



National Transportation Safety Board Aviation Accident Final Report

Location:	St. Petersburg, Florida	Accident Number:	ERA18LA011
Date & Time:	October 18, 2017, 15:45 Local	Registration:	N900CR
Aircraft:	Cessna 402	Aircraft Damage:	Substantial
Defining Event:	Fuel starvation	Injuries:	4 Minor
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot departed on the non-scheduled passenger flight with one passenger onboard; the flight was the 3rd leg of a 4-leg trip. About 13 minutes after departure, he advised air traffic control that the airplane was “fuel critical” and requested vectors to the nearest airport, which was about 7 miles away. Both engines subsequently lost total power and the pilot performed a forced landing on a street about 2 miles from the airport, during which the airplane collided with two vehicles. Examination of the airplane revealed substantial damage to the fuel tanks, with evidence of a small fire near the left wingtip fuel tank.

Fuel consumption calculations revealed that the airplane would have used about 100 gallons of fuel since its most recent refueling, which was the capacity of the main (wingtip) tanks. Both fuel selectors were found in their respective main tank positions. Given the available information, it is likely that the pilot exhausted all the fuel in the main fuel tanks and starved the engines of fuel. Although the total amount of fuel on board at the start of the flight could not be determined, had all tanks been full, the airplane would have had about 63 gallons remaining in the two auxiliary tanks at the time of the accident. The auxiliary fuel tanks were breached during the accident and quantity of fuel they contained was not determined. Examination of the engines revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation.

Probable Cause and Findings

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

The pilot's mismanagement of the onboard fuel, which resulted in fuel starvation, a total loss of power to both engines, and a subsequent forced landing.

Findings

Personnel issues	Use of equip/system - Pilot
Aircraft	Fuel - Fluid management

Factual Information

On October 18, 2017, about 1545 eastern daylight time, a Cessna 402B, N900CR, was substantially damaged when it was involved in an accident near St. Petersburg, Florida. The commercial pilot and passenger and two individuals on the ground sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 135 non-scheduled passenger flight.

Federal Aviation Administration (FAA) air traffic control records indicated that the airplane departed Tampa International Airport (TPA), Tampa, Florida, at 1526. At 1539, the pilot advised air traffic control that he was “fuel critical” and requested vectors for the nearest airport. The controller provided a heading toward Albert Whitted Airport (SPG), St. Petersburg, Florida, about 7 miles away. The pilot reported that he had 20 minutes of fuel on board. At 1543, while 4 miles from the runway, the pilot was given a vector toward runway 4. The pilot reported the airport in sight, and the controller provided the pilot the SPG tower frequency. There were no further radio transmissions.

The airplane landed on a residential street about 2 miles from SPG and collided with two vehicles.

Examination of the airplane by an FAA inspector revealed substantial damage to both wings, the horizontal stabilizer, elevator, and nose section. Both wingtips and wingtip fuel tanks were separated from the wings. The left wing tip fuel tank exhibited minor sooting and heat damage. Both auxiliary fuel tanks were damaged and breached. The left engine fuel selector was found in the left main fuel tank position; the right engine fuel selector was in the right main fuel tank position. Examination of the engines revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation. Fuel was found in the line between the fuel flow transducer, the fuel manifold valve, and in the fuel manifold valve housing on both engines.

According to operator records, the accident occurred during the third leg of a four-leg trip. The records indicated that at the start of the trip, the airplane’s hour meter read 589.0 hours. At the accident scene, it read 592.7 hours. Two of the legs were scheduled with passengers; the other two legs were positioning flights.

A review of fueling records revealed that the airplane was fueled with 102.3 gallons the day before the accident. The total amount of fuel on board at the start of the trip was not listed in the company dispatch documents. The pilot did not fuel the airplane at either of the intermediate stops.

According to the Pilot’s Operating Handbook, the airplane was equipped with two main wingtip tanks, each with a capacity of 50 usable gallons, and two auxiliary fuel tanks, each with a capacity of 31.5 usable gallons. With full fuel, the published endurance was between 4.8 to 5.4 hours using 73% and 65% power, respectively. The published endurance for 100 gallons of fuel (the capacity of the main fuel tanks) was 3 to 3.3 hours.

Fuel consumption estimates, based on the flight’s itinerary, distances between airports, and performance tables in the Pilot’s Operating Handbook indicated that the airplane would have used about 100 gallons of fuel between the last fueling and the accident.

The pilot had 38 hours in the airplane make and model, all of which were flown in the 30 days preceding the accident. The pilot completed his Part 135 checkride the day before the accident. The accident trip was his first solo revenue flight.

History of Flight

Enroute-climb to cruise	Fuel starvation (Defining event)
Enroute-climb to cruise	Off-field or emergency landing
Landing	Collision during takeoff/land

Pilot Information

Certificate:	Commercial	Age:	36, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	November 16, 2016
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	October 16, 2017
Flight Time:	(Estimated) 654 hours (Total, all aircraft), 38 hours (Total, this make and model), 593 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 38 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N900CR
Model/Series:	402 B	Aircraft Category:	Airplane
Year of Manufacture:	1978	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	402B1356
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	August 31, 2017 AAIP	Certified Max Gross Wt.:	6300 lbs
Time Since Last Inspection:	34 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	8971.8 Hrs as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	C126 installed	Engine Model/Series:	TSIO-520 E(8)
Registered Owner:		Rated Power:	300 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	SPG, 8 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	15:49 Local	Direction from Accident Site:	60°
Lowest Cloud Condition:	Few / 2900 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	19 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	27° C / 22° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	TAMPA, FL (TPA)	Type of Flight Plan Filed:	VFR
Destination:	SARASOTA, FL (SRQ)	Type of Clearance:	VFR
Departure Time:	15:26 Local	Type of Airspace:	Class D

Airport Information

Airport:	ALBERT WHITTED SPG	Runway Surface Type:	Asphalt
Airport Elevation:	6 ft msl	Runway Surface Condition:	Dry
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	On-ground
Ground Injuries:	2 Minor	Aircraft Explosion:	None
Total Injuries:	4 Minor	Latitude, Longitude:	27.751943,-82.653053(est)

Administrative Information

Investigator In Charge (IIC):	Brazy, Douglass		
Additional Participating Persons:	Jesse M Lacy; FAA/FSDO; Tampa, FL		
Original Publish Date:	May 27, 2021	Investigation Class:	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=96209		

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](#).