



The National Transportation Safety Board

Office of Aviation Safety
Central Region
Memorandum for the Record
Airframe Examination
Findings
CEN19FA084
Goshen Indiana
February 21 2019

The wreckage was examined at the accident site and at a secure facility.

Fuselage

The fuselage was inverted, and the cabin area and cockpit had severe impact and fire damage. The instrument panel was impact and partially consumed by fire. Most instrumentation was not readable. The forward cabin door and aft cabin were impact damaged, fractured and fire damaged. The forward and aft baggage doors were impact and fire damaged. Flight control cable continuity for the ailerons was confirmed from the chain in the cockpit to the right wing bellcrank and from the cockpit chain to a recovery cut near the root of the left wing. The aileron balance cable was separated at the turnbuckle near the center of the fuselage. The turnbuckle barrel was separated in the middle and exhibited signatures consistent with thermal damage and melting.

The right control column was separated from the tee-bar. The tee bar was separated from the fuselage and fractured at the top of the tee. The left control column remained attached to the upper left side of the tee-bar. One of the stabilator cables remained attached to the tee-bar and was continuous to the balance tube in the tail cone. The other stabilator cable was continuous from the balance tube to a recovery cut in the cockpit. The rudder pedal assembly was separated from the airframe. Both rudder cables remained attached to the rudder pedal assembly and exhibited recovery cuts approximately 24" from the rudder pedal assembly. The rudder cables remained attached to the rudder horn and were continuous to the cuts in the cockpit.

The fuel selector handle, torque tube, pushrod, and selector valve remained attached to each other and were separated from the airframe. The selector handle position could not be determined. The selector valve was nearly in the closed position. The fuel selector valve was fire damaged and the fuel strainer bowl and screens were consumed by fire and not observed.

Flight control continuity was confirmed from the cockpit to the elevator, rudder, and ailerons. Some control cables were cut by first responders and some were fire damaged.

Left Wing

The left wing was located laying on the ground and inverted. The landing gear was extended. The pitot mast remained attached to the wing. The leading edge of the wing, with exception of the TKS panels, was consumed by fire from the root out to about Wing Station (W.S.) 190. The wing tip outboard of W.S. 190 was separated and located in the vicinity of the main wreckage. The separated wing tip exhibited impact damage to the leading edge and lower skin consistent with contacting an electric powerline. A chordwise cut through the skin, from the leading edge to the main landing gear was observed and appeared consistent with tearing due to contact with an electric powerline. The aileron cables were continuous from the fuselage to the bellcrank. The bellcrank stops were intact and unremarkable. The bellcrank pushrod remained connected to the bellcrank and the aileron. The aileron remained attached to the wing at all three hinge locations. The flap remained attached at all its attach points.

Right Wing

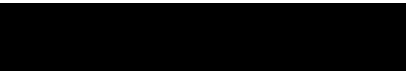
The right wing was laying on the ground and inverted. The landing gear was extended. The leading edge of the wing was partially consumed by fire. The wing tip outboard and a portion of the aileron outboard of W.S. 171 were separated and located in the vicinity of the main wreckage. The wing and separated wing tip exhibited damage to the separated surfaces consistent with contacting an electric powerline. The aileron cables were continuous from the fuselage to the bellcrank. The bellcrank stops were intact and unremarkable. The bellcrank pushrod remained connected to the bellcrank and the aileron. The inboard portion of the aileron remained attached to the wing at the two inboard hinge locations. The flap remained attached at all its attach points.

Empennage

The empennage was attached to the tail cone and was inverted. No damage was observed to the stabilator or rudder. The vertical stabilizer was impact damaged on the tip which was resting on the ground. The stabilator and rudder stops were intact and unremarkable. The stabilator trim tab remained attached to the pushrod and to its hinges. Not damage was observed to the trim tab. The trim tab actuator screw was extended approximately 1.1", with about 10 threads exposed, which corresponds to a partial nose up setting.

Most of the cockpit instruments could not be examined due to fire damage and melting. The severely fire damaged altimeter was removed for further testing.

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