



## **Report Says Emergency Training for U.S. Cabin Crew Sometimes Deficient**

*In a review of 31 accidents, the U.S. National Transportation Safety Board praised the actions of many flight attendants in helping passengers during emergencies, but noted that failure to follow emergency procedures also increased the number of injuries in some instances.*

*Editorial Staff Report*

Seconds after a McDonnell Douglas DC-9 collided on the ground with a Boeing 727, the lead flight attendant struggled to open the DC-9's left forward exit door.

As a post-crash fire spread through the cabin, the door was finally opened with the help of two passengers. The flight attendant then jumped to the ground after failing to locate the evacuation slide's inflation handle.

While the lead flight attendant shouted instructions from the ground, another, less-experienced, flight attendant took command of the evacuation at the door and prevented serious injuries by helping lower passengers to the ground. She did not attempt to inflate the slide because she assumed it had malfunctioned. In addition to the lead flight attendant, the first officer and two off-duty flight attendants evacuated from the exit door without pulling the inflation handle on the evacuation slide.

In the rear of the aircraft, a flight attendant with 22 years' experience and a passenger died because the tailcone emergency-release-handle assembly was broken, rendering the tailcone emergency exit inoperable. Six other

passengers were also killed in the accident. The aircraft was destroyed.

This accident, along with dozens of others, underscores the need for improved emergency equipment and procedures training for flight attendants, according to a recent report compiled by the National Transportation Safety Board (NTSB).

The NTSB report was based on a review of 31 accidents and incidents during the past two decades and is the board's "first definitive report on flight attendant training programs."

The report was highly critical of several U.S. Federal Aviation Administration (FAA) flight attendant training policies and included more than a dozen safety recommendations. The NTSB accused the FAA of being "inconsistent in its process for approving flight attendant training" and of regulating "by waiver rather than by adherence to Federal Aviation Regulations (FAR)."

Performance in emergency situations, the NTSB said, is

being compromised by flawed initial and recurrent training scenarios.

“There are many examples of flight attendants who have performed extremely well, even heroically, during life-threatening emergencies. Nonetheless, there have been many examples of flight attendants who lacked knowledge about emergency equipment and procedures.”

But the NTSB noted that an increase in the use of different types of aircraft (with emergency equipment stowed in different areas and varied emergency procedures) and the increased use of two-person cockpit crews “have added to the need for more and better flight attendant training.”

“Yet flight attendant refresher or recurrent training hours have remained the same or declined,” the report said.

Flight attendants are required under U.S. regulations to receive recurrent training and a competency check every 12 months. Emergency training focuses on decompression, fire, ditching, planned and unplanned evacuations, illness or injury, hijacking, bomb threat, turbulence and hypoxia-related conditions.

The FAA was criticized in the report for granting waivers in many instances that allowed reductions in training hours and for easing some training scenario requirements.

Problems and deficiencies identified by the NTSB report included flight attendants who were unable to locate and properly operate emergency equipment; opening of exit doors while aircraft were moving or with engines running; inability to open doors properly; failure to inflate evacuation slides or allowing the slides to inflate before fully deployed (blocking exits and escape routes); and failure to follow evacuation procedures.

The report expressed concern about FAA delays in providing its operations inspectors and airlines with guidance on conducting flight attendant training programs. According to the NTSB, the FAA’s *Air Carrier Operations Inspector’s Handbook* “fails to provide guidance for the approval of flight attendant training programs or the granting of waivers for reduced hours for such training.”

Flight attendant proficiency failures in emergency procedures in actual emergencies can be linked to inadequate, FAA-approved training, the NTSB said. The report said

the NTSB was concerned that “many air carriers do not perform evacuation drills during recurrent training.”

“Flight attendants receive extensive training that prepares them to handle emergencies, but these skills are rarely used,” the report said. “Recurrent training must ensure that attendants are given adequate opportunity to practice and demonstrate these acquired skills for all airplanes for which they are qualified.”

U.S. carriers are not required to limit the number of airplane types that flight attendants are qualified to crew as do some non-U.S. carriers, the NTSB said. The report said that current methods of determining flight attendant proficiency in emergencies may be inadequate, adding that there is a need for “better human engineering design of cabin equipment.”

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The report surveyed the training programs of 12 air carriers.

Initial and recurrent training programs, the report said, should address degradation of human performance that can be expected during stressful, and especially, life-threatening situations. The NTSB also noted that because most flight attendants do not receive crew resource management (CRM) training during initial training, it is not presented in recurrent training.

The NTSB concluded that while flight attendants provided valuable assistance to passengers during most emergency situations, they “did not always follow their air carrier’s approved training procedures and perform their duties in accordance with training.”

The report said that in two of 24 evacuation events studied, the actions of several flight attendants contributed to an increase of passenger injuries and increased the risk of injuries in others.

“The safety board is concerned that these same actions in other situations could have disastrous results and that flight attendant training may not adequately prepare flight attendants for actions they may be required to take.”

In the DC-9/Boeing 727 collision, for example, the NTSB determined that the lead flight attendant “was not in her jump seat when the collision occurred, failed to properly secure the (right front exit) emergency evacuation slide girt bar into the floor brackets, failed to fully open the (left front) exit door and, along with three other trained crew members, failed to inflate the evacuation slide, thereby slowing the evacuation and increasing the number of

evacuation-caused injuries.” According to the report, several passengers were seriously injured when they jumped from the exit.

The report also outlined deficiencies that could have contributed to the two tailcone fatalities in the DC-9.

“Although the FAA had approved the air carrier’s DC-9 tailcone-release-handle training simulator, the [NTSB] found that flight attendants had not been adequately trained in the use of the tailcone exit because the simulator was not installed in a realistic environment. A door or a hatch was not used to gain access to the handle, and the handle was not installed in clips that would have [simulated] the actual force [needed] to remove the handle from the restraining clips.”

Similar difficulties were encountered by flight attendants on a McDonnell Douglas MD-80 when it caught fire after being struck by a baggage truck while taxiing to a terminal gate.

In that accident, the lead flight attendant also had problems opening the forward left exit door. “She believed that the door weighed more than the door trainer that had been used during her recurrent training and she did not think that the door would be harder to open than the training door,” the report said.

The NTSB report added: “Although the cabin was very dark, [the flight attendant] did not activate the emergency light switch located at the forward flight attendant panel because flight attendants had not been trained to do so.”

The failure of many flight attendants to open undamaged doors and exit hatches “reflects a serious training problem,” the report said. During an evacuation of a Boeing 727, the report noted that only one of four flight attendants was able to open an assigned exit door.

In the MD-80 accident, the lead flight attendant had been pinned initially against the forward exit door by panicked passengers. She was freed by a passenger who managed to pull other passengers away from the door and assist her.

Flight attendant emergency performance was also reviewed in the 1989 crash of a Boeing 737-400 at New York’s La Guardia Airport. The aircraft overran the end of the runway and came to rest partially submerged in Bowery Bay after a rejected night takeoff. Two passengers were killed; 55 passengers and six crew members successfully evacuated the aircraft.

The report praised the lead flight attendant, who “remained in the cabin until rescuers had boarded the airplane to free a trapped passenger.” The report added that the attendant had “used almost all of the emergency equipment available to him, including a flashlight, life preserver, megaphone, crash ax and an evacuation slide disconnect handle.”

But the report noted that the flight attendant also experienced some confusion about the location of crew life preservers (stowage locations were different for Boeing 737-400 and 200 aircraft used by the airline) and operation of the evacuation slide release.

“The flight attendant had been taught that the quick-release handle was under a velcro flap, but he pulled the red slide inflation handle by mistake. When he realized that he had pulled the wrong handle, he pulled on ‘whatever I could find’ until he found another handle. He pulled it and nothing happened; then he pulled and tore the ‘white heavy thread-type cord and lacing’ until ‘somehow the slide did release [from the airplane].’ He said that he had seen ‘pictures during training’ of the slide quick-release handle but thought that it was different from the one on the airplane. He stated that ‘hands on’ training would have provided him a better understanding of how the slide release operated.”

[The NTSB has since recommended that air carriers standardize the location of emergency equipment.]

Darkness also created post-crash confusion.

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“It was not until the first passenger evacuated that flight attendants in the forward cabin realized the airplane was in the water,” the report said.

It added: “Passengers stated that flight attendants urged them to get off the wing and into the water and away from the airplane because the airplane could ‘explode.’ Rescuers urged them to stay with the airplane because some [passengers] in the water were being swept under the overhanging runway deck and could not be seen.”

In another case involving evacuation slide confusion, several passengers were seriously injured in an emergency evacuation of a Boeing 747 when the slide separated from the airplane. It was determined that the flight attendant had inadvertently pulled the slide disconnect handle instead of the inflation handle.

The NTSB, reviewing the 1991 collision of a Boeing 737 and a Fairchild Metroliner in Los Angeles, Calif., said emergency response performance by flight attendants could

have been compromised by two flight attendants aft who released their restraints and got out of their seats "after the collision but before the airplane came to a stop."

One flight attendant opened the door while the airplane was sliding down the runway, but closed it again because the left side was engulfed in flames. As she stepped back from the door, the airplane struck a building and "she was thrown forward and then backwards, grabbing a handle in the galley to keep from falling." An open exit door would have increased the risk of fire spreading through the cabin, the report said.

The second aft flight attendant opened an exit door on the right side of the aircraft while the aircraft was still moving before being "thrown back into the aft galley area and to the floor" when the airplane struck the building.

To improve flight attendant performance during emergencies, the NTSB recommended that the FAA:

- Require flight attendant hands-on proficiency drills for each type of airplane exit and ensure that flight attendants are evaluated individually by an instructor with a record kept of performance;
- Ensure that flight attendant training programs provide detailed guidance on the probability of hazards associated with emergencies such as fire, toxic smoke and explosion;
- Require that flight attendant training include drills on methods to open exits and to manage flow control of passengers at more than one floor level exit if necessary;

- Require an evacuation and/or wet-ditching group exercise using flight attendants and cockpit crews during recurrent training and ensure that all reasonable attempts are made to conduct joint cockpit crew/flight attendant drills, especially for crew members operating on aircraft with two-member cockpit crews;

- Assign specialists in cabin safety to each major air carrier and to each FAA region to help with oversight of flight attendant training programs; and,

- Provide procedures in the FAA *Air Carrier Operations Inspector's Handbook* to approve waivers, including specific guidance for reductions in recurrent training hours, taking into consideration the number of types of aircraft for which attendants are qualified, the accuracy and effectiveness of training devices and simulators, and the methods used to test and evaluate proficiency.

The report said that since flight attendants are expected to deal with emergency situations that can be stressful or life-threatening, "training programs should teach them to recognize, anticipate and accommodate stresses that may accompany life-threatening situations."

"The Safety Board recognizes that training can never truly duplicate the types of situations that may confront flight attendants," the report said. "Nonetheless, training can instill the basic skills and confidence that will allow flight attendants to handle life-threatening situations. As the crashworthiness of transport category airplanes improves and accidents become more survivable, flight attendants are assuming a more critical role in ensuring passenger safety." ♦

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