



Joshua Young
Air Safety Investigator
AS-ERA

Date: 5/13/2026

Subject: ERA25FA082, Controllability

Contact: Ricardo Asensio, Senior Air Safety Investigator, Textron Aviation

During examination of the flight control cables recovered from the wreckage by the NTSB materials laboratory it was found that the aileron crossover cable fracture surfaces exhibited 62% and 60% wear on the individual sides of the cable fracture.

Investigator Asensio was queried by the NTSB IIC as to what effect this would have on the controllability of the airplane if the failure happened in flight. He responded with the following:

On a Cessna 172S, a disconnection of the aft most wing (aileron) cable would interrupt the closed-loop control system. In this condition, control wheel inputs would tension only a single cable run, effectively transmitting load to one wing in both directions of wheel travel.

As a result, the aileron on the unloaded side would tend to float toward its zero hinge-moment (aerodynamically neutral) position, while the aileron on the loaded side would remain responsive to pilot input. This condition would occur in both left and right roll commands.

The pilot would retain partial roll control; however, control effectiveness would be reduced because only the lift-increasing aileron would be actively driven, while the opposing surface would not provide a corresponding aerodynamic response.

He also provided an image which illustrated the 172 aileron control system and the transfer of pilot inputs to the control surfaces (Figure 1).

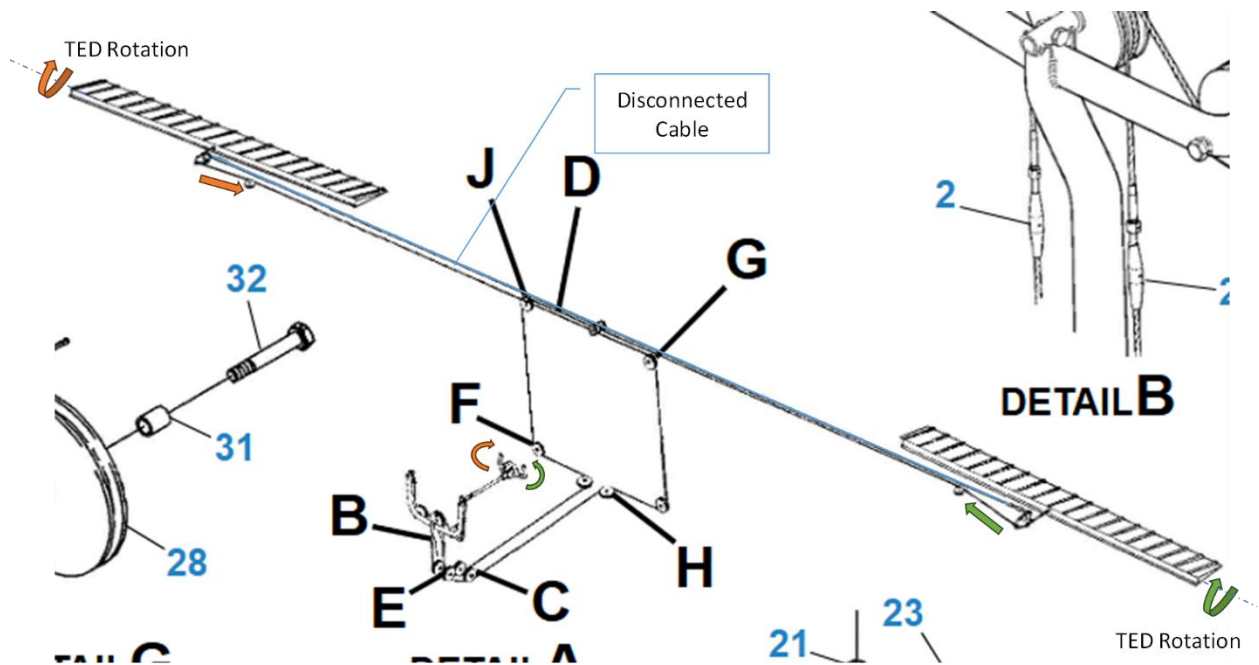


Figure 1: Cessna 172 aileron control system and the transfer of pilot inputs to the control surfaces. (Courtesy of Textron Aviation)

A review of the Cessna Model 172 (Series 1996 and on) Maintenance Manual showed the position of the aileron crossover cable turnbuckle to the right side of a pulley (figure 2). The NTSB IIC asked investigator Asensio if the turnbuckle was always on that side of the pulley and he responded stating "The left crossover cable length is longer than the right crossover cable locating the turnbuckle always on the right side of the cabin as shown in the manual."

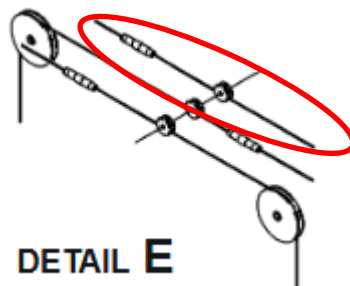


Figure 2: Cessna Model 172 maintenance manual figure 201 excerpt; the aileron crossover cable is circled in red.