

ACCIDENT CASE STUDY



COLGAN AIR FLIGHT 3407

TEACHER BACKGROUND

Use this background to guide students during their accident case activity.

- **Factors that may have contributed to the accident**

- Pilot failure to monitor flight instruments properly
- Pilot's inappropriate response to the activation of the stick shaker, indicating that the airplane was stalling from too slow of an airspeed
- Lack of training involving the stick shaker and how to respond to low airspeed cues
- Icing conditions that caused the airplane to stall at a higher than normal airspeed
- Pilots being distracted by conversation not pertinent to the flight, lack of pilot professionalism
- Pilot fatigue (due to commuting from Seattle), late-night flying and possible illness

- **Limitations or challenges to conducting an effective investigation of this accident**

- Location is a rural area of residential home
- Severity of the wreckage and post-crash fire

- **Other parties that might be brought into this investigation**

- Colgan Air
- Bombardier
- Engine, propeller manufacturers
- Air traffic controllers
- Other system and component manufacturers - avionics, deicing systems
- Airline pilot union

- **Safety recommendations that might result from this investigation**

- Improved training on proper aircraft control during low-speed flight and proper monitoring of flight instruments
- Improved training on stick pusher operations and pilot response
- Improved training and adherence to sterile cockpit rules
- Improved leadership training for captains, including professional standards and codes of conduct
- Airline to address fatigue risks brought about by commuting, illness and late flights



EXECUTIVE SUMMARY

On Feb. 12, 2009, about 10:17 p.m. Eastern Standard Time, a Colgan Air Bombardier DHC-8-400, N200WQ, operating as Continental Connection Flight 3407, was on an instrument approach to Buffalo-Niagara International Airport in New York when it crashed into a residence in Clarence Center, New York, about 5 nautical miles northeast of the airport. The two pilots, two flight attendants and 45 passengers aboard the airplane died, one person on the ground died, and the airplane was destroyed by impact and fire. Night visual meteorological conditions prevailed at the time.

The safety issues discussed in the final accident report focus on strategies to prevent flight-crew monitoring failures, pilot professionalism, fatigue, remedial training, pilot training records, airspeed selection procedures, stall training, Federal Aviation Administration (FAA) oversight, flight operational quality assurance programs, use of personal portable electronic devices on the flight deck, the FAA's use of safety alerts for operators to transmit safety-critical information, and weather information provided to pilots.

PROBABLE CAUSE

The National Transportation Safety Board determined that the probable cause of this accident was the captain's inappropriate response to the activation of the stick shaker, which led to an aerodynamic stall from which the airplane did not recover. Contributing to the accident were: 1) the flight crew's failure to monitor airspeed in relation to the rising position of the low speed cue; 2) the flight crew's failure to adhere to sterile cockpit procedures; 3) the captain's failure to effectively manage the flight; and 4) Colgan Air's inadequate procedures for airspeed selection and management during approaches in icing conditions.

PROPRIETARY