Aviation Investigation Final Report

Location:	Dadeville, Alabama	**Accident Number:**	ERA17FA140
Date & Time:	March 28, 2017, 12:00 Local	**Registration:**	N8169Y
Aircraft:	Beech A36	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot was conducting a cross-country flight at a cruise altitude of 5,000 ft mean sea level (msl) in day visual meteorological conditions when the airplane experienced a total loss of engine power. Over the next minute, the airplane continued a northerly track before it began a turn to the west as the controller identified the closest public airport, private strip, state highway, and open areas for potential forced landing sites, which the pilot acknowledged. About 3 minutes later, the airplane collided with trees and terrain and was consumed by postcrash fire. All engine accessories were destroyed by fire and could not be examined except for the engine-driven fuel pump, which revealed no anomalies. The engine displayed internal and external thermal damage, but internally displayed signatures consistent with normal wear and lubrication. Tree damage at the site was consistent with a rotating propeller at the time of tree contact.

An NTSB performance specialist plotted potential glide ranges and trajectories for the airplane from the assumed point of engine power loss. About the time of the loss of engine power, the airplane was about 1 mile abeam an abandoned airport. This airport was not plotted on the visual flight rules sectional chart nor was it visible to the controller, and it may not have been readily visible to the pilot due to its location on the right side of the airplane. However, the airplane's projected glide distance and trajectories indicated that the airplane was within gliding distance of numerous open fields as well as a four-lane divided highway with a large grass median. It could not be determined why the pilot chose to forgo any of the potential suitable forced landing sites.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power for reasons that could not be determined due to postcrash thermal damage to the engine accessories and the airframe. Contributing to the accident was the pilot's failure to navigate to any of the available forced landing sites within gliding distance of the airplane following the loss of engine power.

Findings

Not determined	(general) - Unknown/Not determined
Personnel issues	Decision making/judgment - Pilot
Personnel issues	Use of available resources - Pilot

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Emergency descent	Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

On March 28, 2017, about 1200 central daylight time, a Beech A36, N8169Y, was destroyed by impact and a postcrash fire following a forced landing near Dadeville, Alabama. The commercial pilot and the passenger were fatally injured. The airplane was owned and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91.Visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the personal flight, which departed Enterprise Municipal Airport (EDN), Enterprise, Alabama at 1118, and was destined for Upper Cumberland Regional Airport (SRB), Sparta, Tennessee.

According to air traffic control and radar data from the Federal Aviation Administration (FAA), the airplane was in cruise flight about 5,000 ft mean sea level when, at 1155:06, the pilot was instructed to change from the Atlanta Approach Control frequency to the Atlanta Air Route Traffic Control Center. At 1156:00, the airplane began a descent. At 1157:07, the controller radioed the pilot; that he had not contacted Atlanta Center, and the airplane had descended nearly 1,000 ft below its assigned altitude. At 1157:11, the airplane had descended to 4,025 ft when the pilot responded to the controller and declared, "N8169Y I have a… it appears to be an engine failure…declare an emergency at this time."

Over the next minute, the airplane continued a northerly track before it began a turn to the west as the controller identified the closest public airport, private strip, state highway, and open areas for potential forced landing sites, which the pilot acknowledged.

At 1158:59, the airplane was tracking westbound at 1,500 ft and 86 knots groundspeed when the pilot announced, "Atlanta 69Y it looks like I'm coming down…"; he added that he did not have a runway in sight. There were no further communications from the pilot. The last radar target at 1159:34 showed the airplane on a westerly track over densely wooded terrain at 874 ft and 77 knots groundspeed.

Pilot Information

Certificate:	Commercial	**Age:**	67,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	November 1, 2016
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	11000 hours (Total, all aircraft), 100 hours (Total, this make and model)		

According to FAA records, the pilot held commercial pilot and flight instructor certificates with ratings for rotorcraft-helicopter and instrument helicopter. He held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. The pilot's most recent FAA second-class medical certificate was issued November 3, 2016. He declared 11,500 total hours of flight experience on that date. In July 2016, the pilot declared to his insurance company that he had 11,000 total hours of flight experience, of which 1,000 hours were in airplanes.

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N8169Y
Model/Series:	A36 UNDESIGNAT	**Aircraft Category:**	Airplane
Year of Manufacture:	1991	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	E-2598
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	May 5, 2016 Annual	**Certified Max Gross Wt.:**	3651 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4006.7 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-550B
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The six-seat, single-engine, low-wing, retractable-gear airplane was manufactured in 1977 and was equipped with a Continental Motors 300-horsepower reciprocating engine.

Copies of aircraft maintenance records were provided by the pilot's family and the maintainers of the airplane for the 10 years before the accident. Review of the records revealed that the airplane's most recent annual inspection was completed on May 5, 2016 at 4,006.7 total aircraft hours. The previous annual inspection, dated May 5, 2015 at 3,993 total aircraft hours, included the removal and reinstallation of the engine. The engine was removed and the propeller was replaced due to a propeller-strike event.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ALX,686 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	11:55 Local	**Direction from Accident Site:**	292°
Lowest Cloud Condition:	Scattered / 2500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	24°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	ENTERPRISE, AL (EDN)	**Type of Flight Plan Filed:**	IFR
Destination:	SPARTA, TN (SRB)	**Type of Clearance:**	IFR
Departure Time:	11:18 Local	**Type of Airspace:**	Class E

The 1155 automated weather observation at Thomas C. Russel Field (ALX), 14 miles northwest of the accident site, included scattered clouds at 2,500 ft, 10 statute miles visibility, and wind from 270° at 6 knots. The temperature was 24°C, the dew point was 18°C, and the altimeter setting was 30.03 inches of mercury.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	32.830833,-85.712219(est)

The airplane was examined at the accident site about 650 ft elevation and all major components were accounted for at the scene. The wreckage path was about 140 ft in length and oriented on a magnetic

heading about 320°.

The initial impact point was in trees about 30 ft above the ground. Most tree trunks displayed blunt fractures, but some displayed clean, angular cuts. Tree trunk and branch sections 4-6 inches in diameter displayed angular cuts and were scattered along the wreckage path. The main wreckage was inverted, faced opposite the direction of travel, and was consumed by postcrash fire. Control cable continuity was established from the cockpit area to the flight control surface attachment points. The flap actuator position was consistent with a flaps-retracted position. The elevator trim actuator position was consistent with a 10° tab-down position. The landing gear was retracted.

The fuel selector was set fully in the right-tank position.

Examination of the engine revealed that all accessories were destroyed by fire except for the engine-driven fuel pump. The 3-bladed propeller was attached at the hub, but damaged by impact and fire. One propeller blade was loose at the hub.

The engine-driven fuel pump was removed and its driveshaft was intact and rotated freely. The fuel inlet screen was removed and was absent of debris. The spark plugs were removed and showed normal wear and coloration. The engine could not be rotated by hand. The examination was suspended and completed later under the supervision of an FAA airworthiness inspector at the manufacturer's facility in Mobile, Alabama.

Disassembly of the engine revealed extreme-to-minor thermal damage both externally and internally. Aside from the thermal damage, there were no indications of pre-impact mechanical anomaly that would have precluded normal operation. The engine displayed normal wear and lubrication signatures throughout, including those rotating parts inspected at the 2015 sudden-stoppage inspection.

Medical and Pathological Information

The pilot was transported to Atlanta, Georgia, for treatment of the injuries to which he ultimately succumbed. Postmortem examination and toxicology testing was not performed.

Additional Information

Aircraft Performance

An NTSB National Resource Specialist (Aircraft Performance) examined the Automatic Dependent

Surveillance–Broadcast (ADS-B) data, performance parameters computed from the ADS-B data, and theoretical zero-thrust glide trajectories based on best-glide performance data published in the Pilot's Operating Handbook to plot potential trajectories for the airplane from the assumed point of engine power loss.

The plots were based on an estimated gross weight of 3,400 lbs and speeds ranging between best glide (110 knots calibrated airspeed [KCAS]) and the lowest estimated airspeed of 80 KCAS.

The actual ground track of the airplane revealed that, about the time of the loss of engine power, an abandoned airport (Camp Hill-Tallapoosa County) was directly abeam the airplane, about 1 mile east. The airport was not depicted on the visual flight rules sectional navigation chart current at the time, nor was it visible to the air traffic controller who was in communication with the pilot.

The ground track of the airplane bisected U.S. Highway 280W, a four-lane, divided highway which was oriented northwest-southeast at the point of the airplane's crossing. The grass median that divided the east and west-bound lanes averaged about 50 ft wide for several miles on either side of the ground track. The ground track also traversed several open fields and a railroad track before it terminated over wooded terrain.

The potential trajectories plotted also traversed and reached open fields in all directions surrounding the estimated point of the power loss.

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	Joel Clark; FAA/FSDO; Birmingham, AL Ricardo Asensio; Textron Aviation; Wichita, KS Mike Council; Continental Motors; Mobile, AL
Original Publish Date:	July 16, 2018
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=94924