



Aviation Investigation Final Report

Location:	Stuart, Florida	Accident Number:	ERA18LA220
Date & Time:	August 15, 2018, 12:00 Local	Registration:	N425AZ
Aircraft:	CZECH SPORT AIRCRAFT AS PIPER SPORT	Aircraft Damage:	Substantial
Defining Event:	Landing gear collapse	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The sport pilot was conducting a personal flight in the special light sport airplane. During landing, the airplane touched down normally on the main landing gear. After 50 ft of ground roll, the nose landing gear touched down and collapsed; one propeller blade subsequently separated, and the airplane came to rest upright on the runway. Examination of the airplane revealed that the nose landing gear had separated at a location that the airplane maintenance manual (AMM) and a service bulletin (SB) indicate should be inspected for cracks. The separated fracture surfaces exhibited cracking and corrosion. Review of the SB revealed that due to the development of cracks, an inspection for cracks per the AMM should occur every 25 flight hours or 50 cycles, whatever occurs first. The AMM stated to use a flashlight and 10x magnifier to visually inspect the nose landing gear leg lower section and verify that there is no evidence of cracking in paint on or around the place of the weld between the tube and the bracket. The most recent documented nose landing gear inspection was about 2 years 5 months before the accident. Thus, it is likely that the nose landing gear was not adequately inspected and cracks and corrosion were therefore undetected, which led to the nose landing gear collapse during landing.

Probable Cause and Findings

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

Inadequate maintenance inspection of the airplane's nose landing gear, which resulted in a nose landing gear collapse during landing due to cracking and corrosion.

Findings

Personnel issues	Scheduled/routine inspection - Maintenance personnel
Aircraft	Nose/tail gear strut/axle - Inadequate inspection

Factual Information

History of Flight

Landing-landing roll	Landing gear collapse (Defining event)
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On August 15, 2018, about 1200 eastern daylight time, a special light sport aircraft (S-LSA) Czech Sport Aircraft AS Piper Sport, N425AZ, operated by the sport pilot, was substantially damaged during landing at Witham Field (SUA), Stuart, Florida. The sport pilot and passenger were not injured. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the local flight that departed SUA about 1100.

The sport pilot reported that during landing on runway 16, the airplane touched down normally on the main landing gear. After 50 ft of ground roll, the nose landing gear touched down and collapsed. One propeller blade subsequently separated and the airplane came to rest upright on the runway.

Examination of the wreckage by a Federal Aviation Administration (FAA) inspector revealed that the nose landing gear had penetrated the engine firewall. The inspector added that the nose landing gear had separated at a location where the airplane maintenance manual (AMM) and a service bulletin direct to inspect for cracks. The inspector further stated that the separated fracture surfaces exhibited cracking and corrosion.

Review of SB-CR-016, published October 9, 2013, revealed:

"...REASON:

Some SportCruiser / PiperSport / PS-28 Cruiser aircraft have developed cracks in the bottom side of the lower section of the nose landing gear (NLG). The cracks develop on the NLG assembly along the weld of the tube and the bracket. Furthermore, on several aircraft bending of the pivot connecting the fork with leg was discovered and cracks from holes of bolts on the fork. To address this potentially unsafe condition, a repetitive inspection is required of the bottom side of the lower section, in the area of the weld of the tube, the bracket and the pivot and the fork in the place of the bolts mounting the fork to the landing gear.

COMPLIANCE:

- A. Before next flight after issue of this bulletin.
- B. Periodically at each 25 FH or 50 cycles whatever occurs first check as described in documents [1] for PS-28 Cruiser and [2] for SportCruiser (see REFERENCES).
- C. During pre-flight check (see POH , Section 4, 4.1 Pre-flight check, Inspection Check List, Point 4 - Nose gear) visually inspect pivot (see the picture on the Page 3 of 4 of this Service Bulletin) and verify that there is no evidence of cracks or bending..."

Review of the AMM, 8.4.3, revealed:

"...(d) Using flashlight and 10x magnifier, visually inspect nose landing gear leg lower section and verify there is no evidence of cracking in paint on or around place of the weld of the tube and the bracket..."

The two-seat, low-wing, fixed tricycle-gear airplane, was manufactured in 2010. It was powered by a Rotax 912 ULS, 100-horsepower engine, equipped with a ground-adjustable, two-blade Sensenich propeller. Review of maintenance records revealed that the airplane's most recent annual inspection was completed on March 26, 2018. At that time, the airframe and engine had accrued 487.8 hours since new. The airplane flew an additional 24.8 hours from the time of the most recent inspection, until the accident. The most recent nose gear inspection documented in the maintenance records was dated March 14, 2016.

Pilot Information

Certificate:	Sport Pilot	Age:	58,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Sport pilot	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	November 18, 2017
Flight Time:	428 hours (Total, all aircraft), 144 hours (Total, this make and model), 334 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CZECH SPORT AIRCRAFT AS	Registration:	N425AZ
Model/Series:	PIPER SPORT	Aircraft Category:	Airplane
Year of Manufacture:	2010	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	P1001082
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	March 26, 2018 Annual	Certified Max Gross Wt.:	1320 lbs
Time Since Last Inspection:	25 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	488 Hrs as of last inspection	Engine Manufacturer:	Rotax
ELT:	C91A installed, not activated	Engine Model/Series:	912 ULS
Registered Owner:		Rated Power:	100 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	SUA, 16 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	11:47 Local	Direction from Accident Site:	0°
Lowest Cloud Condition:	Scattered	Visibility:	7 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	120°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.12 inches Hg	Temperature/Dew Point:	32°C / 24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Stuart, FL (SUA)	Type of Flight Plan Filed:	None
Destination:	Stuart, FL (SUA)	Type of Clearance:	None
Departure Time:	11:00 Local	Type of Airspace:	

Airport Information

Airport:	Witham Field SUA	Runway Surface Type:	Asphalt
Airport Elevation:	16 ft msl	Runway Surface Condition:	Dry
Runway Used:	16	IFR Approach:	None
Runway Length/Width:	4998 ft / 100 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:	27.181667,-80.221389(est)

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Jimmey Mygatt; FAA/FSDO; Miramar, FL
Original Publish Date:	September 27, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98090

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).