
Ground collision between tug and Douglas DC-9-31, Minneapolis, May 1, 2001

Micro-summary: This Douglas DC-9-31 was damaged by an aircraft tug during passenger boarding.

Event Date: 2001-05-01 at 1437 CDT


Investigative Body: National Transportation Safety Board (NTSB), USA


Investigative Body's Web Site: <http://www.nts.gov/>


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 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: CHI01FA129		Aircraft Registration Number: N9333	
		Occurrence Date: 05/01/2001		Most Critical Injury: Minor	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Minneapolis		State MN	Zip Code 55111	Local Time 1437	Time Zone CDT
Airport Proximity: On Airport		Distance From Landing Facility: 0		Direction From Airport: 0	
Aircraft Information Summary					
Aircraft Manufacturer Douglas		Model/Series DC-9-31		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>On May 01, 2001, at 1437 central daylight time, a Douglas DC-9-31, N9333, operated by Northwest Airlines, Inc. as flight 682, was substantially damaged when it was struck by an aircraft tug during passenger boarding. The 14 CFR Part 121 flight was parked at gate D3 at the Minneapolis-St. Paul International/Wold-Chamberlain Airport, Minneapolis, Minnesota and was bound for the Philadelphia International Airport, Philadelphia, Pennsylvania. No injuries were reported by the 4 crewmembers or 38 passengers that had boarded the aircraft. The driver of the tug and a food service worker received minor injuries.</p> <p>The aircraft was parked and was being prepared for departure by various ground workers including the tug driver and workers restocking the aircraft food supply. The driver of the tug said that he 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. A food service worker was injured when he jumped from his vehicle which was parked next to the aircraft.</p> <p>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. Subsequent to the testing, the throttle system of the tug was replaced as a precautionary measure by the airline.</p> <p>During the course of the investigation, it was found that the tug had been involved in a previous incident where an aircraft was damaged. A report of the previous incident was obtained. The driver of the tug during the previous incident reported that the tug lurched when he was attempting to move the tug into position to connect to the aircraft.</p> <p>The manufacturer of the tug said, during a telephone interview, that they do not have records of operational problems associated with that model tug. He also stated that he was not aware of a history of lurching problems concerning the model tug in question.</p> <p>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.</p>					
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 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: CHI01FA129				
		Occurrence Date: 05/01/2001				
		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name		Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
MINNEAPOLIS-ST PAUL INTL/WOLD-		MSP	841 Ft. MSL			
Runway Surface Type: Unknown						
Runway Surface Condition: Unknown						
Type Instrument Approach: Unknown						
VFR Approach/Landing: Unknown						
Aircraft Information						
Aircraft Manufacturer		Model/Series		Serial Number		
Douglas		DC-9-31		47246		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Retractable - Tricycle						
Homebuilt Aircraft? No		Number of Seats: 105	Certified Max Gross Wt. 108000 LBS		Number of Engines: 2	
Engine Type:		Engine Manufacturer:		Model/Series:	Rated Power:	
Turbo Jet		Pratt & Whitney		JT8-9A	14000 LBS	
- Aircraft Inspection Information						
Type of Last Inspection		Date of Last Inspection	Time Since Last Inspection		Airframe Total Time	
AAIP			Hours		Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? No		ELT Operated?		ELT Aided in Locating Accident Site?		
Owner/Operator Information						
Registered Aircraft Owner		Street Address				
		5101 Northwest Dr.				
NORTHWEST AIRLINES INC		City		State	Zip Code	
		Saint Paul		MN	55111	
Operator of Aircraft		Street Address				
		Same as Reg'd Aircraft Owner				
Same as Reg'd Aircraft Owner		City		State	Zip Code	
Operator Does Business As:				Operator Designator Code: NWAA		
- Type of U.S. Certificate(s) Held:						
Air Carrier Operating Certificate(s): Flag Carrier/Domestic						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 121: Air Carrier						
Type of Flight Operation Conducted: Scheduled; Domestic; Passenger Only						
FACTUAL REPORT - AVIATION						

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: CHI01FA129
	Occurrence Date: 05/01/2001
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth	Age 46
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number:
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Certificate(s): Airline Transport; Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): Airplane Multi-engine; Airplane Single-engine; Instrument Airplane

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review? 09/2000
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Medical Cert.: Class 1	Medical Cert. Status: Unknown	Date of Last Medical Exam:
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	9174	6759								
Pilot In Command(PIC)										
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? No	Shoulder Harness Used? No	Toxicology Performed? No	Second Pilot? Yes
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Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

Departure Point	State	Airport Identifier	Departure Time	Time Zone
MINNEAPOLIS	MN	MSP		
Destination	State	Airport Identifier		
PHILADELPHIA	PA	PHL		


Type of Clearance: None

Type of Airspace: Unknown

Weather Information

Source of Briefing: Unknown

Method of Briefing: Unknown

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
MSP	1445	CDT	841 Ft. MSL	0 NM	0 Deg. Mag.

Sky/Lowest Cloud Condition: Scattered	2500 Ft. AGL	Condition of Light: Day
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Lowest Ceiling: Broken	8000 Ft. AGL	Visibility: 10 SM	Altimeter: 30.15 "Hg
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Temperature: 25 °C	Dew Point: 10 °C	Wind Direction: 80	Density Altitude: Ft.
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Wind Speed: 6	Gusts:	Weather Conditions at Accident Site: Visual Conditions
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Visibility (RVR): Ft.	Visibility (RVV) SM	Intensity of Precipitation:
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Restrictions to Visibility: None


Type of Precipitation: None

Accident Information

Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None
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Classification: U.S. Registered/U.S. Soil

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot				1	1
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants				2	2
Other Crew					
Passengers				38	38
- TOTAL ABOARD -				42	42
Other Ground			2		2
- GRAND TOTAL -			2	42	44

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Administrative Information

Investigator-In-Charge (IIC)
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Additional Persons Participating in This Accident/Incident Investigation:

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