

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: May 28, 1980

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Forwarded to:

Honorable Langhorne M. Bond  
Administrator  
Federal Aviation Administration  
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-80-44

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On April 5, 1979, a Royale Airlines Beech B-99, N1922T, being operated under 14 CFR 135, was struck by a flock of birds while descending for a landing at the Regional Airport in Lafayette, Louisiana. One bird penetrated the right windscreen, resulting in minor injuries to the copilot. There were 2 crewmembers and 13 passengers on board the aircraft. The National Transportation Safety Board's investigation of this incident indicates that corrective action is necessary to reduce the possibility of windscreen penetration in this and similar aircraft.

The Beech 99A windscreen is constructed of two-ply plate glass panels, with a single vinyl material sandwiched in between. The windscreen also incorporates a heating element. Investigation revealed that the flightcrew had not activated the windscreen heat during the descent, and the Flight Operations Manual does not specify the use of windscreen heat when descending. Further, according to the aircraft manufacturer's engineers, the manual does not suggest the use of windscreen heat in an area of high bird strike probability, and no bird strike tests have been conducted on the Model 99 aircraft windscreen since there is no requirement for such tests in 14 CFR Part 23.

At the Safety Board's request, the Federal Aviation Administration queried its computer for Service Difficulty Reports over the last 5 years in which bird strikes were reported. The computer run revealed that about 15 bird strikes have been reported involving general aviation aircraft. These strikes occurred not only on windscreens but on other areas of the aircraft as well.

A query of the Safety Board's accident/incident computer revealed that there were 53 bird strikes reported on all types of general aviation aircraft between 1964 and 1978. During the period, 6 aircraft were destroyed, 45 were damaged substantially, and 2 were damaged slightly. In addition, 5 persons were killed and 115 were injured as a result of these accidents.

The Beech 99 is used primarily in commuter operations, and it is used extensively in operations around coastal regions and at the lower altitudes where exposure to bird strikes is more likely. The Safety Board believes that the windscreens of the Beech 99 and similar aircraft used in commuter and air taxi operations should be tested to determine their tolerance to bird strikes in both the "hot" and "cold" configurations. Bird strike tests on windscreens have been conducted on many types of aircraft in the "heated" versus "cold" configuration, and the heated windscreen was found less susceptible to breakage or penetration. Tests or studies should be conducted to determine which condition offers the best protection in the event of a bird strike. This information should be incorporated into appropriate flight manuals and appropriate procedures should be made a part of the aircraft checklist.

In view of the above, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Conduct a study to determine whether the structural characteristics of general aviation aircraft windscreens equipped with heating elements are enhanced by the use of such elements and apprise operators of optimal procedures through inclusion in appropriate flight manuals or issuance of an advisory circular. (Class III, Longer Term Action) (A-80-44)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation.

By:   
James B. King  
Chairman