

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

SP-20
Log 1579

ISSUED: May 9, 1983

Forwarded to:

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

SAFETY RECOMMENDATION(S)

A-83-34

On November 3, 1982, a Cessna 210E, S/N 21058658, single-engine aircraft performed an emergency landing in a parking lot in Chattanooga, Tennessee, after experiencing an almost total loss of engine power. On touchdown, the nose gear collapsed, the fuselage aft of the rear seats buckled, and the right wing struck a sign post. The occupants of the aircraft were uninjured.

Investigation of the accident revealed that the throttle linkage had separated in the threaded area of the control shaft where a brass sleeve and bushing are held to the shaft by a drive screw. A metallurgical examination of the linkage revealed that the control shaft had been severely weakened at the point of fracture by action of the drive screw. The contact between the screw and the shaft had reduced the effective cross section of the control shaft by approximately 45 percent. Fatigue cracking had progressed through most of the remaining portion of the control shaft before the final separation which led to the loss of engine power.

Cessna Service Letter SE69-16, dated July 22, 1969, concerns modification and replacement of throttle and mixture controls on various 205, 206, 207, and 210 models of Cessna aircraft. The service letter indicates, "that a loose sleeve can cause excessive wear of the plunger rod (control shaft) at the point of attachment resulting in possible separation of the plunger control and loss of throttle control." The service letter goes on to require inspection and modification and, in some cases, replacement of the throttle and/or mixture controls with an improved type.


Research disclosed two additional accidents in the 1971 to 1981 period involving throttle or mixture control separations on Cessna 210 aircraft with the pre-1969 control, and the Safety Board is concerned that the circumstances which led to the accident detailed herein may exist in additional Cessna aircraft.

The Safety Board has issued prior Safety Recommendations A-81-6 and -7, and A-82-130 through -132 which concern mixture and throttle controls on a broad range of small, single-engine aircraft. These recommendations proposed actions to minimize the adverse consequences of a failure in mixture control or a throttle control linkage by designing these controls so that linkage failure would result in optimum positioning of the mixture and throttle to permit continued flight to a safe landing. The FAA has indicated in response to these recommendations that they will study the requirement for future design criteria. However, the Safety Board believes that the elimination of identified failure modes in throttle and mixture controls is essential to insure the safety of the aircraft involved. Such failures in pre-1969 Cessna airplanes could be greatly reduced or eliminated by modification or replacement of the pre-1969 style throttle and mixture controls with the improved type currently being supplied as replacements.

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

Issue an airworthiness directive to make compliance with Cessna Service Letter SE69-16 compulsory. (Class II--Priority Action)
(A-83-34)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and McADAMS, BURSLEY and ENGEN, Members, concurred in this recommendation.


By: Jim Burnett
Chairman