

Air Safety Investigations Aircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 1980	Make: Cessna	Model: 421C
	Serial number: 421C0874		Registration: N421NS
Location: Canadian, TX		Date: 02-15-19	Time: 0957 CST
Aircraft Owner		Aircraft Operator	
Charles S. Azzopardi [REDACTED] Amarillo, TX 79108-6831		Same as Owner	
Report Information			
Senior Air Safety Investigator: Andrew L. Hall		Report #: ASI-19-AF-T	Report date: 11-11-19

Airframe

Impact Sequence and Airframe Structure

The aircraft contacted the ground in a nose down attitude with no indications of forward movement. The empennage was observed displaced to the right. The aircraft was then involved in a post impact fire which consumed most of the aircraft. All of the aircraft was accounted for at the accident site. The engines were observed depressed into the soft soil approximately 2'. Both propeller hubs were observed in the engine craters and all six propellers blades were accounted for at the site.

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: Not established	Rudder tab: Not established
Flap and Trim Positions		
Flap indicator: Undt	Flap handle: Undt	Flap actuator: See below
Elevator trim:	Indicator: Unknown due to damage	Actuator: 1.65 ~5° tab up
Rudder trim:	Indicator: Unknown due to damage	Actuator: Undt
Aileron trim:	Indicator: Unknown due to damage	Actuator: 1.2

Remarks:

Melted remains of both ailerons were observed in the appropriate location on the left and right wings. The aileron trim which was measured at 1.2" is beyond the limits of 21° tab up position. The rudder trim was not measured. Photographs show the tab displaced slightly to the right of center. Both elevators and the rudder were observed attached to their respective surfaces. The flaps panels were observed

slightly extended and the chain wrap was observed to have approximately 8 links on the lower chain which equates to approximately 15° down.

Airframe Fuel System Condition, Controls, and Read Outs					
Fuel strainer screen:		Left: Undetermined		Right: Undetermined	
Fuel strainer bowl:		Left: Undetermined		Right: Undetermined	
Main fuel tank gauge:		Left: Undt		Right: Undt	
Auxiliary fuel gauge:		Left: Undt		Right: N/A	
Locker fuel gauge:		Left: Undt		Right: N/A	
Locker transfer:		Left: Undetermined		Right: Undetermined	
Fuel selector handle:	Left: Undetermined	Fuel selector valve:	Left: Undetermined	Fuel boost pump:	Left: Undetermined
	Right: Undetermined		Right: Undetermined		Right: Undetermined
Crossfeed shutoff: Down (open)					

Remarks:

The airframe fuel system was compromised by the post impact fire.

Landing Gear System Condition and Controls			
Gear position:	Nose: Retracted	Left: Retracted	Right: Retracted
Actuator position:	Nose: Retracted	Left: Retracted	Right: Retracted
Landing gear selector:	Retracted	Aux gear control: Undt	
Environmental System Controls and Read Outs			
Cabin heater:	Undt	Cabin vent:	Undt
Air conditioner:	N/A	Oxygen system:	Undetermined
		Oxygen quantity:	Undt
Pressurization System Controls and Read Outs			
Cabin pressurization:	Undetermined	Cabin VSI:	Undt
Differential pressure:	Undt	Cabin altitude:	Undt
Cabin altitude selector:	Undt	Ram air control:	Undetermined
Left air control:	Undetermined	Source selector knob:	Undetermined
Icing System Information and Switches			
Certified into known icing?	Yes	De-ice boots installed?	Yes
Pitot heat:	Undetermined	Stall heat:	Undetermined
De-ice:	Surface: Undetermined	Propeller:	Undetermined
Anti-ice:	Surface:	Propeller:	Undetermined
		Windshield:	Undetermined
ELT Information			
Installed?	Yes	Manufacturer:	Dorne & Margolin
		Model:	DM ELT 6.1
		Type:	AF
Serial number:	46163	Battery due date:	Undt
		Armed:	See below
		Activated:	No

Remarks:

The first responders were told by the FAA-IIC that they reviewed the ELT and indicated that the impact damage had displaced the switch guard into the switch and displaced the switch into the off position.

Cabin and Equipment/Furnishings

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

Seat Condition Information					
Seat	Orientation	Feet intact	Back intact	Base intact	Rail intact
1	Forward facing	Yes	No	No	Yes
2	Forward facing	Yes	No	No	Yes
3	Rear facing	No	Yes	Yes	Undetermined
4	Rear facing	No	Yes	Yes	Undetermined
5	Forward facing	No	Yes	Yes	Undetermined
6	Forward facing	No	Yes	Yes	Undetermined
7	Side facing	No	No	No	Not applicable

Remarks:

The first responders reported to this investigator that both occupants were utilizing only the lap belt portion of the 3-point restraint system. All seats had been separated from the wreckage prior to the arrival of the investigative team. The #7 seat was the side facing toilet.

Instrument Panel

Navigation Instruments							
Analog primary instruments				Autopilot type: Undetermined			
Suction gage: Undetermined		Magnetic compass: Undetermined		Clock: Undetermined			
	Left side	Right side		Left side	Right side		
Airspeed:	Undt	Undt	Turn coordinator (airplane):	Undt	Undt		
Attitude (pitch):	Undt	Undt	Turn coordinator (ball):	Undt	Undt		
Attitude (roll):	Undt	Undt	Heading indicator:	Undt	Undt		
Altimeter:	Undt	Undt	Heading "bug":	Undt	Undt		
Altimeter setting:	Undt	Undt	Vertical speed indicator:	Undt	Undt		
Communication and Navigation Radios							
Radio	Control	Active frequency	Stand-by frequency	Radio	Control	Active frequency	Stand-by frequency
Com 1:	Undt	Undetermined	Undetermined	Com 2:	Undt	Undetermined	Undetermined
Nav 1:	Undt	Undetermined	Undetermined	Nav 2:	Undt	Undetermined	Undetermined
Obs 1:	Undetermined			Obs 2:	Undetermined		
Transponder:	Mode: Undetermined		Active code: Undetermined		Stand-by code: Undetermined		
Electrical Switch Positions							
Master battery: Undetermined				Stand-by battery: Undetermined			
Left alternator: Undetermined				Right alternator: Undetermined			
Avionics 1: Undetermined				Avionics 2: Undetermined			
Lighting Switch Positions							
Navigation: Undetermined		Rotating beacon: Undetermined		Landing: Undetermined			
Taxi: Undetermined		Strobe: Undetermined		Instrument: Undetermined			
Wing Ice: Undetermined							
Ignition Switch Positions							
Left engine:	Left magneto: Undetermined			Right magneto: Undetermined			
Right engine:	Left magneto: Undetermined			Right magneto: Undetermined			

Remarks:

All of the cockpit was severely compromised by the post impact fire.

Powerplant Description

Engine Instruments					
Hour meter: Undetermined					
	Left engine	Right engine		Left engine	Right engine
Tach RPM:	Undt	Undt	CHT:	Undt	Undt
Manifold press:	Undt	Undt	Fuel press:	Undt	Undt
Oil press:	Undt	Undt	Fuel flow:	Undt	Undt
Oil temp:	Undt	Undt	Ammeter:	Undt	Undt
EGT:	Undt	Undt	Voltmeter:	Undt	Undt
Left Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Throttle:	Mid travel	Undetermined	Cowl flaps:	Undetermined	Undetermined
Mixture:	Rich	Undetermined	Carb heat:	Undetermined	Undetermined
Propeller:	Mid range	Undetermined	Primer:	Undetermined	
Right Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Throttle:	Forward	Undetermined	Cowl flaps:	Undetermined	Undetermined
Mixture:	Rich	Undetermined	Carb heat:	Undetermined	Undetermined
Propeller:	Mid range	Undetermined	Primer:	Undetermined	
Engine Condition					
	Left engine		Right engine		
Engine attached to airframe:	Partially		Partially		
Propeller attached to engine:	No		Partially		
Engine compression:	Undetermined		Undetermined		
Vacuum pump drive shaft:	Undetermined		Undetermined		
Valve train continuity:	See below		See below		
Engine Fuel System Condition					
	Left engine		Right engine		
Fuel pump drive shaft:	Intact		Intact		
Fuel injectors:	Clean		Undetermined		
Fuel control inlet screen:	See below		Clean		
Distribution valve screen:	Undetermined		See below		

Engine Magneto Condition						
	Left engine			Right engine		
Left magneto attached:	No			No		
Left magneto spark:	No			No		
Right magneto attached:	No			No		
Right magneto spark:	No			No		
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	See below	See below	See below	See below	See below	See below
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	See below	See below	See below	See below	See below	See below

Remarks:

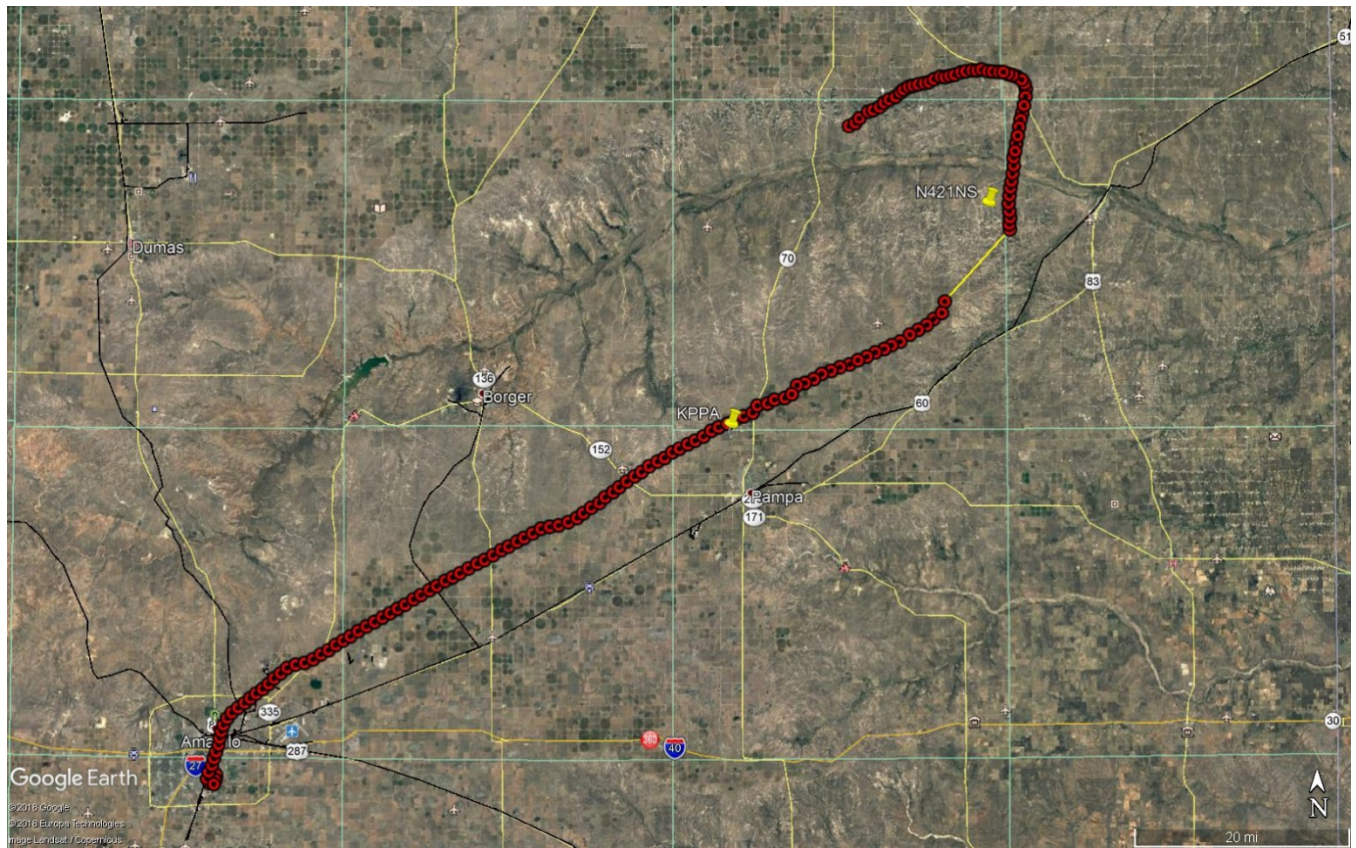
Both engines displayed a significant amount of thermal and ground impact damage. Neither engine displayed any indication of catastrophic internal pre-impact damage. All of the lower spark plugs on both engines were inspected by the CAT investigator. Those which were not submerged in oil were normal in wear. The left engine fuel control inlet screen and body were not observed in the wreckage.

Propellers

All three of the left propeller blades were observed separated from the engine. One blade marked "A" remained attached to the propeller hub and piston dome. One blade remained attached to a section of the hub and the other blade was observed separated completely. Blade "A" did not exhibit much chord wise scratching of the blade and it did have a section of the trailing edge missing near the tip. Blade "B" exhibited "S" bending and chord wise polishing of the cambered side of the blade. Blade "C" was observed nearly straight and exhibited some chordwise scratching of the cambered side of the blade.

The right propeller hub remained attached to the engine with one propeller blade marked "A" exhibited some "S" bending along the trailing edge. Blade "A" was observed loose in the hub. Blade "B" exhibited some chordwise polishing of the leading edge and cambered surface. There was some twisting of the blade observed. This blade remained attached to a large section of the hub which contained the propeller piston which had the spring retained. Blade "C" was observed separated from the hub and exhibited a bend towards the flat side of the approximately 12" out from the hub. This blade exhibited heavy chordwise polishing of the cambered side of the blade.

Research & Testing



Radar track.