



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

May 18, 2017

ACCIDENT SITE, AIRFRAME AND ENGINE EXAMINATION SUMMARY

WPR17FA101

This document contains 0 embedded photos.

A. ACCIDENT

Location: Lake Berryessa, California
Date: May 8, 2017
Aircraft: Icon Aircraft A5, N184BA
NTSB Investigator-in-Charge: Joshua Cawthra

B. DETAILS OF THE INVESTIGATION

1.0 Accident Site Examination

GPS Coordinates: N38.54031, W-122.14292
Elevation: 440' msl

Representatives of the NTSB conducted an on-scene examination of the accident site on May 8th and 9th, 2017.

Examination of the accident site revealed that the airplane impacted terrain on an approximate heading of about 194° and came to rest upright in the northern area of Little Portuguese Canyon on Lake Berryessa at an elevation of about 440 ft. msl. All major structural components of the airplane were located at the accident site. The fuselage, right wing, and a portion of the empennage were located on the shoreline along a steep embankment and the outboard portion of the left wing and left side of the empennage were partially submerged within water. A large area of freshly disturbed dirt was observed immediately in front of the right wing. No damage was observed to the surrounding vegetation and trees immediately in front of the right wing, behind, or upslope of the wreckage.

Lake Berryessa, is a reservoir that is about 23 miles long and 3 miles wide. The southern area of the lake features various coves and canyons, which are mostly surrounded by areas of steep rising terrain. In addition, there is only one entrance to the larger area of the lake from the southern area of the lake. The areas of rising terrain that surrounded Little Portuguese Canyon varied between 780 feet msl and 1,420 feet msl. The accident site was located about 0.35 nm from the tops of 1,200 foot high ridges to the west, 0.36 nm from the 1,050 foot high ridges to the east, and 1.34 nm from the 1,200 foot-high ridges to the north. In addition, Little Portuguese Canyon narrowed in width from about 700 feet at the opening to about 300 feet near the accident site, and 240 feet near the farthest northern area of the canyon.

2.0 Airframe Examination

Examination of the fuselage revealed the fuselage structure, engine nacelle, and wing center section was crushed downward and displaced laterally to the left. The canopy structure was displaced from the airplane and located adjacent to the wreckage. The forward portion of the cockpit area was significantly impact damaged with most of the instrument panel separated. The empennage structure was separated from the airframe just forward of the vertical stabilizer, however, it remained attached via control cables. The ballistic parachute handle was partially extended and the pin was removed. The parachute and rocket were intact and not deployed.

The left wing remained attached to the fuselage attach points and was partially submerged in water. The wing was bent upward about mid span with impact related damage along the leading edge. The left flap and aileron remained attached to their respective mounts.

The right wing was mostly separated from the fuselage just outboard of its attach points and exhibited impact damage to the wing structure and leading edge from about 1 foot outboard of the flap aileron junction inboard to the wing root. The flap and aileron remained partially attached to the wing.

The engine remained attached to the fuselage. One of the three propeller blades were separated from the propeller hub. One propeller blade was embedded within the seaming structure.

The wreckage was recovered to a secure location for further examination; both wings and empennage were removed to facilitate transport of the wreckage. Examination of the recovered wreckage was conducted at the facilities of Plain Parts, Pleasant Grove, California, by the NTSB IIC and representatives from Icon Aircraft and the Federal Aviation Administration.

Fuselage:

The roof structure of the fuselage, which included the wing mounts was crushed downward, and slightly rotated right about 10 degrees, while being shifted laterally to the left. The engine remained attached to the fuselage structure. The right sea wing was impact damaged and fractured throughout. The left sea wing exhibited impact damage and was partially separated from the fuselage, and displaced upward. One of the propeller blades was embedded into the left sea wing. Both main landing gears appeared to be in the up position. Both wing lock mechanisms were in the "locked" position.

Rudder control continuity was established from the rudder pedals aft to the area of the separated portion of the empennage. Aileron control continuity was established from the left and right control sticks to the wing root bell crank (cables continuous). The right side aileron bell crank was pulled away from its mount with the cables still attached, consistent with impact damage. Elevator control continuity was established from the control sticks to the separated portion of the empennage.

Right Wing:

The right wing was separated from the airframe to facilitate recovery and transport of the wreckage. The leading edge to the wing root remained attached to the wing structure, the wing structure aft of the aileron bell crank at the wing root was separated, extending aft at a 45-degree angle to about 18 inches outboard of the wing root. The separated portion of the wing structure remained attached to the fuselage. The leading edge exhibited impact damage throughout its span. The flap remained attached via the center and outboard mount. The aileron remained attached via the inboard mount. Flight control continuity to the aileron was established from the wing root bellcrank to the aileron.

Left Wing:

The left wing was separated from the airframe to facilitate recovery and transport of the wreckage. The wing was fractured in half from the leading edge (at the flap/aileron junction), and extending outboard at an approximate 45-degree angle outboard to the trailing edge. The aileron was separated into two pieces. The inboard section remained attached to the inboard mount. The outboard portion of the

aileron was separated just outboard of the inboard mount and separated from the middle and outboard mounts. Flight control continuity was established from the wing root aileron bellcrank to the aileron.

Empennage:

The empennage was separated from the airframe to facilitate recovery and transport of the wreckage. The rudder and elevator remained attached to their respective mounts. Flight control continuity of the rudder and elevator was established from the area of separation. Both left and right elevator tips were in the "locked" position.

Cockpit Documentation:

Landing Gear: UP
Flap Handle: Separated
Radio / Transponder: Digital
Landing Light: Off
Taxi Light: Off
Nav Lights: On
Strobe Lights: On
Bilge: On
Heat: Full right (high)
Water Rudder: Extended / impact damaged
Throttle: Unreliable / housing impact damaged and moved freely when the wreckage was moved.
Master: On
Magnetos: Both
RPM: 0
Altitude: 0
Airspeed: 0
Fuel: 0
Oil: 0
Water Temp: Needle displaced
AOA Indicator: Deflected full down (green)
Left Control Stick: Intact
Right Control Stick: Top separated

3.0 Engine Examination

The engine remained intact and attached to the airframe. The crankshaft was partially rotated by the propeller, however, was limited due to one propeller blade embedded within the left sea wing. The embedded propeller blade exhibited chord wise striations on the front and aft sides of the blade tip.

Submitted by: Joshua Cawthra