



National Transportation Safety Board Aviation Accident Final Report

Location:	Palm City, FL	Accident Number:	MIA06LA078
Date & Time:	04/02/2006, 1823 EDT	Registration:	N595PP
Aircraft:	Czech Aircraft Works Parrot	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious

Flight Conducted Under: Part 91: General Aviation - Personal

Analysis

The pilot stated that the airplane had an adequate supply of fuel for the intended flight. During the takeoff roll the engine was only developing 4,300 rpm instead of the normal 5,000 to 5,200 rpm. The takeoff roll was longer than anticipated and after becoming airborne, climbed above the tops of trees. The climb rate decreased, and with obstructions ahead, the pilot maneuvered the airplane for a landing on another runway, then elected to land on the takeoff runway due to obstructions. The airplane landed hard which broke the right main landing gear, there was no observed damage to the engine mount or engine firewall. Examination of the engine revealed both bowden cables of the throttle control were bent forward of a junction block. With full throttle applied, cylinder Nos. 1 and 3 throttle was 4 mm from full open, and cylinder Nos. 2 and 4 was 7 mm from full open. Additionally, the hot air actuation lever at the airbox was separated from the shaft of the butterfly. NTSB examination of the airbox revealed the braze which secures the lever to the shaft was not completely around the shaft. The engine was started but only attained 4,500 rpm (maximum full power is 5,500 rpm). The airbox was then moved which allowed both throttle plates to open, and with full power applied, the engine attained 5,600 rpm.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the pilot-in-command to abort the takeoff after recognizing the engine was not developing full power during the takeoff roll. A contributing factor in the accident was the bending of the throttle cables which prevented full movement of the throttle control.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL
Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (F) THROTTLE/POWER LEVER,CABLE - BENT
2. (C) ABORTED TAKEOFF - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: HARD LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Factual Information

On April 2, 2006, about 1823 eastern daylight time, a special light sport aircraft (SLSA) Czech Aircraft Works Parrot, N595PP, registered to Sport Aircraft Works LLC, collided with trees after experiencing a loss of engine power during the takeoff roll from Naked Lady Ranch Airport, Palm City, Florida. Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 CFR Part 91 personal flight from Naked Lady Ranch Airport to Lakeland Linder Regional Airport, Lakeland, Florida. The airplane was substantially damaged and the commercial-rated pilot, the sole occupant was seriously injured. The flight was originating at the time of the accident.

The pilot stated that after engine start, he taxied to the displaced threshold for his intended departure as the first aircraft in a flight of two. He announced his departure intention and added full throttle, noting that the RPM was only indicating 4,300. He expected the RPM to increase during the takeoff roll, and also thought he had sufficient power so he elected to continue the takeoff. The takeoff roll was longer than what would have occurred if the engine had been producing full power, and the flight climbed about treetop level, which was out of ground effect. The rate of climb slowed, which concerned him about clearing trees at the departure and the runway. He maneuvered the airplane for an attempted landing on the north runway, but obstacles prevented making the turn. He returned to the original runway heading, but because of the maneuvering, the airplane had an increased rate of descent. He landed hard which broke the right main landing gear, and the airplane swerved to the left side of the runway. He further stated that he should have aborted takeoff when the engine failed to develop full power.

According to the president of the manufacturer of the airplane who was a witness to the accident, he heard the engine start and observed the pilot taxi near the approach end of runway 09. Due to close proximity to ground marking items in the approach end area of runway 09, the pilot secured then restarted the engine. The pilot began the takeoff roll on runway 09 with 10 degrees of flaps extended, and during the takeoff roll, the engine did not appear to be developing full rpm. The witness reported the takeoff roll was long with slow acceleration, and after becoming airborne, the airplane appeared to be flying at a slow speed at 50-75 feet above ground level when the flight was more than 1/2 down the runway. The flight continued and when approximately 2/3 down the runway, he noted the airplane made a "steep quick left turn" then rolled to a wings level attitude. The airplane began to settle and impacted on the side of the runway. He and another individual drove to the scene and when they arrived, the pilot was conscious and had unstrapped himself.

The president of the airplane distributor reported his company performed recovery of the airplane. During the recovery process, approximately 1/2 ounce of 100 low lead (100LL) fuel was drained from the gascolator, which holds approximately 2 to 3 ounces. Each wing fuel tank was drained; no contaminants were noted. The left tank contained approximately 4 gallons of 100LL fuel, and the right tank contained approximately 7.5 gallons of 100LL fuel. The fuel selector was positioned to the left tank. The in-line fuel filter before the carburetor was clear, and contained 100LL fuel. The oil reservoir was at the proper level, and the coolant reservoir was full.

Following recovery of the airplane, the engine, engine systems, and fuel system were examined by representatives of the engine manufacturer and airframe manufacturer with FAA oversight.

At the time of the examination, the wings were not installed. There was no observed damage to the engine mount, or firewall. Impact damage to the fuel supply system and engine exhaust pipes was noted; there was no reported preimpact obstructions of the fuel supply lines. The plastic fuel filter located in the engine compartment was free of contaminants. Additionally, the fuel lines in the engine compartment did not have fire protection. Visual inspection of the throttle linkage revealed both bowden cables were bent forward of a junction block, and the throttle control was in the full open position. The junction block for the throttle linkage is located in the engine compartment and is a point where a single solid cable from the cockpit transitions to 2 multi-strand Bowden cables. With the throttle control in the full-open position, cylinder Nos. 1 and 3 throttle was 4 mm from full open, and cylinder Nos. 2 and 4 throttle was 7 mm from full open. Examination of the air box revealed the hot air actuation lever was separated from the shaft of the butterfly; the air box was retained for further examination. The oil quantity was correct. The propeller was destroyed and could not be used for the attempted engine run. Additionally, the impact damaged exhaust was cut off just above the crush location for the attempted engine run. The impact damaged propeller was replaced, and an alternate fuel supply tank was plumbed in at the mechanic fuel pump. The engine was started, and after being warmed up, full throttle was applied. The engine did not achieve higher than 4,500 rpm (maximum rpm at full power is 5,500). The throttle plates at both carburetors were noted to be closed, in addition to the previously reported bending of the 2 multi-strand Bowden cables. The air box was then moved which allowed both throttle plates to open. With full power applied, the engine attained 5,600 rpm.

Examination of the air box was performed by the NTSB Materials Laboratory located in Washington, DC. The results on the examination indicate that the lever which normally connects both throttle plates had separated from the shaft of the preheated air valve. Close examination of the shaft revealed that the brass colored braze which normally retains the lever on the shaft was mostly located on the upper 30 percent of the shaft; a quadrant of the braze was missing.

NTSB review of the maintenance records revealed:

-August 23, 2005-Pitot Static System Test.

-September 10, 2005, Assembled aircraft from shipping container parts.

-September 23, 2005-Factory Test Flight sign-off. Aircraft total time 14 hours 25 minutes.

-November 18, 2005-Special Airworthiness Certificate issued by an FAA inspector from the Orlando FAA Flight Standards District Office (FSDO). The airplane total time at that time was 14 hours 25 minutes.

-January 1, 2006-Engine oil and oil filter change. Aircraft total time 64.0 hours.

-March 4, 2006-Engine oil and oil filter change. Aircraft total time 95.25 hours.

The airplane total time since manufacture at the time of the accident was 119.6 hours.

According to the president of the airplane distributor, the airplane is designed by Czech Aircraft Works, and is assembled by Sport Aircraft Works. The aircraft is a light sport certificated aircraft (SLSA). The purpose of the flight was to deliver the airplane to the annual Sun-N-Fun Fly-In located at the Lakeland Linder Regional Airport, Lakeland Florida. The airplane was to be in static and flight displays. The pilot was not an employee of Sport Aircraft Works, but is an industry journalist.

As previously reported by the pilot, the tachometer indicated 4,300 rpm during the takeoff roll. The president of the operator reported that with full power applied, the tachometer will indicate between 5,000 and 5,200 rpm during the takeoff roll.

The light sport aircraft was certificated in the special category in accordance with ASTM standard F 2245-04. A review of section 7.3.9 of the standard revealed "Fuel lines located in an area subject to high heat (engine compartment) must be fire resistant or protected with a fire-resistant covering." As previously reported, the fuel lines in the engine compartment did not have fire protection.

The airplane minus the retained air box was released to Danny Defelici, of Sport Aircraft Works, on July 18, 2007. The retained air box was also released to Danny Defelici on August 5, 2007.

Pilot Information

Certificate:	Commercial	Age:	57, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 None	Last Medical Exam:	03/01/2004
Occupational Pilot:		Last Flight Review or Equivalent:	10/01/2005
Flight Time:	5000 hours (Total, all aircraft), 2 hours (Total, this make and model), 4750 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Czech Aircraft Works	Registration:	N595PP
Model/Series:	Parrot	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Special Light-Sport	Serial Number:	P5001
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	11/01/2005, Conditional	Certified Max Gross Wt.:	1320 lbs
Time Since Last Inspection:	105.35 Hours	Engines:	1 Reciprocating
Airframe Total Time:	119.6 Hours	Engine Manufacturer:	Rotax
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	912ULS
Registered Owner:	Sport Aircraft Works LLC	Rated Power:	100 hp
Operator:	Sport Aircraft Works LLC	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KSUA, 18 ft msl	Observation Time:	1847 EDT
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	26° C / 15° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	7 knots, 130°	Visibility (RVR):	
Altimeter Setting:	30.07 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Palm City, FL (64FA)	Type of Flight Plan Filed:	None
Destination:	Lakeland, FL (KLAL)	Type of Clearance:	None
Departure Time:	1823 EDT	Type of Airspace:	

Airport Information

Airport:	Naked Lady Ranch (64FA)	Runway Surface Type:	Grass/turf
Airport Elevation:	22 ft	Runway Surface Condition:	Dry
Runway Used:	09	IFR Approach:	Unknown
Runway Length/Width:	1980 ft / 120 ft	VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious		

Administrative Information

Investigator In Charge (IIC): Timothy W Monville **Adopted Date:** 11/29/2007

Additional Participating Persons: Bill Weaver; FAA Flight Standards District Office; Fort Lauderdale, FL
Danny Defelici; Sport Aircraft Works; Palm City, FL
Eric Tucker; Rotax Flying and Safety Club; Nassau,

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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