Aviation Investigation Final Report

Location:	NEW BERN, North Carolina	**Accident Number:**	MIA97FA020
Date & Time:	November 9, 1996, 11:39 Local	**Registration:**	N8239J
Aircraft:	Piper PA-60-600	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was over gross weight at takeoff but within Weight and Balance at the time of the accident. Witnesses observed the airplane flying low with the landing gear retracted over a wooded area then observed the airplane bank to the left and pitch down. The airplane then pitched nose up and entered what was described as a flat spin to the left. The airplane descended and impacted the ground upright with the landing gear retracted and the flaps symmetrically extended 6 degrees. Examination of the flight control systems, and engines revealed no evidence of preimpact failure or malfunction. A cabin door ajar indicating light was not illuminated at impact but the gear warning light was illuminated at impact. The pilot recently purchased the aircraft and only accumulated a total of 1 hour 23 minutes during 6 training flights. He accumulated an additional 3 hours 37 minutes after completion of the training flights while flying with other qualified pilots. The accident flight was the first flight in the make and model while flying with no other multiengine-rated pilot aboard.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure to maintain airspeed (VMC). Contributing to the accident was his lack of total experience in kind of aircraft.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. (C) AIRSPEED(VMC) - NOT MAINTAINED - PILOT IN COMMAND
2. (F) LACK OF TOTAL EXPERIENCE IN KIND OF AIRCRAFT - PILOT IN COMMAND
3. STALL/MUSH - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On November 9, 1996, about 1139 eastern standard time, a Piper PA-60-600, N8239J, registered to a private individual, collided with terrain about 3 nautical miles south-southwest of the Craven County Regional Airport, New Bern, North Carolina. Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 CFR Part 91 personal flight. The private-rated pilot and two passengers were fatally injured. The flight originated about 1119 from the Craven County Regional Airport.

According to the pilot's wife the purpose of the flight was a local pleasure flight. The flight service station (FSS) on the airport recorded that at 1115, the pilot advised that the flight was taxiing and at 1119, he advised that the flight was departing runway 22.

According to a witness located about 300 yards from the crash site, he observed the airplane flying about 100 feet above the treetops toward the direction of the airport then observed the airplane in a vertical descent spinning to the right. He then lost sight of the airplane behind trees and heard the impact. Another witness first heard the engine rpm's increase, what he thought was the airplane descending then thought by the change in engine sound that the airplane began climbing. He then looked up and saw the airplane flying over his position about 300 feet above the treetops. The airplane was flying eastbound with the landing gear retracted. The airplane then began a climbing right turn during which he observed the wings wobbling. He further stated that the engines sounded normal during the time he heard the airplane. Another witness observed the airplane flying what he thought was 10-20 feet above the trees slow then observed the airplane in a sharp left turn then pitch nose down. The airplane then appeared to begin climbing but entered a flat spin. The witness further stated that he heard the engines until the point when the airplane banked to the left and pitched down and the landing gear was retracted.

PERSONNEL INFORMATION

Information pertaining to the pilot-in-command seated in the left front seat is contained on page 3 of the NTSB Factual Report-Aviation. Review of his airman file revealed that he obtained his multiengine and multi-engine instrument training and ratings in a Beech 76 airplane. At the time of his last add-on rating which took place the month before, he indicated that he had a total of 13 hours total time in that airplane. The pilot indicated on an insurance application dated October 30, 1996, that he had a total of 40 hours multi-engine flight time and 15 hours total flight time in the accident make and model airplane. Review of his pilot logbook revealed he logged a corrected total of 19.4 hours total multi-engine time excluding the check ride flight in October 1995 and the recent flights in the accident airplane which were not

logged. Prior to the training flights he had not logged any flight time in the accident make and model airplane. Additionally, he did not log any multi-engine flights between October 25, 1995, and October 20, 1996. A break in logged entries was noted between September 15, 1984, to December 31, 1994.

The accident pilot received about 7 hours of ground instruction pertaining to the airplane and its systems from a certified flight instructor (CFI) the night the airplane was delivered on November 1, 1996, and the following day. The CFI stated that the pilot had a firm grasp of the systems of the airplane. On November 3, 1996, that same CFI flew with the accident pilot on six flights that lasted a total of 1 hour 23 minutes as determined by the takeoff and landing times documented by the on-field FSS. The flights included stalls, engine failure recognition and associated propeller feathering, single-engine maneuvering, and full-stop landings. Additionally, no-flap takeoffs and landings were performed as well as simulated engine failure on takeoff. The accident pilot did not complete an IFR checkout in the airplane, and as a result the hours flown were less than the accident pilot expected, according to the CFI. The accident pilot did advise the CFI that he would fly with another CFI located on the airport to complete his time and to receive an IFR checkout. The CFI indicated that the total time from engine start of the first flight to the last training flight was 3.7 hours. After the training flights were completed the accident pilot flew another 3 hours 37 minutes in the accident airplane with other pilots aboard as determined by the on field FSS, excluding the accident flight.

Information pertaining to the single-engine rated pilot seated in the right front seat is contained in Supplement E.

AIRCRAFT INFORMATION

Information pertaining to the airplane is contained on page 2 of the Factual Report-Aviation and in Supplements A and B. Additionally, the airplane was equipped with a cabin door ajar indicating system which incorporates in part an annunciator light installed in the upper right position in an annunciator panel in the cockpit.

METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed at the time of the accident. Further information pertaining to the weather is contained on page 4 of the Factual Report-Aviation.

WRECKAGE AND IMPACT INFORMATION

The airplane crashed into the Croatan National Forrest. Examination of the accident site revealed that the airplane came to rest upright on a magnetic heading of 230 degrees with all components necessary to sustain flight attached to the airframe. The landing gear was determined to be retracted and examination of the aileron, elevator, and rudder flight controls revealed no evidence of preimpact failure or malfunction. The upper skin of the left wing in the leading edge area was observed to be displaced up from the wing tip to the engine nacelle.

The upper skin of the right wing in the leading edge area was observed to be displaced up just outboard of the engine nacelle and upward and forward near the wing tip. Upward crushing was noted to the leading edge skin of the left and right wings inboard of each engine nacelle. The empennage was observed to be displaced 90 degrees to the left from the usual position. The latch pins of the upper cabin door were observed to be extended about 1 inch with the door located adjacent to the wreckage. Damage to only one tree was noted though the airplane crashed in a wooded area. The smell of fuel was noted from beneath all three fuel tanks. The left and right throttle controls were observed to be aft of midrange and at idle respectively. The left and right mixture controls were both near the full rich position and each propeller controls were near the midrange position. The left engine magneto switch was found in the "left" position and the right engine magneto switch was found in the "both" position. Each engine was observed to be partially buried in the ground to the upper cowling with each propeller attached. Examination of the bottom of each wing revealed upward crushing and a flat indentation in the ground was noted beneath each wing. Each fuel crossfeed valve was closed and each fuel shutoff valve was determined to be open. Fuel was found at each auxiliary fuel pump and at each airframe fuel filter which were examined and found to be free of contaminants. No obstructions were noted from the fuselage tank to each engine firewall. The flaps were determined to be symmetrically extended and the annunciator panel from the cockpit was removed from the airplane for further examination. (See the Tests and Research Section of this report). .Each engine and each respective auxiliary fuel pump were removed for further examination.

Examination of the left engine revealed crankshaft, camshaft, and valve train continuity. The right magneto was found separated from the engine at the accessory case but each mount ear was in place and the magneto was still attached to the engine by three of the six ignition leads. The left magneto was tightly secured to the engine and was determined to be timed 50 degrees before top dead center. Impact damage to the magneto was noted. Thumb compression was noted for cylinder Nos. 3, 4, 5, and 6. Thumb compression was not noted from cylinder Nos. 1 and 2. Examination of cylinder Nos. 1 and 2 revealed dirt between the intake valve and the valve seat and a cracked cylinder head respectively. The throttle, mixture, and propeller controls were secured to each respective attach point at the servo fuel injector and the propeller governor. Fuel was found at the engine driven fuel pump and in the servo fuel injector. The fuel inlet screen at the servo fuel injector was examined and found to be free of contaminants. The right auxiliary electric fuel pump was connected by a hose to the servo fuel injector will all connections beyond that intact. With each fuel injector nozzle removed from each cylinder, power was applied to the auxiliary fuel pump. Equal flow was noted from each fuel injector nozzle. The engine driven fuel pump was operated by hand with no discrepancies noted. Upward crushing was noted on the engine sump. Both magnetos were rotated by hand and spark was observed at all ignition towers. No blockage of the air inlet was noted.

Examination of the left engine propeller revealed one of the three blades sustained minimal damage. The second blade was bent aft at about a 45-degree angle near the hub and the remaining blade was aft about 90 degrees about midspan of the blade with the leading edge

twisted towards the low pitch position. Examination of the propeller spinner revealed evidence of rotational damage.

Examination of the right engine revealed crankshaft, camshaft, and valve train continuity. Both magnetos were determined to be properly timed to the engine and thumb compression was noted in all cylinders. The throttle, mixture, and propeller control cables were attached to each respective attach point; however the governor was found separated from the engine but still secured by the cable. Fuel was found at the servo fuel injector and at the engine-driven fuel pump. The inlet screen at the servo fuel injector was examined and found to be free of contaminants. The right auxiliary electric fuel pump was attached by hose to the inlet of the servo fuel injector with all connection beyond that intact. With each fuel injector nozzle removed from each cylinder, power was applied to the auxiliary fuel pump. Equal flow was noted from each fuel injector nozzle. The engine-driven fuel pump was operated by hand with no discrepancies noted. Both magnetos were rotated by hand and spark was observed at all ignition towers.

Examination of the right engine propeller revealed one of the three blades sustained moderate damage. The second blade was bent aft about 45 degrees about midspan of the blade and the remaining blade was bent aft about 90 degrees near the hub. Examination of the propeller spinner revealed evidence of rotational damage.

Testing of the both engines fuel systems was performed using the right auxiliary fuel pump. Impact damage to the left pump precluded operation.

MEDICAL AND PATHOLOGICAL

Postmortem examinations of the pilot and passengers were performed by C.L. Garrett, M.D., Pathologist, Coastal Pathology Associates, P.A., Jacksonville, North Carolina. The cause of death for all was listed as multiple injuries due to airplane crash.

Toxicological analysis of specimens of the pilot and right front seat passenger were performed by the FAA Accident and Research Laboratory and the Office of the Chield Medical Examiner, Chapel hill, North Carolina. The results of analysis by the FAA of the pilot's specimens was negative for carbon monoxide, cyanide, volatiles, and tested drugs. The results of analysis by Chapel Hill of the pilot's specimens was negative for ethanol and less than 5 percent saturation carbon monoxide. The results of analysis by the FAA of specimens of the passenger was negative for volatiles. Carbon monoxide and cyanide testing was not performed due to lack of a suitable specimen. Doxylamine was detected in the blood and liver fluid. The results of analysis by Chapel Hill of specimens of the passenger was identical to the pilots results. According to the Physicians Desk Reference, Doxylamine is found in UNISOM which is a nightime sleep aid.

TESTS AND RESEARCH

The airplane empty weight was listed as 4,011.73 pounds and the pilots weight of (177 pounds) and the right front seat passengers weight (200 pounds) were based on medical certificates. The weight of the left middle passenger (estimated 175 pounds) was based on the autopsy report. The wings and fuselage fuel tanks were full with a corresponding total usable capacity weight of 993 pounds. The Weight calculations at the beginning of the engine start revealed the gross weight was 5,556.73 pounds. According to the airplane type certificate data sheet the maximum takeoff weight is 5,500 pounds. Calculating the fuel used for engine start, run-up, takeoff, and the 20 minute flight the total fuel used was estimated to be 57 pounds. Subtracting that amount from the previous figure revealed the airplane weight at the time of the accident was calculated to be 5,499.73 pounds. The Center of Gravity (C.G.) at the time of the accident was calculated to be 161.83 inches. According to the type certificate data sheet the forward and aft limits are 159.58 and 166.00 respectively.

Examination of all the light bulbs installed in the annunciator panel revealed only two bulbs with the filaments uncoiled and not broken. The two bulbs were installed in the "gear" position. According to the airplane maintenance manual, the "gear" light in the annunciator panel will illuminate when the landing gear has not reached the down and locked position and the manifold pressure is below 14 inHg. Examination of the door unsafe bulbs revealed the filaments were broken and were not stretched.

ADDITIONAL INFORMATION

The wreckage minus the retained items was released to Mr. Jack C. Trabucco, President of Carolina Air Services, Inc., on November 12, 1996. The retained items were released to Mr. Andy Paul of Crittenden Adjustment Company, on July 8, 1997.

Pilot Information

Certificate:	Private	**Age:**	37,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:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	January 6, 1995
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	382 hours (Total, all aircraft), 5 hours (Total, this make and model), 312 hours (Pilot In Command, all aircraft), 47 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8239J
Model/Series:	PA-60-600 PA-60-600	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	60-0643-7912
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 20, 1996 Annual	**Certified Max Gross Wt.:**	5500 lbs
Time Since Last Inspection:	17 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	1888 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-540-K1J5
Registered Owner:	JAMES H. DOERING	**Rated Power:**	290 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	EWN ,19 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	11:48 Local	**Direction from Accident Site:**	31°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(EWN)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	11:19 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	CRAVEN COUNTY REGIONAL EWN	**Runway Surface Type:**	
Airport Elevation:	19 ft msl	**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	35.110336,-77.069229(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	JEFFREY S RIDDELL; WINSTON-SALEM , NC GREGORY ERIKSON; WAYNE , IL
Original Publish Date:	March 31, 1998
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=38124