



National Transportation Safety Board Aviation Accident Final Report

Location:	Montgomery, NY	Accident Number:	NYC03LA096
Date & Time:	05/04/2003, 2300 EDT	Registration:	N55854
Aircraft:	Piper PA-28-180	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None

Flight Conducted Under: Part 91: General Aviation - Instructional

Analysis

During the nighttime departure, the airplane accelerated normally, with the engine producing full power during the takeoff roll and initial climb. Upon reaching approximately 300 to 400 feet above the ground, the engine began to lose power. The CFI took the flight controls and performed a forced landing. During the landing rollout, the airplane rolled through a shallow drainage swale, collapsing the nose and right main gear assemblies. The airplane rotated to the right and came to rest upright. Examination of the wreckage revealed that the fuel line, which ran between the fuel pump and the carburetor, was loose at the connection point on the carburetor. When the electric fuel pump was activated, fuel was observed spraying from the connection point. The airplane had accumulated about 20 hours of operation since a 100-hour inspection was performed 10 days prior to the accident. According to 14 CFR Part 43 Appendix D - Scope and Detail of Items (as Applicable to the Particular Aircraft) To Be Included in Annual and 100 Hour Inspections, "Each person performing an annual or 100 hour inspection shall inspect (where applicable) components of the engine and nacelle group..."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The inadequate 100-hour inspection by maintenance personnel, which resulted in a loose fuel line and loss of power. A factor related to the accident was the dark night conditions.

Findings

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

Findings

1. (C) FUEL SYSTEM,LINE FITTING - LOOSE
2. (C) MAINTENANCE,100-HOUR INSPECTION - INADEQUATE - OTHER MAINTENANCE PERSONNEL

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings

3. TERRAIN CONDITION - ROUGH/UNEVEN
4. (F) LIGHT CONDITION - DARK NIGHT

Factual Information

On May 4, 2003, about 2300 eastern daylight time, a Piper PA-28-180, N55854, was substantially damaged during a forced landing, after experiencing a partial loss of power while departing from the Orange Country Airport, Montgomery, New York. The certified flight instructor (CFI) and student pilot were not injured. Night visual meteorological conditions prevailed, and no flight plan was filed the instructional flight conducted under 14 CFR Part 91.

According to the CFI, after completing a 1-hour cross-country flight, the airplane was taxied to runway 3, with the intention of practicing takeoffs and landings. The CFI estimated that the fuel on board at the time of departure was approximately 34 gallons, and the fuel selector was placed on the right tank because the right fuel gauge was indicating slightly more fuel.

After the student completed the pre-takeoff checklist, the CFI confirmed that the fuel boost pump was on, the mixture was full rich, the carburetor heat was off, and the airplane was configured for takeoff. During the departure, the airplane accelerated normally, with the engine producing full power during the takeoff roll and initial climb. Upon reaching approximately 300 to 400 feet above the ground, the engine began to lose power. The CFI took the flight controls and immediately executed the emergency checklist, which consisted of switching fuel tanks, confirming that the mixture was rich, the fuel boost pump on, and applying carburetor heat. The CFI requested that the student attempt to switch the magnetos, which had no effect. The CFI cycled the throttle several times, which made the engine surge briefly, but not produce enough power to maintain altitude. The CFI advised the student that a landing would be made to a field, and instructed him to turn the fuel selector off, turn the boost pump off, and pull the mixture to lean. As the ground came into view, the CFI observed a ditch approximately 8 feet deep, and extended the glide so the touchdown point would be beyond the ditch. The airplane touched down clear of the ditch; however, during the landing rollout, the airplane rolled through a shallow drainage swale, collapsing the nose and right main gear assemblies. The airplane rotated to the right and came to rest upright.

The wreckage was examined by a Federal Aviation Administration inspector. He observed that the fuel line, which ran between the fuel pump and the carburetor, was loose at the connection point on the carburetor. When the electric fuel pump was activated, fuel was observed spraying from the connection point.

Fuel was observed in both wing tanks, and was absent of debris and contamination.

Examination of the gascolator and the fuel line which ran between the fuel selector and the fuel pump, revealed an absence of fuel.

Blue stains were observed on the outer skin of the airplane, from the firewall area, extending about 4 feet aft.

The airplane had accumulated about 20 hours of operation since a 100-hour inspection was performed on April 25, 2003.

According to 14 CFR Part 43 Appendix D - Scope and Detail of Items (as Applicable to the Particular Aircraft) To Be Included in Annual and 100 Hour Inspections:

"Each person performing an annual or 100 hour inspection shall inspect (where applicable) components of the engine and nacelle group as follows:

- (1) Engine section - for visual evidence of excessive oil, fuel, or hydraulic leaks, and sources of such leaks.
- (2) Studs and nuts - for improper torquing and obvious defects.
- (3) Internal engine - for cylinder compression and for metal particles or foreign matter on screens and sump drain plugs. If there is weak cylinder compression, for improper internal condition and improper internal tolerances.
- (4) Engine mount - for cracks, looseness of mounting, and looseness of engine to mount.
- (5) Flexible vibration dampeners - for poor condition and deterioration.
- (6) Engine controls - for defects, improper travel, and improper safetying.
- (7) Lines, hoses, and clamps - for leaks, improper condition and looseness.
- (8) Exhaust stacks - for cracks, defects, and improper attachment.
- (9) Accessories - for apparent defects in security of mounting.
- (10) All systems - for improper installation, poor general condition, defects, and insecure attachment.
- (11) Cowling - for cracks, and defects."

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	34, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	02/11/2003
Occupational Pilot:		Last Flight Review or Equivalent:	04/28/2003
Flight Time:	607 hours (Total, all aircraft), 468 hours (Total, this make and model), 545 hours (Pilot In Command, all aircraft), 77 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	Student	Age:	26, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	11/16/2002
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	34 hours (Total, all aircraft), 34 hours (Total, this make and model), 10 hours (Pilot In Command, all aircraft), 14 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N55854
Model/Series:	PA-28-180	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	28-7305485
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	04/25/2003, 100 Hour	Certified Max Gross Wt.:	2450 lbs
Time Since Last Inspection:	20 Hours	Engines:	1 Reciprocating
Airframe Total Time:	5603 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-360-A4A
Registered Owner:	KS Aircorp	Rated Power:	180 hp
Operator:	KS Aircorp	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	MGJ, 365 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	2254 EDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.17 inches Hg	Temperature/Dew Point:	7° C / 6° C
Precipitation and Obscuration:			
Departure Point:	Montgomery, NY (MGJ)	Type of Flight Plan Filed:	None
Destination:	Newburgh, NY (SWF)	Type of Clearance:	None
Departure Time:	2300 EDT	Type of Airspace:	Class G

Airport Information

Airport:	Orange County Airport (MGJ)	Runway Surface Type:	Asphalt
Airport Elevation:	365 ft	Runway Surface Condition:	Dry
Runway Used:	3	IFR Approach:	None
Runway Length/Width:	5006 ft / 100 ft	VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	41.509722, -74.264444

Administrative Information

Investigator In Charge (IIC):	Stephen M Demko	Report Date:	06/30/2004
Additional Participating Persons:	Kenneth Symons; FAA; Teterboro, NJ		
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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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](#).