



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

September 7, 2016

Engine Exam Summary

WPR16FA169

This document contains 02 embedded photos

A. ACCIDENT

Location: Madras, Oregon
Date: August 27, 2016
Aircraft: Boeing Stearman
NTSB IIC: Hogenson

B. EXAMINATION PARTICIPANTS:

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C. SUMMARY

On August 27, 2016, about 1425 Pacific daylight time, a Boeing A75N1 Stearman, N999PP, registered to Unusual Attitudes LLC and operated by the pilot sustained substantial damage when it impacted runway 34 during an aerial demonstration flight at Madras Municipal Airport (S33), Madras, Oregon. The commercial pilot, the sole occupant, was fatally injured. The exhibition flight was operated under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the flight.

The pilot was one of several civilian aerial demonstration pilots who performed at the 2-day "Airshow of the Cascades" which included both static and aerial displays.

D. EXAM OVERVIEW

The engine examination was conducted on September 7, 2016 at Nu Venture Services, Dallas, Oregon. The examination revealed no evidence of preimpact mechanical malfunction or failure that would have precluded normal operations.

The airplane was powered by a Pratt & Whitney R-985, 9-cylinder supercharged radial engine. The engine was removed from the airframe at the accident site to facilitate transportation and storage.

A visual inspection of the engine revealed impact damage throughout the engine assembly with concentrated damage to cylinders assemblies 4,5 and 6. The engine case showed no evidence of case breach or preimpact catastrophic failure. A large crack in the case, near the propeller flange, was observed and attributed to impact damage. Cylinder barrels 4,5 and 6 remained affixed to the engine case; however, the cylinder heads and associated overhead components were displaced and sustained extensive impact related damage. Combustion deposits were noted in the

combustion chambers and residual oil was present on the cylinder bores. The remaining cylinders were in place and no anomalies were noted. The ignition assembly and associated harnesses sustained impact related damage; however, all components were accounted for and no preimpact anomalies were noted.

The propeller remained attached to the crankshaft and extensive impact damage was noted. Propeller blade “A” was positioned in line with the lower cylinders and bent aft approximately 90 degrees at mid span. The blade was twisted and length-wise striations towards the tip of the blade were noted. Propeller blade “B” was positioned in line with the top cylinders. The blade was bent aft, exhibited chord-wise striations and “S” bending.

E. EXAM PHOTOS



Figure 1: Engine and Propeller Post Recovery



Figure 2: Engine and Damaged Cylinders

Submitted: Dennis Hogenson