



Aviation Investigation Factual Report

Location:	Emmett, Idaho	Accident Number:	SEA04LA021
Date & Time:	November 23, 2003, 13:00 Local	Registration:	N8982C
Aircraft:	Piper PA-22-135	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

On November 23, 2003, approximately 1300 mountain standard time, a Piper tricycle geared PA-22-135, N8982C, registered to multiple owners, and being operated/flown by a private pilot, sustained substantial damage during an overrun on landing at the Emmett Municipal airport, Emmett, Idaho. Neither the pilot nor passenger was injured. Visual meteorological conditions existed and no flight plan had been filed. The flight, which was personal, was operated under 14CFR91, and had originated from the Emmett airport approximately 45 minutes earlier.

The pilot reported that prior to departing Emmett at the beginning of the flight he conducted an engine run up holding the hand brake. He then departed, remaining in the pattern and executed two touch and go landings to runway 28, and did not use brakes during these landings. The pilot left the pattern for a short time operating at a higher altitude, and then returning and setting up for a landing on runway 28.

The aircraft touched down approximately 50 miles per hour and as the airspeed bled off the pilot applied the hand brake. He stated that "...I immediately realized there were no brakes. At that point I pumped the hand brake several times in hopes of building up some pressure. This did not work..." and "...I continued to hold the brake handle all the way back in the stopping position. I did not feel any resistance...." The passenger reported that he "...observed the pilot apply and recycle the brakes at least twice without noticeable braking or effect...."

The pilot maintained the aircraft on the centerline and rolled out straight ahead exiting the upwind end of the runway about 10 miles per hour. The aircraft then rolled down a gravel embankment and into a ditch.

Runway 28 at the Emmett airport is 3,250 feet in length and 50 feet in width. The runway surface is composed of asphalt and the first taxiway turnoff is approximately 2,450 feet short of the upwind end of the runway.

Following the accident an inspector assigned to the Federal Aviation Administration's Boise Flight Standards District Office physically tested the aircraft's brakes following its return to a hangar at the Emmett airport, and reported that they appeared to function (refer to Attachments FAA-I and OH-I). The testing was accomplished in a heated hangar, which the aircraft had been moved to earlier, and the testing was completed under circumstances of low loading/energy, i.e., the wing was merely lifted off the deck, the wheel spun by hand and the brake applied.

A local mechanic/pilot who has owned a Piper PA-22 for 40 years at the Emmett airport, was interviewed and reported that the PA-22's brake system is a closed hydraulic system operated by a hand brake (refer to Attachment OH-1). He indicated that this system is highly sensitive

to temperature changes and that when the system is fully serviced under cool conditions and then allowed to increase in temperature (e.g., a raise in ambient temperature) the system will lock up requiring that a small amount of fluid be bled out in order to release the brakes.

Conversely, when the system is under serviced and taken from a warm ambient temperature to a cold temperature the fluid contracts and the brakes become loose requiring the addition of brake fluid. The mechanic/pilot indicated this was a peculiarity of the PA-22 braking system which pilots new to the aircraft were often unfamiliar with.

The pilot reported a total of 118 hours of flight experience of which 15.7 hours were in the PA-22.

The surface temperature for Caldwell Industrial airport, which bears 183 degrees magnetic and 13 nautical miles from Emmet, was charted for 1255 local time for the 7 days from and previous to the date of the accident. The temperature trend showed a significant decreasing trend in temperature throughout the week (refer to Table I).

Pilot Information

Certificate:	Private	Age:	47,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	March 19, 2002
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	November 7, 2001
Flight Time:	118 hours (Total, all aircraft), 16 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N8982C
Model/Series:	PA-22-135	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	22-1565
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	March 3, 2003 Annual	Certified Max Gross Wt.:	1950 lbs
Time Since Last Inspection:	15 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3048 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-290-D2
Registered Owner:	Graviet, L.	Rated Power:	135 Horsepower
Operator:	Mednicoff, Steve J.	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	EUL,2432 ft msl	Distance from Accident Site:	13 Nautical Miles
Observation Time:	12:55 Local	Direction from Accident Site:	183°
Lowest Cloud Condition:	Few / 4000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	30°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.37 inches Hg	Temperature/Dew Point:	2°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Emmett, ID (S78)	Type of Flight Plan Filed:	None
Destination:	(S78)	Type of Clearance:	None
Departure Time:	12:15 Local	Type of Airspace:	Class G

Airport Information

Airport:	Emmett Municipal S78	Runway Surface Type:	Asphalt
Airport Elevation:	2350 ft msl	Runway Surface Condition:	Dry
Runway Used:	28	IFR Approach:	None
Runway Length/Width:	3250 ft / 50 ft	VFR Approach/Landing:	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	43.854167,-116.544441

Administrative Information

Investigator In Charge (IIC): McCreary, Steven

Additional Participating Persons: Brent A Morrow; Boise FSDO; Boise, ID

Report Date: April 27, 2004

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=58375>

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).