Aviation Investigation Final Report

Location:	Naples, Florida	**Accident Number:**	MIA02FA113
Date & Time:	June 19, 2002, 09:58 Local	**Registration:**	N9127L
Aircraft:	Piper PA-46-310P	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

An annual inspection had been completed on the airplane the same day, and on its first flight after the annual inspection, as the airplane was departing from runway 05, at Naples Municipal Airport, witnesses said the engine ceased operating. They also said that the propeller was rotating either slowly or had stopped, and they then observed the airplane enter a steep turn, followed by an abrupt and uncontrolled nose-low descent and subsequent impact with the ground. The airplane came to rest in a nose-low, near vertical position, suspended at its tail section by a fence and some trees along the eastern perimeter of the airport. It had incurred substantial damage and the pilot and two passengers who were onboard the airplane were fatally injured. Postaccident examination of the airframe, flight controls and the engine did not reveal any mechanical failure or malfunction. The flaps were found to have been set to 10 degrees, and the propeller showed little or no evidence of rotation at impact. The FAA Toxicology Laboratory, Oklahoma City, Oklahoma, performed toxicological studies on specimens obtained from the pilot and the results showed that diphenhydramine was found to be present in urine, and 0.139 (ug/ml, ug/g) diphenhydramine was detected in blood. Diphenhydramine, commonly known by the trade name Benadryl, is an over-the-counter antihistamine with sedative side effects, and is commonly used to treat allergy symptoms. Published research (Weiler et. al. Effects of Fexofenadine, Diphenhydramine, and Alcohol on Driving Performance. Annals of Internal Medicine 2000; 132:354-363), has noted the effect of a maximal over the counter dose of diphenhydramine to be worse than the effect of a 0.10% blood alcohol level on certain measures of simulated driving performance. The level of diphenydramine in the blood of the pilot was consistent with recent use of more than a typical maximum single over-the-counter dose of the medication.

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 above the stall speed while maneuvering to land after the engine ceased operating for undetermined reasons, which resulted in a stall/spin, an uncontrolled descent, and an impact with the ground.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Findings
2. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
3. IMPAIRMENT(DRUGS) - PILOT IN COMMAND
4. STALL/SPIN - INADVERTENT - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
5. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On June 19, 2002, about 0958 eastern daylight time, a Piper PA-46-310P, N9127L, registered to and operated by a private individual, as a Title 14 CFR Part 91 personal flight, crashed shortly after takeoff from Naples Municipal Airport, Naples, Florida. Visual meteorological conditions prevailed, and no flight plan was filed. The private-rated pilot and two passengers received fatal injuries, and the airplane was destroyed. The flight was originating at the time of the accident.

The mechanic who performed the annual inspection stated that after he completed the inspection, he tested the airplane by performing low and high power static tests for about 30 minutes. He further stated that all tests were normal, and he then endorsed the logbooks, and returned the airplane to service. While the annual was being conducted, the mechanic said that the pilot arrived with two passengers, and was anxious to proceed on his planned flight to St. Petersburg, Florida. After the airplane was returned to the pilot, the mechanic said he saw the pilot perform a short preflight, and then he and his passengers embarked the airplane, and taxied from the maintenance facility. Information obtained from the FAA Air Traffic Control Tower showed that from the time the pilot requested a clearance to taxi, to the time the clearance was issued for takeoff on the active runway, was about 5 minutes.

The airplane was departing from runway 05, at Naples Municipal Airport, and according to witnesses, it was at a low altitude in the vicinity of the departure end of the runway, when all of a sudden it entered into a steep bank, followed by a nose-down pitch attitude, and subsequently it impacted the ground. One of the witnesses stated that when he saw the airplane he did not hear the engine operating, and it appeared as if the propeller was moving slowly. Another witness stated that when the noise of the airplane's engine ceased, it drew his attention to the airplane, and he then turned to see what was happening. He said he saw the airplane enter a steep bank to the right, and descend.

The FAA Air Traffic Control Tower controller on duty at the airport stated that he had watched the accident airplane as it was cleared onto the active runway. He said he then saw it proceed down the runway and climb to an altitude of about 50-to 75 feet above the runway, but at that time his attention was diverted to inbound traffic. He said that there had been no further radio communications transmissions with the pilot of the accident airplane after the takeoff clearance had been issued.

PERSONNEL INFORMATION

The pilot/owner of N9127L held a FAA private pilot certificate, with airplane single and

multiengine land and instrument ratings, last issued on October 25, 1993, when the multiengine rating was added. He also held an FAA third class medical certificate, issued on March 5, 2002. The pilot's medical certificate did not show any limitations.

The NTSB did not obtain access to the pilot's flight logbook, but according to information obtained from his last FAA medical examination, the pilot stated that he had accumulated a total of 3,000 hours of flight experience at the time of his application for the medical certificate.

AIRCRAFT INFORMATION

N9127L, is a 1987 Piper Malibu, model number PA-46-310P, serial number 46-08102. The airplane was equipped with a Teledyne Continental Motors, TSIO-520-BE2G, 310 horsepower engine. It is also equipped with a Hartzell two-bladed constant speed propeller, model number CHC-2YF-1BF. At the time of the accident, records showed that the airplane had accumulated about 4,643.3 flight hours on the airframe, and about 898 hours on the factory rebuilt/zero timed engine. The airplane had last received an annual inspection on June 19, 2002, and this was the first flight since that inspection.

METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed at the time of the accident. The Naples Municipal Airport 0953, surface weather observation was, winds from 110 degrees at 4 knots, visibility 10 statute miles, few clouds at 2,000 feet, temperature 84 degrees Fahrenheit, dew point temperature 75 degrees Fahrenheit, altimeter setting 30.11 inHg.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted the ground on airport property behind the Humane Society building, located at 160 Aviation Drive, Naples, Florida. The airplane came to rest in a nose-low, near vertical attitude, suspended at its tail section by a fence and some sparse trees along the eastern perimeter of the airport. The geographic position of the accident site was 26 degrees, 09.398 minutes north latitude, 081 degrees, 46.112 minutes west longitude, and the position is about 100 feet beyond the end, and about 400 feet to the right of the departure runway's centerline.

All components of the airplane necessary to sustain flight, were located in the immediate vicinity of the main wreckage. The airplane had incurred impact damage to its nose areas, to include the propeller, spinner, cowling and engine. Compression wrinkles were evident, and the nose section had been pushed up, and to the rear. The aft fuselage/empennage, was been bent about 30 degrees from the vertical, but it otherwise had minimal damage. There were no indications of a fire and/or explosion having occurred at the scene.

No evidence of any preaccident mechanical failure or malfunction to the airframe was found,

and flight control continuity was established for roll and yaw. The elevator cable had parted, consistent with overload, and flight control continuity for pitch was confirmed from the elevator forward to the broken cable, and from the control yoke aft. The elevator trim tab actuator displayed seven threads, which equated to about a neutral setting. There was no damage to the tail cone, vertical fin/rudder, but the left horizontal stabilizer had been bent upward at the leading edge about 3 feet from the root. The left elevator was attached to the spar and the skin was wrinkled. The elevator "up-stop" had incurred impact damage, and the right stabilizer had incurred wrinkling about 4 feet outboard of the root.

In the cockpit, the panel had been pushed up and aft into the cabin. The throttle control was found to be in the full forward position, and it was bent to the right. The mixture control was also bent slightly to the right, and was about a half inch from its forward stop. The propeller control was about half an inch from its aft stop and was also bent to the right about 90 degrees. The fuel selector lever was positioned to select the left tank, and the selector valve corresponded to the left tank as well. When tested, the fuel selector valve operated in the left, right, and off positions. The electric boost pump switch had incurred impact damage, and its position could not be determined. The main and nose landing gear were in the retracted position.

The right rear of the fuselage, aft of the upper rear window frame had 12 rivets missing with 12 corresponding holes remaining in the fuselage. The right rear shoulder harness bracket that had been affixed to the fuselage in that position, and had separated from the fuselage. In addition, the corresponding right rear seatbelt webbing stitch which secured the webbing to the female end of the buckle had separated at the stitches. All seats exhibited signs consistent with impact damage.

The left wing had remained attached to the fuselage, and its leading edge was twisted and had been pushed upward and aft. The outboard section of the leading edge exhibited accordion crushing. Portions of the upper skin had separated from the main spar rivet line, exposing the fuel tank. The upper aft inboard section of the wing was also wrinkled from the wing root, outboard. The aileron was still attached to the wing, but its edge was bent upward. The aileron connecting rod had separated also from the aileron. The flap remained attached and the outboard and leading edges had been crushed. A wrinkle proceeded from the leading to trailing edge of the flap, and the flap's connecting rod was bent downward.

The right wing remained attached at its forward attach point, and the leading edge had been crushed at the root and was pushed aft. The outboard section of the leading edge of the wing, beginning about 77 inches outboard of the root, was pushed upward and aft, and the wing tip had also been damaged. The aft main spar had separated about 15 inches from the wing root. The aileron was attached to the aft spar, and its inboard area had buckled from leading to trailing edge. The aileron connecting rod had also separated from the aileron. The flap was attached at the outboard and middle hinge. The flap jackscrew measured 13 to 14 threads, consistent with about a 10-degree flap position.

Each of the airplane's fuel tanks had been breached, and according to emergency personnel who first responded to the scene, there had been a strong smell of fuel present, but heavy rain had fallen after the accident. All fuel and fuel ventilation lines were unobstructed.

The airplane's two-bladed constant speed propeller, along with the damaged spinner had remained attached at the crankshaft flange. One propeller had been bent backwards and was found to have broken loose in the hub. Propeller signatures were consistent with little or no rotation at impact.

External examination of the engine and accessories showed that the engine had remained attached to the airframe, but it had incurred damage to its forward and bottom areas. There was damage to the oil sump, the exhaust system, the intake tubes, and the oil cooler. The engine mounts, both magnetos, and both vacuum pumps had been separated from the locations where they are mounted. Both the induction and exhaust systems, had their respective intake tubes and exhaust pipes crushed,

Both magnetos had sustained impact damage, and the drives functioned when rotated. In addition, a spark was produced at all magneto terminals when field tested. During follow-on bench tests, both magnetos operated normally at low and high rpm settings, and when operated at 2,700 rpms for 5 minutes, no anomalies were found. E-gap and contact gap settings when examined were within manufacturer's specifications, and internal timings were normal. The ignition system's harness was intact, and the spark plugs, when removed and examined exhibited combustion signatures consistent with those associated with normal operation.

The engine rotated freely, and compression and suction were obtained on all cylinders. Continuity was established throughout the drive train, valves, and accessory drive gears. All cylinders were intact, and their combustion areas had minimal carbon deposits. In addition, the cylinders exhibited no scoring or pitting, and oil was present on the cylinder walls. The valves were properly seated and they, along with the valve springs, retainers, rocker arms shafts and pushrods were found to be intact. The pistons were intact and had clean piston crowns, with no evidence of carbon deposits. The crankcase, crankshaft and camshaft assemblies were intact, had oil present, and all main bearings and rod bearings had smooth surfaces. Both turbochargers mounted on the engine rotated freely, the waste gates were intact.

The oil pump was disassembled and examined and the spline drive and gears were intact. The relief valve was properly seated and the valve spring intact. Oil was present in the oil pump, but the oil dip stick had been driven through the sump, and the oil had been lost during the impact. The oil pickup tube had been crushed but the screen was clean and unobstructed.

Examination of the engine fuel system showed that all fuel injector lines were intact and tight, and the fuel nozzles were clear of obstructions. The fuel manifold valve and associated diaphragm were found to be intact, and fuel was present. In addition, the fuel screen was clean and unobstructed. The throttle valve was found to be in the full open position, and the throttle

body had separated. The metering unit was clear of obstructions and rotated freely. Approximately 4 ounces of fuel was obtained from the engine-driven fuel pump, and fuel pump's coupling was undamaged and the pump mechanism moved freely. On August 1, 2002, the NTSB conducted a detailed examination of the engine driven fuel pump at Teledyne Continental Motors, and the examination revealed that the fuel pump operated within the manufacturer's specifications.

MEDICAL AND PATHOLOGICAL INFORMATION

On June 19, 2002, a deputy chief medical examiner, with the District Twenty Medical Examiner's Office, Collier County, Naples, Florida, performed the postmortem examination on the pilot and front seat passenger. The cause of death was attributed to multiple blunt force injuries for both the pilot and front seat passenger, and no findings which could be considered causal were reported in either case. At a family member's request, an autopsy was not performed on the second passenger.

The Dade County Medical Examiner's Office, Toxicology Department, conducted toxicological studies on specimens obtained from the pilot and front seat passenger. Specimens were tested for volatiles, barbiturates, benzodiazepines, bebzoylecgonine, opiates, cannabinoids, diphenhydramine, and carbon monoxide. The toxicology report showed that in the case of the pilot, diphenhydramine was detected in blood. All tests on specimens from the front seat passenger were negative.

The FAA Toxicology Laboratory, Oklahoma City, Oklahoma, also conducted toxicology studies on specimens from the pilot and front seat passenger. Specimens were tested for carbon monoxide, cyanide, volatiles, and drugs. Diphenhydramine was found present in urine, and 0.139 (ug/ml, ug/g diphenhydramine was detected in blood specimens obtained from the pilot. Test results from the FAA Toxicology Laboratory were negative on specimens obtained from the front seat passenger.

Diphenhydramine, commonly known by the trade name Benadryl, is an over-the-counter antihistamine with sedative side effects, and is commonly used to treat allergy symptoms. Published research (Weiler et. al. Effects of Fexofenadine, Diphenhydramine, and Alcohol on Driving Performance. Annals of Internal Medicine 2000; 132:354-363), has noted the effect of a maximal over the counter dose of diphenhydramine to be worse than the effect of a 0.10% blood alcohol level on certain measures of simulated driving performance.

TESTS AND RESEARCH

A fuel sample from the refueling truck which refueled the accident airplane was sent to the Philips Research Center for examination. The test results showed that the fuel complied with ASTM D-910 requirements for 100LL aviation gasoline. In addition, 16 other airplanes were found to have been refueled from the same fuel source prior to N9127L, and no problems and/or anomalies were reported.

ADDITIONAL INFORMATION

On June 22, 2002, the NTSB released the wreckage of N9127L to Mr. Shannon F. Spears, Airport Duty Officer, City of Naples Airport Authority.

Pilot Information

Certificate:	Private	**Age:**	38,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:**	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	March 3, 2002
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	3000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N9127L
Model/Series:	PA-46-310P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	4608102
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	June 19, 2002 Annual	**Certified Max Gross Wt.:**	4116 lbs
Time Since Last Inspection:	0 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4643.3 Hrs at time of accident	**Engine Manufacturer:**	Teledyne Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	TSIO-520-BE2G
Registered Owner:	Cavin Robert Councilor	**Rated Power:**	310 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	APF,9 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	09:53 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	Few / 2000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	110°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.11 inches Hg	**Temperature/Dew Point:**	29°C / 24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Naples, FL (APF)	**Type of Flight Plan Filed:**	None
Destination:	St. Petersberg, FL (PIE)	**Type of Clearance:**	Unknown
Departure Time:	09:58 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	Naples Municipal Airport APF	**Runway Surface Type:**	Asphalt
Airport Elevation:	9 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	5	**IFR Approach:**	None
Runway Length/Width:	5000 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	26.156665,-81.766944

Administrative Information

Investigator In Charge (IIC):	Lovell, John
Additional Participating Persons:	George Hollingsworth; The New Piper Aircraft Company; Reston , VA John Bures; Teledyne Continental Motors; New Bern, NC William Merkle; FAA FSDO; Miami, FL
Original Publish Date:	June 30, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55024