Log 2433

National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: June 25, 1993
In refer reply to: A-93-55

Mr. Joseph M. Del Balzo
Acting Administrator
Federal Aviation Administration
Washington, D.C. 20591

On March 27, 1992, at 1316 mountain standard time, American Airlines flight 1526 was pushed back from its position on the parking apron at Yampa Valley Regional Airport, Hayden, Colorado, in preparation for departure to Dallas/Fort Worth International Airport, Texas. The pilot had requested that the airplane be pushed back from the terminal apron to the deicing area prior to departure. The weather was overcast, it was raining at the time, and the ambient temperature was around freezing. Witnesses stated that the apron was wet but not icy. The ground service personnel, who were employed by Spectrum Jet Inc., stated that on this occasion, the airplane was being pushed back in a direction opposite to that normally used.

Five ground service personnel were assigned to perform the pushback: two guidemen, one assigned to each wing tip to ensure proper obstacle clearance; a signalman, who was communicating with the crew by an interphone headset that was plugged into the communications panel on the nosegear strut; an observer, who sat in the tractor; and the crew chief, who was in charge of the pushback operation and who drove the tractor.

The signalman received clearance via the interphone from the flightcrew to push the airplane back, and he signaled the crew chief to begin the pushback. The crew chief began the pushback, which he described as slower than normal, and he continued the operation for about 200 feet, at which time he observed the signalman moving toward a position near the nosegear and under the fuselage. During the interviews, the crew chief stated that he had thought that the signalman was clear of the airplane, so he began to turn the plane in the signalman's direction. A few moments later, the crew chief saw the signalman's head move back and his right leg contact the nosewheel. Then, he saw the signalman fall forward, and the signalman's right foot appeared to go under the nosewheel. The crew chief then attempted to stop the tractor and airplane; however, about 15 feet was needed to stop the airplane, during which time the signalman was dragged along the ground. The signalman was then transported to the Routt County Memorial Hospital; he sustained seven bone fractures in his right foot and a compound fracture of the right tibia slightly above the ankle.

With the exception of the signalman, all Spectrum Jet personnel who were interviewed stated that they had been trained by American Airlines about pushback procedures, generally on an annual basis. The training included the viewing of an American Airlines videotape, which covered pushback procedures, using two guidemen and a tractor driver, with the interphone cord plugged directly into a communications box that was located on the tractor. Flightcrew/ground crew communications were transmitted and received directly between the tractor cab and the cockpit. Positioning of ground personnel at the airplane nosegear was not depicted on the video.

During their interviews, Spectrum Jet personnel expressed a concern that use of the "4-man pushback," i.e., the use of a signalman whose interphone is connected directly to the nosegear strut, was far less safe than the procedures depicted in the video, i.e., the "3-man pushback." They stated, however, that they did not have the longer communications cord and the connecter box on the tractor, which are needed to accomplish the "3-man pushback."

The Safety Board has investigated two similar accidents involving pushbacks: one resulted in the amputation of the signalman's leg; the other resulted in fatal injuries to the signalman. In addition, two recent accidents in which ground personnel were injured during the movement of an airplane are currently under investigation by the Safety Board.

Pushback procedures that require ground personnel to be close to the nose gear and directly connected to the communications panel in the nosegear well are unnecessary and unsafe. Procedures should be designed to provide the maximum protection to ground service personnel during potentially hazardous pushback operations. Procedures must provide for ground service personnel to be clear of the nosegear.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

> Issue an air carrier operations bulletin directing Principal Operations Inspectors to inform air carriers of the circumstances of this accident. Urge air carriers to conduct pushback operations in a manner which eliminates the need for ground service personnel to be close to the airplane landing gear while the airplane is in motion. (Class II, Priority Action)(A-93-55)

Also, as a result of its investigation, the Safety Board has issued Safety Recommendation A-93-56 to the Air Transport Association.

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

By: Carl W. Vogt
Chairman