



# National Transportation Safety Board

Washington, D.C. 20594  
Safety Recommendation

Date: August 12, 1998

In reply refer to: A-98 -80

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Office of the Administrator  
Research and Special Programs Administration  
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Washington, D.C. 20590

About 0554 eastern daylight time,<sup>1</sup> on September 5, 1996, a Douglas DC-10-10CF, N68055, operated by the Federal Express Corporation (FedEx) as flight 1406, made an emergency landing at Stewart International Airport (Stewart), Newburgh, New York, after the flightcrew determined that there was smoke in the cabin cargo compartment. The flight was operating under the provisions of Title 14 Code of Federal Regulations (CFR) Part 121 as a cargo flight from Memphis, Tennessee, to Boston, Massachusetts. Three crewmembers and two nonrevenue passengers were aboard the airplane. The captain and flight engineer sustained minor injuries while evacuating the airplane. The airplane was destroyed by fire after the landing.

The National Transportation Safety Board determined that the probable cause of this accident was an in-flight cargo fire of undetermined origin.<sup>2</sup>

After the occupants had successfully evacuated the airplane, the most immediate problem for the firefighters and other emergency responders was to prevent the fire from spreading and involving the fuel that remained on the airplane. In this case, the unavailability to the incident commander of specific information about the declared hazardous materials on board did not affect the firefighting strategy of the New York Air National Guard (NY ANG). Nevertheless, in accidents that involve hazardous materials, it is critical that firefighters and other emergency responders receive timely information regarding the identity, quantity, number of packages, and location of declared hazardous materials. Such information can influence the type and level of response and may be necessary to adequately protect emergency response personnel, the environment, and the surrounding communities.

Neither the assistant fire chief who served as the initial incident commander nor the ANG fire chief received specific information during the firefighting phase of the emergency (before

<sup>1</sup> Unless otherwise indicated, all times are eastern daylight time, based on a 24-hour clock.

<sup>2</sup> National Transportation Safety Board. 1998. *In-Flight Fire/Emergency Landing, Federal Express Flight 1406, Douglas DC-10-10, N68055, Newburgh, New York, September 5, 1996*. Aircraft Accident Report NTSB/AAR-98/03. Washington, DC.

0925) about the identity of the hazardous materials, their quantities, or the number of packages on the airplane. By 0700, about 1 hour after the airplane had landed, the only information about the hazardous materials on board the airplane that had been provided to the initial incident commander came from the Part A form and a handwritten list provided by the FedEx station at the airport. This information indicated only the hazard classes of the hazardous materials on board the airplane and their location in the airplane by cargo container position. Emergency guidance about specific chemicals was available through the Orange County Hazardous Materials Response Team (HMRT) and its communications link to CHEMTREC; however, this information was of little use until the specific identity and quantities of the declared hazardous materials on board the airplane were known. About 0915, approximately 10 minutes before the fire was extinguished, the fire chief received from the Orange County HMRT coordinator a copy of the weight and load plan and a handwritten list identifying some of the chemicals on board.

The NY ANG and other participating emergency response agencies, including airport operations at Stewart, repeatedly requested specific information about the hazardous materials on board the airplane. Throughout the morning (beginning at 0635) and into the early afternoon, FedEx, primarily through its Global Operations Command Center in Memphis, faxed as many as 12 transmissions of various hazardous materials shipping documents to the emergency operations center at the airport operations building and the New York State Police barracks at Stewart, although many of the faxes were illegible. However, none of these reached the incident commander.

Another problem was that FedEx did not have the capability to generate, in a timely manner, a single list indicating the shipping name, identification number, hazard class, quantity, number of packages, and the location of each declared shipment of hazardous materials on the airplane. To prepare such a list, FedEx would have had to compile information from copies of all of the individual Part Bs for each individual shipment of hazardous materials on the airplane. Because FedEx did not have the capability to quickly consolidate that information, it relied on faxing copies of the individual Part Bs for the approximately 85 hazardous materials packages on board, which proved to be burdensome, time consuming and, in this case, ineffective. Also, because of the poor quality and legibility of many of the handwritten Part Bs, much of the information was unusable.

In contrast, railroads operating freight trains can generate a computerized list of all of the freight cars in the train that identifies which freight cars are transporting hazardous materials and provides the shipping name, hazard class, identification number, and type of packaging, quantity, and emergency response guidance for each hazardous material transported. Such a printed, comprehensive list can be generated quickly and thus the information can be provided in a timely fashion to the appropriate emergency responders and in a more useful format than numerous faxed copies of partially legible Part B forms.

In both this accident and the July 31, 1997, crash of the FedEx MD-11 at Newark, the on-board Part B hazardous materials shipping papers were not available to emergency responders,<sup>3</sup>

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<sup>3</sup> The Department of Transportation (DOT) hazardous materials regulations [49 CFR Part 173] require that the proper shipping name, hazard class, identification number, packaging group, and total quantity of the material

and FedEx was unable to provide complete information to emergency responders in a timely manner. Further, in two subsequent accidents (one near Clarksville, Tennessee, on March 5, 1998, and the other at Bismarck, North Dakota, on April 7, 1998), the effectiveness of FedEx's hazardous materials recordkeeping system was again called into question. In the Clarksville accident, the shipping papers on board the airplane and on file at FedEx's Memphis Operations Center were found to be inaccurate. And in the Bismarck accident, FedEx was unable to confirm whether there were hazardous materials on board the airplane until 2 hours and 49 minutes after receiving the request for this information.

Safety Board investigators surveyed the capability of other carriers to provide this information in similar circumstances and found that only one carrier had an on-line capability to provide detailed information about the hazardous materials on board its airplane. The remaining carriers, like FedEx, rely on paper copies of the hazardous material shipping documentation retained at the departing station if the on-board documentation is destroyed. The Safety Board is pleased that FedEx has committed to developing and implementing an electronic system for tracking and retrieving information about hazardous materials being carried on board FedEx flights. FedEx plans to implement intermediate and long-term plans that would make computerized information about hazardous materials information available from all FedEx facilities. However, the Safety Board does not agree with FedEx's position that the proper shipping name is not relevant to emergency responders. Although this information may not always be required, in many cases it may be vital that emergency responders know exactly what substances are on board an aircraft so that appropriate measures can be taken to address potential risks.

Compared to the other modes of transportation, it is less likely that shipping papers on board an accident aircraft will survive or be accessible because of the greater likelihood of fire and destruction of the airplane. Because of the danger of fire, a flightcrew is also less likely to have time to retrieve the shipping papers after a crash. The Safety Board concludes that the DOT hazardous materials regulations do not adequately address the need for hazardous materials information on file at a carrier to be quickly retrievable in a format useful to emergency responders. Therefore, the Safety Board believes that the Federal Aviation Administration and the Research and Special Programs Administration should require, within 2 years, that air carriers transporting hazardous materials have the means, 24 hours per day, to quickly retrieve and provide consolidated, specific information about the identity (including proper shipping name), hazard class, quantity, number of packages, and location of all hazardous materials on an airplane in a timely manner to emergency responders.

As a result of the investigation of this accident, the National Transportation Safety Board recommends that the Research and Special Programs Administration:

Require, within 2 years, that air carriers transporting hazardous materials have the means, 24 hours per day, to quickly retrieve and provide consolidated specific information about the identity (including proper shipping name), hazard class,


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appear on the shipping papers for any shipment of hazardous materials. Further, the regulations stipulate [49 CFR Part 175] that an operator must provide this information in writing to the pilot-in-command and that a copy of the shipping papers must accompany the shipment on board the airplane.

quantity, number of packages, and location of all hazardous materials on an airplane in a timely manner to emergency responders. (A-98-80)

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

By:



Jim Hall  
Chairman