

Air Safety Investigations Aircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 1964	Make: Cessna	Model: 210D
	Serial number: 21058495		Registration: N3995Y
Location: Apalachicola, FL		Date: 11-30-18	Time: 1805 EST
Aircraft Owner		Aircraft Operator	
Lewis C. Midlam [REDACTED] Fort Myers, FL 33907		Same as Aircraft Owner	
Report Information			
Senior Air Safety Investigator: Andrew L. Hall		Report #: ASI-18-DT-T	Report date: 06-06-19

Airframe

Impact Sequence and Airframe Structure

The engine was observed separated from the fuselage and the propeller was observed separated from the engine. The right wing was observed with tree impact and ground impact damage to the leading edge. The right wing was observed in two main sections. One right wing section was the root/fuel tank outboard to approximately the lift strut attachment, and the second section was from the lift strut attachment outboard to the tip. The left wing was observed in two sections. The first from the wing root to wing station 136.00, and the other from station 136.00 outboard to the tip. Both outboard wings exhibited significant impact damage to the leading edges. The empennage was observed separated at fuselage station 166.40; however, it remained attached to the main fuselage by the control cables. The cabin overhead was observed separated from the main fuselage section and exhibited fire damage. The main fuselage consisted of the cabin floor structure and instrument panel.

Airframe Systems

Flight Control System Information		
Control lock: Undetermined		
Flight Control Cable Continuity		
Ailerons: Established	Elevators: Established	Rudder: Established
Aileron tab: Not applicable	Elevator tab: Established	Rudder tab: Not applicable
Flap and Trim Positions		
Flap indicator: Unknown due to damage	Flap handle: Unknown due to damage	Flap actuator: Up
Elevator trim: Indicator: Unknown due to damage	Actuator: See below	
Rudder trim: Indicator: Unknown due to damage	Actuator: N/A	

Remarks:

The elevator trim tab actuator was measured at 1.20 inches extension which is beyond the travel limits of 10° in the tab down position. The rudder and elevator control cables were observed cut by the recovery personnel. All cables were observed attached at both the input and output locations. The aileron cables were observed separated in tension overload type separations.

Airframe Fuel System Condition, Controls, and Read Outs			
Fuel strainer screen: Undetermined		Fuel strainer bowl: Undetermined	
Main fuel tank gauge:	Left: See below		Right: See below
Fuel selector handle: Right	Fuel selector valve: Right		Fuel boost pump: High

Remarks:

Both the left and right fuel tanks were observed with both impact and fire damage.

Landing Gear System Condition and Controls					
Gear position:	Nose: Extended		Left: Extended		Right: Extended
Actuator position:	Nose: Extended		Left: Extended		Right: Extended
Landing gear selector: Extended			Emer gear handle: Stowed		
Environmental System Controls and Read Outs					
Cabin heater: Off		Cabin vent: Closed		Defrost: Undt	
Air conditioner: N/A		Oxygen system: Not applicable		Oxygen quantity: Not applicable	
Icing System Information and Switches					
Certified into known icing? No			De-icing boots installed? No		
Pitot heat: Off			Stall heat: On		
De-ice:	Surface: Not applicable		Propeller: Undetermined		Windshield: Undetermined
Anti-ice:	Surface: Not applicable		Propeller: Undetermined		Windshield: Undetermined
ELT Information					
Installed? Undt	Manufacturer: Undetermined		Model: Undetermined		Type: Undetermined
Serial number: Undt		Battery due date: Undetermined		Armed: Undetermined	Activated: Undetermined

Remarks:

The left main gear was observed in the down and locked position; the right main gear was observed separated from the fuselage. The nose gear was observed separated from the fuselage, however the nose landing gear actuator was observed in the down position. The ELT was not observed at the site or at the review.

Cabin and Equipment/Furnishings

Restraint System Information						
Seat	Occupied	Restraint type	Restraint used	Condition	Manufacturer	2nd seat stop
1	Yes	3-Point	Undt	Worn	Non-OEM	No
2	No	3-Point	No	Worn	Non-OEM	No
3	No	Undetermined	No	Undt	Undetermined	Not applicable
4	No	Undetermined	No	Undt	Undetermined	Not applicable
5	No	Undetermined	No	Undt	Undetermined	Not applicable
6	No	Undetermined	No	Undt	Undetermined	Not applicable

Seat Condition Information					
Seat	Orientation	Feet intact	Back intact	Base intact	Rail intact
1	Forward facing	See below	See below	See below	See below
2	Forward facing	See below	See below	See below	See below
3	Forward facing	See below	See below	See below	See below
4	Forward facing	See below	See below	See below	See below
5	Forward facing	See below	See below	See below	See below
6	Forward facing	See below	See below	See below	See below

Remarks:

Parts of three seats were observed in the wreckage. One seat remained intact and was determined to have been the co-pilot's seat. The pilot's seat exhibited impact and fire damage with the front two legs and attachment feet separated and not observed. The rear inboard attachment feet were observed separated at the top of the foot attachment. The outboard seat feet remained with the seat base and were observed with distortion.

Instrument Panel

Navigation Instruments							
Digital primary instruments				Autopilot type: See below			
Suction gage: Unknown		Magnetic compass: Unknown		Clock: Undt			
	PFD 1	MFD		PFD 1	MFD		
Airspeed:	Unknown	Unknown	Turn coordinator (airplane):	Unknown	Unknown		
Attitude (pitch):	Unknown	Unknown	Turn coordinator (ball):	Unknown	Unknown		
Attitude (roll):	Unknown	Unknown	Heading indicator:	Unknown	Unknown		
Altimeter:	Unknown	Unknown	Heading "bug":	Unknown	Unknown		
Altimeter setting:	Unknown	Unknown	Vertical speed indicator:	Unknown	Unknown		
Stand-by:	Airspeed: 0		Attitude (pitch): Unknown		Attitude (roll): Unknown		
	Altimeter: 140		Altimeter Setting: 30.14"				
Communication and Navigation Radios							
Radio	Control	Active frequency	Stand-by frequency	Radio	Control	Active frequency	Stand-by frequency
Com 1:	Undt			Com 2:	Undt		
Nav 1:	Undt			Nav 2:	Undt		
Obs 1:	Undt			Obs 2:	Undt		
Transponder:	Mode: Undt		Active code: Undt		Stand-by code: Undt		
Electrical Switch Positions							
Master battery: On		Master alternator: On		Avionics 1: On			
Stand-by battery: Not applicable		Alternator 2: Not applicable					
Lighting Switch Positions							
Navigation: Off		Rotating Beacon: Off		Landing: Off			
Taxi: Off		Strobe: Off		Instrument: Undetermined			
Wing Ice: Not applicable							
Ignition Switch Position							
Key: Undetermined							

Remarks:

The autopilot was a Century II. All circuit breakers were observed in the connected (IN) position.

The vacuum pump after removal from the engine was free to rotate and the drive was in tack.

Powerplant Description

Engine Instruments						
Hour meter: N/A		Tach RPM: 0		Tach hours: 3,185.81		
Oil press: In green		Oil temp: Off scale low		EGT: Digital		
Fuel press: N/A		Fuel flow: 11 GPH		Ammeter: Charge		
				Manifold press: Undt		
				CHT: N/A		
				Voltmeter:		
Engine Control Positions						
	Cockpit	Engine		Cockpit	Engine	
Throttle:	Fwd	Undt	Cowl flaps:	Undt	Undt	
Mixture:	Fwd	Undt	Alternate air:	Undt	Undt	
Propeller:	Fwd	Undt	Primer:	In		
Engine Condition						
Engine attached to airframe: No			Propeller attached to engine: No			
Engine compression: See below			Valve train continuity: Yes			
Vacuum pump drive shaft: Intact						
Engine Fuel System Condition						
Fuel pump drive shaft: Intact			Fuel control inlet screen: Clean			
Fuel distribution valve screen: Clean			Fuel injectors: Clean			
Magnetos Condition						
Left magneto attached: Yes			Right magneto attached: Yes			
Left magneto spark: See below			Right magneto spark: Undetermined			
Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Normal	Normal	Normal	Normal	Normal	Normal
Bottom	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined

Remarks:

The engine was observed separated from the airframe at the site. After recovery, the engine was shipped to the engine manufacturer for a teardown review. The engine was reviewed on 05-29-19 and 05-30-19 at the manufacture facility in Mobile, AL, by the NTSB led team.

The engine rotated through a complete cycle prior to the disassembly. The top spark plugs exhibited normal wear. The fuel pump drive was observed in tack. All of the fuel injectors nozzles were free of debris and the flow divider screen was observed clean. Both magnetos, after the points were cleaned of corrosion, produced a spark on all leads.

Propeller

The propeller was observed separated from the engine. Propeller blade #1 was observed twisted. Propeller blade #2 was observed displaced at a 45° angle at approximately mid span towards the flat side of the blade and exhibited some leading-edge scratching near the tip.

Research & Testing

None