



National Transportation Safety Board Aviation Accident Final Report

Location:	EDENTON, NC	Accident Number:	MIA97FA057
Date & Time:	01/02/1997, 1835 EST	Registration:	N802TH
Aircraft:	Cessna 208B	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal

Flight Conducted Under: Part 91: General Aviation - Positioning

Analysis

During his weather briefing, the pilot was told that his destination weather was not available, and was provided weather for an airport about 10 miles north. He was briefed that low visibility due to fog prevailed. The flight departed earlier than usual because the company business manager was concerned that the weather at the destination airport was deteriorating, and if the airplane was not there earlier they might not get into the airport. At the time of the accident there was a power failure, and lights around the destination airport went out. The airplane had struck power lines and a support tower located on the approach end of runway 1 and runway 5, about 1/2 mile southwest of the airport. The airport had one NDB approach which was not authorized at night. The nearest recorded weather, about 10 miles north of the crash site, at the time of the accident was; '...ceiling 100, [visibility] 1/2 mile, fog, [temperature] 46 degrees F, dew point, 42 degrees F, winds 220 degrees at 5 [knots], altimeter 29.90 inches Hg. Witnesses reported that there was heavy fog at the airport and the visibility was below 1/4 mile.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's continued VFR flight into instrument meteorological conditions. Factors in this accident were: fog, the low ceiling, and the dark night.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: APPROACH

Findings

1. (F) LIGHT CONDITION - DARK NIGHT
 2. (F) WEATHER CONDITION - FOG
 3. (F) WEATHER CONDITION - LOW CEILING
 4. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND
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Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: APPROACH

Findings

5. OBJECT - WIRE, TRANSMISSION
6. OBJECT - ELECTRICAL TOWER

Factual Information

HISTORY OF FLIGHT

On January 2, 1997, about 1835 eastern standard time, a Cessna 208B, N802TH, operated by Tar Heel Aviation Inc., operating as a Title 14 CFR Part 91, positioning flight, crashed while on approach for landing near Edenton, North Carolina. Instrument meteorological conditions prevailed and no flight plan was filed. The airplane was destroyed. The commercial pilot, and an airline transport-rated, jump seat passenger were fatally injured. The flight departed Manteo, North Carolina, about 1815 en route to Edenton to pick up cargo. It was then scheduled to continue on to Raleigh, North Carolina, under a contract with United Parcel Services (UPS).

At 1724:44, the pilot of N802TH telephoned the Raleigh Automated Flight Service Station (AFSS) and identified himself as Tarheel 1279 (THC1279). The pilot told the specialist he was "trying to figure out what was going on with this cloud stuff and are you coming down out there yet...." The specialist said, "we have been down all day...were still a little bit IFR [instrument flight rules]...are you looking for a standard briefing...." The pilot answered, "no sir."

The weather at Edenton was not available, so the pilot was provided the Elizabeth City, North Carolina, weather: "...indefinite ceiling 300, [visibility] 2 miles, in mist, [temperature] 8 degrees C [46F], dew point, 7 degrees C [45F], winds 260 degrees at 5 [knots], altimeter 29.89 inHg.

The Air Operations Controller for UPS at the Manteo Airport (MQI), wrote in his statement to the sheriff, that the pilot of N802TH usually departed from MQI about 1915, en route to Edenton. The UPS controller stated; "...[the pilot] told me the fog was forecasted to move in and UPS had told him to make sure to make it to Edenton." On January 2, 1997, the flight departed about 1 hour earlier, because the business manager for UPS had called between 1500 and 1600, and told the pilot of N802TH to "leave earlier," because UPS was concerned that the weather at Edenton was deteriorating and if the airplane was not there earlier they might not get into the airport.

According to the Air Operations Controller for UPS at Manteo, the pilot had called on the UNICOM frequency, after departure, and said, "...that he couldn't make it back to Manteo or Elizabeth City, because the fog had already moved in." About 20 minutes later, the UPS controller at Manteo, called the pilot of N802TH, on the UNICOM and asked him "did he think he could get into Pitt Greenville?" The pilot answered, "...the ceiling in Greenville was 700 feet and getting worse all the time and he didn't know if he could get in there or not."

The pilot of N802TH then asked the UPS controller at Manteo to call UPS in Raleigh, tell them the situation, and ask what they wanted the pilot of N802TH to do. UPS in Raleigh advised UPS in Manteo that they would call back with further instructions, because they did not know what to do. The information was forwarded to the pilot of N802TH, and it was at this time the pilot told the UPS controller at Manteo that he was "getting ready to try to go into Edenton" and that he would soon be "too low" to talk to Manteo. The UPS controller at Manteo then told the pilot "if you miss at Edenton, climb up and call me for directions."

About 1835, there was a power failure and the lights around the Edenton Airport went out. At 1845, the UPS controller at Manteo, tried to call the pilot of N802TH on the UNICOM,

but he did not get any answer. There was no further radio communication with the airplane.

According to the UPS business manager's statement, between 1500 and 1600 he called Raleigh "to suggest we move the plane [N802TH] from Manteo to Edenton. There had been a lot of fog weather." He said about 1730, he called Manteo to see if the N802TH had moved to Edenton, and that "no one knew." A little after 1800, he was on his way to someone's house and stopped at the Edenton Airport to see if the plane was there and he said it "was not." In addition, he said, " I could not see from the gate to the back of the building where the plane was parked." He arrived at his destination about 1830, and about 1850 the lights went out. He called the UPS center and found out that the lights were out all over the area. He told the people at the UPS center, "we would have to carry our air [cargo] somewhere because I didn't think the airplane could land out there [Edenton]." He said it was not until about 2020 that the sheriff told him that it was possible that UPS's plane had crashed.

After the power failure, the sheriff's office received calls from some residents, that lived south of the airport, and had heard a low flying plane go over their homes just before the lights went out. A deputy was dispatched to Cape Colony area, at a point where the power lines cross the Albemarle Sound to check on a possible airplane crash. According to the deputy that was first on the scene, "...I found one electrical wire broken. Using a pair of binoculars and a spotlight [I] looked in the area of the first electrical tower. It was extremely foggy and I would estimate visibility [was] at a maxim of 300 yards...as the fog lifted briefly, I could barely see a white object in the water near the base of the tower. I could not confirm at the time what the object was...[until another deputy] arrived with night vision [and] we were able to confirm that it was a downed aircraft."

The accident occurred during the hours of darkness approximately 36 degrees, 01 minutes north, and 076 degrees, 34 minutes west.

PERSONNEL INFORMATION

Information on the pilot is contained in this report on page 3, under First Pilot Information. The pilot's personal logbook containing his flight hours was not found.

The pilot was hired by Tarheel Aviation May 1995, and his last check ride before the accident was November 8, 1996.

METEOROLOGICAL INFORMATION

Instrument meteorological conditions prevailed at the time of the accident. Meteorological information is contained in this report on page 3, under Weather Information. Witnesses reported that there was heavy fog at Edenton and the visibility was below 1/4 mile.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilots, on January 3, 1997, at the Medical Examiner's Office, Chapel Hill, North Carolina, by Dr. Robert Thompson and Dr. Karen Chancellor.

Toxicological tests were conducted at the Federal Aviation Administration, Research Laboratory, Oklahoma City, Oklahoma, and revealed, "...no drugs or alcohol detected...."

AERODROME INFORMATION

The published non-direction beacon (NDB) approach in effect at the time of the accident stated in the remarks: "Use Elizabeth [City] altimeter setting, when Elizabeth control tower

closed, procedure not authorized...straight-in minimums not authorized at night." There was no record found to indicate that the pilot had the Elizabeth City altimeter. There was no recorded transmission between the airplane and the control tower at Elizabeth City. The hours of operation of the Elizabeth City tower on the day of the accident were from 0700 to 2200.

The published minimums for the NDB approach to runway 5 was the same for the straight-in and circling approaches. They were: 580 feet minimum descent altitude (MDA), with at least 1 mile visibility, and the height above the terrain was 561 feet. The minimum ceiling was 600 feet and 1 mile visibility.

WRECKAGE INFORMATION

The accident site was located on the approach end of runway 1 and runway 5, about 1/2 mile southwest of the airport. The airplane came to rest directly under down power lines, a broken power line support tower, in about 5 feet of water, and about 600 feet offshore. The airplane was removed from the water, the afternoon of January 3, 1997, and taken to Waff's Marine Salvage Yard, at Edenton where the airframe and engine were examined.

Wire from the power lines was found wrapped around the engine and airframe to include the tail section. Wire strike marks were observed on the nose and main landing gear tires and struts. In addition, wire strike marks were observed on the propeller blades.

Partial control continuity was established to the ailerons, because of the deformation and damage to the wings. Control continuity was established to the elevators and rudder. The left elevator and stabilizer displayed impact damage, and part of the power line cable was wrapped around the left stabilizer. The right elevator and stabilizer displayed minor impact damage. Examination of the engine revealed that it remained attached to the airframe by external lines and linkages. Power line cable was found wrapped around the engine and propeller flange for 10 complete loops. No discrepancies were found with the engine.

For reference purposes, the propeller blades were numbered from the rear, 1 thru 3 counter clockwise.

Blade No. 1: The blade airfoil was deformed slightly aft and the tip was twisted towards low pitch. The leading edge was gouged about 1/2 inch inboard of the tip and about 3 inches inboard of the tip. The gouge marks were consistent with wire that was wrapped around the propeller flange.

Blade No. 2: The airfoil of the blade was deformed about 20 degrees forward from about 1/2 span, and the tip was twisted toward low pitch. The leading edge displayed gouges at locations 3 inches, 4-1/2 inches, and 6 inches inboard of the tip. The gouge marks were consistent with wire that was wrapped around the propeller flange.

Blade No. 3: The airfoil of the blade was deformed about 90 degrees aft, and the tip was twisted towards low pitch. The trailing edge was deformed and dimpled about 5 and 9 inches inboard of the tip.

ADDITIONAL INFORMATION

According to a record of telephone conversation between the UPS, Air Operations Controller at Manteo, and the FAA, dated January 5, 1997, the controller told the FAA: "...[the jump seat passenger] usually rode this airplane to RDU [Raleigh], probably once a week and then caught a flight out of RDU...this was his regular means of transportation to RDU." The

passenger was a pilot for an air freight company. The UPS controller said he "has ridden with these pilots on this run before." He further said that the previous pilot that flew this trip "had been known to use his radar to paint the power lines running on an extended line from the runway, and follow these to the shoreline...then turn towards the runway." The UPS controller said he "has seen this done on at least two occasions, although never with [the accident pilot]." The controller said he "feels certain that [the pilot of N802TH] knew of and used this procedure routinely to get into Edenton when weather was low...this is [a] fairly common practice for pilots going in to Edenton. All local pilots know the powerlines are there and that they lead to the airport...both [pilots] knew the lines were there and their height...."

The broken power lines and tower were owned by Virginia Power Company. The elevation of the tower at the point where it was damaged was 128 feet above the water. The magnetic heading of the tower and power lines was 013/193 degrees. The power lines sagged about 12 to 14 feet and their height above the water was about 110 feet. The broken wires were shield or static wire and were 0.349 inches in diameter. The static wire had a tensile strength of about 280 pounds. In addition, a phase conductor wire was also broken. The phase conductor wire had a diameter of 0.721 inches and a tensile strength of 100 pounds.

The aircraft wreckage was released to Mr. Paul Waff, representing the owner's insurance company, on January 4, 1997.

Pilot Information

Certificate:	Commercial	Age:	35, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	04/27/1996
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	2980 hours (Total, all aircraft), 850 hours (Total, this make and model), 2900 hours (Pilot In Command, all aircraft), 135 hours (Last 90 days, all aircraft), 45 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N802TH
Model/Series:	208B 208B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	208B-0179
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	11/18/1996, AAIP	Certified Max Gross Wt.:	8750 lbs
Time Since Last Inspection:	64 Hours	Engines:	1 Turbo Prop
Airframe Total Time:	3520 Hours	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	PT6A-114A
Registered Owner:	CESSNA FINANCE CORP.	Rated Power:	675 hp
Operator:	TAR HEEL AVIATION INC.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	FFJA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	ECG, 12 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	1845 EST	Direction from Accident Site:	360°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	0.5 Miles
Lowest Ceiling:	Obscured / 100 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	8°C / 6°C
Precipitation and Obscuration:			
Departure Point:	MANTEO, NC (MQI)	Type of Flight Plan Filed:	None
Destination:	(EDE)	Type of Clearance:	None
Departure Time:	1815 EST	Type of Airspace:	

Airport Information

Airport:	NORTHEASTERN REGIONAL (EDE)	Runway Surface Type:	
Airport Elevation:	20 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ALAN J YURMAN	Report Date:	04/10/1998
Additional Participating Persons:	PHIL RANDALL; WINSTON/SALEM, NC THOMAS A BERTHE; S. BURLINGTON, VT FRED LEEPER; WICHITA, KS		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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