

Air Safety Investigations Aircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 1980	Make: Cessna	Model: P210N
	Serial number: P21000576		Registration: N732FU
Location: Bryan, TX		Date: 02-16-16	Time: 11:29 CST
Aircraft Owner		Aircraft Operator	
Bia Air, LLC [REDACTED] Graham, TX 76450-1298		James R. Guinn, Jr. [REDACTED] Graham, TX 76450	
Report Information			
Senior Air Safety Investigator: Andrew L. Hall		Report #: ASI-16-AY-T	Report date: 06-03-16

Airframe

Impact Sequence and Airframe Structure

Review of the on-site photographs, provided by recovery personnel, indicated that the right wing was separated from the fuselage at the wing root during the mishap sequence. The right wing was observed separated into two sections. One starting at the fuselage and extending to near Wing Station (WS) 130.00 and the other was from WS 130 outboard. The left wing remained attached to the fuselage, however, it exhibited leading edge damage from multiple tree strikes. The left horizontal stabilizer was observed to have separated near Stabilizer Station (SS) 38. The left elevator was observed separated near SS 27. The right horizontal stabilizer and elevator were observed to have separated near the intersection with the aft fuselage. The cabin area of the fuselage remained intact. There was no fire damage noted to the aircraft.

Airframe Systems

Flight Control System Information		
Control lock: Undetermined		
Flight Control Cable Continuity		
Ailerons: See below	Elevators: See below	Rudder: See below
Aileron tab: Not applicable	Elevator tab: Undetermined	Rudder tab: Not applicable
Flap and Trim Positions		
Flap actuator: 1.5"	Flap indicator: 20°	Flap handle: 20°
Elevator trim:	Actuator: See below	Indicator: Between neutral and full nose up
Rudder trim:	Actuator: See below	Indicator: Neutral

Remarks:

The aircraft had been disassembled prior to the review of this investigator. Several of the flight control cables were observed disassembled, but several were observed separated in tension overload. The elevator trim tab system was observed compromised at the trim tab actuator during the accident sequence.

Airframe Fuel System Condition, Controls, and Read Outs			
Fuel strainer screen: Clean		Fuel strainer bowl: Clean	
Main fuel tank gauge:	Left: Off scale low		Right: Off scale low
Fuel selector handle: Left	Fuel selector valve: Undetermined		Fuel boost pump: Off

Remarks:

None

Landing Gear System Condition and Controls			
Gear position:	Nose: Extended	Left: Extended	Right: Undetermined
Actuator position:	Nose: Extended	Left: Extended	Right: Undetermined
Landing gear selector: Extended		Emer gear handle: Undetermined	
Environmental System Controls and Read Outs			
Cabin heater: Off	Cabin vent: N/A	Defrost: Off	
Air conditioner: N/A	Oxygen system: Undetermined	Oxygen quantity: Underermined	
Pressurization System Controls and Read Outs			
Cabin pressurization: De-pressurize		Cabin VSI: 0	
Differential pressure: 0		Cabin altitude: 500'	
Cabin altitude selector: 5,000'		Cabin dump control: Closed (in)	
Icing System Information and Switches			
Certified into known icing? No		De-icing boots installed? No	
Pitot heat: Off		Stall heat: Not applicable	
De-ice:	Surface: Not applicable	Propeller: Not applicable	Windshield: Not applicable
Anti-ice:	Surface: Not applicable	Propeller: Not applicable	Windshield: Not applicable
ELT Information			
Installed? Yes	Manufacturer: Dorne Margolin	Model: ELT 6.1	Type: AF
Serial number: 44175	Battery due date: May 17	Armed: Yes	Activated: No

Remarks:

None

Cabin and Equipment/Furnishings

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

Seat Condition Information					
Seat	Orientation	Feet intact	Back intact	Base intact	Rail intact
1	Forward facing	Yes	Yes	Yes	Yes
2	Forward facing	Yes	Yes	Yes	Yes
3	Forward facing	Yes	Yes	Yes	Yes
4	Forward facing	Yes	Yes	Yes	Yes
5	Forward facing	Not applicable	Yes	Yes	Not applicable
6	Forward facing	Not applicable	Yes	Yes	Not applicable

Remarks:

During the review of the wreckage, both of the front seats were observed to function properly for forward and aft movement. The seat belt data tags on the pilot's and co-pilot's seatbelts were faded to the point of not being legible. The pilot aft inboard seat attachment foot was observed on top of the seat track.

The main cabin door was operated several times and the locking mechanism functioned properly. It was noted that there was dried blood on the door handle, however, the secondary door lock was observed clean. The flight manual and checklist require that the secondary door lock be unlocked prior to takeoff and then locked prior to pressurizing the aircraft. Prior to landing, the aircraft is to be depressurized and the secondary door lock is to be unlocked.

Instrument Panel

Navigation Instruments							
Analog primary instruments				Autopilot type: S-Tec			
Suction gage: 0		Magnetic compass: Undt			Clock: Undt		
	Left side				Left side		
Airspeed:	0		Turn coordinator (airplane):	Level			
Attitude (pitch):	10° nose up		Turn coordinator (ball):	Centered			
Attitude (roll):	level		Heading indicator:	260			
Altimeter:	480'		Heading "bug":	050			
Altimeter setting:	30.02		Vertical speed indicator:	0			
Communication and Navigation Radios							
Radio	Control	Active frequency	Stand-by frequency	Radio	Control	Active frequency	Stand-by frequency
Com 1:	See below			Com 2:	See below		
Nav 1:	See below			Nav 2:	See below		
Obs 1:	Undt			Obs 2:	Undt		
Transponder:	Mode: See below		Active code: See below		Stand-by code: See below		
Electrical Switch Positions							
Master battery: Off		Master alternator: Off			Avionics 1: On		
Lighting Switch Positions							
Navigation: On		Rotating Beacon: On			Landing: Off		
Taxi: Off		Strobe: Off			Instrument: Undetermined		
Wing Ice:							
Ignition Switch Position							
Key: Off							

Remarks:

The aircraft's radios had been removed prior to the review of this investigator. The aircraft was equipped with the Cessna 7-amp standby generator. The switch for the standby generator was in the "OFF" position.

Powerplant Description

Engine Instruments						
Hour meter: 278.9		Tach RPM: 300		Tach hours: 1,402.3		Manifold press: 29.5
Oil press: off scale low		Oil temp: off scale low		EGT: Digital		CHT: off scale low
Fuel press: N/A		Fuel flow: 0		Ammeter: 0		Voltmeter: N/A
Engine Control Positions						
	Cockpit	Engine			Cockpit	Engine
Throttle:	In	Undt		Cowl flaps:	Open	Undt
Mixture:	In	Undt		Alternate air:	Undt	Undt
Propeller:	In	Undt		Primer:	N/A	
Engine Condition						
Engine attached to airframe: Partially				Propeller attached to engine: Yes		
Engine compression: See below				Valve train continuity: See below		
Vacuum pump drive shaft: Intact						
Engine Fuel System Condition						
Fuel pump drive shaft: Intact				Fuel control inlet screen: Undetermined		
Fuel distribution valve screen: Undetermined				Fuel injectors: Clean		
Magneto Condition						
Left magneto attached: Yes				Right magneto attached: Yes		
Left magneto spark: See below				Right magneto spark: All leads		
Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Normal	Normal	Normal	Normal	Normal	Normal
Bottom	Normal	Normal	Normal	Normal	Oil fouled	Oil fouled

Remarks:

The engine was reviewed at the Continental Motors Inc. facility in Mobile, AL, on 05-03-16 by the NTSB-IIC, the CMG investigator, and this investigator. The engine was removed from the shipping crate and placed in an engine stand. The engine driven fuel pump drive was removed and the CMG investigator attempted to rotate the engine crankshaft by hand and it would not rotate. When the propeller flange of the crankshaft was rotated in reverse the crankshaft rotated slightly. However, the accessory drive would not rotate. A cylinder hold down nut on the #1 cylinder was observed displaced. When the crankcase was separated, the #2 main bearing was observed to have shifted and rubbed on the crankshaft. The crankshaft was observed separated at the #2 main bearing.

The magnetos, fuel pump, fuel distributor, fuel-metering valve, and cylinders were the same serialized components as were installed on the engine when it was manufactured at CMI in 2005.

The left magneto vent hole was observed plugged. Deposits of corrosion were observed inside of the left magneto. The right magneto vent hole was open and the internal components were clean.

Propeller

None of the propeller blades exhibited signs of chordwise scratching or rotation.

Research & Testing

None