



National Transportation Safety Board Aviation Accident Final Report

Location:	Melrose, FL	Accident Number:	ERA16LA193
Date & Time:	05/23/2016, 1600 EDT	Registration:	N952SA
Aircraft:	CESSNA 152	Aircraft Damage:	Substantial
Defining Event:	Fuel exhaustion	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

When the private pilot was about 1 hour into a cross-country personal flight, as the airplane was descending to the destination airport, the engine suddenly lost all power. The pilot prepared for an approach to a nearby field and attempted to restart the engine but was unsuccessful. The airplane came to rest upright in swampy terrain and sustained substantial damage to the fuselage and nose section. Examination of the wreckage after recovery revealed that both wing fuel tanks remained intact, and no fuel was observed in either fuel tank or the carburetor. Postaccident examination of the engine did not reveal any evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation. Examination of the airplane's flight records, the fueling records, and the operator's account of the airplane's flight and fueling history revealed contradictory information that could not be reconciled, so the reason for the lack of fuel could not be determined.

Probable Cause and Findings

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

A total loss of engine power due to fuel exhaustion.

Findings

Aircraft	Fuel - Fluid management (Cause)
Environmental issues	Wet/muddy terrain - Contributed to outcome

Factual Information

On May 23, 2016, at 1600 eastern daylight time, a Cessna 152, N952SA, operated by Sunrise Aviation, was substantially damaged during a forced landing, following a total loss of engine power while maneuvering near Melrose, Florida. The private pilot received minor injuries. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight that was conducted under the provisions of 14 *Code of Federal Regulations* Part 91. The flight departed Ormond Beach Municipal Airport (OMN), Ormond Beach, Florida, about 1500, destined for the Gainesville Regional Airport (GNV), Gainesville, Florida.

According to the pilot, he began a descent from 4,500 feet mean sea level (msl) to 1,100 feet msl, about 13 nautical miles east of GNV. He indicated that he followed the descent checklist to include enriching the mixture, applying the carburetor heat, and reducing the power to 1,500 rpm. As he leveled off at 1,100 msl, the engine shut down without warning. The pilot then prepared for an approach to a nearby field, and attempted to restart the engine, but was unsuccessful. He did not recall any further details about the landing.

The airplane subsequently came to rest upright in swampy terrain and sustained substantial damage to the fuselage and nose section. The empennage was fractured and partially separated aft of the cabin area. A Federal Aviation Administration (FAA) inspector responded to the accident site but was unable to examine the wreckage due to the terrain surrounding the site.

The operator was self-insured and recovered the wreckage back to a hangar at OMN. The operator stated that during recovery, no fuel was in one fuel tank, he couldn't tell if any fuel was in the other fuel tank, and there was no odor of fuel at the accident site. The wreckage was examined after recovery by a National Transportation Safety Board investigator. Both fuel tanks remained intact and were absent of fuel. Additionally, no fuel was found in the carburetor. Continuity of the crankshaft, camshaft, valve train, and continuity to the rear accessory section on the engine was confirmed through rotation of the propeller. Thumb compression was attained on all cylinders.

When asked about fueling, the operator stated that the airplane was last fueled on May 11, 2016 and hadn't flown until the accident flight. The operator added that the airplane had only flown once during May 2016 (the accident flight) and he produced an airplane flight log sheet for the month, which only listed the accident flight on it. However, review of fueling records for May 10 and 11, 2016, revealed that the accident airplane was fueled three times on May 10, 2016 and two times on May 11, 2016. Additionally, the pilot and the operator did not report how much fuel was onboard the accident airplane at the beginning of the accident flight.

History of Flight

Enroute-descent	Fuel exhaustion (Defining event) Loss of engine power (total)
Landing	Off-field or emergency landing
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	20, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last FAA Medical Exam:	10/29/2015
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	116 hours (Total, all aircraft), 30 hours (Pilot In Command, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N952SA
Model/Series:	152 NO SERIES	Aircraft Category:	Airplane
Year of Manufacture:	1977	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	15280667
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	05/17/2016, 100 Hour	Certified Max Gross Wt.:	1676 lbs
Time Since Last Inspection:	1 Hours	Engines:	1 Reciprocating
Airframe Total Time:	9300.6 Hours at time of accident	Engine Manufacturer:	LYCOMING
ELT:	C91A installed	Engine Model/Series:	O-235-L2C
Registered Owner:	SUNRISE AVIATION INC	Rated Power:	115 hp
Operator:	SUNRISE AVIATION INC	Operating Certificate(s) Held:	Pilot School (141)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	K42J, 197 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	1555 EDT	Direction from Accident Site:	335°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	310°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.94 inches Hg	Temperature/Dew Point:	29° C / 9° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	ORMOND BEACH, FL (OMN)	Type of Flight Plan Filed:	None
Destination:	GAINESVILLE, FL (GNV)	Type of Clearance:	None
Departure Time:	1500 EDT	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	29.718333, -81.980556 (est)

Administrative Information

Investigator In Charge (IIC):	Douglass P Brazy	Report Date:	03/18/2019
Additional Participating Persons:	Ricardo P Rodriguez; FAA/FSDO; Orlando, FL Jan R Smith; Textron Aviation; Wichita, KS		
Publish Date:	03/18/2019		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93236		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).