

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24FA285

AIRFRAME & ENGINE EXAM SUMMARY REPORT

August 26, 2024

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A. ACCIDENT

Location: Kent, Washington
Date: August 24, 2024
Time: 10:10 Pacific daylight time
Airplane: N61323, Cessna A185F

B. AIRFRAME & ENGINE EXAM SUMMARY REPORT

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C. SUMMARY

Examination of the wreckage was conducted at the facilities of AvTech Aviation Inc. on August 26, 2024.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe examination

Serial number: 18504147

Throttle: Idle
Mixture: Full rich
Propeller: Full forward
Ignition: Both
Fuel Selector: Both
Fuel Boost Pump: Off
Tachometer: 0155.5
Cowl Flaps: Open
Flaps: 30°
Landing Gear Handle: Down
Elevator trim: 1/8 in aft of takeoff setting
Rudder trim: Neutral
Water rudder: Stowed/Retracted



Figure 1. Control panel at wreckage exam.



Figure 2. Additional cabin controls at wreckage exam.

Both wings were removed by wreckage recovery personnel. Both ailerons and both wing flaps remained attached at their attach points, to their respective wings. Neither wing, aileron, or flap displayed noteworthy damage. The right wing lift strut was buckled, mid span. Both wings were equipped with a main fuel tank and a tip fuel tank. All four fuel tank caps were observed in place and secure.

Flight control cable continuity was established between the control yoke and both ailerons. Each wing was equipped with a mirror, installed to provide the pilot with a view of the landing gear position. Both wing mounted mirrors were observed securely installed at the time of water recovery, and later removed by wreckage recovery personnel. (See figure 3.)



Figure 3. Wing mirrors, as observed at the wreckage exam.

The empennage remained attached to the fuselage. Both sides of the horizontal stabilizer remained attached to the empennage. The elevator remained attached to the horizontal stabilizer. The vertical stabilizer and rudder were removed by wreckage recovery personnel. No damage of note was observed on the empennage. The horizontal stabilizer trim was set at -4.4° . Flight control cable continuity was established between the control yoke and the elevator, and between the rudder pedals and the rudder.

The airplane was equipped with Aerocet 3400 series amphibious floats. The left and right amphibious floats remained attached to the fuselage at their strut attach points. The floats appeared undamaged. All four points of the landing gear were in the extended position. The cabin mounted landing gear handle was observed in the down position. (See figure 4.)



Figure 4. Landing gear handle in down position.

The Aerocet GC600 Gear Advisory Unit provides nine indicator lights, two cancel buttons, a test button, and a selector handle. The series of lights provides information for water landing, runway landing, hydraulic pump function, and landing gear transition. The Gear Advisory Unit also provides an audio output that is connected to the audio panel, for verbal pilot information regarding gear position. The Unit is calibrated to and integrated with the pitot/static system to utilize airspeed based trigger points, which activate verbal messages to the pilot. It has built in messages and warnings for water landings, runway landings, and gear unsafe scenarios. The audio messages/warnings are designed to repeat until manually cancelled by the operator. The Gear Advisory Unit was removed from the airframe, for additional examination and testing.

The emergency gear handle and up/down selector handle were stowed. The Oildyne 108 hydraulic reservoir level was not observed. The airplane was suspended and the landing gear was actuated to the retracted position using the emergency handle. The gear required 190 strokes to retract the gear, have the indicator pins show on the top

of the floats, and for firm pressure to build. The emergency selector handle was switched to extend, and it required 155 strokes to fully extend the gear.

*On scene, and during aircraft recovery from the lake, a crescent wrench was observed resting in the left forward landing gear well, behind the gear leg, but not attached to any mechanism within the gear well. The wrench was documented and removed from the gear well, during wreckage recovery. The landing gear was examined and no anomalies were noted.

Water rudder retraction/extension cable continuity was established between the cabin control lever and the water rudders. Water rudder steering cable continuity was established.

Both main fuel tank strainer screens, the fuel strainer screen, and the fuel strainer bowl were clean and free of debris. (See figure 5.) The airplane was equipped with two main fuel tanks and two STC installed Flint Aero tip tanks. They all contained fuel and water, consistent with water submersion. Operation of the fuel selector and fuel shutoff valves were verified in all positions by blowing air from the wing roots to the fuel strainer.



Figure 5. Fuel strainer bowl and filter.

2.0 Engine Examination

Engine Manufacturer: Continental
Engine Model Number: IO-550-D
Engine Serial Number: 1043234
Tach: 0155.5

The engine remained attached to the firewall and airframe via its engine mounts. (See figure 6.)



Figure 6. Left side of engine.

Tempest URHB32S Fine Wire spark plugs were installed. The upper and lower spark plugs were removed. Normal wear was noted, when referencing the Champion Aviation Check-A-Plug chart, with some being oil and/or water coated, consistent with being inverted. (See figure 7.) Upper spark plugs #1 and #4 displayed additional white colored residue, consistent with the initiation of corrosion development after water submersion.



Figure 7. Upper and lower spark plugs.

The oil sump contained 12 quarts of oil. The oil filter was not removed. (See figure 8.)

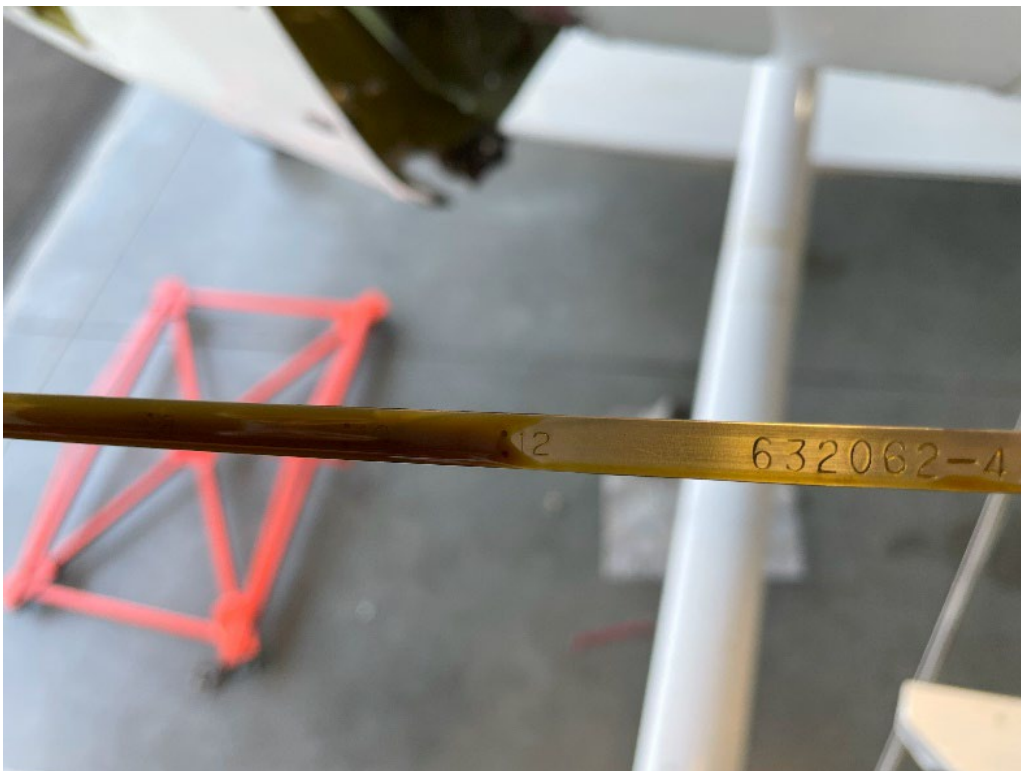


Figure 8. Oil dip stick.

Drive train continuity was established by manually rotating the propeller. Thumb compression was confirmed on all cylinders. The left and right magnetos remained attached and secure. Spark was observed at each lead.

Full travel of the throttle control was verified using the cabin mounted throttle control lever. Full travel of the mixture control was verified using the cabin mounted mixture control lever.

No blockages were noted within the induction or exhaust systems.

3.0 Propeller Examination

Manufacturer: Hartzell

Model Number: HC-C3YF-1N

Hub Serial Number: PY474B

The airplane was equipped with a three bladed, constant speed composite propeller. Each propeller blade remained attached to the hub. The hub remained attached to the flange. The propeller governor remained attached. The governor control arm remained attached and cable continuity was established between the governor arm and the cabin propeller control handle.

None of the propeller blades exhibited bending or delamination. (See figures 9, 10, 11.)



Figure 9. Propeller blade A.



Figure 10. Propeller blade B.



Figure 11. Propeller blade C.

Submitted by:

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