



National Transportation Safety Board

Aviation Accident Data Summary

Location:	Weirsdale, FL	Accident Number:	MIA05LA021
Date & Time:	11/03/2004, 1230 EST	Registration:	N955DC
Aircraft:	J.D. Calhoun, Inc. Vans ACFT RV6A	Injuries:	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot-rated passenger stated that before takeoff of the accident flight, her husband inspected the nose strut and wheel due to roughness at touchdown on 3 separate landings immediately before the accident flight; no discrepancies were reported. The flight departed and remained in the traffic pattern where her husband performed a go-around due to a "...roughness and bounce" at touchdown. The flight returned and after touchdown, the airplane nosed over and came to rest inverted. Several witnesses on the airport reported the landing immediately before the accident appeared normal. Examination of the runway revealed a fresh furrow in the grass measuring approximately 100 feet in length associated with the nose landing gear. Propeller slash marks and portions of the nose landing gear fairing were noted along the length of the furrow. Examination of the airplane revealed the nose landing gear was displaced aft; the nose gear leg was bent, and the canopy bubble was shattered. The F-631 frame (inverted "U" shaped structure which is vertically oriented and located immediately aft of the pilot and co-pilot seats) designed to protect the flight crew in the event of a nose-over ground accident, was crushed down. A longitudinally oriented structural member (F-632A channel brace) that provides structural support to the F-631 frame and also to the F-606 bulkhead located aft of the pilot and co-pilot seats, was separated at the F-606 bulkhead (pictures of the separated channel brace are located in the NTSB Docket for this case). Examination of the aft end of the channel brace (F-632A), revealed the edge margin of 2 of the 5 rivet holes was zero, and the edge margin of the remaining 3 rivet holes was estimated to be less than .050 inch (pictures of the aft end of the channel brace showing the rivet hole edge margin are located in the NTSB Docket for this case). By design, the edge margin should be no less than .1875 inch, or 3/16 inch. The 5 holes in the horizontal portion of F-632B angle which secure the longitudinally oriented channel brace to the vertically oriented F-606 bulkhead, were in close proximity to the bend radius. By design, the 5 holes in the F-632B angle are to be located approximately 5/8 inch aft of the forward edge or 3/8 inch forward of the aft facing surface. Reportedly, during construction of the airplane, the pilot contacted the designer and spoke with an individual about the longitudinally oriented channel brace (F-632A), the angle (F-632B), and the channel brace attachment to the F-606 bulkhead. The pilot reportedly completed as instructed the attachment of the longitudinally oriented F-632A channel brace and F-632B angle to the F-606 bulkhead. NTSB examination of the nose gear leg revealed no cracks or fractures; the material met the hardness specified by the airplane designer. The engine installed at the time of the accident was the make and horsepower engine specified in the airplane builders manual. At the time of the accident, the airplane weight and center of gravity were within limits.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Failure of the nose landing gear for undetermined reasons, resulting in the airplane nosing over during the landing roll, and the pilot's decision to operate the airplane with known deficiencies in the nose landing gear. A factor contributing to the fatality in the accident was the pilot/builder's failure to adequately attach key structural members of the cockpit area, resulting in the collapse of the

protective structure around the cockpit and canopy during the nose over.

Findings

Occurrence #1: NOSE OVER
Phase of Operation: LANDING - ROLL

Findings

1. LANDING GEAR, NOSE GEAR - FAILURE
2. (C) LANDING GEAR, NOSE GEAR - UNDETERMINED
3. (C) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - CONTINUED - PILOT IN COMMAND

Pilot Information

Certificate:	Private	Age:	71
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	None
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
Flight Time:	819 hours (Total, all aircraft), 210 hours (Total, this make and model), 723 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	J.D. Calhoun, Inc.	Registration:	N955DC
Model/Series:	Vans ACFT RV6A	Engines:	1 Reciprocating
Operator:	Henry D. Craig	Engine Manufacturer:	Lycoming
Operating Certificate(s) Held:	None	Engine Model/Series:	O-320-B2C
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KOCF, 89 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	None	Wind Speed/Gusts, Direction:	3 knots / , 100°
Temperature:	28° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Weirsdale, FL (97FL)	Destination:	Weirsdale, FL (97FL)

Airport Information

Airport:	Love Field (97FL)	Runway Surface Type:	Grass/turf
Runway Used:	09	Runway Surface Condition:	Dry
Runway Length/Width:	2500 ft / 100 ft		

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	28.948889, -81.893056		

Administrative Information

Investigator In Charge (IIC):	Timothy W Monville	Adopted Date:	01/31/2007
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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