pilot's License (Aeroplane) SPL (A), Private Pilot's License (Aeroplane) PPL (A), Commercial Pilot's License (Aeroplane) CPL (A), Instrument Rating (IR), Multi Engine Rating (ME Rating), Assistant Flight Instructor's (Aeroplane) AFIR (A) and Flight Instructor's Rating (Aeroplane) FIR (A). The training is *ab-initio* provided at Faizabad Airfield, Ayodhya (U.P.) as per the Agreement between Falcon Aviation Academy and the Government of Uttar Pradesh, whereby the airfield has been leased to FAA. Satellite bases for *ab-initio* training is being operated from Rewa airstrip, Rewa (MP).

The Organisation Chart as per the Manual of the FTO is as shown below:



**Figure 4: Organisation Chart of M/s Falcon Aviation Academy**

For conducting flying training operations, the organisation has primarily fleet of Cessna 152 aircraft.

### 1.17.2 Training and Procedures Manual (TPM) of FAA.

The FTO has formulated a TPM which was approved by DGCA.

#### 1.17.2.1 Duties & responsibilities of CFI & Other Flight Instructors

The Roles & responsibilities of various post holders/personnel of the organisation as per Para 2.3 of the TPM are given below:

- The CFI will be the overall in charge of operational department and will be responsible for all flying/operational activities. He will report to the AM.
- The CFI is responsible for imparting quality and standardized flying training in accordance with the DGCA prescribed syllabus and ensure the training standards meets the requirements of the industry.
- The CFI shall ensure that the Flying Training Manual is prepared in accordance with the regulatory requirements and covers all the aspects of flying training.
- CFI is responsible for:
  - i) Operational Control, conformance to Policies and Standards.
  - ii) Training of FI, AFI and students.
  - iii) Maintenance of operational records/documents.
  - iv) Amendment of TPM and issue of circulars or standing orders when necessary.

- v) Assimilation, evaluation and follow up action on operational reports.
- vi) Ensure all safety requirements are observed.
- vii) Ensure that crew is trained and qualified according to DGCA licensing requirements.
- Functions of the CFI:
  - i) To carry out pattern training for the issue of AFIR (A)/FIR (A).
  - ii) To conduct student pilot's licence examination and Flight Radio Telephone Operators (Restricted) Examination as per DGCA guidelines.
  - iii) To issue SPL (A) as per DGCA guidelines.
  - iv) To impart flying training to trainee pilots for the issue of Civil Flying Licences and carry out their periodical progress checks.
  - v) To authorize and supervise flights of the aircraft operated by the FTO for which it is approved.
  - vi) To act as overall in-charge of the flying training activities of Falcon Aviation Academy.
  - vii) To authenticate the entries in the pilot's log book.
  - viii) To conduct standardization/periodic checks of the AFIs/FIs.
  - ix) To ensure overall discipline and orderly conduct of the student pilots in the academy.
  - x) All other functions and requirements as per CARs.

The duties and responsibilities of Flight Instructors are given below:

- The Flight Instructors (FI) may authorize flights as permitted by Aircraft Rules and DGCA's instructions issued under Rule 133A as CARs or Circulars.
- The Flight Instructors (FI/AFI) are responsible to impart quality flying training, as per company policy and industry standards and in accordance to the syllabi prescribed by DGCA.
- The Flight Instructors (FI/AFI) shall report to the CFI or the Dy. CFI.
- Flight Instructors shall assist the CFI/Dy. CFI in all matters pertaining to training, safety, operations etc.
- The FI/AFI shall monitor the training progress of pupil pilots.
- The FI/AFI shall brief and debrief pupil pilots in accordance to the flying exercises, flight profile for the day, general airmanship, errors in the flight etc.
- Upon appointment in the organization a FI/AFI shall have a check flight with the CFI (or Dy. CFI in case CFI is not present). On satisfactorily passing the check flight, she/he may be cleared to impart instruction to the pupils.



### **1.18 Additional Information**

Nil

### **1.19 Useful or effective Investigation Techniques**

Nil

## **2. ANALYSIS**

### **2.1 Serviceability of Aircraft**

The aircraft was manufactured in the year 1983. It was having a valid Certificate of Registration (C of R) at the time of accident and holding a valid Indian Certificate of Airworthiness (C of A) under Normal category and Passenger Sub-Division. Airworthiness Review Certificate (ARC) was valid at the time of accident. Scrutiny of technical logbook revealed that there was no snag pending or reported before the accident flight.

All concerned Airworthiness Directives, mandatory Service Bulletins, DGCA Mandatory Modifications on this aircraft and its engine were complied with as on the date of accident. The CG of the aircraft was within limits.

### **2.2 Weather**

There is no MET office in Sultanpur airfield. As per procedure the organisation obtains weather information from IMD website for stations en-route and nearby stations of destination where MET is situated for getting general idea of weather around that area. On the day of accident, the weather around Sultanpur was fine with visibility well above the required minima for conducting training flight.

The flight instructor who arrived at Sultanpur before the accident aircraft reported winds as 5 knots/variable on RT as observed from the wind sock installed in the airfield.

The aircraft probably encountered sudden gust of wind during landing which resulted in aircraft deviating sideways from the flight path. However, the overall weather was fine with all other aircraft (total 04) landed safely before the accident flight and did not report any abnormality.

### **2.3 Pilot Handling and Supervision of Flight**

#### **2.3.1 Trainee Pilot**

The trainee pilot was qualified to operate the flight. All the requirements including medical, licenses were current as on date of accident for conduct of this training flight. The trainee pilot had about 130 hrs of total flying experience and carried out all the flying training exercise on Cessna 152 aircraft.

During the accident flight, when the aircraft was on final leg for landing, the trainee pilot configured the aircraft and aligned to the runway for landing. The instructor on ground who was supervising the landing of trainee aircraft communicated winds as 05 knots variable.

When the aircraft was over threshold of runway, the trainee pilot cut the engine power and thereafter flared the aircraft. The aircraft was floating at a height of about 30 feet AGL when it probably encountered sudden gust of wind sideways. The aircraft started deviating to the right of runway. The trainee pilot due to loss of situation awareness and inexperience of handling the situation continued the landing instead of initiating a “go around” as per procedure. As the height of the aircraft was also low, trainee pilot could not correct the deviation and landed on the unpaved surface on right side of the runway. After touch down on the unpaved surface, the trainee pilot tried to bring the aircraft back on runway by applying opposite rudder, however, the left wheel of the LH landing gear got stuck to the edge of runway thereby aircraft stopping at the edge itself.

### **2.3.2 Flying Instructor (on ground)**

In order to assist and supervise 03 solo cross country flight for 300 Nm, 02 dual sorties for 250 Nm sortie along with instructors were also planned for 16 March 2022. As planned, both the instructors reached Sultanpur ahead of 03 trainee pilots (including the involved trainee pilot) who were on 300 Nm solo cross country training exercise. The aircraft VT-PTC flown by trainee pilot was last in sequence for landing at Sultanpur. The instructor on ground relayed the wind information on RT after observing the wind sock installed at the airfield as 05 knots variable. Other than the wind information and landing clearance there was no instruction given by the instructor on ground. 02 aircraft ahead of VT-PTC landed safely. When the aircraft VT-PTC encountered sudden gust of wind overhead runway, no instruction was given by the instructor on ground to the trainee pilot for “go around” or to correct the deviation which implies that there was lack of supervision on the part of instructor. The very purpose of sending an instructor ahead for cross-country flight to supervise and assist the trainee pilots when they encounter with such situation was not fulfilled during the accident flight. Timely instruction if given by the instructor to the trainee pilot could have averted the situation and subsequently the accident.

### **2.4 Circumstances leading to the accident**

The *enroute* flight was uneventful and the trainee pilot did not observe any abnormality in the aircraft during this flight. When the aircraft reached 15 Nm inbound Ayodhya the trainee pilot switched to company common frequency to co-ordinate with other trainee aircraft and instructors in the route. After reporting the position while overhead Ayodhya, the trainee pilot set course to Sultanpur. The weather in and around Sultanpur was fine and the trainee pilot could see the runway while the aircraft was 5-4 Nm inbound Sultanpur. The aircraft was maintaining an altitude of 4500 feet. The instructor who had already reached Sultanpur was instructing these aircraft for landing at Sultanpur. The instructor also passed on the wind information as “5 Knots/Variable” to these aircraft after observing the wind sock installed in the airfield. The trainee pilot was instructed to descend to 1500 feet and join left hand circuit pattern for landing on runway 29. The trainee pilot then reported position on finals and was cleared to land by the instructor. After reaching threshold of runway 29, the trainee pilot

flared the aircraft. The aircraft was floating at a height of about 30 feet AGL when it probably encountered sudden gust of wind sideways. The aircraft started deviating to the right of runway. The trainee pilot due to loss of situation awareness and inexperience of handling the situation continued the landing instead of initiating a “go around” as per procedure. Also, there was lack of supervision on the part of Instructor on ground who was observing the aircraft but did not give any instruction to the trainee pilot to “go around” or to correct the deviation. As the height of the aircraft was low, trainee pilot could not correct the deviation and landed on the unpaved surface on right side of the runway. The aircraft touched down on soft ground at a distance of about 870 feet from threshold of runway 29 and about 110 feet right of runway centerline.

### **3. CONCLUSION**

#### **3.1 Findings**

- 3.1.1 The aircraft was having valid C of R, C of A & ARC on the day of accident.
- 3.1.2 The aircraft and its engine were being maintained as per continuous maintenance programme approved by DGCA.
- 3.1.3 No inspection/Maintenance action was due on the aircraft & its engine as on date of accident.
- 3.1.4 All concerned Airworthiness Directives, mandatory Service Bulletins, DGCA Mandatory Modifications on this aircraft and its engine had been complied with as on date of event.
- 3.1.5 Scrutiny of the Flight Release Book (FRB) revealed that, there was no snag pending on the aircraft prior to the accident flight.
- 3.1.6 The trainee pilot was having a valid student pilot license and was certified & qualified for the flight.
- 3.1.7 No abnormality was reported or observed during the pre-flight inspection of the aircraft other than two loose nuts on the wing tip which was immediately rectified by the technician.
- 3.1.8 The weather *enroute*, in and around Sultanpur was fine with visibility well above minima required for conduct of training flight which was evident from the fact that the trainee pilot could see the runway while 5-4 Nm inbound Sultanpur.
- 3.1.9 The instructor on ground at Sultanpur who was supervising and instructing the trainee aircraft relayed on RT the wind information as 05 knots/variable as observed from the wind sock installed in the airfield.
- 3.1.10 04 aircraft landed safely before VT-PTC which was scheduled to arrive last in the sequence.

3.1.11 After the aircraft was flared, it was floating at a height of about 30 feet AGL when it probably encountered sudden gust of wind sideways and started deviating to the right of runway.

3.1.12 Due to loss of situational awareness, the trainee pilot continued the landing instead of initiating a “go around” as per procedure. Also, as the height of the aircraft was low, trainee pilot could not correct the deviation and landed the aircraft on the unpaved surface on right side of the runway.

3.1.13 Lack of supervision on the part of Instructor on ground who did not gave any instruction to the trainee pilot to “go around” or to correct the deviation which could have averted the situation and subsequently the accident.

### **3.2 Probable causes of the accident**

The accident occurred due to sudden gust encountered by the aircraft when it was floating above runway thereby deviating from the flight path and landed off the runway on the soft ground. This happened as the trainee pilot due to loss of situational awareness could not carry out “Go Around” and lack of supervision on the part of Instructor on ground.

## **4. SAFETY RECOMMENDATIONS**

4.1 It is recommended that DGCA may advise all flying training organizations to develop a full proof system of 100% supervision of the training sorties by the instructors as per the laid down procedures. The compliance of the same may be ensured during audits/surveillance of FTOs.

*K. Ramachandran*

**(K Ramachandran)**  
**Investigator -In- charge**

**Date: 31 March 2023**

**Place: New Delhi**

**DAMAGE ASSESSMENT REPORT**

Aircraft Type	Cessna 152	Aircraft Reg.	VT-PTC
Aircraft S. No.	15285767	Engine Type	LYCO-O-235-N2C
Aircraft TSN	9109:51 Hrs	Engine S. No.	RL-21237-15
Propeller Type	Sensenich	Propeller S. No.	K7989
Date of Accident	16.03.2022	Location of Accident	Sultanpur

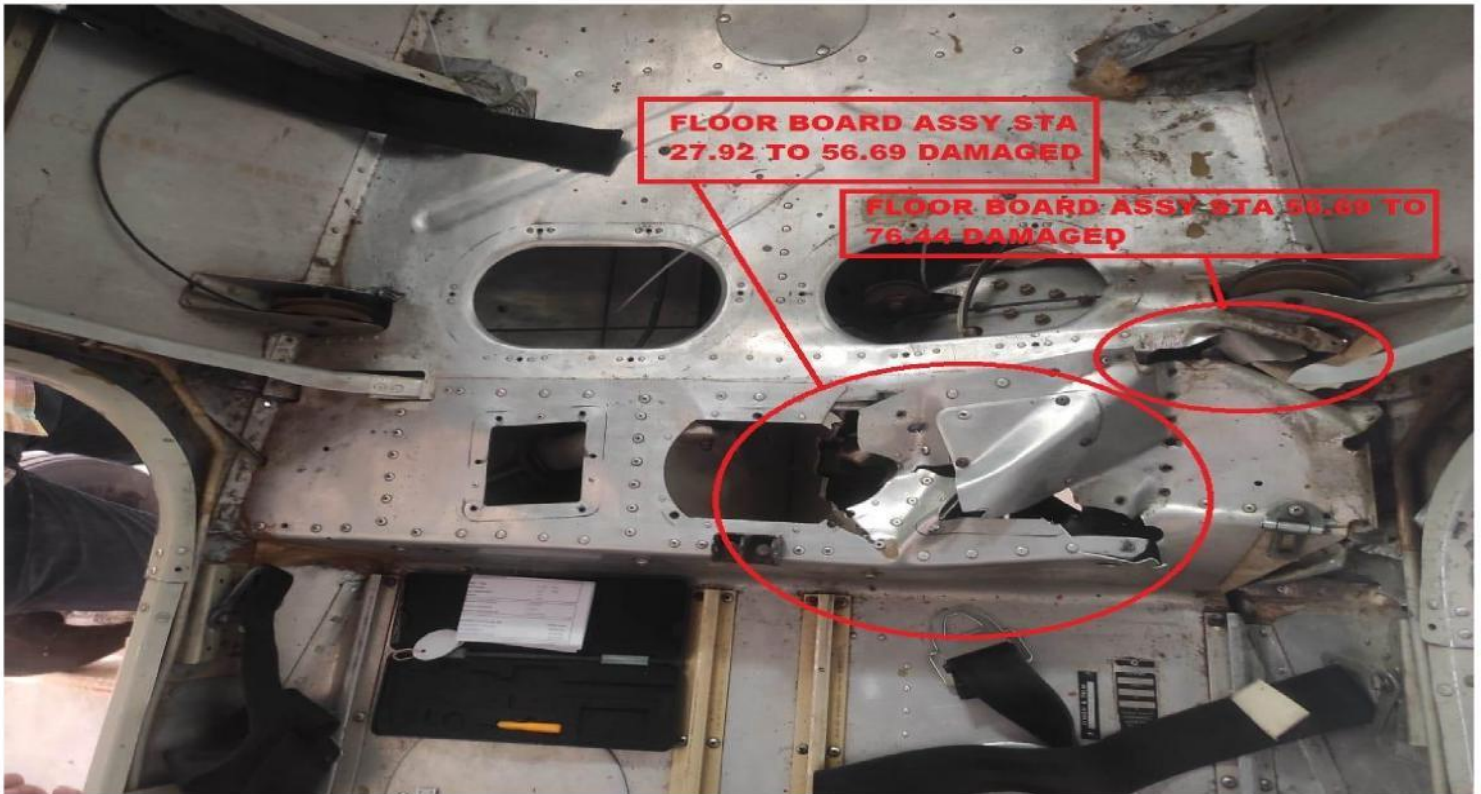
**1 – Cessna 152 VT-PTC aircraft on accident Site.**



**Damage Lefthand Side Landing  
Gear & Lower Fueslage Station  
No 36.0 ,49.69 & 96.69.**



2- Floor board assy (0410238-1) STA 27.92 to 56.69 & Floor board Assy (0412030-5) STA 56.69 to 76.44 along with Angle (0412060-1), Angle (0412171-1) found damaged.



3- Bulkhead Assembly –Main Landing Gear (0412074-3) found damage with LH Bracket (0441204-7).





- 4- Bulkhead (0412049-1), Bracket Aileron Control Lower & Upper (0412050-3 & 0412050-2) damaged.
- 5- Skin Fuselage (0411126-5) STA 27.92 to 56.69 damaged.
- 6- Fairing Assembly (0441217-215) damaged.



- 7- Step Cabin Entrance (0541211-1) of Left-hand side found damage.

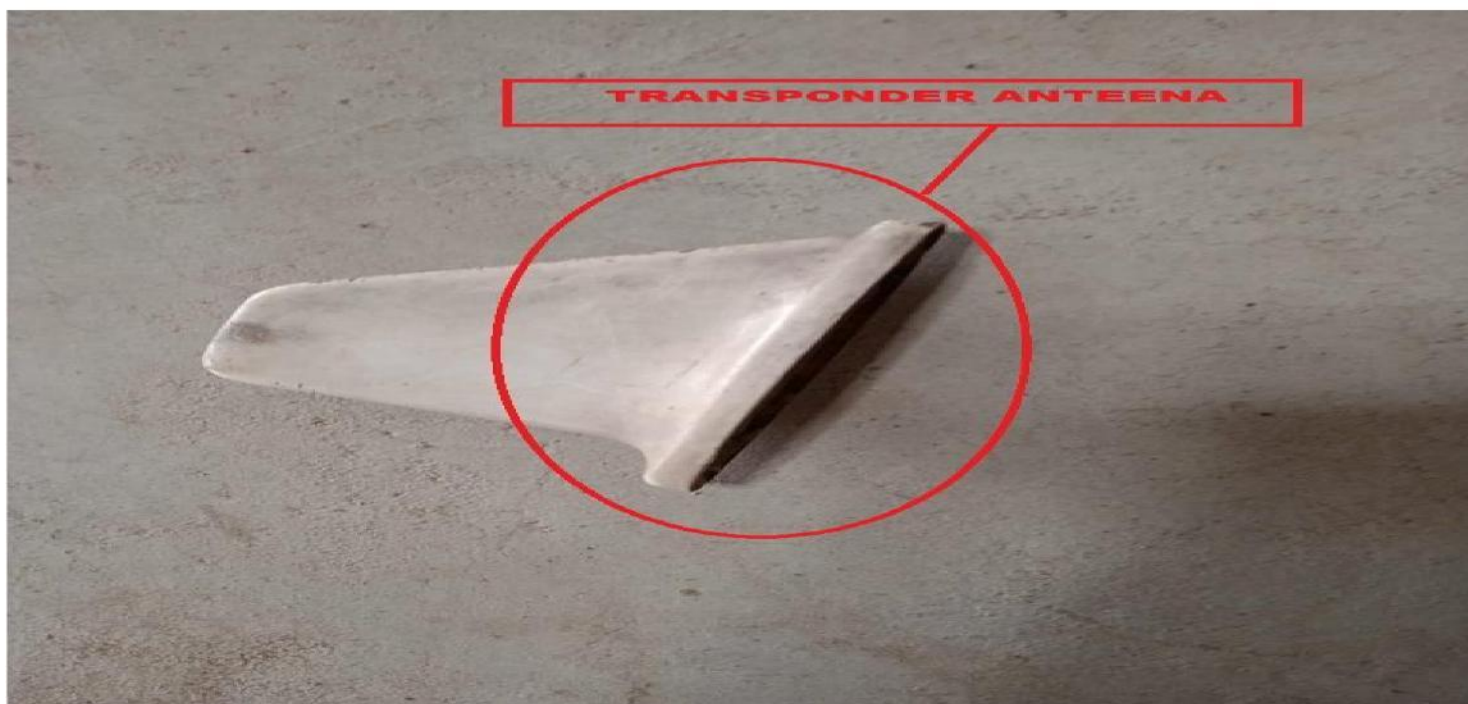




8- Line Assy Brake Left hand side (0400311-109) & Fairing Assy (0441218-1) found damaged.

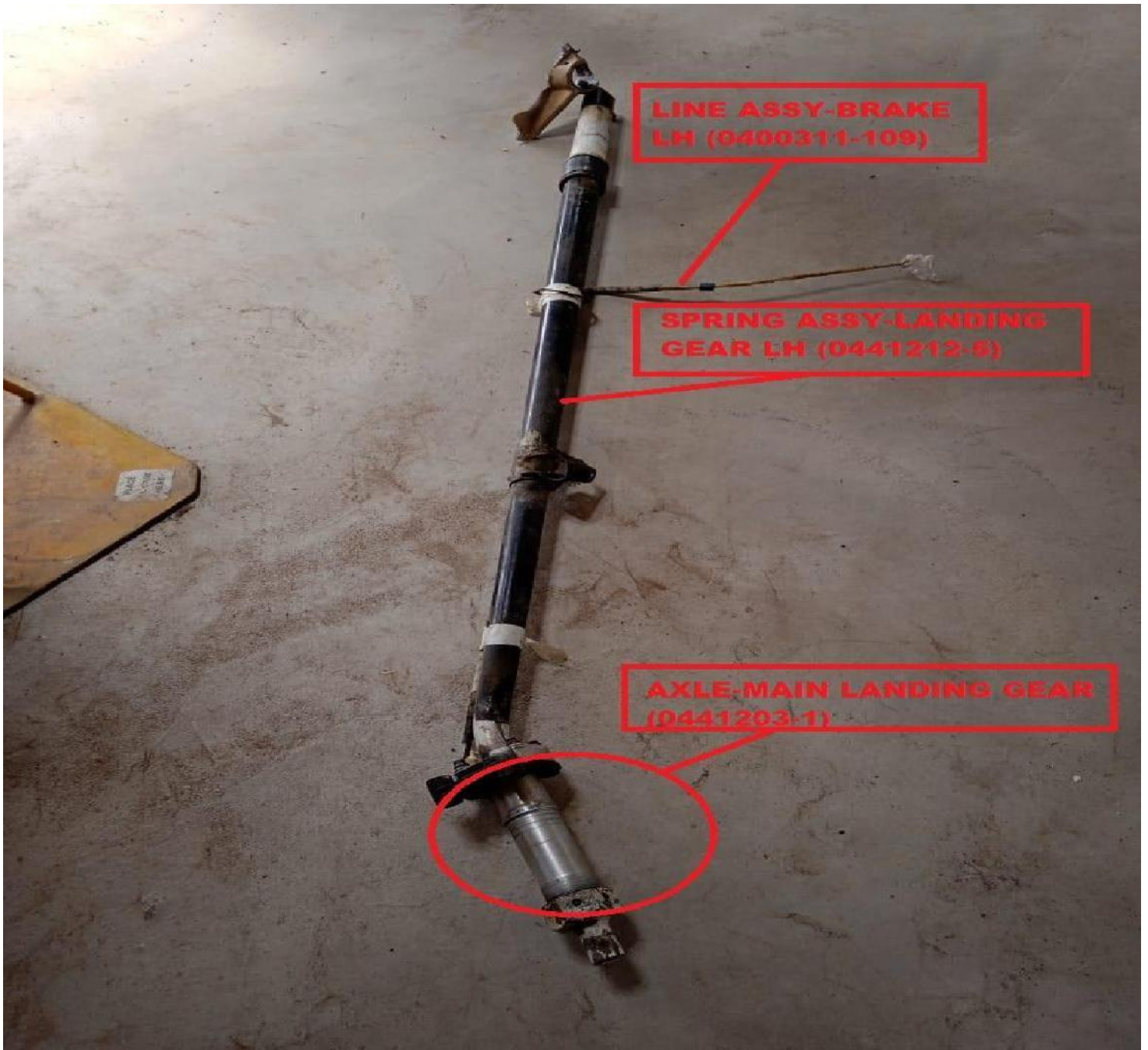


9 - Transponder Antenna found damaged.





10- Spring Assy-Landing Gear LH (0441212-5), Axle-Main Landing Gear (0441203-1), Line Assy-Brake LH (0400311-109) was damaged.



11- Cable Assy Elevator Control FWD, AFT, DOWN AFT (0400107-166, 0444107-163 & 0444107-164) found kinked & damaged.

12- Cable Assy Rudder Control LH & RH (0400107-149, 0400107-150) found kinked & damaged.

13- Some Pulley, Guard found damaged.



14- Tip Assy Wing LH (0523565-29) trailing edge corner found scratched.



**Additionally, the following Parts found damaged:-**

**15- Skin Lower Rear Spar Bulkhead to STA 95.00(0412020-7).**

**16- Stiffner Belly Skin Outboard RH & LH (0411953-3, 0411953-6).**

**17- Clip Tail cone Skin Stiffner & Stiffner Tail Cone Skin (0412054-1, 0412055-1).**