NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

July 24, 2012

AIRFRAME AND ENGINE EXAMINATION

WPR12LA302
N718JT, Bunch, Cozy 3

This document contains 13 embedded photos.

A. ACCIDENT

Location: Winslow, Arizona
Date: July 11, 2012
Aircraft: Experimental Cozy-Canard III,
Registration Number: N718JT, Serial #:BUNCH1
NTSB IIC: Patrick Jones

HISTORY OF FLIGHT

On July 11, 2012, about 1240 mountain standard time (MST), an experimental Bunch-Cozy Canard III, N718JT, During takeoff impacted terrain at Winslow, Arizona. The owner/pilot was operating the airplane under the provisions of 14 *Code of Federal Regulations* (CFR) Part 91. The private pilot sustained serious injuries, and the passenger was fatally injured; the airplane sustained substantial damage by impact forces. The cross-country personal flight was departing Winslow-Lindbergh Regional Airport (INW), Winslow, Arizona, about 1240 with an unconfirmed destination. Visual meteorological conditions prevailed, and no flight plan had been filed.

The airplane landed at INW about 1100 MST, after the pilot refueled the airplane he inquired from the airport FBO personnel about finding a mechanic. The pilot stated that the engine was running rough and that he needed to remove and check the spark plugs.

The pilot was advised that there were no mechanics based at Winslow but that one could be called from Flagstaff, Arizona. The pilot indicated he was going to try and "clear" the engine, and then would call the mechanic.

About an hour and half later, witnesses saw the accident airplane departing INW using runway 29. As the airplane approached the departure end of runway 29 it descended and hit an off airport road and cartwheeled into a dirt field.

Inspectors from the Federal Aviation Administration (FAA) responded to the accident site. After documenting the wreckage it was recovered for further examination.

The Federal Aviation Administration (FAA) accident coordinator interviewed the pilot.

B. EXAMINATION PARTICIPANTS:

Name: Patrick Jones
Title: Air Safety Investigator
National Transportation Safety Board
1152 Via Verde Ave. Suite 132
San Dimas, CA 91773

Name Jill Schenewark
Title: ASI- Operations
Federal Aviation Administration
17777 N. Perimeter Dr.
Scottsdale, Arizona 85255

Name: Mark Platt
Position: Air Safety Investigator
Company: Lycoming
Williamsport, PA 17701

Name
Position
Company
Street Address
City and Zip Code

C. SUMMARY

Examination of the recovered airframe and engine was conducted on July 24, 2012, at the facilities of Air Transport Inc., Phoenix, Arizona. No evidence of pre-impact mechanical malfunction was noted during the examination of the recovered airframe and engine.

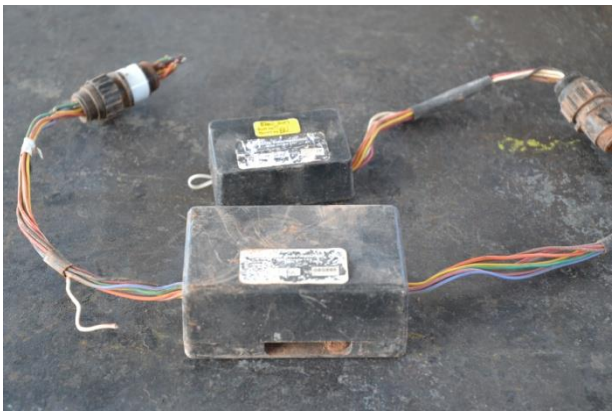
D. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

Examination of the airframe revealed that control continuity could not be established to all of the flight control systems. All flight control surfaces were accounted for in the debris field by the FAA and identified during the examination.

A Garmin Nuvi 200W portable GPS unit was recovered at the accident site by investigators. The unit was photographed and shipped to the NTSB Recorders lab for download. The unit was damaged in the accident sequence.

The airplane was equipped with a fuel flow/pressure instrument (FP-5L) and an engine monitoring instrument (UBG-16). Also installed was the interface module (MUX-8A). Manufacturer- Electronics International Inc., 6329 Powell Butte Hwy., Bend, Oregon 97701, (541) 318-6060. The units were removed and retained by the NTSB for further examination.



1.1 Airframe Exam Photos

2.0 Engine Examination

3.0 Engine make/model is: IO-540-AE1A5

4.0 Serial number L-32469-48E

5.0 Date of manufacture 08/22/2007

6.0 Total hours 753 hours

7.0 Time since inspection 89 hours

8.0 Last inspection May 13, 2012 – 100 hour inspection

The powerplant is a four cylinder, air cooled, direct drive, horizontally opposed, normally aspirated (fuel injected), internal combustion engine rated at 150hp @ 2700rpm. The subject engine was originally shipped from Lycoming Engines as a carbureted engine and had been field modified to fuel injected. The subject aircraft is configured in the “pusher” style; therefore, the engine is situated with the crankshaft flange facing aft. For the purposes of clarification, all references to right and left positions will be made as if viewing the rear of the engine.

The spark plugs were secure at each position with their respective spark plug lead attached. The spark plugs were removed, examined and photographed. The spark plug electrodes remained mechanically undamaged, and according to the Champion Spark Plugs “Check-A-Plug” chart AV-27, the spark plug electrodes displayed coloration consistent with normal operation. The static oil soaking of the spark plugs (as noted) was attributed to the engine positioning at the mishap site and post recovery.

The bottom spark plugs were removed, examined and photographed. The crankshaft was rotated by hand utilizing the propeller. The crankshaft was free and easy to rotate in both directions. "Thumb" compression was observed in proper order on all four cylinders; however, the number one cylinder produced a notably weaker thumb compression when compared to the others. Air could be heard leaking into the exhaust system pipe. The complete valve train was observed to operate in proper order, and appeared to be free of any pre-mishap mechanical malfunction. Normal "lift action" was observed at each rocker assembly. Clean, uncontaminated oil was observed at all four rockerbox areas.

Mechanical continuity was established throughout the rotating group, valve train and accessory section during hand rotation of the crankshaft. The top spark plugs were removed, examined and photographed. The combustion chamber of each cylinder was examined through the spark plug holes utilizing a lighted borescope. The combustion chambers remained mechanically undamaged, and there was no evidence of foreign object ingestion. The tops of each piston were devoid of significant carbon build-up The valves were intact and undamaged. There was no evidence of valve to piston face contact observed. The blue painted cylinder fin area denoting nitrite cylinder barrels was white in color.

The gas path and combustion signatures observed at the spark plugs, combustion chambers and exhaust system components displayed coloration consistent with normal operation. There was no oil residue observed in the exhaust system gas path.

The left magneto remained secure at the mounting pad with the distributor cap secure. The left magneto impulse coupler could be heard clicking during hand rotation of the crankshaft. The magneto timing was observed at 25 degrees BTDC cylinder #1, which was within specification. The magneto powered all of the top spark plugs. The magneto was not removed.

The right electronic ignition system could not be identified and remained secure at the magneto mounting pad. The spark plug leads remained secure and were connected to the bottom spark plugs. The ignition module was not removed.

8.1 Engine Exam Photos

Submitted by: Investigator Patrick Jones