

NATIONAL TRANSPORTATION SAFETY BOARD
Public Meeting of November 18, 2003
(Information subject to editing)

Report of Aviation Accident
Crash of an Aviation Charter, Inc.,
Raytheon (Beechcraft) King Air A100
Near Eveleth, Minnesota
October 25, 2002
NTSB/AAR-03/03

This is a synopsis from the Safety Board's report and does not include the Board's rationale for the conclusions, probable cause, and safety recommendations. Safety Board staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing.

EXECUTIVE SUMMARY

On October 25, 2002, about 1022 central daylight time, a Raytheon (Beechcraft) King Air A100, N41BE, operated by Aviation Charter, Inc., crashed while the flight crew was attempting to execute the VOR approach to runway 27 at Eveleth-Virginia Municipal Airport, Eveleth, Minnesota. The crash site was located about 1.8 nautical miles southeast of the approach end of runway 27. The two pilots and six passengers were killed, and the airplane was destroyed by impact forces and a postcrash fire. The airplane was being operated under the provisions of 14 *Code of Federal Regulations* Part 135 as an on-demand passenger charter flight. Instrument meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan.

CONCLUSIONS

1. The flight crewmembers were properly certificated and had received the training for pilot certification prescribed by Federal regulations. No evidence indicated any preexisting medical or other physical condition that might have adversely affected the flight crew's performance during the accident flight. Fatigue most likely did not degrade the performance of either pilot on the day of the accident.

2. The accident airplane was properly certificated, equipped, and maintained in accordance with Federal regulations and approved company procedures. The recovered components showed no evidence of preexisting powerplant, system, or structural failures.
3. The weight and balance of the airplane were within limits for dispatch, takeoff, climb, cruise, and landing.
4. The flight crew failed to maintain an appropriate course and speed for the approach and did not properly configure the airplane at the start of the approach, making the later stages of the approach more difficult.
5. During the later stages of the approach, the flight crew failed to monitor the airplane's airspeed and allowed it to decrease to a dangerously low level (as low as about 50 knots below the company's recommended approach airspeed) and to remain below the recommended approach airspeed for about 50 seconds.
6. The flight crew failed to recognize that a stall was imminent and allowed the airplane to enter a stall from which they did not recover.
7. The inadequate airspeed or the full course deviation indicator needle deflection should have prompted the flight crew to execute a go-around; however, they failed to do so.
8. The flight crew was not adhering to Aviation Charter's approach procedures and was not effectively applying crew resource management techniques during the approach segment of the flight.
9. Clouds might have prevented the flight crew from seeing the airport.
10. Icing did not affect the airplane's performance during the descent.
11. The Duluth approach control south radar controller's instructions did not prevent the flight

crew from intercepting the Eveleth-Virginia Municipal Airport VOR runway 27 final approach course at a sufficient distance to safely execute an approach and landing.

12. The out-of-tolerance condition and slight bends in the Eveleth-Virginia Municipal Airport VOR signal were not a factor in this accident.
13. Both pilots had previously demonstrated potentially serious performance deficiencies during flight operations consistent with below-average flight proficiency.
14. At the time of the accident, Aviation Charter was not operating in accordance with its weight and balance load manifest procedures, it did not have adequate stall recovery guidance, it did not have consistent deicer boot operational guidance, and it did not have an in-range checklist.
15. Aviation Charter was not adequately making company pilots aware of its Standard Operating Procedures.
16. At the time of the accident, Aviation Charter was not training its pilots on crew resource management (CRM) in accordance with its Federal Aviation Administration-approved CRM training module.
17. Although the Federal Aviation Administration's surveillance of Aviation Charter was in accordance with its standard guidelines, it was not sufficient to detect the discrepancies that existed at Aviation Charter.
18. En route inspections, combined with ground training, flight training, and proficiency check observations, are essential for ensuring adequate oversight of a company's operations and should be conducted on flights operated by 14 *Code of Federal Regulations* Part 135 on-demand charter operators.
19. The circumstances of the October 2002 Aviation Charter accident indicate that crew resource management training should be extended to include all 14 *Code of Federal*

Regulations Part 135 on-demand charter operations that conduct dual-pilot operations regardless of whether the aircraft requires two or more pilots.

20. The development of and requirement for the installation of low-air-speed alert systems could substantially reduce the number of accidents and incidents involving flight crew failure to maintain airspeed.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of this accident was the flight crew's failure to maintain adequate airspeed, which led to an aerodynamic stall from which they did not recover.

SAFETY RECOMMENDATIONS

To Federal Aviation Administration:

1. Conduct en route inspections and observe ground training, flight training, and proficiency checks at all 14 *Code of Federal Regulations* Part 135 on-demand charter operations as is done at Part 121 operations and Part 135 commuter operations to ensure the adequacy, quality, and standardization of pilot training and flight operations. (A-03-XX)
2. Require that 14 *Code of Federal Regulations* (CFR) Part 135 on-demand charter operators that conduct dual-pilot operations establish and implement a Federal Aviation Administration-approved crew resource management training program for their flight crews in accordance with 14 CFR Part 121, subparts N and O.
3. Convene a panel of aircraft design, aviation operations, and aviation human factors specialists, including representatives from the National Aeronautics and Space Administration, to determine whether a requirement for the installation of low-air-speed alert systems in airplanes engaged in commercial operations under 14 *Code of Federal Regulations* Parts 121 and 135 would be feasible, and submit a report of the panel's findings. (A-03-XX)

4. If the panel requested in Safety Recommendation A-03-XX determines that a requirement for the installation of low-airspeed alert systems in airplanes engaged in commercial operations under 14 *Code of Federal Regulations* Parts 121 and 135 is feasible, establish requirements for low-airspeed alert systems, based on the findings of this panel. (A-03-XX)