Aviation Investigation Final Report

Location:	Wann, Oklahoma	**Accident Number:**	CEN14LA218
Date & Time:	April 27, 2014, 13:25 Local	**Registration:**	N3078Y
Aircraft:	Beech A36	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	3 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane departed on the accident flight, and after flying 1 hour 18 minutes using fuel from the left tank, the pilot switched fuel tanks, and the engine lost power. (A passenger reported that there was a strong headwind, so the pilot was diverting for fuel.) Attempts to restore power were unsuccessful. During the ensuing forced landing, the airplane's right wing collided with a tree before the airplane impacted terrain.

The pilot said that, before departure on the accident flight, he had 20 gallons of fuel in each wing fuel tank. However, postaccident examination revealed no fuel in the uncompromised left wing fuel tank. The right wing fuel tank had been compromised, but there were no fuel stains on the ground and there was no odor of fuel in the immediate area. Later, the engine was functionally tested and operated satisfactorily at all power settings. Thus, the airplane likely departed with minimal fuel available in the right wing fuel tank; when the pilot selected the right tank during cruise flight, the engine likely lost power due to fuel exhaustion.

Probable Cause and Findings

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

The pilot's inadequate preflight inspection and planning and inflight fuel management, which resulted in a loss of engine power due to fuel exhaustion and a subsequent forced landing in an area of unsuitable terrain.

Findings

Aircraft	Fuel - Fluid level
Personnel issues	Preflight inspection - Pilot
Aircraft	Fuel - Fluid management
Environmental issues	Rough terrain - Contributed to outcome

Factual Information

History of Flight

Prior to flight	Aircraft servicing event
Enroute-cruise	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Approach	Collision with terr/obj (non-CFIT)

On April 27, 2014, at 1338 central daylight time, the pilot of a Beech A36, N3078Y, made a forced landing near Wann, Oklahoma, after a total loss of engine power during cruise flight. The pilot and two passengers were seriously injured. The airplane was substantially damaged. The airplane was registered to and operated by Dakota N8465S, Montgomery, Alabama, under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident, and an instrument flight rules flight (IFR) plan had been filed. The cross-country flight originated from Washington County Memorial Airport (K38), Washington, Kansas, at 1207, and was originally en route to Shawnee Regional Airport (SNL), Shawnee, Oklahoma, but diverted to Claremore Regional Airport (GCM), Claremore, Oklahoma.

According to the pilot, he obtained a weather briefing and filed an IFR flight plan, then departed K38 en route to GCM. He said the airplane departed with 20 gallons of fuel in each wing tank. After flying for 1 hour, 18 minutes, he switched to the right tank and the engine lost power. Several attempts were made to restore power to no avail. During the forced landing, the airplane's right wing collided with a tree before the airplane impacted terrain. The accident location was near the intersection of Highways 5 and 406. The pilot and front seat passenger were airlifted to a hospital with non-life threatening but serious injuries. The second passenger was transported to a local hospital with serious injuries. He told state troopers that they had been diverting to SNL for fuel and because of strong headwinds encountered during the flight.

A Federal Aviation Administration (FAA) inspector and representatives from Continental Motors, Inc., and Textron Aviation examined the airplane. They reported finding no fuel in the uncompromised left wing fuel tank. The right wing fuel tank had been compromised, but they reported finding no fuel stains on the ground or any an odor of fuel in the immediate area. An on-scene examination of the engine revealed no obvious discrepancies. The Hobbs hour meter displayed 717.4 hours at the accident site.

According to FlightAware, a global aviation software and data services company that tracks flights throughout the world, the accident airplane had originally departed Montgomery Regional Airport (MGM), Montgomery, Alabama, at 0958 on April 25. It is not known how much fuel was on board the airplane when it departed MGM. The flight continued to Horseshoe Bend Airport (6M2), Horseshoe Bend, Alabama, arriving there at 1232 the same day. The reported time en route to 6M2 was 2 hours, 37 minutes. According to the fuel receipt, 46.01 gallons of fuel was purchased at 1238 on April 25; however, it is not known whether the airplane was fueled to capacity at that time. The accident airplane then departed 6M2 at 1317, and flew to K38, arriving there at 1519. The reported time en route was 2 hours, 2 minutes. There was no evidence that the airplane was refueled at K38.

Under the auspices of the National Transportation Safety Board, the engine was functionally tested at Teledyne Continental Motor in Mobile, Alabama, on July 16, 2014. Several external engine components were replaced to facilitate the test run, but the engine tested satisfactory at all power settings and no anomalies were noted.

The JPI EDM 700 (JP Instruments Engine Data Management) and a JPI Fuel Scan 450 were removed from the airplane and shipped to the National Transportation Safety Board's Vehicle Recorder Division for download. According to an e-mail from the laboratory, the JPI EDM 700 had no internal EPROM chips and no data was stored on the device. The JPI Fuel Scan 450 displayed also did not store data.

Pilot Information

Certificate:	Private	**Age:**	50
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	November 21, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 17, 2012
Flight Time:	(Estimated) 1455 hours (Total, all aircraft), 742 hours (Total, this make and model), 1455 hours (Pilot In Command, all aircraft), 48 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N3078Y
Model/Series:	A36	**Aircraft Category:**	Airplane
Year of Manufacture:	1987	**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	E-2386
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	January 1, 2014 Annual	**Certified Max Gross Wt.:**	3663 lbs
Time Since Last Inspection:	31 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2692 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-550-B
Registered Owner:	DAKOTA N8465S LLC	**Rated Power:**	300 Horsepower
Operator:	DAKOTA N8465S LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KBVO,717 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	220°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots / 26 knots	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.36 inches Hg	**Temperature/Dew Point:**	26°C / 15°C
Precipitation and Obscuration:			
Departure Point:	Washington, KS (K38)	**Type of Flight Plan Filed:**	IFR
Destination:	Claremore, OK (KGCM)	**Type of Clearance:**	IFR
Departure Time:	12:07 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Serious	**Latitude, Longitude:**	36.941112,-95.752777

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	Troy Fields; FAA Flight Standards District Office; Oklahoma City, OK Mike Council; Teledyne Continental Motors; Mobile, AL Jan R Smith; Cessna Aircraft Corporation; Wichita, KS Brian J Weber; Hawker Beechcraft Corporation; Wichita, KS
Original Publish Date:	October 27, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89125