Aviation Investigation Final Report

Location:	MITCHELLVILLE, Maryland	**Accident Number:**	IAD99LA049
Date & Time:	June 5, 1999, 08:30 Local	**Registration:**	N86RK
Aircraft:	Kucki PITTS S-1S	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After landing, the pilot applied the brakes and experienced no braking action on the left side. The airplane departed the left side of the runway, struck a ditch, nosed over, and came to rest inverted. Examination of the left brake revealed the brake caliper was broken at the forward dowel pin hole.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: was the loss of braking action on the left side due to a broken brake caliper.

Findings

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

Findings
1. (C) LANDING GEAR,NORMAL BRAKE SYSTEM - INOPERATIVE
2. DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings
3. TERRAIN CONDITION - DITCH

Factual Information

On June 5, 1999, at 0830 eastern daylight time, a homebuilt Pitts S-1S was substantially damaged after a loss of control during landing at the Freeway Airport (W00), Mitchellville, Maryland. The certificated airline transport pilot was not injured. Visual meteorological conditions prevailed and no flight plan was filed for the local flight conducted under 14 CFR Part 91.

In a telephone interview, the pilot said he landed on runway 18 at Freeway. He said he applied the brakes and experienced no braking action on the left side. The airplane departed the right side of the runway, struck a ditch, nosed over, and came to rest inverted.

The pilot, also a certificated airframe and powerplant mechanic, said he experienced problems with the left brake in the recent past, and had attempted to repair the problem on two separate occasions in the month prior to the accident. He said:

"I'd had some trouble with my left brake. I changed the 'O' rings and cleaned the disks and pads. I then ground tested and flew the airplane. A flight or so later, I had the problem again, so I replaced the pads. On the third occurrence, I suffered the accident."

The pilot said he contacted the brake manufacturer for information about the system, and to verify that the brake disks measured to the manufacturer's specifications.

According to the pilot, "The brakes are needed to stop and to steer. It's a high priority thing, that's why I put so much effort into it." Examination of maintenance records revealed the pilot performed brake repairs on May 17, 1999, and again on June 4, 1999.

The pilot reported that, other than the left brake, the airplane operated with no mechanical deficiencies.

The pilot reported a total of 3,200 hours of flight experience on October 6, 1998.

Federal Aviation Administration (FAA) Inspectors performed a cursory examination of the wreckage. In a telephone interview, an FAA Inspector stated that the left brake was not operational, and that the right brake did function.

The airplane was inspected by an FAA Airworthiness Inspector on June 7, 1999. According to the Inspector, "The left brake caliper was broken at the forward dowel pin hole."

The FAA Inspector conducted a telephone interview with the pilot. According to the Inspector's record of telephone conversation:

"[The pilot] stated that, during conversations with other Pitts owners, he heard that this brake configuration was a known problem. He said that he was told that later models did not have the caliper installed on the bottom of the disk, as this one is. [The pilot] also stated that on more than one occasion he had the brake activate on bumpy runways. He was told it was due to the caliper location."

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	39,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Center
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	October 6, 1998
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	3286 hours (Total, all aircraft), 85 hours (Total, this make and model), 3126 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Kucki	**Registration:**	N86RK
Model/Series:	PITTS S-1S PITTS S-1S	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	K036
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	May 17, 1999 Annual	**Certified Max Gross Wt.:**	1200 lbs
Time Since Last Inspection:	6 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	752 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Not installed	**Engine Model/Series:**	AEIO-360-B4A
Registered Owner:	MALCOLM B. MILAM	**Rated Power:**	180 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ADW ,281 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	08:55 Local	**Direction from Accident Site:**	219°
Lowest Cloud Condition:	Scattered / 25000 ft AGL	**Visibility**	7 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	20°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(W00)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	07:50 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	FREEWAY AIRPORT W00	**Runway Surface Type:**	Asphalt
Airport Elevation:	167 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	2450 ft / 30 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	38.919197,-76.789756(est)

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	RICK LEE; BALTIMORE , MD
Original Publish Date:	November 2, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46494