



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Central Region

5/27/2022

INVESTIGATION SUMMARY

CEN22LA202

A. INVESTIGATION PARTICIPANTS:

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B. ACCIDENT SUMMARY

On May 15, 2022, about 1320 central daylight time, a Cessna 421C, N619AC, was substantially damaged when it was involved in an accident near Monroe, Louisiana. The pilot and five passengers were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot stated that immediately after departure from Morehouse Memorial Airport (BQP), Bastrop, Louisiana, he heard a loud pop and the control yoke oscillated violently. He declared an emergency and proceeded to Monroe Regional Airport (MLU), Monroe, Louisiana, about 16 miles southwest, for a longer runway and emergency services. The control yoke continued to oscillate until the airplane was on final approach about 3 miles from MLU. The pilot landed the airplane without further incident.

C. DETAILS OF THE EXAMINATION

According to the Cessna 421 service manual, the elevator trim tab is operated by a control wheel mounted on the left side of the pedestal. The control wheel is attached to a sprocket which drives a chain and cables. The chain and cables are routed to pulleys forward and down through the pedestal under the floor and aft to the tailcone of the aircraft. In the tailcone, the cables are routed aft just forward of the horizontal rear spar, then up and through the right horizontal stabilizer to a chain which operates the trim tab actuator. The trim tab push-pull tube connects the trim tab actuator to the elevator trim tab mounted to the right elevator by a continuous hinge. Adjustable turnbuckles are located in the forward inspection panel for cable tension adjustment. Stop blocks are located in the tailcone for adjustment of the elevator tab travel.

A postaccident examination of the airplane by the FAA revealed that the right elevator had mostly separated from the horizontal stabilizer. There was a small puncture on the right side of the rudder. A small portion of the elevator remained attached, as seen in Figure 1.



Figure 1. Right elevator partially separated.

The elevator trim push rod remained attached to the trim actuator; however, there was no bolt, nut, or cotter pin attached to the aft fork connection and the trim tab was missing. The pushrod did not exhibit any preaccident damage or anomalies. The remainder of right elevator and trim tab were not recovered.

A review of the airplane's maintenance logbooks revealed that the elevator trim system was re-rigged on May 13, 2022.

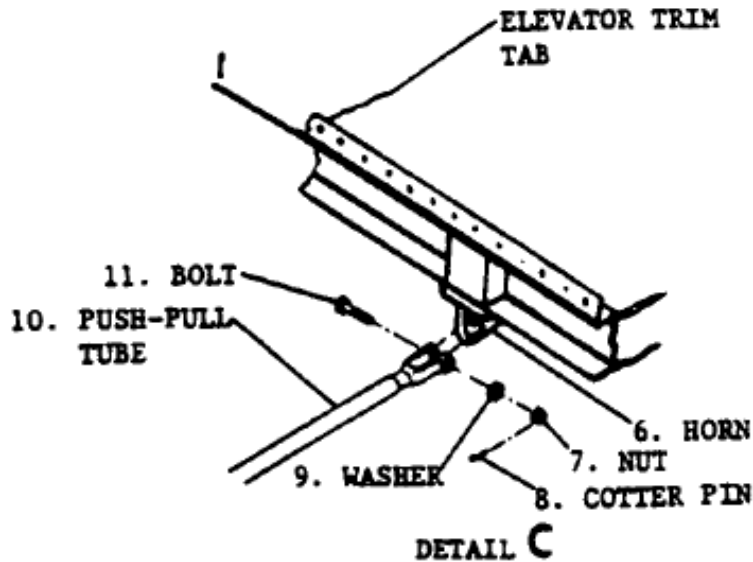


Figure 1. Cessna 421 service manual excerpt, elevator trim diagram

According to the maintenance personnel, the maintenance squawk stated that the trim tab was not in the proper position. They thought maybe the control rod arm was bottoming out inside, maybe bent. They confirmed it was not bent but needed to be re-rigged. They used the Cessna 421 maintenance manual to complete this task. The mechanic with inspector authorization (IA) was present during this work. His mechanics removed the bolt on the actuator, and he helped re-rig the trim system. The IA physically set the trim tab in the neutral position and set the trim indicator in the takeoff position. He did not check to make sure the bolt was re-installed and was cotter pinned. He checked everything else but missed that step.