

Air Safety Investigations Aircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 2003	Make: Cessna	Model: 208B
	Serial number: 208B1013		Registration: N1983X
Location: Dulles, VA		Date: 01-19-24	Time: 1251 EST
Aircraft Owner		Aircraft Operator	
Southern Airways Pacific LLC 2875 S Ocean Blvd Ste 256 Palm Beach, FL 33480-5590		Southern Airways LLC 2875 S Ocean Blvd Ste 256 Palm Beach, FL 33480-5590	
Report Information			
Senior Air Safety Investigator: Casey J. Love		Report #: ASI-24-AJ-T	Report date: 06-26-24

Airframe

Impact Sequence and Airframe Structure

The wings, tail surfaces, and fuselage did not exhibit impact signatures. The right landing gear contacted a highway guardrail damaging the tire. The propeller cut slashes into the guardrail for approximately 40' resulting in propeller blade damage.

Airframe Systems

Flight Control System Information		
Control lock: Not engaged		
Flight Control Cable Continuity		
Ailerons: See below	Elevators: See below	Rudder: See below
Aileron tab: See below	Elevator tab: See below	Rudder tab: See below
Flap and Trim Positions		
Flap indicator: 20	Flap handle: 20	Flap actuator: See below
Stand-by flap system:	Direction switch: Centered	Motor control: Normal (guard down)
Elevator trim:	Indicator: Full nose up	Actuator: See below
Rudder trim:	Indicator: Between neutral and full right	Actuator: See below
Aileron trim:	Indicator: Between neutral and full right	Actuator: See below

Remarks:

The wings, tail surfaces, and flight controls remained undamaged and were removed from the aircraft for transportation to the maintenance facility. Flight control continuity was not examined. The pilots did not report any controllability issues during the incident. The trim indicator positions noted above were derived from FAA on scene photographs. The trim actuators were not examined.

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

Remarks:

The wings were removed from the aircraft for transportation prior to the examination. The pilots reportedly turned the fuel off before exiting the aircraft. The fuel system was examined and found to be free of restrictions. Electrical power was applied, and the auxiliary fuel pump was tested satisfactorily. The fuel selector warning horn circuit breaker (CB) was collared to prevent intentional deactivation, as required, and the horn sounded satisfactorily. The reservoir fuel tank fuel level warning activated when approximately three gallons of fuel was drained from it. When the fuel shutoff valves were actuated by hand, the associated warning switch contacts were heard actuating. The fuel shutoff handles in the cockpit overhead were examined and found to be intact and operational. The fuel firewall shutoff valve cable was observed to be securely attached and operated normally when the handle was actuated.



ASI-24-AJ-087 (Fuel Shutoff Handle Cable Attachment)

Landing Gear System Condition and Controls			
Gear position:	Nose: Fixed	Left: Fixed	Right: Fixed
Landing gear selector: Not applicable			
Environmental System Controls and Read Outs			
Left side vent: Off		Right side vent: Off	
Temp selector knob: Hot	Bleed air heat: Off		Mixing Air: In
Aft/Fwd cabin: In	Defrost: In		Air conditioner: Off
Left AC fan: Low	Aft AC fan: Low		Right AC fan: Low
Icing System Information and Switches			
Certified into known icing? Yes		Type of ice protection installed? Boots, including cargo pod	
Pitot/Static heat: Off		Stall heat: Off	Wing light: Undetermined
Deice/Anti-ice: Windshield: Off		Propeller: Off	Boot press: Off
ELT Information			
Installed? Yes	Manufacturer: Pointer	Model: 3000	Type: Undt
Serial number: Undt	Battery due date: Undt		Armed: Undetermined Activated: Undetermined

Remarks:

The anti-icing and air conditioning switch positions above were derived from FAA on scene photos.



FAA On Scene Engine Controls and Inertial Separator Handle Photo

Cabin and Equipment/Furnishings

Restraint System Information						
Seat	Occupied	Restraint type	Restraint used	Condition	Manufacturer	
1	Yes	3-Point	Yes	Intact	Cessna	
2	Yes	3-Point	Yes	Intact	Cessna	
3	No	2-Point	N/A	Intact	Cessna	
4	No	2-Point	N/A	Intact	Cessna	
5	No	2-Point	N/A	Intact	Cessna	
6	Yes	2-Point	Yes	Intact	Cessna	
7	Yes	2-Point	Yes	Intact	Cessna	
8	Yes	2-Point	Yes	Intact	Cessna	
9	Yes	2-Point	Yes	Intact	Cessna	
10	Yes	2-Point	Yes	Intact	Cessna	

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	Yes	Yes	Yes	Yes
6	Forward facing	Yes	Yes	Yes	Yes
7	Forward facing	Yes	Yes	Yes	Yes
8	Forward facing	Yes	Yes	Yes	Yes
9	Forward facing	Yes	Yes	Yes	Yes
10	Forward facing	Yes	Yes	Yes	Yes

Remarks:

The seats had been removed from the aircraft at the time of the examination. Neither the seats nor rails were damaged in the incident.

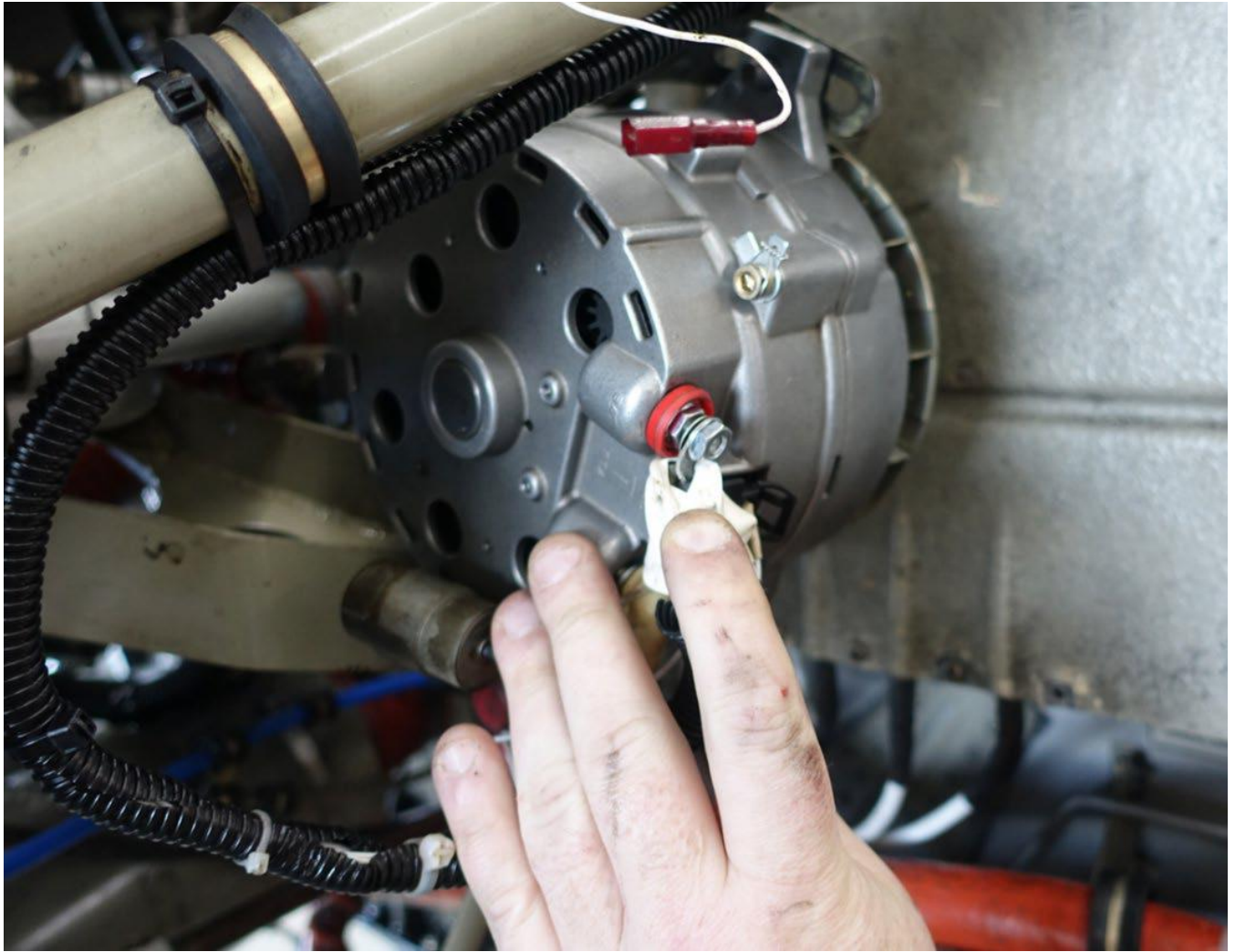
Instrument Panel

Navigation Instruments							
Analog Primary Instruments				Autopilot type: See below			
Suction Gage: 0		Magnetic compass: 20		Clock: Undt			
	Left side	Right side		Left side	Right side		
Airspeed:	0	0	Turn coordinator (airplane):	Level	Level		
Attitude (pitch):	+5°	Level	Turn coordinator (ball):	Centered	Centered		
Attitude (roll):	7° left bank	Level	Heading indicator:	20	20		
Altimeter:	320'	320'	Heading "bug":	Undt	Undt		
Altimeter setting:	29.73	29.73	Vertical speed indicator:	0	0		
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:	Undt			Obs 2:	Undt		
Transponder:	Mode: Undt	Active code: Undt		Stand-by code: Undt			
Electrical Switch Positions							
External power: Off		Battery: Off		Generator: On			
Stby alt pwr: Off		Avionics stby pwr: Off		Avionics bus tie: Off			
Avionics 1: Off				Avionics 2: Off			
Lighting Switch Positions							
Left landing: Off		Taxi/recognition Off		Right landing Off			
Strobe: Off		Navigation: Off		Beacon: Off			
No smoke: Off		Seat belt: Off		Cabin: Off			
Engine Starter and Ignition Switches							
Starter: Off				Ignition: Norm			

Remarks:

The instrument readings and switch positions above were derived from FAA on scene photographs. The pilots reportedly turned all power and lights off prior to exiting the aircraft. The autopilot controller was removed and the slot covered with an Autopilot Deactivated placard.

The positive power cable attaching lug nut was observed loose and backed off on the stand-by alternator.



NTSB Photo of Loose Power Cable

Powerplant Description

Engine Instruments					
Hour meter: 8,471.8		Ng RPM: 0		Np RPM: 0	
Torquemeter: 0		Oil temp: 0		Oil press: 0	
ITT: 0		Fuel flow: 0		Ammeter: 0	
Voltmeter: 0		Standby torquemeter: NA			
Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Power:	Idle	Idle	Emer. power:	Stowed	Stowed
Fuel control:	Cutoff	Cutoff	Inertial sep:	Bypass	See below
Propeller:	Low RPM	Low RPM	Cowl flaps:	NA	NA
Engine Condition					
Engine attached to airframe: Yes			Propeller attached to engine: Yes		

Remarks:

The Engine Instrument and Engine Control Position sections were derived from FAA on scene photographs. The engine cowling was removed from the aircraft prior to examination. The inertial separator was examined off the aircraft and functioned normally when actuated by hand.

Below is an excerpt from the NTSB and Engine Manufacturer investigator's field notes.

External engine surfaces appeared unremarkable with no evidence of uncontainment or undercowl fire. The Ng spool was manually rotated by turning the alternator/alternator pad in the accessory gearbox (AGB) and the spool rotated smoothly with no audible grinding. The reduction gearbox (RGB) and AGB magnetic chip detector plugs had no significant debris accumulation. The fuel, oil, and P3 filters were in good condition and free of debris. The P3 and Py b-nut connections on the propeller governor, FCU, and bulkhead were torqued, and safety wired. A safety wire could be not inserted through both the forward and aft clevis inspection holes that act as check points for proper thread engagement. The beta arm was installed on the correct side of the beta arm retaining pin and the beta block was intact and secure. A borescope was inserted into the engine inlet to inspect the axial compressor blades. Minor 1st stage compressor leading edge erosion was observed but there was no evidence of impact/FOD damage on visible blades/stator vanes. A fuel nozzle was removed to perform a borescope inspection (BSI) of the combustion liner, fuel, nozzles, and compressor turbine. The combustion liner had minor discoloration but there was no evidence of burn through or excessive coking on the liner or visible fuel nozzles. According to PWC, the combustor condition was typical of similar service run engines. The power turbine blades visible through the exhaust were all complete and unremarkable and the PT rotor spun smoothly with no audible grinding.

Propeller

The three propeller blades all exhibited impact damage including gouging and blade tip material loss. The blade tips were all bent opposite the direction of rotation. Blades 1 and 2 were feathered and blade 3 was rotated 180 degrees relative to the other two blades. Two blade tip fragments were recovered from the highway and shipped in a box with the airplane.

The McCauley engineer that examined the propeller during the teardown reported the following:

The propeller had sudden-failure type damage and gross part deflections typically associated with impact forces. The investigation found no evidence of any type of fatigue failure. There were no indications of any type of propeller failure or malfunction prior to the impact sequence.



NTSB Photo (Propeller)

Research & Testing

None.