



NTSB National Transportation Safety Board

Office of Aviation Safety

Pinnacle Airlines

Flight 3701

Jefferson City, Missouri

Lorenda Ward

Investigator-in-Charge

Accident Summary

- October 14, 2004
- Pinnacle Airlines flight 3701
- Bombardier CL-600-2B19
- Repositioning flight
- Two flight crewmembers killed

Events During Takeoff and Climb

- Cleared to 33,000 feet
- Abrupt pitch-up maneuver performed
 - Stall protection system activated
- Flight crew changed seats
- Unnecessary high G maneuvers and large rudder inputs made
- Requested clearance to 41,000 feet
- Autopilot set for vertical speed

At 41,000 Feet

- Captain left cockpit
- Comments about altitude by flight crew and ATC
- Level flight for about 2.5 minutes before requesting a lower altitude
- The stick shaker activated 4 seconds later

Upset Event

- Four additional stick shaker with stick pusher activations
- Aerodynamic stall
- Engines flamed out
- Flight crew declared an emergency
- Flight crew recovered the airplane at 34,000 feet

Emergency Descent

- Flight crew members recognized that they had lost both engines
- No discussion on potential landing sites
- Did not maintain target airspeed
- Engine core rotation stayed at zero
- Told ATC that they had a single engine failure

Emergency Descent (cont.)

- Attempted four APU-assisted restarts
- Engines were core locked
- Switched back into their correct seats
- Told ATC at that time that they had dual engine failure
- Passed five airports
- Radar contact was lost

Parties to the Investigation

- Federal Aviation Administration
- Pinnacle Airlines
- Air Line Pilots Association
- General Electric Aviation
- Honeywell
- Hamilton Sundstrand
- Rockwell Collins

Canadian Support

- Accredited Representative - Transportation Safety Board of Canada
- Technical Advisors – Transport Canada and Bombardier Aerospace

Office of Aviation Safety Workload

- 7 major investigations
- 7 major reports
- 485 regional investigation launches
- 23 foreign investigation launches
- 139 safety recommendations

Non-contributing Factors

- Flight crew certification
- Flight crew fatigue and hypoxia
- Airplane
 - Within regulations
 - No structural or system failures
- Weather

Significant Findings

- Flight crew training
 - High altitude climbs
 - Stall recognition and recovery
 - Double engine failure
- Flight crew professionalism
- Flight crew's failure to follow SOPs
- Core lock phenomenon



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