Cessna Aircraft Company
Aircraft Incident/Accident Technical Report

Aircraft and Incident/Accident Information			
Year: 1999	Model: 172S	Serial number: 172S8255	Registration: N328SP
Location: Minden, NV		Date: 02-06-13	Time: 1709 PST
Aircraft Owner		**Aircraft Operator**	
James D. McFadden [redacted]		Flying Start Aero [redacted]	
Report Information			
Senior Air Safety Investigator: Andrew L. Hall		Report #: 13-CXDP-T	Report Date: 06-20-13

Airframe

Impact Sequence and Airframe Structure

Aircraft wreckage was located on an 8 degree slope about 1.5 miles below and west of Rice Peak, 14 miles east of Minden, Nevada. The terrain was populated with 20-foot tall pinion pines and juniper trees. The ground was snow covered. Fiberglass fragments identified the initial point of impact with terrain, a wing tip position light with red lens fragments, and freshly broken tree branches. Trees on either side of the initial impact point appeared undisturbed with no broken branches or evidence of being topped. The main wreckage was located on a bearing of 088 degrees magnetic 63 feet from the initial impact point. About halfway between the initial impact point and the main wreckage was the propeller hub and one propeller blade imbedded into the ground with disturbed earth surrounding it. The main wreckage consisted of the engine, airplane cabin, left and right wings, empennage and tail. The tail was elevated in the air and bent over the cabin in scorpion fashion.

The horizontal stabilizer leading edge was observed crushing along the entire right stabilizer. The outboard 24 inches of the left stabilizer leading edge was also observed crushed. Both elevators were observed attached to the horizontals and the balance weights remained attached. The rudder remained attached to the vertical stabilizer and the rudder balance weight was observed attached to the rudder at the mishap site. Both wings were accounted for at the mishap site. The left wing exhibited leading edge crushing along the entire length of the wing. The left aileron and flap remained attached to the wing. The right wing exhibited leading edge crushing along the entire length of the wing. The outboard approximately four feet of the wing was displaced at a 45 degrees angle aft. The right aileron except for the outboard 4' remained attached to the wing. The right flap remained attached to the wing.

Airframe Systems

Flight Control System Information		
Control Lock: Found Loose in Aircraft		
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 Actuator: UP	Flap Indicator: Undetermined	Flap Handle: Near up
Elevator Trim:	Actuator: 1.35" 5 tab up	Indicator: Unknown due to damage
Rudder Trim:	Actuator: N/A	Indicator: Unknown due to damage

Remarks:
Flight control cable continuity was established through multiple tension overload type cable separations.

Airframe Fuel System Condition, Controls, and Read Outs		
Fuel Strainer Screen: Clean	Fuel Strainer Bowl: See Below	
Main Fuel Tank Gauge:	Left: Undt	Right: Undt
Fuel Selector Handle: See Below	Fuel Selector Valve: See Below	Fuel Boost Pump: Undt
Firewall Fuel Shutoff: On		

Remarks:
The fuel selector handle was observed separated from the shaft. The imprint on the position placard indicated the handle was between the “BOTH” and “LEFT” position. The fuel selector valve was observed not in a detent and was between the “BOTH” and “LEFT” position. The fuel strainer bowl was observed partly separated from the top of the strainer. The fuel strainer contained a few drops of light blue fluid. Both fuel caps were observed attached to their respective filler necks.

Landing Gear System Condition and Controls			
Gear Position:	Nose: Fixed	Left: Fixed	Right: Fixed

Environmental System Controls and Read Outs		
Cabin Heater: Undt	Cabin Vent: Undt	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: Undetermined		Stall Heat: Not Applicable	
Anti-Ice:	Surface: Not Applicable	Propeller: Not Applicable	Windshield: Not Applicable

ELT Information			
Installed? Yes	Manufacturer: Pointer, Inc	Model: 3000-11	Type: AF
Serial Number: 328125	Battery Due Date: 05-14	Armed: Yes	Activated: Yes

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	Cut	Cessna	Not Applicable
2	No	3-Point	No	Undt	Cessna	Not Applicable
3	No	3-Point	No	Intact	Cessna	Not Applicable
4	No	3-Point	No	Intact	Cessna	Not Applicable

Seat Condition Information					
Seat	Orientation	Feet Intact	Back Intact	Base Intact	Rail Intact
1	Forward Facing	Yes	Yes	Yes	No
2	Forward Facing	Yes	Yes	Yes	No
3	Forward Facing	Yes	Partially	Partially	Not Applicable
4	Forward Facing	Yes	Partially	Partially	Not Applicable

Remarks:
Both crew seats were observed separated from the cockpit floor. The rear bench seat remained attached to the rear floor structure.

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:	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:	Undt			OBS 2:	Undt		
Transponder:	Mode: Undt		Active Code: Undt		Standby Code: Undt		

Electrical Switch Positions		
Master Battery: Undetermined	Master Alternator: Undetermined	Avionics 1: Undetermined
Stand-By Battery: Not Applicable		

Lighting Switch Positions		
Navigation: Undetermined	Rotating Beacon: Undetermined	Landing: Undetermined
Taxi: Undetermined	Strobe: Undetermined	Instrument: Undetermined

Ignition Switch Position	
Key: Undetermined	

Remarks:
Directional gyro, interior of gyro case shows evidence of circumferential scoring.

Powerplant Description

Engine Instruments							
Hour Meter:	Undt	Tach RPM:	1700	Tach Hours:	3234.2	Manifold Press:	N/A
Oil Press:	Undt	Oil Temp:	Undt	EGT:	Undt	CHT:	Undt
Fuel Press:	Undt	Fuel Flow:	Undt	Ammeter:	Undt	Voltmeter:	Undt

Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Throttle:	In	Undt	Cowl Flaps:	N/A	Undetermined
Mixture:	In	Undt	Carburetor Heat:	In	Undetermined
Propeller:	N/A	N/A	Primer:	Undt	

Engine Condition			
Engine Attached to Airframe:	Partially	Propeller Attached to Engine:	No
Engine Compression:	Yes	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

Magneto Condition			
Left Magneto Attached:	No	Right Magneto Attached:	No
Left Magneto Spark:	All Leads	Right Magneto Spark:	Undetermined

Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4		
Top	Oil Fouled	Normal	Oil Fouled	Normal		
Bottom	Not Examined	Not Examined	Not Examined	Not Examined		

Remarks:
The Lycoming investigator reviewed the engine and indicated there was nothing observed which would have precluded the engine from producing power. The engine remained attached to the airframe through cables. The left side induction tubes were observed crushed. The left side exhaust manifold exhibited plastic deformation and crushing. The right side induction tubes and the right side exhaust manifold were present. The fuel distribution valve removed and the diaphragm was flexible and undamaged. The fuel pump removed and disassembled and the diaphragm present, pliable, and undamaged.

Propeller
The propeller separated from the engine upon ground impact and was approximately 25’ from the left wing contact point. One of the propeller blades was separated from the propeller hub approximately 8” out from the center of the hub. Significant camber side propeller blade scratching and scoring was observed to both propeller blades.

Research & Testing

Radar data provided by Frank M. McDermott, Ltd