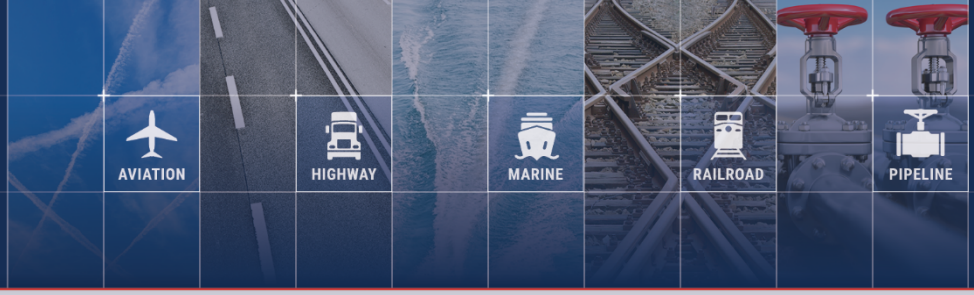

Aviation Investigation Final Report

Location:	Memphis, Tennessee	**Accident Number:**	ATL01LA041
Date & Time:	March 23, 2001, Local	**Registration:**	N275US
Aircraft:	Boeing 727-200	**Aircraft Damage:**	None
Defining Event:		**Injuries:**	1 Serious, 127 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

According to the Airlines Safety Official, a wing walker was removing a stuck wheel chock from the right main landing gear during a power-back from the gate. The wing walker was blown over by the jet blast after the chock was removed. The wing walker received serious injuries. The Airline's Standard Practice Manual states, the Marshal is responsible for ensuring wing walkers are in proper position before giving the all clear signal. The flight was cancelled, and the passengers were deplaned.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The Powerback Coordinator's failure to follow powerback procedures which resulted in jet blast injuries to the wing walker. A factor was the stuck wheel chock.

Findings

Occurrence #1: PROPELLER BLAST OR JET EXHAUST/SUCTION
Phase of Operation: TAXI - PUSHBACK/TOW

Findings

1. (C) MISC EQPT/FURNISHINGS,WHEEL CHOCKS - JAMMED
2. (C) PROCEDURES/DIRECTIVES - NOT FOLLOWED - GROUND PERSONNEL

Factual Information

About 2100 central standard time, on March 23, 2001, a Boeing 727-200, N275US, operated by Northwest Airlines, as Flight 934, blew over a ramp employee during a power back from the terminal gate at Memphis Tennessee International Airport in Memphis, Tennessee. Flight 934 was operated under the provisions of Title 14 CFR Part 121, as a scheduled, domestic passenger flight from Memphis, Tennessee, to Miami. The flight was scheduled to depart the Memphis Tennessee International Airport at approximately 2100. There were three crewmembers and 124 revenue passengers on board Flight 934. No injuries were reported by the flight crew or the passengers. The wing walker received serious injuries. Visual metrological conditions prevailed at the time of the accident. The flight was operated on an instrument flight plan.

According to the Northwest Airlines Safety Official, a wing walker was removing a stuck wheel chock from the right main landing gear during a power-back from the gate. The wing walker was blown over by the jet blast after the chock was removed. The wing walker received serious injuries. The flight was cancelled, and the passengers were deplaned.

According to the flight crew, they were given the signal for engine start. After completing the taxi check, the flight crew signaled they were ready for powerback. The flight crew then stated, the coordinator signal for them to come forward. The captain moved the airplane forward by applying forward thrust. The Powerback/Coordinator then gave the flight crew the signal to stop. After a slight delay, the Powerback Coordinator then gave the powerback signal. The captain moved the throttles into reverse thrust, moving back for a very short distance. The Powerback Coordinator then gave the crew the stop signal.

According to the Powerback Coordinator, there was a stuck wheel chock under the right main inner landing gear on the aft side. He gave the signal for the airplane to move forward so that the wing walker could remove the chock. After the airplane moved forward, he then gave the signal to stop. The wing walker unchocked the airplane, and proceeded to position himself for powerback. The wing walker was then blown to the ground behind the left main gear. The Powerback Coordinator stated that due to darkness he could not see the wing walker behind the gear. The Powerback Coordinator stated that the airplane started to move backwards, and he gave the crew the emergency stop signal.

According to the wing walker, the airplane had settled back on the right main landing gear chock. He advised the marshaller that he would remove the chock when the airplane was moved forward. As the airplane was moved forward, the wing walker removed the chock and disposed of it to the right. He walked back under the airplane to the left wing. As he was exiting the left side, he heard the thrust reversers deploy and was knocked down by the reverse thrust.

The wing walker stated that he was in no position to see the Powerback Coordinators signals.

The Northwest Airlines Standard Practice Manual states, Powerback Coordinator (Marshal)-(Provides signals to the Captain) "Item A.1a. The Marshal is responsible for ensuring Wing Walkers are in proper position before giving the all clear signal. Never signal the flight deck crew to move the aircraft until the Wing Walker is in position and ready".

Pilot Information

Certificate:	Airline transport	**Age:**	34,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 Unknown	**Last FAA Medical Exam:**	December 18, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	January 3, 2001
Flight Time:	5360 hours (Total, all aircraft), 1846 hours (Total, this make and model), 85 hours (Last 90 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport	**Age:**	34,Male
Airplane Rating(s):	Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	June 13, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	August 15, 2000
Flight Time:	2685 hours (Total, all aircraft), 2685 hours (Total, this make and model), 175 hours (Last 90 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

Flight engineer Information

Certificate:	Airline transport; Flight engineer	**Age:**	33,Male
Airplane Rating(s):	None	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Unknown Unknown	**Last FAA Medical Exam:**	
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	March 13, 2000
Flight Time:	1558 hours (Total, all aircraft), 1558 hours (Total, this make and model), 0 hours (Pilot In Command, all aircraft), 85 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	**Registration:**	N275US
Model/Series:	727-200	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Transport	**Serial Number:**	21154
Landing Gear Type:	Retractable - Tricycle	**Seats:**	150
Date/Type of Last Inspection:	Continuous airworthiness	**Certified Max Gross Wt.:**	176500 lbs
Time Since Last Inspection:		**Engines:**	3 Turbo jet
Airframe Total Time:		**Engine Manufacturer:**	P&W
ELT:	Installed, not activated	**Engine Model/Series:**	JT8D-7BH
Registered Owner:	NORTHWEST AIRLINES INC	**Rated Power:**	15500 Lbs thrust
Operator:		**Operating Certificate(s) Held:**	Flag carrier (121)
Operator Does Business As:	Northwest Airlines	**Operator Designator Code:**	MR5D

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	MEM,341 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	20:53 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Scattered / 2500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	150°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.02 inches Hg	**Temperature/Dew Point:**	22°C / 5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Memphis , TN (MEM)	**Type of Flight Plan Filed:**	IFR
Destination:	Miami , FL (MIA)	**Type of Clearance:**	IFR
Departure Time:	21:00 Local	**Type of Airspace:**	Class B

Airport Information

Airport:	Memphis International Airport MEM	**Runway Surface Type:**	
Airport Elevation:	335 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:	0	**IFR Approach:**	Unknown
Runway Length/Width:	0 ft / 0 ft	**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	3 None	**Aircraft Damage:**	None
Passenger Injuries:	124 None	**Aircraft Fire:**	None
Ground Injuries:	1 Serious	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 127 None	**Latitude, Longitude:**	35.029785,-90.01004(est)

Administrative Information

Investigator In Charge (IIC):	Powell, Phillip
Additional Participating Persons:	Howard Hawkins; Memphis FSDO; Memphis, TN
Original Publish Date:	August 21, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52002