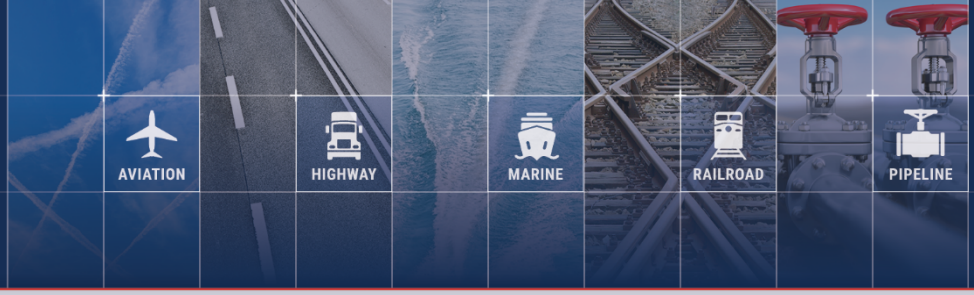

Aviation Investigation Final Report

Location:	FORT LAUDERDALE, Florida	**Accident Number:**	MIA94LA171
Date & Time:	July 4, 1994, 14:00 Local	**Registration:**	N61PS
Aircraft:	PITTS S2B	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT WAS PERFORMING ACROBATIC MANEUVERS WHEN HE HEARD A 'POP' AND NOTED THAT HIS RIGHT UPPER AILERON WAS LOOSE. HE SLOWED DOWN, AND WAS ABLE TO RETURN AND LAND WITHOUT FURTHER INCIDENT. POSTFLIGHT INSPECTION REVEALED A FAILURE OF THE UPPER RIGHT INBOARD AILERON WELDED BRACKET. FURTHER METALLURGICAL EXAMINATION AT THE SAFETY BOARD LABORATORY REVEALED 3 DISTINCT FATIGUE ORIGINS BETWEEN THE TOE OF THE WELD AND THE WELDED ZONES. THE WELD ITSELF EXHIBITED SHARP AND HIGH WELD CROWNS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE POOR WELDING QUALITY OF THE MANUFACTURER, RESULTING IN THE FATIGUE FAILURE OF THE AILERON ATTACHMENT BRACKET.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: MANEUVERING

Findings
1. (C) FLIGHT CONTROL,AILERON ATTACHMENT - FATIGUE
2. (C) AIRCRAFT/EQUIPMENT INADEQUATE - MANUFACTURER

Factual Information

On July 4, 1994, about 1400 eastern daylight time, N61PS, a Pitts S2B, registered to the pilot David Swartz, experienced an in-flight control system failure while maneuvering on a 14 CFR Part 91 personal flight. Visual meteorological conditions prevailed at the time and no flight plan was filed for the local flight. The airplane was substantially damaged and the pilot was not injured. The flight originated about 1330 the same day.

The pilot stated that while performing aerobatics he heard a "pop". He then noticed partial loss of control of aileron travel. He returned to the airport and landed without further incident. Postflight inspection of the airplane revealed a failure of the upper, right, inboard aileron welded bracket. This same airplane experienced longeron failures at the welds on May 26, 1994, reference, NTSB accident case number MIA94LA154.

The failed aileron bracket was submitted to the NTSB laboratory for examination. The examination revealed three distinct fatigue origins between the toe of the weld and the welded zones. The weld itself exhibited sharp and high weld crowns.

Pilot Information

Certificate:	Commercial	**Age:**	46,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	December 18, 1994
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	879 hours (Total, all aircraft), 374 hours (Total, this make and model), 741 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 23 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PITTS	**Registration:**	N61PS
Model/Series:	S2B S2B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Aerobatic	**Serial Number:**	5230
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	December 15, 1993 Annual	**Certified Max Gross Wt.:**	1700 lbs
Time Since Last Inspection:	160 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	740 Hrs	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	AEIO-540
Registered Owner:	SWARTZ, DAVID J.	**Rated Power:**	260 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:	FXE ,24 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	13:45 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Scattered / 3000 ft AGL	**Visibility**	15 miles
Lowest Ceiling:	Broken / 20000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	13:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

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:**	

Administrative Information

Investigator In Charge (IIC):	Alston, Andrew
Additional Participating Persons:	TOM LAIRD; FT. LAUDERDALE , FL
Original Publish Date:	April 27, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=37570