National Transportation Safety Board

Washington, D. C. 20594

Safety Recommendation Log 2105A

Date: November 3, 1988
In reply refer to: A-88-143

Mr. Robert W. Grant
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On November 15, 1987, Continental Airlines, Inc., flight 1713, a McDonnell Douglas DC-9-14, N626TX, was operating as a regularly scheduled, passenger-carrying flight between Denver, Colorado, and Boise, Idaho. The airplane was cleared to take off following a delay of approximately 27 minutes after deicing. The takeoff roll was uneventful, but following a rapid rotation, the airplane crashed off the right side of runway 35 left. Both pilots, 1 flight attendant, and 25 passengers sustained fatal injuries. Two flight attendants and 52 passengers survived.[1]

The Safety Board believes that the initial response by the City and County of Denver Fire Department to the accident site was timely and saved many lives. Fire department personnel arrived quickly enough to extinguish several small fires within the wreckage before they could spread to the fully fueled, intact right wing of the airplane. The rescue of surviving passengers, however, was hampered by inadequate equipment and the fact that the fuselage came to rest in an inverted position.

In the area of the aft tailcone exit, impact damage and debris delayed passenger evacuation 7 to 10 minutes. Contributing to the delay was the fact that outside rescuers were hampered by limited visibility around the hatch area. The only instruction printed on the outside of the hatch was the word "Pull" on a placard near the hatch release handle. The hatch was then upside down because the fuselage was inverted. To assist future rescue attempts, the Safety Board believes that the FAA should issue an airworthiness directive to require more complete operating instructions on the exterior side of the tailcone exit hatch of DC-9 airplanes. The instructions should include both actions that are required to unlock and open the hatch: (1) Pull the release handle and (2) Push the latch into the cabin. A precautionary instruction also should be included to advise rescuers that inward movement of the hatch may be blocked by occupants of the aft jumpseat.

[1]For more detailed information, read Aircraft Accident Report--*Continental Airlines, Inc., Flight 1713 McDonnell Douglas DC9-14, N626TX, Stapleton International Airport, Denver, Colorado, November 15, 1987* (NTSB/AAR-88/09).

Radio communications difficulties existed from the outset of the rescue effort. The airport command post vehicle was of no use to the initial incident commander because its radio was inoperative. Therefore, the city's hazardous materials vehicle was used instead. Also, this original airport command post vehicle was used from the outset to shelter injured passengers. Portable radio communications were not possible between crash/fire/rescue units operating around the airplane due to the noise that was generated by three large heaters, gasoline-power units for four hydraulic jaws, and numerous portable lighting rigs. In addition, the engines of all vehicles at the accident site were running, which added to the general noise.

According to rescuers and passengers, insufficient blankets were available to protect some of the injured passengers from the weather. In addition, many of the medical personnel from local hospitals were dispatched to the scene without proper cold-weather clothing.

Following the accident, rescue personnel recommended changes or additions to their rescue equipment. They stated that such items as surgical scissors and knives would have been useful to cut upholstery and wiring within the airplane. Also, they recommended that larger, unpainted and sturdier wooden cribbing be available to help support heavy airplane structures. The cribbing used during the rescue was small (which meant they needed a lot of it), painted (which made it slick in the snowstorm), and made of pine (which allowed it to compress in use). Lastly, they had trouble separating triage tags because they were tangled and frozen together after getting wet, and they also had trouble writing with pens on the tags because the ink in the pens had frozen.

According to the physician in charge of injury triage, about 15 Continental personnel responded to the crash scene and became interspersed with flight 1713's "walking wounded." Their presence presented a problem during attempts to triage the injured because it was difficult to quickly determine those persons who actually had been on board the airplane. According to the airport emergency plan, the Continental employees were supposed to have reported to fire station No. 1 to help administratively process uninjured passengers. The Safety Board understands the desire of company personnel to help in any way they can during the initial hours of a disaster. However, the crash site itself is not the place for untrained persons to be. Furthermore, aside from causing confusion during triage, the Continental employees placed themselves in physical danger by being so close to the wreckage, which could have caught fire at any moment.

Because major airplane accidents, such as this one with a combination of deceased, trapped, and mobile passengers are relatively rare, the Safety Board believes that the city and county of Denver in conjunction with professional organizations, such as the National Fire Protection Association and the American Association of Airport Executives, should disseminate the circumstances of the crash/fire/rescue operation on November 15, 1987, throughout the industry.

Therefore, as a result of its investigation, the National Transportation Safety Board recommends that the National Fire Protection Association:

Advise the Technical Committee on Airplane Rescue and Fire Fighting Operational Procedures of the problems identified during the investigation of the airplane accident at Denver, Colorado, on November 15, 1987, with a view toward developing additional information on emergency access areas for airplanes that may rest in unusual attitudes and the advisability and safety of defueling while passengers are trapped in and under the fuselage. (Class II, Priority Action) (A-88-143)

Also, as a result of its investigation, the Safety Board issued Safety Recommendations A-88-134 through -142 to the Federal Aviation Administration, A-88-144 to the American Association of Airport Executives and the Airport Operators Council International, and A-88-145 and -146 to Continental Airlines, Inc.

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in this recommendation.

By: James L. Kolstad
Acting Chairman