

Air Safety Investigations Aircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 1975	Make: Beechcraft	Model: F33A
	Serial number: CE-555		Registration: N4082S
Location: Hatboro, PA		Date: 08-08-19	Time: 0615 EDT
Aircraft Owner		Aircraft Operator	
[REDACTED]		Same as Owner	
Report Information			
Senior Air Safety Investigator: Andrew L. Hall		Report #: ASI-19-CA-T	Report date: 01-09-20

Airframe

Impact Sequence and Airframe Structure

The aircraft impacted the ground in a left wing low and nose low attitude and tumbled. Both wings were observed fragmented and separated from the fuselage. The fuselage was observed fragmented.

Airframe Systems

Flight Control System Information		
Control lock: Undetermined		
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		
Flaps:	Indicator: Unknown due to damage	Handle: Unknown due to damage
	Left actuator: 2.0:	Right actuator: Unknown due to damage
Elevator trim:	Indicator: Unknown due to damage	
	Left actuator: ~1.5"	Right actuator: ~1.5"
Rudder trim:	Indicator: Not applicable	Actuator: N/A
Aileron trim:	Indicator: Not applicable	Actuator: N/A

Remarks:

Both the elevator and rudder cables were observed attached in the cockpit and continuous to the aft connection locations. All three cockpit elevator control hinges were accounted for in the cockpit area. The elevator control cables were observed attached to the elevator cockpit control column and the bob-weight was attached to the cable. The right aileron cables were observed attached to the right aileron wing bellcrank and the push rod to the aileron was observed separated from the aileron. The left aileron wing bellcrank was observed in the left wing and the balance cable was attached. The direct cable attachment location was observed separated. The left direct cable was observed in the cabin section area of the fuselage and was connected to the separated end of the wing bellcrank.

The Garmin Auto pilot servo bridle cable to the elevator control cable was observed attached at both ends, however, the cable was observed with several strands separated. When removed from the system the capstan was observed to spin freely in both directions.

Airframe Fuel System Condition, Controls, and Read Outs		
Fuel strainer screen: Clean	Fuel strainer bowl: Clean	
Main fuel tank gauge:	Left: slight above 5/8 full	Right: 5/8 full
Fuel selector handle: Right	Fuel selector valve: Both	Fuel boost pump: Undetermined

Remarks:

The valve and the bowl were observed separated, and the valve was in the right tank position. When air was passed thru the valve body, the valve was determined to be in the right tank position. Both main fuel tank fuel filler caps were observed installed. The NTSB-IIC reported that the tip tank fuel filler caps were observed installed in the remains of the tip tanks.

Landing Gear System Condition and Controls			
Gear position:	Nose: Undetermined	Left: Retracted	Right: Undetermined
Actuator position:	Nose: Retracted	Left: Retracted	Right: Retracted
Landing gear selector:	Retracted	Emer gear handle: Undetermined	
Environmental System Controls and Read Outs			
Cabin heater:	Off	Cabin vent:	On
		Defrost:	Undt
Air conditioner:	N/A	Oxygen system:	See below
		Oxygen quantity:	Undt
Icing System Information and Switches			
Certified into known icing? No		De-icing boots installed? No	
Pitot heat: Undetermined		Stall heat: Undetermined	
De-ice:	Surface: Not applicable	Propeller: Not applicable	Windshield: Not applicable
Anti-ice:	Surface: Not applicable	Propeller: Not applicable	Windshield: Not applicable
ELT Information			
Installed? Yes	Manufacturer: Ameri-King	Model: AK-450	Type: AF aand AP
Serial number: 469205	Battery due date: 12-2025	Armed: No	Activated: No

Remarks:

The pilot had a portable O₂ bottle, which was an unrestrained scuba diving tank, on board the aircraft which was weighed (by the local Fire Department) at 24 lbs. empty + 5 lbs. for O₂ released = 29 lbs. total.

Cabin and Equipment/Furnishings

Restraint System Information						
Seat	Occupied	Restraint type	Restraint used	Condition	Manufacturer	
1	Yes	4-Point	Yes	Worn	Beechcraft	
2	Yes	4-Point	Yes	Worn	Beechcraft	
3	No	2-Point	No	Worn	Undetermined	
4	Yes	2-Point	Yes	Worn	Undetermined	

Seat Condition Information					
Seat	Orientation	Feet intact	Back intact	Base intact	Rail intact
1	Forward facing	No	Partially	Partially	No
2	Forward facing	No	Partially	Partially	No
3	Forward facing	No	Partially	Partially	No
4	Forward facing	No	Partially	Partially	No

Remarks:

All of the cabin seats were observed separated from the floor structure. The shoulder harnesses for both front seats were observed separated from the inertial reel. Both seat belts and shoulder harness were observed in the completely latched condition. The seat belt attachment fittings attached to the seat base were observed separated.

Instrument Panel

Navigation Instruments							
Digital primary instruments				Autopilot type: Garmin			
Suction gage: Undetermined		Magnetic compass: Undetermined		Clock: Undetermined			
	PFD 1			PFD 1			
Airspeed:	Undt		Turn coordinator (airplane):	Undt			
Attitude (pitch):	Undt		Turn coordinator (ball):	Undt			
Attitude (roll):	Undt		Heading indicator:	Undt			
Altimeter:	Undt		Heading "bug":	Undt			
Altimeter setting:	Undt		Vertical speed indicator:	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: On		Master alternator: On		Avionics 1: Undetermined			
		Alternator 2: On		Avionics 2: Undetermined			
Lighting Switch Positions							
Navigation: Undetermined		Rotating Beacon: Undetermined		Landing: Not applicable			
Taxi: Undetermined		Strobe: Undetermined		Instrument: Undetermined			
Wing Ice: Not applicable							
Ignition Switch Position							
Key: Right							

Remarks:

None

Powerplant Description

Engine Instruments						
Hour meter: Undt		Tach RPM: Undt		Tach hours: Undt		
Oil press: Undt		Oil temp: Undt		EGT: Undt		
Fuel press: Undt		Fuel flow: Undt		Ammeter: Undt		
				Manifold press: Undt		
				CHT: Undt		
				Voltmeter: Undt		
Engine Control Positions						
	Cockpit	Engine		Cockpit	Engine	
Throttle:	Full in	Undetermined	Cowl flaps:	Undt	Undetermined	
Mixture:	Full in	Undetermined	Alternate air:	Undt	Undetermined	
Propeller:	Full in	Undetermined	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: Not applicable						
Engine Fuel System Condition						
Fuel pump drive shaft: Intact			Fuel control inlet screen: Clean			
Fuel distribution valve screen: Clean			Fuel injectors: See below			
Magneto Condition						
Left magneto attached: Partially			Right magneto attached: No			
Left magneto spark: All leads			Right magneto spark: All leads			
Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Worn	Worn	Worn	Worn	Undetermined	Worn
Bottom	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined

Remarks:

The engine remained partially attached to the airframe and displayed a significant amount of impact damage signatures; most of the damage occurred to the front, bottom, and right side of the engine. Several of the components had broken free from the engine and were found along the wreckage path.

The oil filter was opened and observed free of contamination. The nozzles were noted to be GAMI nozzles and displayed varying amounts of impact damage. The nozzles were removed and visually inspected. There were no anomalies noted with any of the nozzles.

Propeller

The propeller was observed detached from the engine. Approximately 16" of one of the propeller blades was observed in the initial main fuselage impact crater. The remainder of the propeller was observed approximately 150' from the main impact crater.

Research & Testing

1975 Beechcraft F33A

CE555 N4082S

Hatboro, PA; D/A: 08-08-19

max gross wt 3612

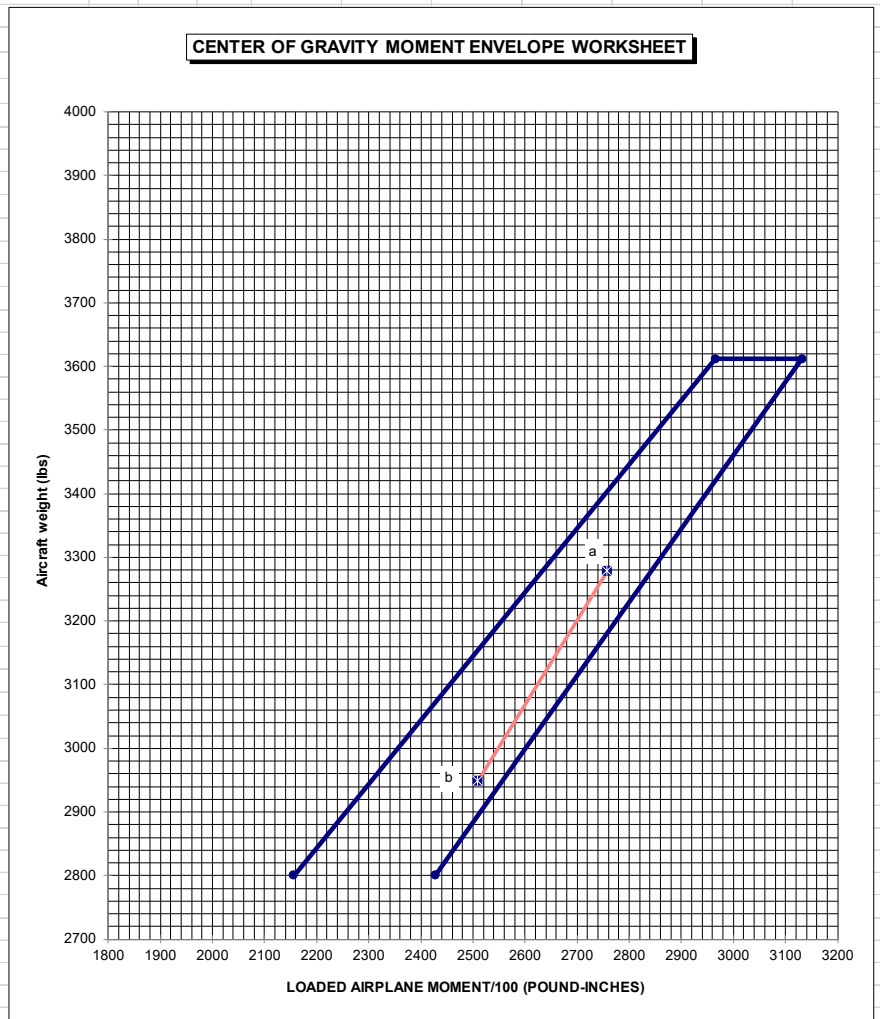
useful load = 1235

Loaded Aircraft				C.G.
	wt	arm	mom/100	
empty wt	2350	xxx	1877.0	
fuel	330	xxx	248.0	55 gallons
oil	0		0.0	0 quarts
Seat # 1	165	85	140.3	
Seat # 2	150	85	127.5	
Seat # 3	118	125	147.5	
Seat # 4	29	125	36.3	
Seat # 5	0		0.0	
Seat # 6	0		0.0	
Seat #7	0		0.0	
Tip Tank Fuel	20	89.1	17.8	
Aft bag	116.5	140	163.1	
Bag area A			0.0	
Bag area b	0		0.0	
Bag area C	0		0.0	
Bag area D	0		0.0	
Aft Baggage	0		0.0	
Total Wt.	3278.5	84.106	2757.4	334 lbs.

PLOT DATA			
Envelope		Actual Data	
mom/100	wt		
2156	2800	2757.4	3278.5 a Loaded a/c
2965.4	3612	2509.4	2948.5 b empty fuel
3131.6	3612		
2427.6	2800		

Note 1: Shaded areas require manual input

Note 2: A & b tags must be positioned manually



The chart above reflects the as delivered envelope, with the tip tank fuel added.