Aviation Investigation Final Report

Location:	Indianola, Mississippi	**Accident Number:**	CEN23LA194
Date & Time:	May 18, 2023, 08:17 Local	**Registration:**	N63B
Aircraft:	Beech 35-C33A	**Aircraft Damage:**	Destroyed
Defining Event:	Fire/smoke (non-impact)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that before the flight he completed an engine runup with no anomalies noted. After departure, when the airplane was about 800 to 1,000 ft above ground level, he smelled “burning plastic” and observed smoke from the engine compartment. He turned back toward the airport and was on the base leg of the traffic pattern when he observed flames coming through the firewall under the battery box area. He tried to kick out the flame, but the fire seemed to be coming from the engine side of the firewall. He turned off the electrical system and adjusted the mixture control to cut off the fuel. He performed a gear-up landing on the runway as the cabin filled with smoke. After the airplane came to rest and the pilot egressed, the fire consumed a majority of the fuselage before it was extinguished. The pilot recorded a video of the airplane that showed dark smoke in the cabin and heat discoloration below the front right windscreen, near the battery box.

The postaccident examination was unable to determine the source of the fire due to the extensive fire damage.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

An in-flight fire for undetermined reasons.

Findings

Aircraft	(general) - Unknown/Not determined

Factual Information

History of Flight

Initial climb	Fire/smoke (non-impact) (Defining event)
Landing	Landing gear not configured

On May 18, 2023, at 0817 central daylight time, a Beech 35-C33A, N63B, was substantially damaged when it was involved in an accident at Indianola Municipal Airport (IDL), Indianola, Mississippi. The pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot stated that he had flown the airplane more than 6 hours in the week before the accident. On the day of the accident flight, an engine runup was completed with no anomalies noted. After departure, when the airplane was about 800 to 1,000 ft above ground level, the pilot smelled “burning plastic” and observed smoke from the engine compartment. He turned the airplane back toward IDL and was on the base leg of the traffic pattern when he observed flames coming through the firewall under the battery box area. He tried to kick out the flame, but the fire seemed to be coming from the engine side of the firewall. He turned off the electrical system and adjusted the mixture control to cut off the fuel. The pilot performed a gear-up landing on the runway as the cabin filled with smoke. After the airplane came to rest and the pilot egressed, the fire consumed a majority of the fuselage before it was extinguished. The pilot recorded a video of the airplane on the runway after he egressed. Figure 1 is a still image from the video that shows dark smoke in the cabin and heat discoloration below the front right windscreen, near the battery box.

Figure 1. The airplane on the runway with dark smoke in the cabin and heat discoloration below the front right windscreen, near the battery box.

The maintenance records revealed that an annual inspection was completed on August 2, 2022, during which the battery was removed, serviced, and reinstalled, and a defective fuel boost pump was replaced. On February 1, 2023, the throttle and mixture cables were replaced. According to the pilot, they were replaced because the old mixture cable was slipping.

After the accident, the responding Federal Aviation Administration inspector examined the wreckage and stated it appeared that the fire had started below the battery box. He could not tell if it originated on the engine side or the cockpit side of the firewall. He removed the end cap from the starter and the internal components did not reveal any anomalies. All of the electrical wiring in the cabin area was burned down to bare copper wire. Also, he found no compromised fuel lines on the engine side of the firewall. He identified one melted fuel line on the cockpit side of the firewall, which was behind the pilot's (left) side of the instrument panel. Portions of the fuel line had melted around an adjacent avionics wire, which exhibited damage to the outer shielding. Due to the significant fire damage, the inspector was unable to determine the source of the fire.

Pilot Information

Certificate:	Commercial; Flight instructor; Military	**Age:**	66,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane; Instrument helicopter	**Toxicology Performed:**	
Medical Certification:	Class 2 Waiver time limited special	**Last FAA Medical Exam:**	May 1, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 1, 2021
Flight Time:	8335 hours (Total, all aircraft), 322 hours (Total, this make and model), 6584 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N63B
Model/Series:	35-C33A	**Aircraft Category:**	Airplane
Year of Manufacture:	1966	**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	CE-97
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	August 2, 2022 Annual	**Certified Max Gross Wt.:**	3300 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4841.3 Hrs as of last inspection	**Engine Manufacturer:**	Continental Motors
ELT:	Installed, not activated	**Engine Model/Series:**	IO-550-B
Registered Owner:	Bradley MacNealy	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KGLH,129 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	08:53 Local	**Direction from Accident Site:**	272°
Lowest Cloud Condition:	Scattered / 5500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	50°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.92 inches Hg	**Temperature/Dew Point:**	23°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Indianola, MS (IDL)	**Type of Flight Plan Filed:**	IFR
Destination:	Starkville, MS (STF)	**Type of Clearance:**	None
Departure Time:	08:14 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	INDIANOLA MUNI IDL	**Runway Surface Type:**	Concrete
Airport Elevation:	126 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	36	**IFR Approach:**	None
Runway Length/Width:	7004 ft / 150 ft	**VFR Approach/Landing:**	Forced landing;Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	In-flight
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	33.483824,-90.678747

Administrative Information

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	Mike Jones; Federal Aviation Administration ; Jackson, MS
Original Publish Date:	March 28, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=192214