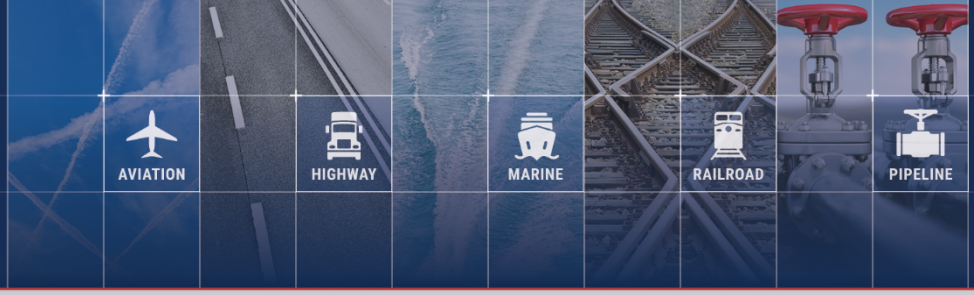

Aviation Investigation Final Report

Location:	GREENWOOD, Delaware	**Accident Number:**	NYC00LA052
Date & Time:	December 15, 1999, 07:25 Local	**Registration:**	N450M
Aircraft:	Cessna P210N	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot made an IFR departure from an uncontrolled turf runway with a soft surface. He initiated the takeoff with full power, and then the airplane swerved left. He reduced power, regained directional control and re-added power, however, he did not check the power setting. After becoming airborne, the airplane initially climbed out of ground effect and then settled into trees off the departure end of the runway. Passing through trees, the engine lost power, and the pilot landed gear up in an open field. The pilot reported that visibility was about 1/2 to 3/4 of a mile at the time, and the ceiling was about 100 feet.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the failure of the pilot to use full power for takeoff, which resulted in not obtaining a positive rate of climb and the inadvertent collision with trees. A factor was the fog.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (F) WEATHER CONDITION - FOG
2. (C) THROTTLE/POWER CONTROL - IMPROPER USE OF - PILOT IN COMMAND
3. PROPER CLIMB RATE - NOT OBTAINED/MAINTAINED - PILOT IN COMMAND

4. DESCENT - INADVERTENT - PILOT IN COMMAND
5. OBJECT - TREE(S)

Factual Information

On December 15, 1999, about 0725 eastern standard time, a Cessna P210N, N450M, was substantially damaged while departing from Sugar Hill Airport, Greenwood, Delaware. The certificated private pilot and passenger were not injured. Instrument meteorological conditions prevailed for the personal flight, and an instrument flight rules (IFR) flight plan had been filed for the flight that was conducted under 14 CFR Part 91.

The airplane had been modified with the installation of an Allison B17F turbine engine which developed 420 horse power. In a telephone interview, the pilot reported that the ground visibility was about 1/2 to 3/4 of a mile. He set the wing flaps at 20 degrees for takeoff because the runway was soft. During the ground roll with full power applied, the airplane drifted left, and he reduced power to regain directional control. After directional control was regained, power was added, but at a reduced level. After becoming airborne, he was distracted from the climb attitude of the airplane when he retracted the wing flaps and landing gear, and the airplane settled into trees.

According to a written statement from the pilot:

"...After departure failed to establish and maintain positive rate of climb. After retracting gear lost altitude and hit trees. Engine quite [after hitting trees], made sharp turn to left and attempted to keep airplane from stalling. Cleared power lines and irrigation system and belly landed plane."

In a follow-up telephone interview, the pilot reported he always used full power as defined by the red line on the torque or temperature gage for takeoff. He would normally use 10 degrees of flaps for takeoff. On the accident flight, he had the flaps set at 20 degrees due to the softness of the field. He initially set full power for takeoff; however, he was unable to maintain directional control and reduced the power. When he reset the power, he did not visually check the setting. After the airplane became airborne he immediately transferred his focus to the flight instruments as he immediately entered instrument meteorological conditions. He never rechecked the power setting after resetting the power.

In addition, the pilot explained that he was used to using a small ear piece for listening to the radios, and probably would have detected the lower than normal power setting. However, he had recently switched to a full ear cover head set and did not detect the lower than normal power setting.

The FAA Inspector also reported the leading edges of both wings were damaged, but the damage did not go back to the spar. Both horizontal stabilizers had also received leading edge damage and were pushed rearward.

The closest weather reporting facility was Sussex County Airport (GED), Georgetown, Delaware, which was located 12 miles southeast of the departure airport. Between 0715, and 0737, there were three observations. The ceiling was 300 feet overcast each time, and the visibility varied between 1 1/4 miles and 3/4 miles. The winds varied between calm and from the northwest at 5 knots or less.

According to the pilot, he had accumulated 4,500 hours of flight experience with 1,110 in make and model, and had flown 36.2 hours in the preceding 90 days, which included 19 hours of instrument time.

Pilot Information

Certificate:	Private	**Age:**	63,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	October 20, 1999
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	4500 hours (Total, all aircraft), 1110 hours (Total, this make and model), 4500 hours (Pilot In Command, all aircraft), 36 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N450M
Model/Series:	P210N P210N	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	P21000631
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	February 1, 1999 Annual	**Certified Max Gross Wt.:**	4000 lbs
Time Since Last Inspection:	110 Hrs	**Engines:**	1 Turbo prop
Airframe Total Time:		**Engine Manufacturer:**	Allison
ELT:	Installed, not activated	**Engine Model/Series:**	250 B17F
Registered Owner:	IMPERIAL SALES INC.	**Rated Power:**	
Operator:	MERLE L. EMBLETON	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	L

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GED ,51 ft msl	**Distance from Accident Site:**	12 Nautical Miles
Observation Time:	12:23 Local	**Direction from Accident Site:**	128°
Lowest Cloud Condition:	Unknown	**Visibility**	1 miles
Lowest Ceiling:	Overcast / 300 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	5°C / 5°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:		**Type of Flight Plan Filed:**	IFR
Destination:	HARNETT , NC (HRJ)	**Type of Clearance:**	None
Departure Time:	07:25 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	SUGAR HILL AIRPORT DE17	**Runway Surface Type:**	Grass/turf
Airport Elevation:	45 ft msl	**Runway Surface Condition:**	Soft;Wet
Runway Used:	21	**IFR Approach:**	None
Runway Length/Width:	2300 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	38.800216,-75.589485(est)

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	JAMES R DORNAK; PHILADELPHIA , PA
Original Publish Date:	November 30, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=48348