



BY TEXTRON AVIATION

Air Safety Investigations

Aircraft Incident/Accident Technical ReportAircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 1965	Make: Cessna	Model: 172F
	Serial number: 17253113		Registration: N5532R
Location: Show Low, AZ		Date: 05-25-22	Time: 1750 MST
Aircraft Owner		Aircraft Operator	
Anthony Greco [REDACTED] Walworth, WI 53184-9400		Same as Aircraft Owner	
Report Information			
Air Safety Investigator Jennifer D. Barclay		Report #: ASI-22-BC-T	Report date: 12-28-22

Airframe

Impact Sequence and Airframe Structure

The aircraft impacted a creek bank in a cow pasture in a nose-low and wings level flight attitude. Compression damage was observed on both wings outboard of the strut attach point. Both wingtips separated from the aircraft, the right wingtip was not recovered from the creek. The nose area of the aircraft including the nose landing gear was forced aft. The fuselage buckled upwards at approximately Fuselage Station (FS) 124. There was no fire.



Wreckage overview, ASI-22-BC-005

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 indicator: 0	Flap handle: Up	Flap actuator 0.25" = 0°
Elevator trim:	Indicator: Unknown due to damage	Actuator: 1.4" ~ 5° tab Up

Remarks:

Control cable continuity was established from each flight control surface to the cockpit controls. Both control yokes were fractured at the U-joint.

Airframe Fuel System Condition, Controls, and Read Outs		
Fuel strainer screen: Clean	Fuel strainer bowl: See below	
Main fuel tank gauge:	Left: 0	Right: 0
Fuel selector handle: Both	Fuel selector valve: Both	

Remarks:

Fuel drained from the strainer was light blue in color and tested positive for water. However, the nose section of the aircraft had been submerged in water. The fuel strainer bowl contained a clear globule of material that appeared to be silicone. The bowl also exhibited light corrosion. No fuel was drained from the right wing tank. Approximately 16 gallons of fuel was drained from the left wing tank. Both wing tank finger screens were clean. Compressed air was used to blow through each line of the fuel system, including the vent line, and no obstructions were noted.



Globule of material removed from fuel strainer, ASI-22-BC-087

Landing Gear System Condition and Controls			
Gear position:	Nose Fixed	Left Fixed	Right Fixed
Environmental System Controls and Read Outs			
Cabin heater: Off	Cabin vent: Off	Defrost Not applicable	
Air conditioner: Not applicable	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: Off		Stall heat: Not applicable	
Anti-ice:	Surface: Not applicable	Propeller: Not applicable	Windshield: Not applicable
ELT Information			
Installed? Yes	Manufacturer: ACK Technologies	Model: E-01	Type: AF
Serial number: 024438	Battery due date: 12-22	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	2-Point	Yes	Intact	Non-OEM	No
2	Yes	2-Point	See below	Intact	Non-OEM	No
3	No	2-Point	N/A	Intact	Non-OEM	Not applicable
4	No	2-Point	N/A	Intact	Non-OEM	Not applicable

Seat Condition Information					
Seat	Orientation	Feet intact	Back intact	Base intact	Rail intact
1	Forward facing	See below	Yes	Yes	Partially
2	Forward facing	See below	Yes	Yes	Partially
3	Forward facing	Yes	Yes	Yes	Not applicable
4	Forward facing	Yes	Yes	Yes	Not applicable

Remarks:

Per the FAA, the pilot was utilizing his lap belt restraint. It was undetermined if the passenger was utilizing his lap belt restraint.

The two aft feet of the pilot seat remained intact. The forward seat feet were fractured. The feet of the co-pilot seat remained intact except the forward outboard.

Instrument Panel

Navigation Instruments							
Analog primary instruments				Autopilot type: None			
Suction gage: 0		Magnetic compass: 035°		Clock: Undt			
	Left side				Left side		
Airspeed:	0			Turn coordinator (airplane):	Level		
Attitude (pitch):	Undt			Turn coordinator (ball):	Left		
Attitude (roll):	30°			Heading indicator:	077°		
Altimeter:	6,680'			Heading "bug":	255°		
Altimeter setting:	30.12			Vertical speed indicator:	1,300' climb		
Communication and Navigation Radios							
Radio	Control	Active frequency	Stand-by frequency	Radio	Control	Active frequency	Stand-by frequency
Com 1:	Digital	Digital	Digital	Com 2:	Digital	Digital	Digital
Nav 1:	Digital	Digital	Digital	Nav 2:	Digital	Digital	Digital
Obs 1:	Placarded INOP			Obs 2:	Not applicable		
Transponder:	Mode: Undetermined		Active code: Undetermined		Stand-by code: Undetermined		
Electrical Switch Positions							
Master battery: Off		Alternator: Undetermined		Avionics 1: Not applicable			
Lighting Switch Positions							
Navigation: Off		Rotating Beacon: Off		Landing: Off			
Taxi: Off		Strobe: Not applicable		Instrument: Off			
Ignition Switch Position							
Key: Both							

Remarks:

None.

Powerplant Description

Engine Instruments						
Hour meter: Undt	Tach RPM: 100		Tach hours: 276.79		Manifold press: N/A	
Oil press: S/B	Oil temp: 0		EGT: N/A		CHT: INOP	
Fuel press: N/A	Fuel flow: N/A		Ammeter: Undt			
Engine Control Positions						
	Cockpit	Engine		Cockpit	Engine	
Throttle:	Full	Full	Cowl flaps:	N/A	N/A	
Mixture:	Rich	S/B	Carburetor heat:	Off	Off	
Propeller:	N/A	N/A	Primer:	Closed & locked		
Engine Condition						
Engine attached to airframe: Yes			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: Not applicable			Carburetor inlet screen: Clean			
Magneto Condition						
Leftmagneto attached: Yes			Right magneto attached Yes			
Leftmagneto spark: All leads			Right magneto spark: All leads			
Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Carbon fouled	Normal	Normal	Normal	Normal	Normal
Bottom	Lead fouled	Normal	Normal	See below	Not examined	Lead fouled

Remarks:

The engine remained attached to the airframe. The carburetor was impact separated from the engine. Engine control continuity was not established. The mixture control at the carburetor was observed in the Lean position. Valve train continuity and thumb compression/suction were obtained on all cylinders except cylinder 4. The exhaust valve was staked; however, there was still no valve movement. Cylinder 4 was removed, and the exhaust valve was observed to be stuck in the open position. The magneto leads for the bottom spark plugs of cylinders 2, 4, & 6 exhibited impact damage. The leads of both magnetos were cut near the housing. The removed magnetos were rotated by hand and spark was observed on all leads. The bottom spark plug of cylinder 4 was lead fouled and contained additional unidentified debris. The vacuum pump would not rotate.



Cylinder 4, ASI-22-BC-104

Propeller

One blade was relatively straight; the other blade was bent aft at midspan. Both blades exhibited leading edge polishing.



Propeller & engine, ASI-22-BC-018

Research & Testing

The engine was retained by the NTSB for further examination. The No. 4 cylinder was further examined on 08-12-22, by the NTSB-IIC. Per his notes: "During disassembly the exhaust valve stem was observed stuck in the sleeve in the cylinder head. Wear/polishing was noted on one side of the exhaust stem that protruded from the sleeve and the stem appeared to be off center from the sleeve. The exhaust valve was removed from the cylinder using a brass punch and a hammer.

Upon removal a black substance consistent with carbon buildup was noted along the length of the exhaust valve stem. The valve stem diameter measured .4134 at the base of the stem and .4325 at the top. The specified measurements for the valve stem indicated a minimum diameter of .4335 for P/N 629404 and .4325 for P/N 3921. The P/N of the removed exhaust valve was not determined. The cylinder and exhaust valve were retained for further examination."

The aircraft was under the maximum gross weight limit but exceeded the forward center of gravity limit.

