



National Transportation Safety Board Aviation Accident Data Summary

Location:	Minneapolis, MN	Accident Number:	CHI01FA129
Date & Time:	05/01/2001, 1437 CDT	Registration:	N9333
Aircraft:	Douglas DC-9-31	Injuries:	2 Minor, 42 None
Flight Conducted Under:	Part 121: Air Carrier - Scheduled		

Analysis

The airplane was substantially damaged when it was struck by an aircraft tug during passenger boarding. The aircraft was parked and was being prepared for departure. The driver of the tug was moving the vehicle into position in order to connect the aircraft tow bar in preparation for pushback. He said that when he placed the tug into gear, it lurched forward into the parked aircraft. He said that pieces of the aircraft protruded through the windshield of the vehicle and pinned him into his seat. He said that he was unable to shift the vehicle into reverse and his leg was pinned on the accelerator pedal. Other ground workers in the area attempted to shut off the tug's engine. The driver said that the vehicle continued to drive forward until the engine was finally shut off. During the event, the pilot of the aircraft had applied the brakes when he noticed the unplanned movement of the airplane. The aircraft was pushed backward about 30 feet causing damage to the nose section of the fuselage. Subsequent to the accident, the tug was placed on jacks and a check performed. During the check it was found that the normal engine shutoff switch would not shut the engine off if the engine was operated at high throttle settings. It was further discovered that at high throttle settings, the brake system was not able to stop the rotation of the drive wheels. No anomalies were found during this test that would explain the lurching described by the tug driver. The tug had been involved in a previous incident where an aircraft was damaged. A report of the previous incident showed that the tug lurched when the driver was attempting to move the tug into position to connect to the aircraft. The tug manufacturer does not have records of operational problems associated with that model tug. The manufacturer also said that they were not aware of a history of lurching problems concerning the model tug in question. It was found that the distance from the cab of the tug to the nose of a DC-9 aircraft when the tow bar is attached is 4 feet 2 inches.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The partial failure of the aircraft tug for undetermined reasons.

Findings

Occurrence #1: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: STANDING - ENGINE(S) NOT OPERATING

Findings

1. (C) AIRPORT EQUIPMENT, GROUND SUPPORT - FAILURE, PARTIAL
2. (C) REASON FOR OCCURRENCE UNDETERMINED

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	46
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane
Flight Time:	9174 hours (Total, all aircraft), 6759 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Douglas	Registration:	N9333
Model/Series:	DC-9-31	Engines:	2 Turbo Jet
Operator:	NORTHWEST AIRLINES INC	Engine Manufacturer:	Pratt & Whitney
Operating Certificate(s) Held:	Flag carrier (121)	Engine Model/Series:	JT8-9A
Flight Conducted Under:	Part 121: Air Carrier - Scheduled		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	MSP, 841 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	Broken / 8000 ft agl	Wind Speed/Gusts, Direction:	6 knots / , 80°
Temperature:	25 °C	Visibility	10 Miles
Precipitation and Obscuration:			
Departure Point:	MINNEAPOLIS, MN (MSP)	Destination:	PHILADELPHIA, PA (PHL)

Airport Information

Airport:	MINNEAPOLIS-ST PAUL INTL/WOLD-(MSP)	Runway Surface Type:	Unknown
Runway Used:		Runway Surface Condition:	Unknown
Runway Length/Width:			

Wreckage and Impact Information

Crew Injuries:	4 None	Aircraft Damage:	Substantial
Passenger Injuries:	38 None	Aircraft Fire:	None
Ground Injuries:	2 Minor	Aircraft Explosion:	None
Latitude, Longitude:			

Administrative Information

Investigator In Charge (IIC): John M Brannen

Adopted Date: 07/02/2002

Investigation Docket: NTSB accident and incident dockets 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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