



National Transportation Safety Board Aviation Accident Final Report

Location:	OPA-LOCKA, FL	Accident Number:	MIA95FA141
Date & Time:	06/01/1995, 1230 EDT	Registration:	N5832Y
Aircraft:	PIPER PA-23-250	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Business		

Analysis

THE AIRPLANE HAD BEEN PARKED AT LEAST 16 DAYS WITH THE INBOARD FUEL TANKS ABOUT 1/3 FULL BEFORE BEING FILLED THE DAY OF THE ACCIDENT. AFTER DEPARTING, THE FLIGHT RETURNED REPORTING THAT THE FLAPS WERE NOT OPERATIONAL AND THE LANDING GEAR WOULD NOT RETRACT. A MECHANIC WHO HAD RECENTLY WORKED ON THE HYDRAULIC SYSTEM OPERATIONALLY CHECKED THE FLAPS MORE THAN 10 TIMES WITH NO DISCREPENCIES NOTED. THE AIRPLANE WAS NOT PLACED ON JACKS FOR AN OPERATIONAL TEST OF THE LANDING GEAR. THE FLIGHT DEPARTED, AND DURING INITIAL CLIMB THE PILOT ADVISED THE ATC CONTROLLER OF A ROUGH RUNNING ENGINE. THE AIRPLANE WAS OBSERVED TO BANK LEFT, PITCH NOSE DOWN, AND IMPACT THE GROUND. WATER WAS DETECTED AT THE FUEL INJECTOR NOZZLES AND FUEL MANIFOLD ASSEMBLY OF SEVERAL CYLINDERS OF THE LEFT ENGINE. NO EVIDENCE OF WATER CONTAMINATION WAS FOUND BY OPERATORS OF OTHER AIRPLANES FUELED FROM THE SAME SOURCE. POSTACCIDENT EXAMINATION REVEALED THAT THE LEFT PROPELLER WAS NOT FEATHERED, THE FLAPS WERE PARTIALLY EXTENDED AND THE LANDING GEAR WAS FULLY EXTENDED.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A LOSS OF ENGINE POWER DUE TO WATER CONTAMINATION OF THE FUEL, THE PILOT'S INADEQUATE PREFLIGHT, AND HIS INTENTIONAL OPERATION OF THE AIRPLANE WITH KNOWN DEFICIENCIES IN EQUIPMENT WHICH RESULTED IN AN INADVERTENT STALL AT AN ALTITUDE INADEQUATE FOR RECOVERY. FACTORS WHICH CONTRIBUTED TO THE ACCIDENT WERE: THE PILOT'S LACK OF RECENT EXPERIENCE IN THE AIRPLANE AND HIS SELF-INDUCED PRESSURE TO ACCOMPLISH THE FLIGHT.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. 1 ENGINE
2. (C) FLUID,FUEL - CONTAMINATION,WATER
3. (C) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO REVERSE DIRECTION

Findings

4. (C) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - INTENTIONAL - PILOT IN COMMAND
5. (F) SELF-INDUCED PRESSURE - PILOT IN COMMAND
6. (F) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
7. (F) LACK OF RECENT EXPERIENCE IN TYPE OF AIRCRAFT - PILOT IN COMMAND
8. STALL - INADVERTENT - PILOT IN COMMAND

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

Factual Information

HISTORY OF FLIGHT

On June 1, 1995, about 1230 eastern daylight time, a Piper PA-23-250, N5832Y, crashed shortly after takeoff from the Opa-Locka Airport, Opa-Locka, Florida, while on a 14 CFR Part 91 business flight. Visual meteorological conditions prevailed at the time and a visual flight rules flight plan was filed for the flight. The airplane was destroyed and a postcrash fire ensued, which was extinguished by the Metropolitan Dade County Fire Rescue Department. The commercial-rated pilot and private pilot-rated passenger were fatally injured. The flight was originating at the time of the accident. Damage to Florida Power and Light (FPL) property consisted of a damaged guy wire and heat damage to a power line pole.

The airplane had been parked for at least 16 days with the inboard fuel tanks about 1/3 full. At about 1040 on the day of the accident, the inboard fuel tanks were filled.

A mechanic stated that on the flight before the accident flight, the pilot returned and landed reporting that the flaps were not operational and the landing gear would not retract. According to the owner's handbook the landing gear and flaps are hydraulically operated and pressure is supplied from an engine-driven hydraulic pump mounted to the left engine. The mechanic stated that he inspected the left engine compartment, and reservoir for leaks; none were found. He then operated both engines and raised and lowered the flaps greater than 10 times to full extension noting that each time the flap selector handle returned to neutral; no discrepancies were noted. He asked the pilot if he had hydraulic pressure; to which the pilot responded he did not know. The owner's handbook indicates that after full extension of the flaps or landing gear, hydraulic pressure within the selector valve forces the flap or landing gear control lever to the neutral or off position. The owner's handbook also indicates that landing gear retraction occurs in about 10-12 seconds. The mechanic stated he then observed the pilot reload the nose baggage compartment and the airplane was positioned by a tug to a taxiway. The pilot was then observed to have difficulty starting each engine and after each engine was started, the pilot taxied to takeoff. The mechanic did not witness the accident. The airplane was not placed on jacks for an operational test of the landing gear.

The pilot taxied to runway 9L and according to recorded communications with the Opa-Locka Air Traffic Control Tower (ATCT), the flight was cleared to takeoff. Shortly after takeoff an occupant of the airplane advised the ATCT controller that the flight was returning due to a rough running engine. When the ATCT controller asked if the pilot needed assistance the occupant replied negative. The flight was then cleared to land on any runway and the pilot was advised that the wind was from 120 degrees at 12 knots. The ATCT controller inquired about the rough running engine but there was no reply.

A witness who is an FAA certificated airframe and powerplant mechanic stated he was working on an airplane inside a hangar which is east of the ATCT. He heard a "backfiring" sound, walked outside of the hangar and observed the accident airplane about abeam the ATCT. Calculations indicate that the tower is located about 5,202 feet down the 8,002-foot runway. He thought the backfiring was from the left engine of the accident airplane and observed it about tower height (141 feet) in a shallow climb. He thought the pilot was going to land and the airplane climbed no higher than 300 feet. He then observed the airplane in a left bank of about 30 degrees with both engines operating but one of the engines sounded as if it was not developing full power. The airplane then "spun" to the left, pitched nose down, and he

heard the impact.

Another witness who is also a mechanic stated he was working with the above mentioned mechanic who alerted him to the accident airplane. He observed the airplane and heard "alot of backfiring" which he thought was associated with the left engine. He stated that the airplane was observed to bank to the left and descended losing 150-200 feet of altitude. The airplane was observed to regain the altitude then banked "sharply" to the left. The airplane then pitched nose down and impacted the ground. He estimated the airplane climbed to about 500 feet while over the runway and the flight was about just east of the ATCT. He also stated that he did not observe any smoke trailing the airplane. Calculations indicated that about 2,437 feet of runway remained when the witness first observed the airplane and heard an engine malfunction.

Another witness who was located about 60-80 yards north of the crash site stated that he observed the airplane fly over trees which were later determined to be about 60-feet tall. The airplane was then observed in a 45-60 degree right bank, descended, impacted the ground nose low, then exploded. No damage to the trees was noted.

PERSONNEL INFORMATION

Information pertaining to the pilot-in-command seated in the left front seat is contained in the NTSB Factual Report-Aviation. Review of his pilot logbook dated from 1981 to the last entry dated November 5, 1994, revealed he logged about 28 hours in 1987, in the accident make and model airplane. There was no other similar make and model entries in his logbook. The last entry logged was a 2 hour 51 minute flight in a single engine airplane which took place on November 5, 1994. The last entry logged in a multiengine airplane took place on October 21, 1992, in an Aero Commander 500 airplane. Information pertaining to the private pilot-rated right front seat passenger is contained in Supplement E.

AIRCRAFT INFORMATION

Information pertaining to the airplane is contained in the NTSB Factual Report-Aviation and Supplements A and B. Additionally, an optional engine driven hydraulic pump was not installed to the right engine. According to a mechanic, work began on May 24, 1995, and ended on May 26, 1995, in which deteriorated left engine hydraulic hoses were removed and replaced, and the hydraulic reservoir was serviced. The airplane was then placed on jacks and using the hand pump at the power pak assembly and a hydraulic mule, the landing gear and flaps were retracted and extended about 13 times. The maintenance work was not documented in the aircraft logbooks.

METEOROLOGICAL INFORMATION

Information pertaining to the weather is contained in the NTSB Factual Report-Aviation.

WRECKAGE AND IMPACT

The airplane crashed on a road in a residential and industrial area and it was observed to be upright on a magnetic heading of about 295 degrees. All components necessary to sustain flight were attached to the airframe and the cockpit, and both wings were fire damaged. A cargo net was not installed and the cargo, which consisted in part of frozen food, was found shifted in the airplane. During recovery of the airplane it was noted that the main and nose landing gears were collapsed. The crash site was located about 045 degrees and .94 nautical mile from the Opa-Locka Airport.

Examination of the aileron, elevator, and rudder flight controls revealed no evidence of preimpact failure or malfunction. The landing gear and flap selector handles were in the down position. Weight calculations indicate that the airplane was about 268 pounds under gross weight. Rust like contaminant was found in the left engine fuel strainer. No rust like contaminant was found in the right engine fuel strainer. The crossfeed valve was determined to be in the "on" position and using water finding paste, water was detected on a drain plug. Both engines were removed for further examination.

Visual examination of the left engine revealed that the propeller was still connected to the crankshaft. Crankshaft, camshaft, and valve train continuity was verified. Cold differential compression of cylinder Nos. 1-6 revealed the following results respectively; 52/80; 75/80; 67/80; 70/80; 53/80; 65/80. Heat damage to the servo fuel injector which was found separated, and both magnetos which were tight against the accessory case, precluded testing. Examination of the servo fuel injector revealed that the fuel inlet screen was clean and the stem of the fuel diaphragm was intact. The flexible fuel supply line was found separated at the servo fuel injector but the opposite end was determined to be tightly secured at the fuel manifold assembly. All tube assemblies-fuel manifold to nozzle, exhibited minimal damage and their fittings were tight at each fitting at the fuel manifold valve and each nozzle, injection. Water was detected at the fuel injector nozzles of cylinder Nos. 1 and 2. Water was also detected at the outlet of the fuel manifold assembly for cylinder Nos. 1, 2, 4, and 5. Blockage of the No. 3 cylinder fuel injector nozzle was noted. The propeller was removed for further examination.

Examination of the left propeller revealed that the No. 2 blade exhibited about a 10-degree forward bend about 25 inches from the butt end of the blade and about a 90-degree aft bend about 11 inches from the butt end of the blade. The No. 1 blade was heat damaged but intact. Disassembly of the propeller revealed that the pitch change knob of the No. 2 blade was failed. Examination of the fracture surface revealed evidence of overload failure. Additionally, the auto high pitch stops were determined to be engaged but the auto high pitch stop assembly was intact. The blade angle of the No. 2 blade was determined to be about 13 degrees. The propeller manufacturer indicates that the low pitch stop is 14.5 degrees plus or minus .1 degree.

Visual examination of the right engine revealed that the propeller was separated and the crankshaft was failed about 1 3/4 inches aft of the forward side of the crankshaft flange. Examination of the fracture surface of the crankshaft revealed evidence of overload failure. Crankshaft, camshaft, valve train continuity, and thumb compression for all cylinders was confirmed. Both magnetos were tight against the accessory case and were heat damaged which precluded testing. The servo fuel injector was removed for inspection and bench testing which revealed no evidence of failure or malfunction. Contamination was observed in the fuel inlet screen and in the mixture housing area. Water was observed on the air diaphragm but was not observed on the fuel diaphragm. The fuel manifold assembly was also heat damaged and examination revealed no evidence of water.

Visual examination of the right propeller revealed that the No. 2 blade was bent forward about 45 degrees at midblade and twisted towards the low pitch direction about 45 degrees at the midblade location. The No. 1 blade was bent rearward about 20 degrees at the inboard station and about 8 inches of the propeller blade tip was separated. Heat damage was noted to the blade tip. The leading edge of the blade was twisted towards low pitch and the trailing edge of the blade was twisted towards high pitch. Further examination of the propeller was not performed.

MEDICAL AND PATHOLOGICAL

Post-mortem examinations of the pilot and passenger were performed by Emma O. Lew, M.D., Associate Medical Examiner, Dade County Medical Examiner Department. The cause of death for both was listed as blunt trauma injuries. A finding listed for the pilot was pulmonary centrilobular emphysema.

Toxicological testing was performed on specimens of the pilot and passenger by the Metropolitan Dade County Medical Examiner Department. The results of analysis of specimens of the pilot and passenger were negative for alcohol and tested drugs.

Toxicological testing was also performed on specimens of the pilot and passenger by the FAA Toxicology and Accident Research Laboratory. The results of analysis of specimens of the pilot were negative for tested drugs. Norpropoxyphene (.400 ug/mL, ug/g) was detected in the urine but was not detected in the blood. Propoxyphene was not detected in the blood or urine. The results of analysis of specimens of the passenger were negative for carbon monoxide and cyanide.

TESTS AND RESEARCH

On the day of the accident about 1530, an employee from the Dade County Aviation Department obtained a fuel sample from the fuel truck that refueled the accident airplane. Visual examination of the sample revealed a color and odor of 100 Low Lead fuel. The fuel sample was not tested. Additionally, the operator of a flight school reported that on June 1, 1995, 152 gallons of fuel were pumped into eight different airplanes from the same fuel truck that fueled the accident airplane. There were no reported fuel contamination problems. Additionally, an FAA designated examiner who operates a helicopter reported that the helicopter was fueled twice the day of the accident from the same truck that fueled the accident airplane. He reported no fuel contamination problems.

The hydraulic power pak assembly, left engine-driven hydraulic pump, anti-retraction valve, and door priority valve were removed for bench testing. Components from the hydraulic power pak which were missing or damaged were replaced and the unit was bench tested which revealed no evidence of failure or malfunction. Bench testing of the anti-retraction and door priority valves revealed no evidence of failure or malfunction. Visual examination of the left engine-driven hydraulic pump revealed it had been subjected to heat. Bench testing of the pump revealed no evidence of preimpact failure or malfunction. A report from the FAA and testing facility are attachments to this report.

ADDITIONAL DATA/INFORMATION

Review of the owner's handbook under emergency procedures indicates that if engine failure occurs during takeoff and a landing can't be made directly after the failure, the pilot should apply full power to good engine, feather the dead engine propeller, and retract the landing gear and flaps, if extended using the hand pump if left engine is out. The handbook also indicates that the emergency hydraulic hand pump when used can raise or lower the landing gear with 30 to 40 up and down pump strokes. The control handle must be positioned as desired.

The airplane was purchased on May 6, 1995, and was delivered to the pilot at the Venice Municipal Airport, Venice, Florida. According to a relative of the pilot, he flew the airplane solo from the Venice Airport to the Opa-Locka Airport. This flight was not logged in the pilot's logbook. The Venice Airport is located about 136 nautical miles from the Opa-Locka Airport.

According to the mechanic who worked on the hydraulic system of the airplane, the first flight on the day of the accident was the first the airplane had been flown since arrival after purchase.

An NTSB Form 6120.1/2 was not prepared due to the pilot being the operator of the airplane.

The wreckage minus all retained components was released to Mr. Charles G. Maynard, a representative of the insurance carrier on June 9, 1995. The retained components were released to Mr. Maynard on December 14, 1995.

Pilot Information

Certificate:	Commercial	Age:	56, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	03/08/1995
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	2617 hours (Total, all aircraft), 28 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N5832Y
Model/Series:	PA-23-250 PA-23-250	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	27-2981
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	06/11/1994, Annual	Certified Max Gross Wt.:	5200 lbs
Time Since Last Inspection:	12 Hours	Engines:	2 Reciprocating
Airframe Total Time:	5200 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	IO-540-C4B5
Registered Owner:	JOSE A. PETIT	Rated Power:	250 hp
Operator:	JOSE A. PETIT	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	OPF, 9 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1231 EDT	Direction from Accident Site:	225°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	15 Miles
Lowest Ceiling:	Broken / 2500 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	110°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	MIAMI, FL (OPF)	Type of Flight Plan Filed:	VFR
Destination:	CONGO TOWN, OF (MYA)	Type of Clearance:	VFR
Departure Time:	1229 EDT	Type of Airspace:	Class D

Airport Information

Airport:	OPA-LOCKA (OPF)	Runway Surface Type:	
Airport Elevation:	9 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	On-Ground
Total Injuries:	2 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	TIMOTHY W MONVILLE	Report Date:	04/01/1996
Additional Participating Persons:	JAMES R BLAKE; MIAMI, FL ED ROGALSKI; BELLEVIEW, FL JIM RYAN; 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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).