



# Aviation Investigation Final Report

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<b>Location:</b>	Amarillo, Texas	<b>Accident Number:</b>	FTW04LA049
<b>Date &amp; Time:</b>	December 20, 2003, 16:00 Local	<b>Registration:</b>	N6850D
<b>Aircraft:</b>	Cessna 195B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The 1,073-hour pilot reported that during his preflight inspection prior to the accident flight, he observed a red fluid seeping from the belly of the aircraft. The pilot stated this was "becoming a common occurrence, requiring him to fill the brake reservoir frequently." The pilot checked the brakes prior to starting the engine and had no problems holding the airplane still with brakes during the engine run up. Unsatisfied with the landing on runway 20 (a 5,500-foot long and 124-foot wide turf runway), the pilot decided to make a touch-n-go landing without the use of the brakes. During the second landing, "all was well until the ground roll, at an approximate speed of 50 miles per hour." The aircraft started to veer to the right, and the pilot applied left brake. As the speed reduced, the aircraft began to ground loop, shearing off the left landing gear at the fuselage. Examination of the aircraft brake system by the pilot revealed hydraulic fluid was leaking the reservoir cap on the left brake master cylinder (Cessna Aircraft Illustrated Parts Catalog Part Number 0411302-21) in the area where the mounting lug (Part Number 0411302-8) bolts onto the reservoir cap.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The leakage of the left brake master cylinder cap, which resulted in the loss of hydraulic fluid and the failure of the left brake.

## Findings

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

### Findings

1. BRAKES(NORMAL) - UNAVAILABLE - PILOT IN COMMAND
2. (C) HYDRAULIC SYSTEM - LEAK
3. MAINTENANCE - NOT PERFORMED
4. GROUND LOOP/SWERVE - ENCOUNTERED - PILOT IN COMMAND

## Factual Information

On December 20, 2003, approximately 1600 central standard time, a Cessna 195B tailwheel equipped single-engine airplane, N6850D, was substantially damaged when it ground looped during landing roll at the Buffalo Airport (1E7), near Amarillo, Texas. The private pilot, sole occupant of the airplane, sustained serious injuries. The airplane was registered to and operated by the pilot. Visual meteorological conditions prevailed, and a flight plan was not filed for the 14 Code of Federal Regulations Part 91 personal flight. The round robin flight departed 1E7 destined for the Tucumcari Municipal Airport, near Tucumcari, New Mexico, at approximately 1400 and returned to 1E7.

The 1,073-hour pilot reported in the Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2) that during his preflight inspection prior to the accident flight, he observed a "red fluid seeping from the belly of the aircraft." He stated this was "becoming a common occurrence, requiring him to fill the brake reservoir frequently." He checked the brakes prior to starting the engine and noted no problems holding the airplane still with the brakes during the engine run up.

Unsatisfied with the landing to runway 20 (a 5,500-foot long and 124-foot wide turf runway), the pilot decided to execute a touch-n-go landing without the use of brakes. During the second landing, "all was well until the ground roll, at an approximate speed of 50 miles per hour." The aircraft started to veer to the right, and he applied left brake. As the airspeed reduced, the aircraft began to ground loop, shearing off the left landing gear at the fuselage. The aircraft came to an "abrupt halt" in an upright position.

The pilot stated in the NTSB Form 6120.1/2 under the Recommendation (How This Accident Could Have Been Prevented) section: "By proper preflight of brakes prior to flight. Attention to the tell-tale signs of red fluid leaking down the aircraft belly."

Examination of the airplane by the Federal Aviation Administration (FAA) inspector, who responded to the accident site revealed, the outboard three feet of the left wing was bent upward approximately 45 degrees. The fuselage was wrinkled approximately four feet aft of the cabin area, and the left main landing gear was separated from the fuselage.

Examination of the aircraft brake system by the pilot revealed hydraulic fluid was leaking the reservoir cap on the left brake master cylinder (Cessna Aircraft Illustrated Parts Catalog Part Number 0411302-21) in the area where the mounting lug (Part Number 0411302-8) bolts onto the reservoir cap.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	79, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical-w/ waivers/lm	<b>Last FAA Medical Exam:</b>	June 27, 2003
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	June 17, 2003
<b>Flight Time:</b>	1073 hours (Total, all aircraft), 667 hours (Total, this make and model), 1033 hours (Pilot In Command, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N6850D
<b>Model/Series:</b>	195B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	16026
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	April 8, 2003 Annual	<b>Certified Max Gross Wt.:</b>	3350 lbs
<b>Time Since Last Inspection:</b>	19 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2420 Hrs at time of accident	<b>Engine Manufacturer:</b>	Jacobs
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	R755-82
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	275 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	AMA,3607 ft msl	<b>Distance from Accident Site:</b>	13 Nautical Miles
<b>Observation Time:</b>	15:53 Local	<b>Direction from Accident Site:</b>	45°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	13 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	210°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.94 inches Hg	<b>Temperature/Dew Point:</b>	19°C / -6°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Amarillo, TX (1E7)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Amarillo, TX (1E7)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	14:00 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Buffalo Airport 1E7	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	3640 ft msl	<b>Runway Surface Condition:</b>	Dry;Rough
<b>Runway Used:</b>	20	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	5500 ft / 124 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious	<b>Latitude, Longitude:</b>	35.064998,-101.879165

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Sauer, Aaron
<b>Additional Participating Persons:</b>	Juan Rivera; Lubbock FSDO; Lubbock, TX
<b>Original Publish Date:</b>	March 30, 2004
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=58536">https://data.nts.gov/Docket?ProjectID=58536</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).