



Aviation Investigation Final Report

Location:	BOCA RATON, Florida	Accident Number:	MIA97LA064
Date & Time:	January 16, 1997, 09:20 Local	Registration:	N69219
Aircraft:	Cessna 152	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The pilot stated that during preflight inspection she did not see any water in fuel samples she drew from the wing sump drains and fuel strainer. After 55 minutes of flight, while on final approach, the engine quit. The pilot made a forced landing in a wooded area. Postcrash examination showed that the fuel strainer and carburetor bowl were full of water. The right fuel cap was found to be leaking. The engine operated normally after removal of the water from the fuel system. The fueling source was free of water and other aircraft fueled from this source did not contain water. The aircraft was refueled 5 days before the accident and did not fly until the accident flight. Between the last refueling and the accident flight the aircraft sat on the ramp. On several of the days it rained. The aircraft received a 100-hour inspection, 17 days and 21 flight hours before the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Inadequate inspection of the fuel caps by company maintenance personnel resulting in a cap with a deteriorated seal being allowed to continue in service. This allowed water to leak into the fuel tank which resulted in loss of engine power due to water ingestion.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. (C) FUEL SYSTEM,CAP - DETERIORATED
2. (C) MAINTENANCE,INSPECTION - INADEQUATE - COMPANY MAINTENANCE PERSONNEL
3. (C) FUEL SYSTEM,CAP - LEAK
4. (C) FUEL SYSTEM - CONTAMINATION,WATER

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

5. OBJECT - TREE(S)

Factual Information

On January 16, 1997, about 0920 eastern standard time, a Cessna 152, N69219, registered to Boca Airport, Inc., collided with trees while making a forced landing following loss of engine power at Boca Raton Airport, Boca Raton, Florida, while on a Title 14 CFR Part 91 instructional flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft received substantial damage and the student-rated pilot received serious injury. The flight originated from Boca Raton, Florida, the same day, about 0825.

The pilot stated she performed a normal preflight inspection and drained the fuel tank sumps and fuel strainer. She did not observe any water in the drained fuel. After takeoff she performed maneuvers west of Boca Raton for about 45 minutes, before returning to the airport for takeoffs and landings. On the second approach to landing she pushed in the throttle to increase engine power while at 500 feet on final approach. The engine did not respond and the propeller stopped turning shortly after this. She was unable to reach the runway and made a forced landing in a wooded area short of the runway.

Postcrash examination of the aircraft by an FAA inspector showed each fuel tank was about three quarters full of 100LL fuel. Uncontaminated fuel was drained from each fuel tank sump. The fuel strainer and carburetor bowl was full of water. The right fuel cap was found to allow water to leak into it when poured over the cap. The engine fuel system was purged of water and the engine was started and operated with no evidence of mechanical malfunction.

The aircraft had been fueled on January 11, 1997, and did not fly until the accident flight. During the period between the fueling and the accident flight the aircraft was parked on the ramp. On several of the days it rained. The fueling source was found to be uncontaminated and other aircraft fueled from the source did not contain water contamination.

Pilot Information

Certificate:	Student	Age:	52,Female
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	April 3, 1996
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	350 hours (Total, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N69219
Model/Series:	152 152	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal; Utility	Serial Number:	15285350
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	December 30, 1996 100 hour	Certified Max Gross Wt.:	1675 lbs
Time Since Last Inspection:	21 Hrs	Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-235-L2C
Registered Owner:	BOCA AIRPORT, INC.	Rated Power:	118 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:	BOCA AVIATION	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	PBI ,19 ft msl	Distance from Accident Site:	18 Nautical Miles
Observation Time:	08:53 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Scattered / 900 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	22°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(BCT)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	08:25 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	26.369609,-80.100311(est)

Administrative Information

Investigator In Charge (IIC):	Kennedy, Jeffrey
Additional Participating Persons:	GARY JUSTICE; FT. LAUDERDALE , FL
Original Publish Date:	August 25, 1997
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=38204

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).