



Aviation Investigation Final Report

Location:	Sturgeon Bay, Wisconsin	Accident Number:	CEN22LA302
Date & Time:	July 1, 2022, 15:00 Local	Registration:	N23RS
Aircraft:	Pitts S1	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that during landing touchdown with all three wheels “down,” and the airplane “tracking fine,” he removed his feet from the lower rudder pedal bars to apply braking via the upper braking pedal bars. The pedals then fell rearward toward the pilot and his right foot got wedged between the lower rudder pedal bar and the upper braking pedal bar. The pilot reported this action caught him by surprise and he applied “heavy” right rudder, thinking it was braking application. The airplane departed the right side of the runway, nosed over, and came to rest inverted in the grass next to the runway. The airplane sustained substantial damage to the top right wing and the empennage. The pilot reported there were no preimpact mechanical malfunctions or failures with the airplane that would have precluded normal operation.

The pilot reported that he had recently purchased the airplane and did not know that the rudder pedal return springs were not installed. The investigation revealed that the airplane was previously modified for aerobatic competition with the addition of a large rudder and that due to cockpit spacing limitations, the rudder pedal return springs could not be installed. The pilot concluded that the accident could have been prevented by performing a “very thorough” inspection and understanding all the modifications made to the airplane before flying it.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain airplane control during landing, which resulted in a runway excursion and nose over. Contributing to the accident was the pilot's inadequate preflight inspection and the pilot's lack of flight control system knowledge.

Findings

Personnel issues	Preflight inspection - Pilot
Personnel issues	Aircraft control - Pilot
Personnel issues	Incorrect action performance - Pilot
Personnel issues	Knowledge of equipment - Pilot
Aircraft	Rudder control system - Inadequate inspection

Factual Information

History of Flight

Prior to flight	Preflight or dispatch event
Landing-flare/touchdown	Miscellaneous/other
Landing-flare/touchdown	Loss of control on ground (Defining event)
Landing-landing roll	Runway excursion
Landing-landing roll	Nose over/nose down

Pilot Information

Certificate:	Commercial	Age:	73, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Single
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	January 20, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	March 17, 2022
Flight Time:	(Estimated) 2500 hours (Total, all aircraft), 50 hours (Total, this make and model), 2500 hours (Pilot In Command, all aircraft), 3 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Pitts	Registration:	N23RS
Model/Series:	S1 S	Aircraft Category:	Airplane
Year of Manufacture:	1981	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	8-0035
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	June 1, 2022 Annual	Certified Max Gross Wt.:	1150 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	608 Hrs as of last inspection	Engine Manufacturer:	Lycoming Engines
ELT:	Not installed	Engine Model/Series:	IO-360 Series
Registered Owner:		Rated Power:	180 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None
Operator Does Business As:	None	Operator Designator Code:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KSUE,724 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	14:56 Local	Direction from Accident Site:	23°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	8 knots / 14 knots	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	170°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.95 inches Hg	Temperature/Dew Point:	22°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Juneau , WI (UNU)	Type of Flight Plan Filed:	None
Destination:	Sturgeon Bay, WI	Type of Clearance:	None
Departure Time:	14:00 Local	Type of Airspace:	Class G

Airport Information

Airport:	DOOR COUNTY CHERRYLAND SUE	Runway Surface Type:	Concrete
Airport Elevation:	724 ft msl	Runway Surface Condition:	Dry
Runway Used:	02	IFR Approach:	None
Runway Length/Width:	4000 ft / 75 ft	VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	44.837454,-87.424599(est)

Administrative Information

Investigator In Charge (IIC):	Hodges, Michael		
Additional Participating Persons:	Nicholas Holmes; FAA Milwaukee FSDO; Milwaukee, WI		
Original Publish Date:	September 8, 2022	Investigation Class:	4
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=105416		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).