

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

CORRECTED COPY

ISSUED: March 12, 1981

Forwarded to:

Mr. Charles E. Weithoner
Acting Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-81-21 and -22

On March 3, 1980, a Beech King Air (65A90), N30AA, was being operated as an air taxi passenger flight and had departed the Dallas/Fort Worth Airport, Texas, at 1200 c.s.t. en route to Higgins, Texas. At 1230 c.s.t., the aircraft experienced an explosive decompression at 11,500 feet m.s.l. when the forward left-hand cabin window failed. The pilot reduced power, slowed the aircraft, and started an immediate descent to Love Field, Dallas, Texas. The aircraft was landed without further incident.

The National Transportation Safety Board's investigation of the incident and its review of pertinent Service Difficulty Reports indicate that corrective action is necessary to reduce the potential for similar occurrences.

Pieces of the failed cast acrylic window, P/N 50-420013-191, and a like window from the aircraft cabin, which showed evidence of a stress craze of less than 3/8-inch in length, were examined at the Beech Aircraft facility in Wichita, Kansas. The examination revealed indications of failure modes similar to those that occurred in other failures of cast acrylic cabin windows from King Air aircraft.

A survey of the FAA Maintenance Analysis Center records on the Beech King Air indicated that 70 cockpit and cabin window discrepancies have been reported over the last 6 years. Three of the discrepancies involved failure of cabin window P/N 50-420013-191 at altitude. In one case, the aircraft was at 20,000 feet and the window that failed had been inspected 20 flight-hours before.

According to AD 77-23-07 and the manufacturer's class-I mandatory compliance Service Instruction, No. 0711-110, Revision II, replacement of cockpit side windows, cabin windows, and baggage compartment windows is predicated upon the finding of a stress craze or crack 3/8 inch or longer. If a 3/8-inch or longer stress craze or crack is discovered during any inspection, the window is to be replaced with a new stretched acrylic window (P/N 50-430013-1053) before the next flight or the aircraft must be placarded and left unpressurized until a new window is installed. If a craze or crack less than 3/8 inch is discovered, the window must be reinspected each 100 flight-hours. Otherwise, the windows need only be inspected at 500-hour intervals. The fact that one cast acrylic window failed about 20 hours after an inspection indicates that the inspection intervals and criteria may not be adequate.

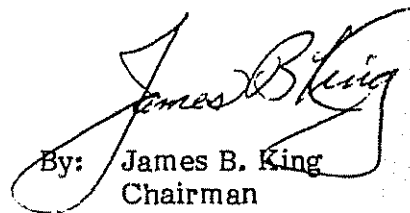
The Safety Board was informed by the aircraft manufacturer, during a recent 12-month period, that 21 cast acrylic windows have failed, 9 of which were cabin windows. Additionally, a review of the manufacturer's data indicated that there were no stretched acrylic window, P/N 50-430013-1053, failures reported during that 12-month period.

In view of the potential catastrophic results of aircraft window failures at high altitude, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Amend Airworthiness Directive 77-23-07 to require more frequent inspections of cast acrylic windows and consider reducing the length of the crack or craze at which the windows must be replaced. (Class II, Priority Action) (A-81-21)

Advise owners/operators of affected Beech aircraft of the hazards of operating their aircraft with crazed or cracked cast acrylic windows, and recommend that cast windows be replaced with stretched acrylic windows at the earliest opportunity. (Class II, Priority Action) (A-81-22)

KING, Chairman, DRIVER, Vice Chairman, and McADAMS, GOLDMAN, and BURSLEY, Members, concurred in these recommendations.


By: James B. King
Chairman