



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Western Pacific Region

July 16, 2019

Field Notes

WPR19LA189

This document contains 14 embedded photos.

ACCIDENT:

Location: Aumsville, OR

Date: 7/16/2019

Aircraft: Experimental, RV-14, Registration Number: N365EM

NTSB IIC: Maja Smith

EXAMINATION PARTICIPANTS:

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AIRCRAFT INFORMATION

The two-seat, low-wing, fixed-gear airplane, N365EM, serial number 140249, was manufactured in 2018. It was powered by a Lycoming YIO-390 engine.

WRECKAGE AND IMPACT INFORMATION

The accident site was a level alfalfa field located about 3 miles north of Aumsville, Oregon. The wreckage was oriented on a magnetic heading of 355°. The initial impact point (IIP) was located about 220 ft to the southeast of the main wreckage. The IIP was identified as a ground scar, approximately 4 x 8 inches deep and wide, and about 2 feet long.

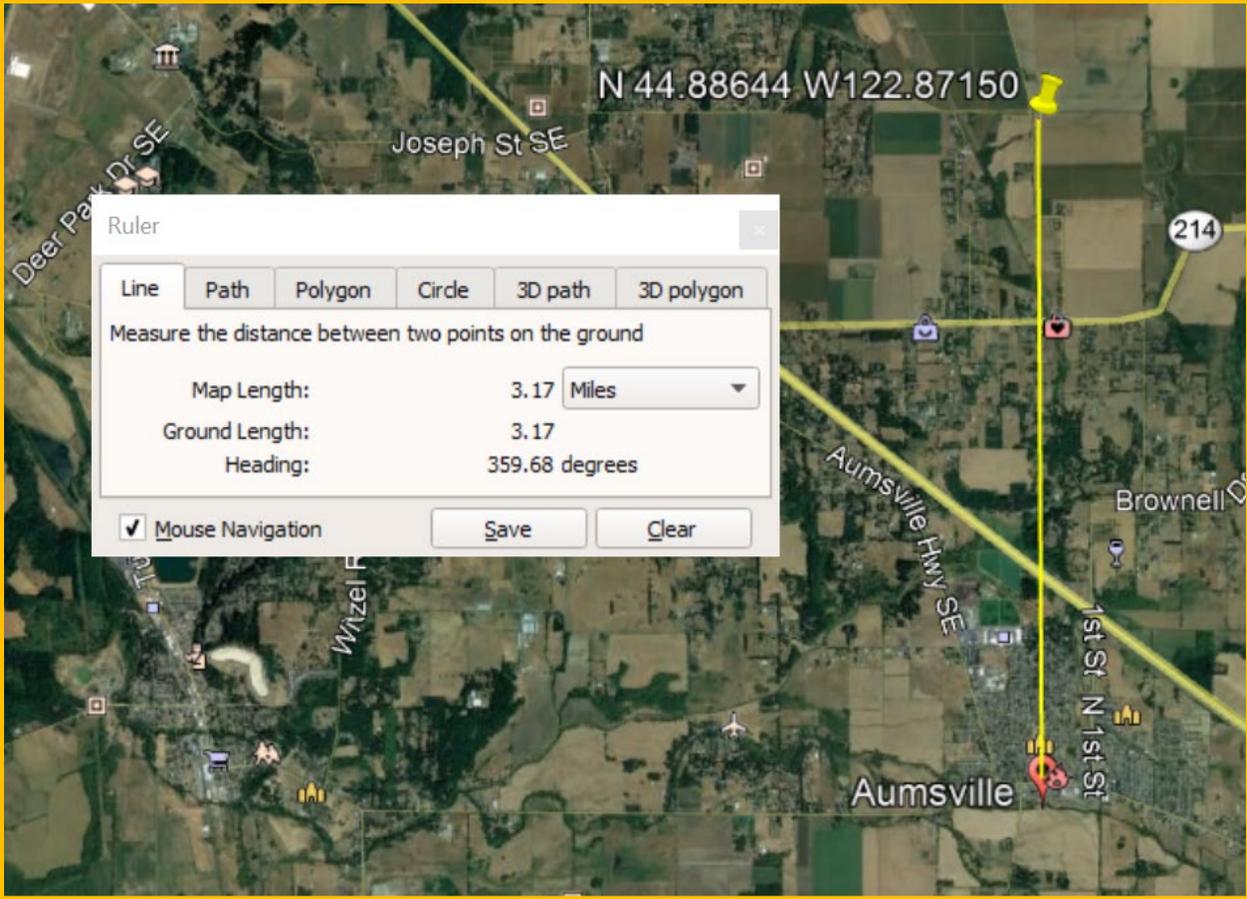


Figure 1: View of accident location relative to nearest city.



Figure 2: View from front of wreckage.

The main wreckage consisted of all major structural surfaces. Flight control continuity was established.

The main fuselage wreckage sustained thermal damage; the cockpit area was thermally destroyed. The fuel selector lever was set to the left fuel tank. The throttle, propeller, and mixture levers were found in unknown position.



Figure 3: View of fuel selector lever position.

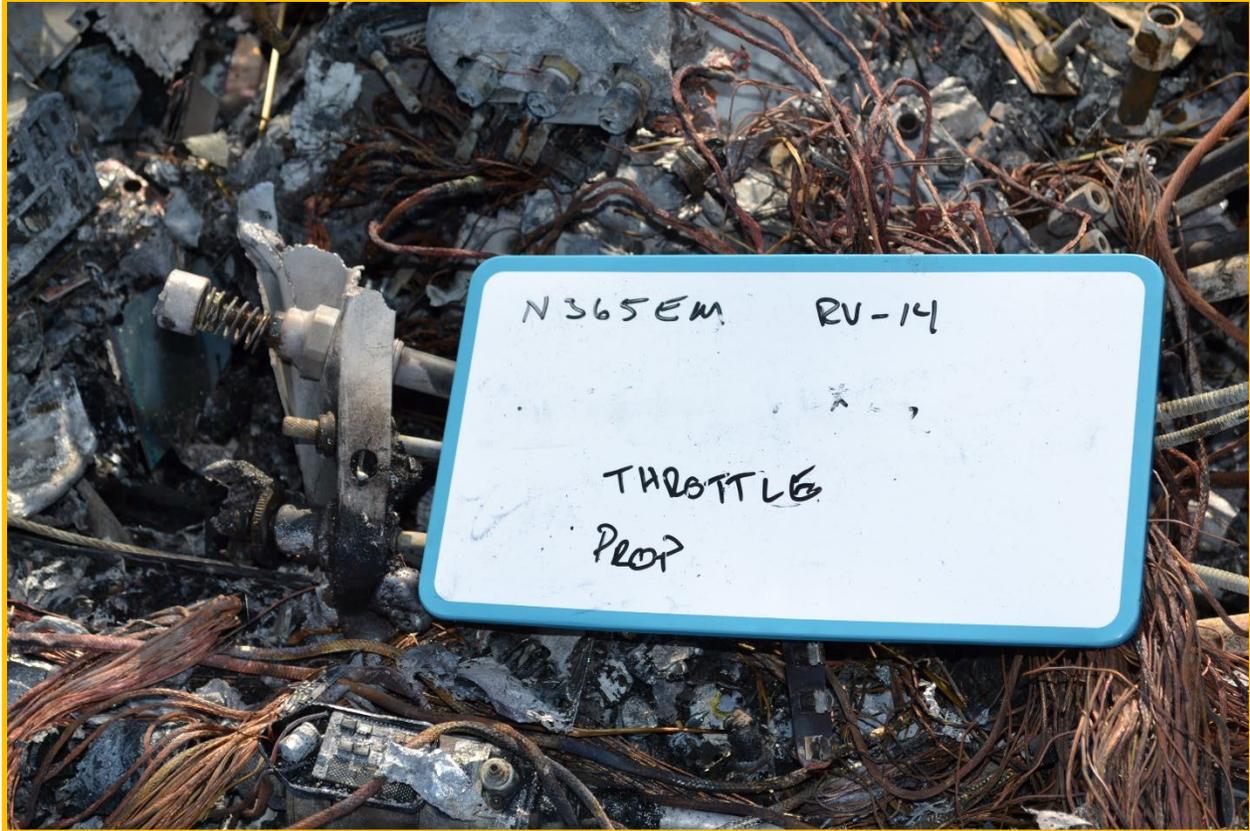


Figure 4: View of throttle and propeller lever position.

The left wing remained attached to the fuselage. Thermal damage was noted along the wing root. The leading edge displayed deformation and thermal damage. The top of the wing displayed some thermal damage. The fuel cap remained secured in its respective housing. About 13 gallons of fuel was noted. The fuel was tested for moisture using SARGEL, no moisture was detected. The wing tip displayed some impact damage. The aileron remained attached to the wing and

thermal damage was noted along the wing attachment points. The flap remained attached to the wing and displayed thermal damage along the wing root.



Figure 5: View of left side airplane wreckage.

The right wing remained attached to the fuselage. Thermal damage was noted along the wing root. The leading edge displayed deformation and thermal damage. The top of the wing displayed some thermal damage. The fuel cap remained secured in its respective housing. About 6 gallons of fuel was noted. The fuel was tested for moisture using SARGEL, no moisture was detected. The wing tip displayed some impact damage. The aileron remained attached to the

wing and thermal damage was noted along the wing attachment points. The flap remained attached to the wing and displayed thermal damage along the wing root.



Figure 6: View of wreckage from the right side.

No impact damage was noted to the empennage, minor thermal damage was identified to the right horizontal stabilizer.



Figure 7: View of the right side of the empennage.

The propeller remained attached to the engine and displayed thermal damage. The engine sustained external heat distress and exhibited impact markings. The engine remained attached to the engine mount and firewall. The engine and accessory components were found intact in their normal positions within the engine compartment area. The engine sustained extensive thermal damage. The top part of the engine did have some indications of thermal damage, all of the spark plugs were noted to have sustained external heat distress. The left side of the engine did have

indications of thermal damage. The right side the of the engine displayed extensive thermal damage, with about 24 ounces of pooled melted metal near the firewall.



Figure 8: View of the left side of the engine.



Figure 9: View of the right side of the engine.



Figure 10: View of pooling metal on the right side of the engine.

Further examination of the engine compartment revealed extensive thermal damage on the right side. Extensive thermal damage was noted in the area around the oil cooler. Further examination of the top oil line coming from the engine to the oil cooler indicated thermal damage and soot on the engine attachment point. On the oil cooler attachment point, the 90° elbow appeared to be deformed. The elbow connection to the oil cooler was fractured separated. Further examination of the AN-818 tee revealed that, when the fitting was turned about 720°, residual oil was noted

running across the thread line of two threads. Removal of the AN-818 tee revealed about three threads on the 90° elbow displayed residual oil, see figure 14.



Figure 11: View of the engine oil cooler and lines.



Figure 12: View of top oil cooling line.



Figure 13: View of AN-818 tee and 90° elbow.



Figure 14: View of residual oil on 90° elbow.