



MEMORANDUM FOR RECORD

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Date: 01/07/2026
Subject: Wreckage Examination
NTSB Case Number: ERA25LA172

Examination of the wreckage of N179ST was conducted by the NTSB on May 22, 2025.

The following information was obtained during the examination:

Propeller

The Hartzell 3-bladed, composite blade propeller was still attached to the propeller mounting hub, but two of the three blades had separated near the hub during the impact sequence. All three blades displayed chordwise and leading-edge damage consistent with rotation at impact. The propeller governor was found in the full increase/full forward position.

Engine

The engine was found to be still attached to the engine mounts and firewall, however, the firewall was separated from the fuselage and held on only by the wires and cables.

One magneto was impacted separated from its mounting position. Both magnetos produced spark on all leads when rotated with a drill. The top spark plugs were removed and displayed normal gray coloration and wear signatures.

The fuel distribution manifold appeared normal and internal examination did not reveal any abnormalities with the diaphragm. The fuel servo had remained attached to its mounting position and all six injector nozzles were found to be clear.

The drivetrain was rotated by hand and thumb compression, and suction was present on all cylinders. Examination of the cylinders, piston heads, and valves with a lighted borescope revealed no anomalies. Drive train continuity was confirmed from the propeller to the accessory section.

Instrument Panel

The Hobbs Meter indicated 1599.1 hours. The landing gear handle was in the down (extended) position. The wing flaps handle was in the full extension (36°) position. The elevator trim was between neutral and nose down, and the rudder trim indicated that it was to the right of neutral. The fuel selector was in the right tank position. The alternate air selector was in the primary position (not alternate). The boost pump was on, the master switch was on, and both magnetos were on. The throttle and mixture control were full forward. The propeller control was also in the full increase/full forward position, which was consistent with the propeller governor being found in the full increase/full forward position.

Fuselage

The fuselage displayed compression damage forward of the instrument panel on both sides. The aft fuselage, aft of the rear entry door displayed compression damage along the entire bottom surface. Fire damage from a post-crash fire was noted at, and above the left-wing root. The boost pump was tested using a 12-volt power source and was heard to operate. The main cabin door on the left side of the fuselage was closed upon first inspection. The upper and lower half of the door was then opened for examination. The lower half was damaged/deformed and did not open fully. The windscreen was broken and partially melted. The aileron drive cables were continuous from the wing roots to the control column. The aileron drive chain at the control column appeared to have broken due to the impact. The aileron balance cable was bound in the center of the fuselage also due to impact damage at that location.

Left Wing

The left wing displayed fire damage at the wing root. The wing flap and aileron remained attached to the left wing at all hinges. The aileron cables remained attached to the aileron sector and were continuous to the wing root where they had been cut by recovery personnel. The left-wing landing gear was in the extended down and locked position. Low pressure air was flowed from the wing root and could be heard entering the integral fuel tank inside the wing. The wing displayed damage near the outboard end which prevented air from escaping the fuel vent. The left wing did not contain fuel during the examination. The left-wing fuel cap was in place and secure. The left-wing header tank fuel pump displayed some fire damage but was successfully test run using a 12-volt battery source. The pitot static tube remained attached to the bottom of the left wing and appeared free of any obstructions. The left-wing leading edge lift detector was intact and undamaged.

Right Wing

The right wing was not fire damaged. The right wing flap remained attached to the wing at the hinges. The right aileron had separated from the wing during the impact sequence. The wing displayed substantial damage, approximately 11 feet outboard of the wing root, from a tree strike. The wing was cut from the fuselage by recovery personnel. Both right wing aileron cables

were separated in overload just inboard of the aileron sector at the location of the tree strike. The aileron cables were further separated by recovery personnel at the wing root. The right main landing gear was in a retracted position. Low pressure air was flowed from the wing root to the breached right main fuel tank. The right-wing header tank pump was test run successfully using a 12-volt battery source. Right wing aileron continuity was confirmed from the sector to the wing root.

Empennage

The vertical stabilizer and rudder remained attached to the empennage. The rudder sector was broken. Both rudder cables remained attached to fragments of the rudder sector and were continuous to the rudder bar in the cockpit.

The horizontal stabilizer and elevators had been cut by recovery personnel just outboard of the elevator trim surface on each side. The elevator remained attached to the horizontal stabilizer and the elevator trim surface remained attached to the elevator. The two elevator trim rods were broken, and the elevator was deformed in a downward direction. The elevator sector was partially broken. Both elevator cables remained attached to the sector and were continuous to the control column in the cockpit. The elevator trim cables remained intact and were continuous from the trim actuator in the empennage to the control wheel in the cockpit. The elevator trim actuator position revealed 9 threads, (approximately 0.9 inches extension on the aft side) which equates to a position between neutral and nose down. This was consistent with the indicator position in the cockpit.