Aviation Investigation Final Report

Location:	Plymouth, Michigan	**Accident Number:**	CHI03LA011
Date & Time:	October 20, 2002, 11:20 Local	**Registration:**	N56655
Aircraft:	Piper PA-32-300	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane received substantial damage when it struck a visual approach slope indicator light after a loss of control during landing. A fire subsequently erupted and was extinguished by the pilot and airport personnel. The pilot reported that during the landing his right brake was not working. He stated that he attempted to stop using the left brake and compensating with rudder. The aircraft veered to the right, departed the runway, and struck a visual approach slope indicator light. The pilot stated he had maintenance performed on the brakes twice in the previous 2 months, at which time the mechanic bled the lines and added fluid. He stated that he had flown the airplane the day before with no problems. Subsequent to the accident, a seal in the brake master cylinder was found defective.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot not maintaining directional control during landing and the inoperative right main landing gear brake. Contributing factors were the failed brake master cylinder seal, resulting in a hydraulic leak, the inadequate preflight by the pilot, the fuel fire, and the pilot intentionally operating the airplane with a known brake system problem.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING

Findings
1. (F) FLUID,HYDRAULIC - LEAK
2. (F) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - INTENTIONAL - PILOT IN COMMAND
3. (F) HYDRAULIC SYSTEM,SEAL - FAILURE
4. (F) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND
5. (C) LANDING GEAR,NORMAL BRAKE SYSTEM - INOPERATIVE
6. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING

Findings
7. (F) OBJECT - RUNWAY LIGHT
8. (F) FLUID,FUEL - FIRE

Factual Information

On October 20, 2002, about 1120 eastern daylight time, a Piper PA-32-300, N56655, piloted by a private pilot, sustained substantial damage when it went off the right side of the runway and struck a part of the visual approach slope indicator (VASI) system. The airplane was landing on runway 36 (2,556 feet by 75 feet, asphalt), at the Canton-Plymouth Mettetal Airport (1D2), Plymouth, Michigan. when the accident occurred. The 14 CFR Part 91 personal flight was operating in visual meteorological conditions. The pilot and passenger were not injured. The flight departed Paul C. Miller - Sparta Airport (8D4), Sparta, Michigan, at 1030.

The pilot reported that upon landing on runway 36, the winds were 270 at 8 knots. He stated that upon touching down he realized he was moving a little fast; the airplane didn't settle and seemed to float. He applied braking to slow down but the right brake was not working. The pilot attempted to slow the airplane by using left braking and right rudder. The pilot reported that the aircraft then veered to the right (east side) and went off the runway. The pilot noted that he attempted to bring the airplane back onto the runway. The aircraft subsequently struck the VASI system with the left wing and the airplane caught fire. The pilot and his passenger safely exited the aircraft and the fire was put out by the pilot and airport staff.

The pilot made a flight the day prior to the accident and reported that the brakes were working fine. The pilot stated "Had I known the brake fluid was low again, and that I did not have complete brake function, I wouldn't have made the flight." He reported that he had maintenance performed on the brakes on August 8th and September 25th of 2003, at which time the mechanic bled the lines and added fluid.

The pilot reported that, subsequent to the accident, a seal within the brake master cylinder was found to be defective. He reported that this allowed the fluid level to be low and air to enter the brake lines.

Pilot Information

Certificate:	Private	**Age:**	47,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):		**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	June 26, 2001
Occupational Pilot:		**Last Flight Review or Equivalent:**	April 13, 2002
Flight Time:	277 hours (Total, all aircraft), 156 hours (Total, this make and model), 211 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N56655
Model/Series:	PA-32-300	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	32-7440012
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	January 2, 2003 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:	137.32 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5049.12 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Not installed	**Engine Model/Series:**	IO-540KIA5
Registered Owner:	David Dean Grear	**Rated Power:**	300 Horsepower
Operator:	David D. Grear	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	DTW,646 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	10:54 Local	**Direction from Accident Site:**	150°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	3°C / 2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sparta , MI (8D4)	**Type of Flight Plan Filed:**	Unknown
Destination:	Plymouth, MI (1D2)	**Type of Clearance:**	None
Departure Time:	10:30 Local	**Type of Airspace:**	Unknown

Airport Information

Airport:	Canton - Plymouth - Mettetal 1D2	**Runway Surface Type:**	Asphalt
Airport Elevation:	696 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	36	**IFR Approach:**	None
Runway Length/Width:	2556 ft / 75 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	42.349998,-83.458335

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Richard Merrill; FAA-FSDO-Detroit, Michigan; Belleville, MI
Original Publish Date:	September 30, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55969