



National Transportation Safety Board Aviation Accident Final Report

Location:	Dulles, VA	Accident Number:	NYC02LA056
Date & Time:	01/20/2002, 0715 EST	Registration:	N837AT
Aircraft:	McDonnell Douglas DC-9-32	Aircraft Damage:	Substantial
Defining Event:		Injuries:	66 None

Flight Conducted Under: Part 121: Air Carrier - Scheduled

Analysis

The DC-9-32 was parked at the gate, with an inoperative APU, and the ramp was covered with snow and ice. The captain reported that a single engine cross bleed start would require an N1 of about 80% on the operative engine. He therefore elected to start both engines at the gate, and then proceed with the pushback. The operators manual stated that if a headset was used, it would be worn by the tug driver. The tug driver did not wear the headset because the headset chord had been broken and repaired multiple times, and was too short to reach the tug driver. A walker near the nose of the airplane was wearing the headset. During pushback, as the tug driver tried to push the nose of the airplane to the west, the airplane encountered icy conditions, moved forward, and struck the tug. At the time of loss of traction, the tug was nearly 90 degrees to the right side of the nose of the airplane. The forward movement of the airplane was observed by the tug driver, who stopped the tug, but with no headset, he could not notify the cockpit crew. The walker near the nose of the airplane, wearing the headset, reported that he was looking away, and did not observe the airplane moving forward in time to make a call to the cockpit. The pushback was accomplished by a contract crew that had been trained in accordance with the airlines GMM, which did not contain specific direction for pushbacks on icy surfaces.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The lack of direction from the operator on how to perform pushbacks on an icy ramp, which led to the tug driver positioning the tug at an angle to the nose of the airplane that allowed the airplane to move forward and strike the tug. Factors were the inadequate visual lookout by the walker wearing the headset, and the icy ramp.

Findings

Occurrence #1: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: TAXI - PUSHBACK/TOW

Findings

1. (F) TERRAIN CONDITION - ICY
2. (C) PROCEDURES/DIRECTIVES - INADEQUATE - COMPANY/OPERATOR MANAGEMENT
3. (F) VISUAL LOOKOUT - INADEQUATE - OTHER PERSON

Factual Information

On January 20, 2002, at 0715 eastern standard time, a McDonnell Douglas DC-9-32, N837AT, operated by Air Tran Airways as flight 67, was substantially damaged during pushback at Washington Dulles International Airport, Dulles, Virginia. There were no injuries to the 2 certificated airline transport pilots, 3 flight attendants, or 61 passengers. Visual meteorological conditions prevailed. An instrument flight rules (IFR) flight plan had been filed, for the flight that was conducted under 14 CFR Part 121.

The flight was destined for Atlanta, Georgia. According to the captain, the ramp was covered with snow and ice, and their gate position required a pushback with a nose swing of about 120 degrees. The airplane had an inoperative APU, and he elected to start both engines at the gate prior to pushback because a single engine crossbleed start would require an N1 of 80 percent on the operative engine. After both engines were started, the pushback was initiated. As the tug neared a 90 degree position to the right side of the nose of the airplane, it started to move forward, and then stopped when it struck the tug, after which the captain set the brakes. The captain added that he had not applied the brakes until after the airplane came to rest.

According to the diagrams on the Air Tran Airways safety report filled out by the captain, the position of the tug was near 90 degrees to the right of the nose of the airplane when the airplane started to move forward.

According to an interview conducted with the tug driver by the Metropolitan Washington Airports Authority, Airport Operations Division, the tug driver reported that he had conducted two earlier pushback with no problems. The tug driver added that with both engines running on the airplane, the airplane felt heavier during the push.

During the pushback, there were two wing walkers, the tug driver, and an additional walker near the nose of the airplane, who was using a headset to remain in communications with the flight crew.

The people who conducted the pushback were contract employees who had been trained in accordance with Air Tran Airways general maintenance manual (GMM). There was no specific requirement to use a headset. However, the Air Tran Airways GMM did state that headset communication was the primary method of communications during pushback and tow. It further stated, "If an interphone/headset is to be used, the tractor operator will man the headset...." The investigation revealed that the tug driver did not wear the headset because the chord had broken, and had been repaired several times, which shortened its overall length.

The tug driver reported that he had already pushed back two airplanes that morning with no problems, and that the initial part of the push was without incident. As the airplane entered an area where the ramp was icy, he turned the nose of the airplane to the west. The nosewheels on the airplane started slipping, and he was unable to communicate this to the cockpit crew. He stopped the tug and the airplane slid into the tug.

The walker on the interphone to the cockpit reported that he was not looking at the airplane when it began to slip. When he became aware that the airplane was slipping, there was insufficient time to tell the flight crew to set the brakes. He did not make any transmission to the pilots prior to impact.

The ramp was reported as icy, and some people reported difficulty in walking.

The tug used for pushback was a Hough T-225, rated to push an airplane up to 225,000 pounds. The tires on the tug were not equipped with chains. The ramp had not been sanded. Within the preceding 12 hours, the airport had reported periods of freezing rain, followed by light snow.

A toxicological report on the tug driver was negative for drugs or alcohol.

Neither Air Tran Airways, nor the contract operator had any specific training directed to the problems that could be encountered with pushing airplanes on icy ramps, or winter operations in general.

Damage to the airplane consisted of a hole in the right side of the fuselage, located about 3 feet below the bottom of the forward, right side cabin door, and about 4 feet behind the trailing edge of the door. Internally, there was damage to the longerons.

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial; Flight Engineer	Age:	50, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:	Class 1 None	Last Medical Exam:	08/17/2001
Occupational Pilot:		Last Flight Review or Equivalent:	09/11/2001
Flight Time:	12500 hours (Total, all aircraft), 7000 hours (Total, this make and model), 6000 hours (Pilot In Command, all aircraft), 240 hours (Last 90 days, all aircraft), 80 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport; Commercial; Flight Engineer	Age:	58, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last Medical Exam:	08/26/2002
Occupational Pilot:		Last Flight Review or Equivalent:	11/01/2001
Flight Time:	14500 hours (Total, all aircraft), 4521 hours (Total, this make and model), 2200 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	McDonnell Douglas	Registration:	N837AT
Model/Series:	DC-9-32	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	45774
Landing Gear Type:	Retractable - Tricycle	Seats:	106
Date/Type of Last Inspection:	03/01/2000, Continuous Airworthiness	Certified Max Gross Wt.:	109000 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:	67712 Hours	Engine Manufacturer:	Pratt & Whitney
ELT:	Not installed	Engine Model/Series:	JT8D-9
Registered Owner:	Air Trans Airways	Rated Power:	14500 lbs
Operator:	Air Trans Airways	Air Carrier Operating Certificate:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	ZZDA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	IAD, 313 ft msl	Observation Time:	0651 EST
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	-1° C / -5° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	8 knots, 360°	Visibility (RVR):	
Altimeter Setting:	30.11 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Dulles, VA	Type of Flight Plan Filed:	IFR
Destination:	Atlanta, GA (ATL)	Type of Clearance:	None
Departure Time:	0715 EST	Type of Airspace:	Unknown

Airport Information

Airport:	Washington Dulles (IAD)	Runway Surface Type:	Unknown
Airport Elevation:	313 ft	Runway Surface Condition:	Unknown
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	5 None	Aircraft Damage:	Substantial
Passenger Injuries:	61 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	66 None	Latitude, Longitude:	38.950000, -77.446667

Administrative Information

Investigator In Charge (IIC):	Robert L Hancock	Adopted Date:	04/17/2003
Additional Participating Persons:	Bill Brergmann; Federal Aviation Administration; Dulles, VA J P Dagon; Airtrans; Orlando, FL		
Publish Date:			
Investigation Docket:	NTSB accident and incident docket serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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