

**Beechcraft**

BY TEXTRON AVIATION

Air Safety Investigations Aircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 1973	Make: Cessna	Model: 421B
	Serial number: 421B0353		Registration: N421DP
Location: Old Bethpage, NY		Date: 01-10-21	Time: 1304 EST
Aircraft Owner		Aircraft Operator	
850 Atlantic Collision Inc [REDACTED] Brooklyn, NY 11207-4503		Marc D. Capus [REDACTED] Bellmore, NY 11710	
Report Information			
Chief Air Safety Investigator: Andrew L. Hall		Report #: ASI-21-AI-T	Report date: 05-07-21

Airframe

Impact Sequence and Airframe Structure

All major components of the aircraft were accounted for during the review.

Both horizontal stabilizer and elevators were observed cut by the recovery personnel at the aft fuselage. Both outboard wing sections were observed with impact damage and separated from the inboard wing at the engine nacelle. The fuselage, from the nose to the vertical stabilizer, was observed in one section. Both left and right stub wings were observed cut from the fuselage.

Airframe Systems

Flight Control System Information		
Control lock: Undetermined		
Flight Control Cable Continuity		
Ailerons: Established	Elevators: Established	Rudder: Established
Aileron tab: Not established	Elevator tab: Established	Rudder tab: Established
Flap and Trim Positions		
Flap indicator: Up	Flap handle: Damaged	Flap actuator: Up
Elevator trim:	Indicator: Unknown due to damage	Actuator: 1.7" or ~ 5 tab up"
Rudder trim:	Indicator: Between neutral and full left	Actuator: Undt
Aileron trim:	Indicator: Neutral	Actuator: Undt

Remarks:

Flight control cable continuity was established from the cockpit to the elevator and rudder. Aileron continuity was established from the cockpit to the center cabin bellcrank. The wing aileron and flap cables were observed cut. The flap actuator aft chain was observed off the sprocket and the forward chain wrapped with three pins before the sprocket (flaps up position).

Airframe Fuel System Condition, Controls, and Read Outs					
Fuel strainer screen:		Left: Clean		Right: Clean	
Fuel strainer bowl:		Left: See below		Right: See below	
Main fuel tank gauge:		Left: 210 lbs		Right: 140 lbs	
Auxiliary fuel gauge:		Left: Undt		Right: Undt	
Locker fuel gauge:		Left: Undt		Right: N/A	
Locker transfer:		Left: Off		Right: Not applicable	
Fuel selector handle:	Left: See below	Fuel selector valve:	Left: See below	Fuel boost pump:	Left: High
	Right: See below		Right: See below		Right: Low

Remarks:

All five of the fuel filler caps were observed installed in the respective fuel filler necks. The right main fuel tip tank was observed intact and did not exhibit signs of hydraulic deformation. The forward section of the left main fuel tip tank was observed separated from the fuel tank attachment fitting. Both fuel tip tank center baffles were observed intact. Both wing auxiliary fuel tanks were observed compromised. The left wing nacelle locker tank was observed intact and did not contain any fuel. Both fuel strainer bowls were removed; the fuel screens were clean and both bowls were observed to have a trace amount of fuel and sediments. The fuel system plumbing was observed compromised and could not be tested.

The left fuel selector handle was observed in the right main tank position. The right fuel selector handle was observed in the right engine off position. Both the left and right fuel selector valves were observed pulled past the off position. The link between the handle and the valve is a push/pull cable.

Landing Gear System Condition and Controls			
Gear position:	Nose: Retracted	Left: See below	Right: Retracted
Actuator position:	Nose: Intermediate	Left: Intermediate	Right: Intermediate
Landing gear selector:	Extended		Aux gear control: Stowed
Environmental System Controls and Read Outs			
Cabin heater:	Cold	Cabin vent:	Cold
Air conditioner:	Off	Oxygen system:	Undetermined
		Oxygen quantity:	0
Pressurization System Controls and Read Outs			
Cabin pressurization:	Pressurize		Cabin VSI: 100' down
Differential pressure:	0		Cabin altitude: Undt
Cabin altitude selector:	Undt		Ram air control: Pulled out (dump)
Left air control:	Pushed in		Source selector knob: Pushed in
Icing System Information and Switches			
Certified into known icing?	No		De-ice boots installed? Yes
Pitot heat:	Off		Stall heat: Off
De-ice:	Surface: Off	Propeller: Not applicable	Windshield: Not applicable
Anti-ice:	Surface: Not applicable	Propeller: Off	Windshield: Off
ELT Information			
Installed? Yes	Manufacturer: Narco	Model: ELT 10	Type: Undt
Serial number: 591541	Battery due date: Feb 21	Armed: Yes	Activated: Undetermined

Remarks:

The landing gear actuator was observed to have impact damage and was in the near up position. The right main landing gear was observed in the up position. The left main gear was observed in the extended position during the inspection. However, both main gears were observed in photographs at the site in the retracted position.

Cabin and Equipment/Furnishings

Restraint System Information						
Seat	Occupied	Restraint type	Restraint used	Condition	Manufacturer	
1	Yes	3-Point	Yes	See below	Undetermined	
2	No	3-Point	No		Undetermined	
3	No	2-Point	No		Undetermined	
4	No	2-Point	No		Undetermined	
5	No	2-Point	No		Undetermined	
6	No	2-Point	No		Undetermined	
7	No	2-Point	No		Undetermined	

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	Rear facing	Yes	Yes	Yes	Yes
4	Rear facing	Yes	Yes	Yes	Yes
5	Forward facing	Yes	Yes	Yes	Yes
6	Forward facing	Yes	Yes	Yes	Yes
7	Forward facing	Yes	Yes	Yes	Yes

Remarks:

The #1 outboard seat belt half and shoulder harness were observed latched together and unlatched from the inboard seat belt half.

Instrument Panel

Navigation Instruments							
Analog primary instruments				Autopilot type: Undetermined			
Suction gage: Undt		Magnetic compass: Undt		Clock: Undt			
	Left side	Right side		Left side	Right side		
Airspeed:	0	0	Turn coordinator (airplane):	Left wing low	Not installed		
Attitude (pitch):	15° nose down	5° nose down	Turn coordinator (ball):	Near centered	Not installed		
Attitude (roll):	Left 10	Near level	Heading indicator:	090°	325°		
Altimeter:	60'	Undt	Heading "bug":	170°	N/A		
Altimeter setting:	30.18	Undt	Vertical speed indicator:	0	200' down		
Communication and Navigation Radios							
Radio	Control	Active frequency	Stand-by frequency	Radio	Control	Active frequency	Stand-by frequency
Com 1:	Undt	Undt	Undt	Com 2:	Undt	Undt	Undt
Nav 1:	Undt	Undt	Undt	Nav 2:	Undt	Undt	Undt
Obs 1:	Damaged			Obs 2:	N/A		
Transponder:	Mode: Undt		Active code: Undt		Stand-by code: Undt		
Electrical Switch Positions							
Master battery: On							
Left alternator: On				Right alternator: On			
Avionics 1: On							
Lighting Switch Positions							
Navigation: Off		Rotating beacon: Off		Landing: Off			
Taxi: Off		Strobe: Off		Instrument: Undetermined			
Wing Ice: Undetermined							
Ignition Switch Positions							
Left engine:	Left magneto: On			Right magneto: On			
Right engine:	Left magneto: On			Right magneto: On			

Remarks:

None

Powerplant Description

Engine Instruments					
Hour meter: 26.7					
	Left engine	Right engine		Left engine	Right engine
Tach RPM:	0	2200	CHT:	100°	Below 100°
Manifold press:	Undt	Undt	Fuel press:	Undt	Undt
Oil press:	0	0	Fuel flow:	Undt	Undt
Oil temp:	Low	Low	Ammeter:	See below	See below
EGT:			Voltmeter:	See below	See below
Left Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Throttle:	Mid range	See below	Cowl flaps:	N/A	N/A
Mixture:	Rich	See below	Alt air:	N/A	N/A
Propeller:	Near forward	See below	Primer:	Netural	
Right Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Throttle:	Mid range	See below	Cowl flaps:	N/A	N/A
Mixture:	Idle cutoff	See below	Alt air:	N/A	N/A
Propeller:	Full forward	See below	Primer:	Neutral	
Engine Condition					
	Left engine		Right engine		
Engine attached to airframe:	Yes		Yes		
Propeller attached to engine:	Yes		Yes		
Engine compression:	Yes		Yes		
Vacuum pump drive shaft:	Undetermined		Undetermined		
Valve train continuity:	Yes		Yes		
Engine Fuel System Condition					
	Left engine		Right engine		
Fuel pump drive shaft:	Intact		Intact		
Fuel injectors:	Undetermined		Undetermined		
Fuel control inlet screen:	Undetermined		Undetermined		
Distribution valve screen:	Clean		Clean		

Engine Magneto Condition						
	Left engine			Right engine		
Left magneto attached:	Yes			Yes		
Left magneto spark:	See below			See below		
Right magneto attached:	Yes			Yes		
Right magneto spark:	See below			See below		
Left Engine Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Normal	Normal	Normal	Normal	Normal	Normal
Bottom	Not examined	Not examined	Not examined	Not examined	Not examined	Not examined
Right Engine Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Normal	Normal	Normal	Normal	Normal	Normal
Bottom	Not examined	Not examined	Not examined	Not examined	Not examined	Not examined

Remarks:

The fuel flow, fuel pressure, and manifold pressure gages were not observed in the wreckage. Both propellers remained attached to their respective engines. Both engine driven fuel pumps were removed from the engine and their shear shafts were observed intact. The top spark plugs were removed from both engines and appeared to have normal wear per the Champion Aviation Check-A-Plug chart. The bottom spark plugs were not reviewed. Both engines were rotated by hand and valve train continuity was established. The tops of the pistons were observed thru the spark plug hole and appeared to be normal. Both magnetos were removed from the engines and rotated with an electric drill. Each magneto generated a spark on three of the top spark plug leads. Both engine fuel distributor valves were opened and both screens were observed clean with a trace amount of fuel. The left turbo charger could be rotated by hand. The right turbo charger could not be rotated. The engine controls positions were observed connected, however, due to cables being cut during recovery, position was not documented.

Propellers

The left propeller spinner remained attached to the propeller back plate and did not exhibit signs of rotation. Propeller blade "A" was observed with minimal leading-edge damage; however, it was displaced approximately 60° towards the cambered side of the blade approximately 8 inches inboard from the tip. Propeller blade "B" was observed with minimal damage. Propeller blade "C" was observed with bending near mid span towards the flat side of the blade.

The right propeller spinner remained attached to the propeller back plate and did not exhibit signs of rotation. Propeller blade "A" was observed with minimal damage consisting of a slight twist in the blade near mid span. Propeller blade "A" exhibited some chordwise scratching on the cambered side of the blade. Propeller blade "B" was observed loose in the hub with minimal leading-edge damage; however,

it was displaced approximately 80° towards the flat side of the blade approximately 8 inches inboard from the tip. Propeller blade "C" was observed loose in the hub and exhibited a smooth bend displacement along the length of the blade towards the cambered side of the blade.

Research & Testing

The aircraft was equipped with a Shadin Fuel Computer, which requires input from the pilot. It was retained by the NTSB and when energized, at the NTSB laboratory indicated 36.1 gallons remaining and 0.0 gallons used.