

Air Safety Investigations Aircraft Incident/Accident Technical Report

Aircraft Incident/ Accident Information	Year: 1977	Make: Beechcraft	Model: C24R
	Serial number: MC-487		Registration: N24030
Location: Henderson, NV		Date: 09-07-19	Time: 1950 PDT
Aircraft Owner		Aircraft Operator	
So Cal Leasing LLC [REDACTED]		California Flight Academy Same as Aircraft Owner	
Report Information			
Air Safety Investigator: Jennifer D. Barclay		Report #: ASI-19-CI-T	Report date: 06-23-20

Airframe

Impact Sequence and Airframe Structure

The aircraft impacted a divided highway in a right-wing-low attitude, then slid through a steel boundary fence before coming to rest in a culvert next to a road. The empennage separated during the impact sequence. A post-impact fire consumed the cabin and inboard wings.



Wreckage overview, ASI-19-CI-018



Left cabin door latch, ASI-19-CI-074



Right cabin door latch, ASI-19-CI-077



Baggage door latch, NTSB photo

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: Undetermined	Handle: 25°
Elevator trim:	Indicator: Unknown due to damage	
	Actuator: 1.7" = outside normal limits	

Remarks:

Control cable continuity was established from the ailerons and stabilator to the control column. The stabilator and trim cables were separated in tensile overload. The rudder bellcrank fractured and continuity was established from the cable attachment points to the cockpit.



Rudder bellcrank, ASI-19-CI-030

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: Left	Fuel boost pump: Undetermined

Remarks:

The fuel strainer bowl contained soot. The fuel selector handle was destroyed in the post-impact fire.



Fuel selector valve, ASI-19-CI-058



Fuel selector valve, ASI-19-CI-063

Landing Gear System Condition and Controls			
Gear position:	Nose: See below	Left: Retracted	Right: Retracted
Actuator position:	Nose: Undetermined	Left: Undetermined	Right: Undetermined
Landing gear selector: Undetermined		Emer gear handle: Undt	
Environmental System Controls and Read Outs			
Cabin heater: Undt		Cabin vent: Undt	Defrost: Undt
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: Undetermined		Stall heat: Not applicable	
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: ACK Technologies	Model: E-01	Type: AF
Serial number: 043280	Battery due date: 03-2028	Armed: Yes	Activated: Undetermined

Remarks:

The wheel of the nose landing gear separated during the impact sequence and the strut position was undetermined.



NTSB photo

Cabin and Equipment/Furnishings

Restraint System Information						
Seat	Occupied	Restraint type	Restraint used	Condition	Manufacturer	
1	Yes	3-Point	Undt	Burned	Undetermined	
2	Yes	3-Point	Undt	Burned	Undetermined	
3	Yes	Undetermined	Undt	Burned	Undetermined	
4	Yes	Undetermined	Undt	Burned	Undetermined	

Seat Condition Information					
Seat	Orientation	Feet intact	Back intact	Base intact	Rail intact
1	Forward facing	No	No	No	No
2	Forward facing	No	No	No	No
3	Forward facing	Not applicable	No	No	Not applicable
4	Forward facing	Not applicable	No	No	Not applicable

Remarks:

The seats were destroyed in the post-impact fire. Several restraint buckles were in the wreckage.



Cabin and cockpit area, ASI-19-CI-038

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		
Stand-by:	Airspeed: Undt		Attitude (pitch): Undt		Attitude (roll): Undt		
	Altimeter: Undt		Altimeter Setting: 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		Master alternator: Undetermined		Avionics 1: Undetermined			
Stand-by battery: Undetermined		Alternator 2: 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 Position							
Key: Undetermined							

Remarks:

The instrument panel was destroyed in the post-impact fire.

Powerplant Description

Engine Instruments					
Hour meter: ~1878.0	Tach RPM: Undt	Tach hours: 4780.0	Manifold press: Undt		
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:	Undetermined	Undetermined	Cowl flaps:	Undetermined	Undetermined
Mixture:	Undetermined	Undetermined	Alternate air:	Undetermined	Undetermined
Propeller:	Undetermined	Undetermined	Primer:	N/A	
Engine Condition					
Engine attached to airframe:	Yes	Propeller attached to engine:	Yes		
Engine compression:	Yes	Valve train continuity:	Yes		
Vacuum pump drive shaft:	See below				
Engine Fuel System Condition					
Fuel pump drive shaft:	Not applicable	Fuel control inlet screen:	Clean		
Fuel distribution valve screen:	Not applicable	Fuel injectors:	Clean		
Magneto Condition					
Left magneto attached:	Yes	Right magneto attached:	Yes		
Left magneto spark:	See below	Right magneto spark:	See below		
Spark Plug Condition (per Champion Check-A-Plug Card)					
	1	2	3	4	
Top	Normal	Normal	Normal	Normal	
Bottom	Normal	Normal	Normal	Normal	

Remarks:

The hour meter and tach times were provided by the aircraft operator on 09-09-19. It is unknown if the flight prior to the accident was included in the times.

The vacuum pump drive shaft sustained thermal damage. Both magnetos sustained thermal damage and could not be tested.

According to the engine manufacturer investigator, there were no pre-impact abnormalities that would have precluded normal operation.

Propeller

All three propeller blades exhibited leading edge gouging, S-bending and significant material loss at the tips. Each blade was loose in the hub. Propeller strikes were observed on the road past the initial impact point.

According to the FAA, the accident aircraft had several events in 2017 where aborted takeoffs were initiated due to propeller governor failures.

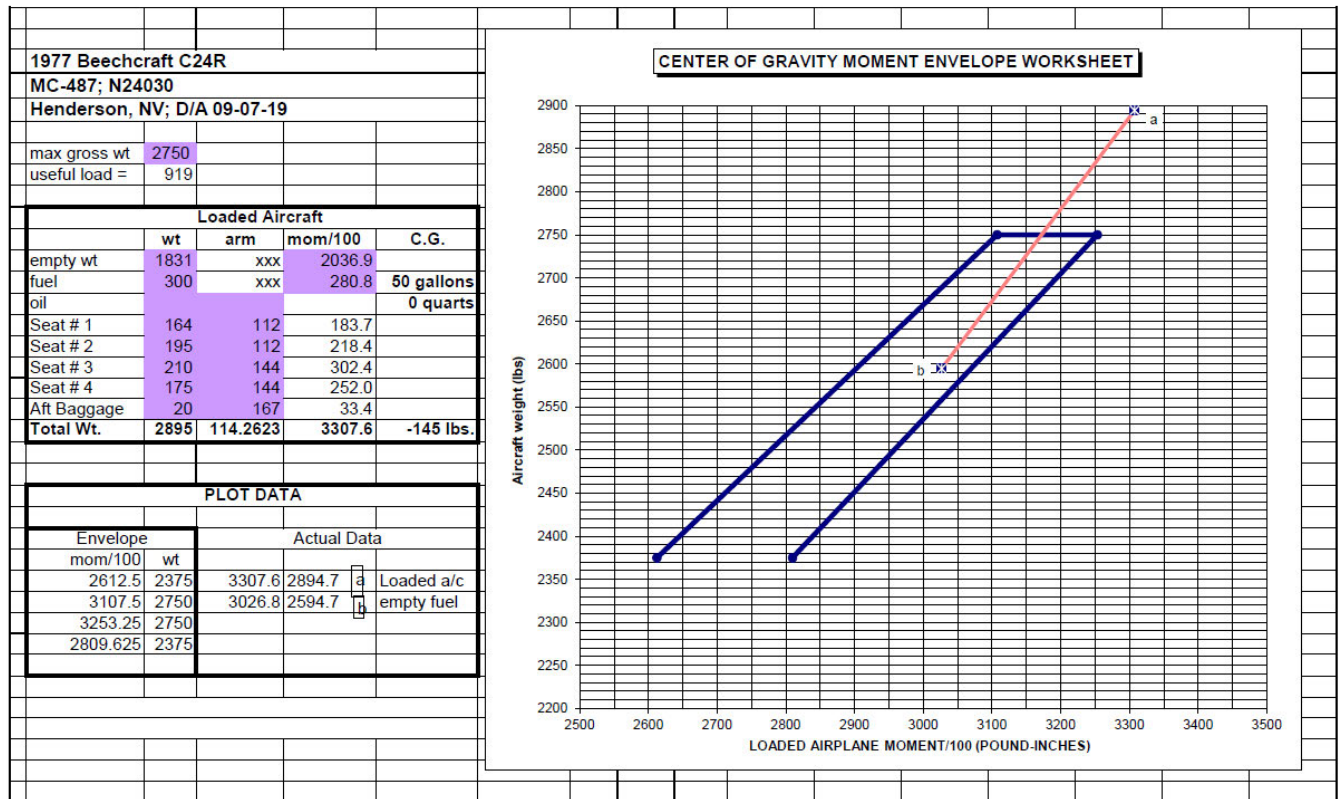


Propeller, ASI-19-CI-065

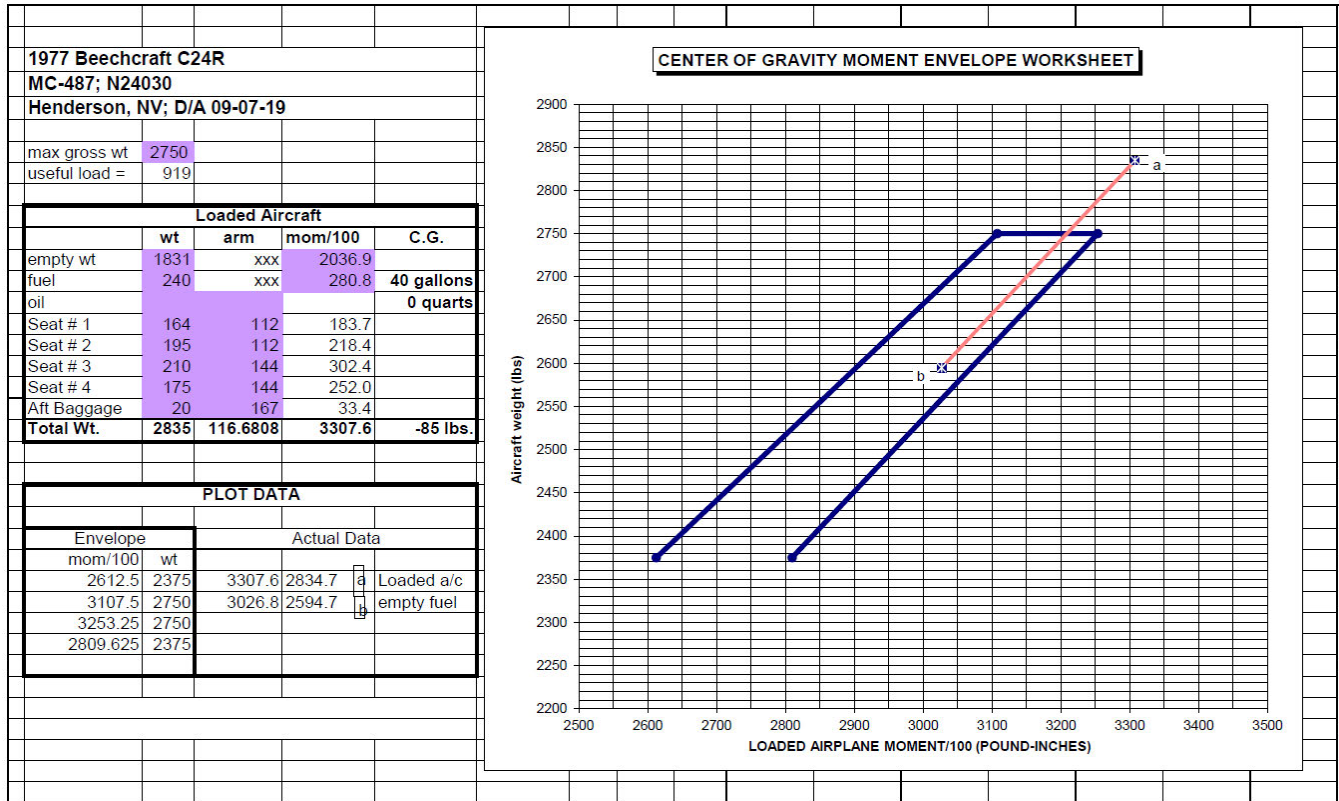
Research & Testing

According to the C24R Pilot's Operating Handbook, the Emergency Procedure for an unlatched door in flight is as follows: "If the cabin door latch is not fully engaged, it may come unlatched in flight. This usually occurs during or just after takeoff. The door will trail in a position approximately 3 inches open. A buffet may be encountered with the door open in flight. Return to the field in a normal manner. If practicable, during the landing flare-out have a passenger hold the door to prevent it from swinging open."

The aircraft was loaded over the max gross takeoff weight and aft of the center of gravity moment envelope for both flights. The following charts depict the calculated weight and balance for the flight attempted at midday with 50 gallons of fuel and the accident flight with 40 gallons of fuel.



Flight 2 – midday, calculated weight and balance



Flight 3 – accident flight, calculated weight and balance