



Aviation Investigation Final Report

Location:	PASADENA, Maryland	Accident Number:	NYC97LA007
Date & Time:	October 18, 1996, 23:01 Local	Registration:	N8226
Aircraft:	Cessna 310Q	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot departed on the first of three legs with an undetermined amount of fuel. He reported to the passenger that the fuel quantity indicating system was inaccurate, but that he knew how much fuel was on board. After flying two legs and purchasing a total of 50 gallons enroute, the airplane departed with what the pilot estimated was a two-hour fuel load for an anticipated one hour final leg to BWI. The passenger reported that the airplane had intercepted the localizer course for the ILS Runway 28 Approach at BWI at 3000 feet. He said, 'All of a sudden the aircraft started yawing violently left to right, because both engines were alternating power, then no power. [The pilot] asked, 'Which engine is failing?' and I said 'they're both failing, you're out of fuel.' He tried to access fuel in the [auxiliary] tanks but there was no fuel anywhere in the aircraft.' Both engines subsequently stopped producing power, and the aircraft descended into wooded terrain. The airplane had been aloft for about 1 hour and 40 minutes when the engines stopped producing power. There was no fuel nor evidence of fuel found at the accident site.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's inadequate preflight planning/preparation and inadequate management of the airplane's fuel supply, which resulted in fuel exhaustion and a forced landing at night. Factors related to the accident were: an inaccurate fuel quantity indicating system, darkness, and trees in the emergency landing area.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

Findings

1. (C) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND
2. (F) ENGINE INSTRUMENTS,FUEL QUANTITY GAGE - FALSE INDICATION
3. (C) FLUID,FUEL - EXHAUSTION
4. (C) FUEL MANAGEMENT - INADEQUATE - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING

Findings

5. (F) LIGHT CONDITION - DARK NIGHT
6. (F) OBJECT - TREE(S)

Factual Information

On October 18, 1996, at 2301 eastern daylight time, a Cessna 310Q, N8226Q, was destroyed when it contacted trees and descended into terrain during a forced landing near Pasadena, Maryland. The certificated commercial pilot received minor injuries and the pilot rated passenger sustained serious injuries. Visual meteorological conditions prevailed at the time of the accident and an IFR flight plan was filed. The cargo (film) flight originated in Chesterfield, Virginia (FCI) at approximately 2130 with an intended destination of Baltimore Washington International Airport (BWI). The flight was conducted under 14 CFR Part 135.

The airplane departed BWI approximately 0645 with an undetermined amount of fuel. The pilot reported to the passenger that the fuel gauges were inaccurate but that he knew how much fuel was aboard. The pilot also stated that some 'unscheduled' stops would be made in order to buy cheaper fuel. The airplane flew for approximately 5 hours after departing BWI and fuel purchases totaling 50 gallons were made enroute.

The passenger reported that the airplane had intercepted the localizer course for the ILS Runway 28 Approach at BWI at 3000 feet. He said, "All of a sudden the aircraft started yawing violently left to right, because both engines were alternating power, then no power. [The pilot] asked, 'Which engine is failing?' and I said 'they're both failing, you're out of fuel'. He tried to access fuel in the [auxiliary] tanks but there was no fuel anywhere in the aircraft." Both engines subsequently stopped producing power and the aircraft descended into wooded terrain.

One witness reported that he was outside his place of employment when he saw the airplane fly overhead. He said he "...heard the engine popping like it was being turned off and then back on." The witness reported that the airplane produced "...normal running sounds and then cut off. When the aircraft would sputter it would tend to go to the right. Looked a little lower than the average airplane going over." Two other witnesses standing together outside their home reported, "Once the plane was directly above the house we could hear what sounded like an engine cutting out but we could still hear the steady sound of another engine. About 150 feet away from the house it sounded as if the stalled engine tried to start again and sputtered then stalled again. Still we could hear the sound of another engine. When the engine cut out the second time the plane pitched or dipped its left wing abruptly then righted itself and wobbled like it was going to roll over."

During the flight between BWI and Greensboro, North Carolina (GSO), N8226Q was delayed 50 minutes for holding. The airplane departed GSO and flew to FCI where a fuel purchase was made. Prior to departing FCI, the pilot reported to the passenger that N8226Q had 2 hours worth of fuel for the anticipated 1 hour flight to BWI. The airplane flew for approximately 1 hour and 40 minutes prior to the loss of engine power.

A post accident examination of the wreckage was conducted with a Federal Aviation Administration Supervisory Aviation Safety Inspector and revealed no pre-impact mechanical deficiencies. The Inspector reported, "The aircraft appeared to descend into the trees on an approximate 300 degree heading and was totally destroyed upon impact. Both propellers were intact and showed no evidence of rotation or power upon impact. The right propeller was separated from the engine upon impacting a tree of approximately 12 inches diameter. The right prop spinner was dented on one side only, verifying that there was no rotation upon impact. All four fuel tanks were observed and contained no fuel. Three of the fuel tanks were opened upon impact but there was no odor or other evidence of fuel on the ground or the surrounding area."

The pilot of N8226Q provided a statement that was a chronological description of events from 2130 to 2320. The pilot did not discuss flight planning, fuel purchases, or the mechanical condition of the airplane. In the NTSB Form 6120.1/2, the pilot reported in the Mechanical Malfunction/Failure section: "Left and right engine temp. during turbulence."

Pilot Information

Certificate:	Commercial	Age:	33, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	January 26, 1996
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	9640 hours (Total, all aircraft), 600 hours (Total, this make and model), 9100 hours (Pilot In Command, all aircraft), 135 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N8226
Model/Series:	310Q 310Q	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	310Q0706
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	July 1, 1996 100 hour	Certified Max Gross Wt.:	5300 lbs
Time Since Last Inspection:	99 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	4655 Hrs	Engine Manufacturer:	Continental
ELT:	Installed	Engine Model/Series:	IO-470
Registered Owner:	SOUTHERN VIRGINIA AVIATION	Rated Power:	260 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:	SUNDANCE AVIATION	Operator Designator Code:	S2VA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night/dark
Observation Facility, Elevation:	BWI ,146 ft msl	Distance from Accident Site:	4 Nautical Miles
Observation Time:	23:00 Local	Direction from Accident Site:	280°
Lowest Cloud Condition:	Unknown	Visibility	4 miles
Lowest Ceiling:	Broken / 4500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	32°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	12°C / 9°C
Precipitation and Obscuration:	N/A - None - Rain		
Departure Point:	CHESTERFIELD , VA (FCI)	Type of Flight Plan Filed:	IFR
Destination:	BALTIMORE , MD (BWI)	Type of Clearance:	IFR
Departure Time:	21:30 Local	Type of Airspace:	Class B

Airport Information

Airport:	BALTIMORE-WASHINGTON BWI	Runway Surface Type:	Asphalt
Airport Elevation:	146 ft msl	Runway Surface Condition:	Wet
Runway Used:	28	IFR Approach:	Localizer only
Runway Length/Width:	9452 ft / 200 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor	Latitude, Longitude:	39.159629,-76.599868(est)

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	LINDA NEVIN; BALTIMORE , MD GEORGE A GALO; BALTIMORE , MD STEPHAN T WILSON; WITCHITA , KS
Original Publish Date:	October 31, 1997
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=39296

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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](#).