

Log 1508

**NATIONAL TRANSPORTATION SAFETY BOARD**  
WASHINGTON, D.C.

ISSUED: August 18, 1982

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Forwarded to:

Honorable J. Lynn Helms  
Administrator  
Federal Aviation Administration  
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-82-95 through -97

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~~On July 29, 1982, a Cessna Model 172N, with a commercial flight instructor and student pilot aboard, was involved in a control malfunction incident near Columbus, Ohio. The control wheel yoke assembly became jammed in the full forward position during recovery from a practice takeoff-departure stall demonstration. When the instructor briskly pushed the control wheel full forward, the control yoke nylon bearing slipped out of and jammed against the forward end of the right-hand control yoke guide assembly. As a result, the elevator could not be moved and the aircraft pitched over to a steep nosedown attitude and dove several thousand feet before efforts by both the flight instructor and student pilot were successful in forcing the control yoke aft and effecting a recovery. The control yoke remained partially jammed and difficult to move because, during the recovery, the nylon guide bearing had been forcibly lodged against the exterior of the guide assembly. Nonetheless, the airplane was landed without further incident.~~

Static tests conducted on several Cessna Model 172 airplanes subsequent to this occurrence, including tests on new airplanes, disclosed a potential for jamming of the elevator control identical to that evidenced in the incident airplane. For example, it was discovered on several airplanes that when the right-hand control wheel was moved forcefully to the full forward position and a side force was applied to the control wheel, the nylon guide bearing could be dislodged from the guide assembly. There is no mechanical stop at the forward end of the guide to restrain the bearing under these circumstances. The left-hand control yoke guide assembly is not subject to this jamming effect.

The right-hand control yoke nylon guide bearing and guide assembly is installed on 10,273 Cessna Model 172 airplanes manufactured in the United States, and on 833 Model 172 airplanes manufactured in France. In order to prevent jamming of the control wheel yoke assembly in these airplanes, the Cessna Aircraft Company, on August 13, 1982, issued Service Letter SE 82-38, "Right Hand Control Yoke Guide Modification." This Service Letter provides instructions for the installation of a forward mechanical stop in the guide assembly.

To date, there have been no accidents caused by a jammed control wheel yoke assembly in the Cessna Model 172. However, a recurrence of this control malfunction under circumstances similar to those of the incident referenced above could be catastrophic. Consequently, the Safety Board believes that all pilot schools operating this airplane should be notified immediately regarding this potential hazard.

Excluding this incident, the Cessna Aircraft Company has received two previous Customer Service Reports relating to the jamming problem. During the period from 1977 to 1982, the Federal Aviation Administrations' Maintenance Analysis Center received one service difficulty report relating to this subject in addition to the incident report.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Immediately advise all pilot schools operating Cessna Model 172 airplanes to avoid abrupt movement of the control wheel to the full forward stop, particularly during demonstrations of recoveries from stalls or spins. (Class I, Urgent Action) (A-82-95)

Publish an alert notice in Federal Aviation Administration Advisory Circular No. 43-16, General Aviation Airworthiness Alerts, detailing the circumstances which may cause jamming of the control wheel yoke assembly in Cessna Model 172 airplanes. (Class II, Priority Action) (A-82-96)

Issue an Airworthiness Directive applicable to Cessna Model 172 airplanes requiring compliance with Cessna Service Letter SE 82-38 (Class II, Priority Action) (A-82-97)

BURNETT, Chairman, GOLDMAN, Vice Chairman, McADAMS, BURSLEY, and ENGEN, Members, concurred in these recommendations.

By: Jim Burnett  
Chairman

*Patricia A. Goldman*  
*for*