



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: March 18, 1993

In reply refer to: A-93-33

Honorable Federico Pena
Secretary
U.S. Department of Transportation
Washington, D.C. 20590

On Sunday, March 22, 1992, about 2135 eastern standard time, a Fokker 28-4000 (F-28), N485US, operating as USAir flight 405, crashed during an attempted takeoff from runway 13 at LaGuardia Airport, Flushing, New York. The airplane was operating under Title 14, Code of Federal Regulations, Part 121, as a scheduled passenger flight from Jacksonville, Florida, to Cleveland, Ohio, with a stopover at LaGuardia Airport. There were 47 passengers, 2 flightcrew members and 2 cabincrew members on board. The captain, one of the cabincrew members, and 25 passengers received fatal injuries. Impact forces and the subsequent fire destroyed the airplane. Instrument meteorological conditions prevailed at the time of the accident, and a thin layer of wet snow covered the runway.¹

The National Transportation Safety Board has determined that the probable causes of this accident were the failure of the airline industry² and the Federal Aviation Administration to provide flightcrews with procedures,

¹For more detailed information, read Aircraft Accident Report--"Uncontrolled Collision with Terrain, USAir Flight 405, Fokker F-28, N485US, LaGuardia Airport, Flushing, New York, March 22, 1992" (NTSB/AAR-93/02)

²For the purposes of this report, "airline industry" includes government and industry organizations responsible for and capable of studying the problems associated with aircraft icing hazards, and disseminating information to flightcrews about these problems, and for developing technology and requirements to minimize such hazards.

requirements, and criteria compatible with departure delays in conditions conducive to airframe icing and the decision by the flightcrew to take off without positive assurance that the airplane's wings were free of ice accumulation after 35 minutes of exposure to precipitation following deicing. The ice contamination on the wings resulted in an aerodynamic stall and loss of control after liftoff. Contributing to the cause of the accident were the inappropriate procedures used by, and inadequate coordination between, the flightcrew that led to a takeoff rotation at a lower than prescribed air speed.

The Safety Board noted that victims who were removed from the water during the initial stages of the emergency response, and who lacked visible vital signs, such as pulse, and respiration, were categorized as deceased and that no attempts were made to resuscitate them. The lieutenant with emergency medical services reported that no attempts were made to resuscitate victims who appeared drowned and/or lacked vital signs because he believed that such victims could not be revived after succumbing in cold salt water. The Safety Board does not dispute this judgment because a basic principle of triage is to treat victims having the most life-threatening injuries first with available medical resources and to utilize limited medical personnel in a manner that will provide maximum effectiveness. However, the Safety Board is also aware that in recent years a number of victims of cold water near drowning have been successfully resuscitated. They survived after periods of time under water, including sea water, as long as one hour or more.

In view of these facts, the Safety Board believes that all emergency response organizations should review their emergency plans to include contingencies for applying cardiopulmonary resuscitation (CPR) techniques as soon as a sufficient number of trained personnel arrive to perform CPR, even during mass casualty/triage incidents, regardless of whether vital signs are present, especially if cold-water immersion/near drowning is involved and where traumatic injuries do not indicate death.

Of the 27 occupants who died, 8 of them sustained minor injuries and died as a result of drowning, 7 sustained serious injuries and died as a result of drowning, 9 died as a result of blunt force trauma, 1 died as a result of smoke inhalation/burns, 1 died from burns, and 1 survived for several hours but subsequently died at the hospital with cervical spine injuries.

Some of the 24 survivors sustained injuries that consisted of fractures of the lower extremities, ribs and arms, first, second, and third degree burns to

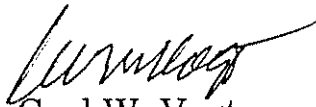
heads, hands, arms and legs, as well as multiple contusions, abrasions, and lacerations.

As a result of this accident, the National Transportation Safety Board recommends that the Department of Transportation, in cooperation with the Federal Emergency Management Agency, the National Fire Protection Association, and the American Association of Airport Executives:

Recommend a review of emergency plans to include contingencies for applying cardiopulmonary resuscitation (CPR) techniques as soon as a sufficient number of trained personnel arrive at a mass casualty/triage incident. Emphasis should be placed on attempting CPR regardless of whether vital signs are present, especially when cold water immersion/near drowning is involved and where traumatic injuries may not indicate death. (Class II, Priority Action) (A-93-33)

Also, the Safety Board issued Safety Recommendations A-93-19 through 30 to the Federal Aviation Administration, A-93-31 and A-93-32 to the Port Authority of New York and New Jersey, and A-93-34 to the New York City Health and Hospitals Corporation.

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HAMMERSCHMIDT and HART concurred in this recommendation.

By: 
Carl W. Vogt
Chairman