

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR23FA080

AIRFRAME EXAMINATION

May 11, 2023

A. ACCIDENT

Location: Provo, Utah
Date: January 2, 2023
Time: 1135 mountain standard time
Airplane: Embraer EMB-505, N555NR

B. AIRFRAME EXAMINATION

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C. SUMMARY

Examination of the recovered wreckage was conducted at the facilities of Air Transport, Phoenix, Arizona, on May 11, 2023.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe

Examination of the recovered wreckage revealed that the wingstab ice protection switch was in the "ON" position. When moved by hand, the switch was verified up, consistent with the on position. The switch moved to the off and reset positions normally. When the switch was in the off position, minimal upward pressure was applied to move the switch to the on position. The switch was removed, and electrical continuity was established throughout the switch positions at the electrical connector.

Aileron control continuity was established from the cockpit controls, through the fuselage to wing aileron bellcrank, and then from the leading edge of the wing to both ailerons. Multiple separations in the control cables were observed and were either cut by recovery personnel to facilitate wreckage transport, or exhibited splayed signatures, consistent with tension overload. Part of the left wing aileron bellcrank (bottom side) was separated from the bellcrank assembly. The areas of separation exhibited overload signatures. The torque tube rod from the aileron to the bellcrank was separated from the bellcrank and exhibited overload signatures.

Elevator and rudder control continuity was established from the cockpit controls aft to the empennage. The rudder and elevator control cables were continuous from just forward of the cabin door aft to the empennage. Forward of the cabin door, the cables were separated in various areas and exhibited splayed signatures, consistent with tension overload. The elevator control cable bell crank was fractured into two pieces and was separated from the elevator control torque tube. The areas of separation exhibited signatures consistent with overload.

The aileron and rudder trim servos were measured; however, Embraer was unable to determine trim tab positions for both.

Submitted by:

Joshua Cawthra
Senior Aviation Accident Investigator