



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	NEWARK, NJ	<b>Accident Number:</b>	NYC00LA086
<b>Date &amp; Time:</b>	03/01/2000, 0347 EST	<b>Registration:</b>	N302FE
<b>Aircraft:</b>	McDonnell Douglas DC-10-30F	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 121: Air Carrier - Non-scheduled		

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## Analysis

The airplane was taxiing to the runway for departure when the APU door light illuminated. The airplane returned to the loading dock, the engines were shut down, and the APU door was closed and secured. The airplane's engines were then restarted, and the airplane began another pushback. One maintenance technician was wearing a headset, and was located off the right side of the airplane. Another technician was driving the tug. After receiving clearance to push, the tug driver made a gradual turn to avoid equipment and minimize jet blast to other gates. Halfway down the ramp, the airplane contacted the loading dock, and suffered an 8-foot gash along the left side, below the cockpit area. The tug operator stated that the tug's drive mechanism was sticking in a '2-wheel,' or 'crab' mode. Post-accident investigation of the tug revealed no discrepancies, although other technicians subsequently complained of the same intermittent problem. Components were removed for testing, with no anomalies found. However, once those components were replaced, there were no additional problems with the tug. A representative from the tug's manufacturer stated that regardless of system status, the operator would always have had front wheel steering and braking.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The tug operator's inadequate visual lookout.

## Findings

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

### Findings

1. (C) VISUAL LOOKOUT - INADEQUATE - DRIVER OF VEHICLE

## Factual Information

On March 1, 2000, at 0347 Eastern Standard Time, a McDonnell Douglas DC-10-30F, N302FE, operated by Federal Express, was substantially damaged during pushback at Newark International Airport (EWR), Newark, New Jersey. On the airplane, the captain, first officer, flight engineer and two couriers were uninjured. On the ground, three maintenance technicians were also uninjured. Visual meteorological conditions prevailed at the time of the accident. An instrument flight rules flight plan had been filed for the cargo flight, between Newark and Memphis International Airport (MEM), Memphis, Tennessee. The flight was to be conducted under 14 CFR Part 121.

According to a Federal Aviation Administration (FAA) Inspector, the airplane was taxiing to the runway for departure when the APU door light illuminated. The airplane returned to the loading dock, the engines were shut down, the APU door was closed, and the APU was secured. The airplane's engines were then restarted at the dock, and the airplane began another pushback. During that pushback, it contacted the loading dock, and suffered an 8-foot gash along the left side, below the cockpit area.

According to a company safety analyst, for the pushback, one of the maintenance technicians was "on a headset," next to the right side of the airplane. Another technician was acting as a "wing walker," aft of the airplane, and a third technician was driving the tug. The "headset man" stated that the crew gave permission to push back. Halfway through the pushback, the captain told him to stop because he thought the airplane had contacted the loading dock. The headset man walked to the left side of the airplane and then saw the gash.

The tug operator stated that he was using a different tug than the one used during the first pushback. The tug had a "2-wheel working fault" indication. After receiving clearance to push, the tug operator "made a gradual turn to avoid equipment and minimize jet blast to other gates. Halfway down the ramp, [I] received [a] stop signal."

The safety analyst further stated that, originally, the tug operator had insisted that there were problems with "the tug's drive mechanism sticking in 2-wheel mode or the crab mode." Post-accident investigation of the tug revealed no anomalies, although other mechanics subsequently complained about the same intermittent problem. Components were removed for testing, with no anomalies found; however, once those components were replaced, there were no additional problems with the tug.

A representative from the tug's manufacturer stated that "regardless of...system status, the operator will always have control of the front wheel steering and braking."

## Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	55, Male
<b>Airplane Rating(s):</b>	Multi-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	12/14/1999
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	6842 hours (Total, all aircraft), 4745 hours (Total, this make and model), 1572 hours (Pilot In Command, all aircraft), 110 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	McDonnell Douglas	<b>Registration:</b>	N302FE
<b>Model/Series:</b>	DC-10-30F DC-10-30F	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	46801
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	7
<b>Date/Type of Last Inspection:</b>	03/01/2000, Continuous Airworthiness	<b>Certified Max Gross Wt.:</b>	565000 lbs
<b>Time Since Last Inspection:</b>	1 Hours	<b>Engines:</b>	3 Turbo Fan
<b>Airframe Total Time:</b>	64258 Hours	<b>Engine Manufacturer:</b>	GE
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	CF6-502C
<b>Registered Owner:</b>	FEDERAL EXPRESS CORP	<b>Rated Power:</b>	52000 lbs
<b>Operator:</b>	FEDERAL EXPRESS CORP	<b>Operating Certificate(s) Held:</b>	Air Cargo
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	FDEA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	EWR, 18 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0351 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	50°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	3°C / -3°C
Precipitation and Obscuration:			
Departure Point:	(EWR)	Type of Flight Plan Filed:	IFR
Destination:	MEMPHIS, TN (MEM)	Type of Clearance:	
Departure Time:	0000	Type of Airspace:	

## Airport Information

Airport:	NEWARK INTL AIRPORT (EWR)	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

## Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	PAUL R COX	Report Date:	11/29/2000
Additional Participating Persons:	DOMINICK DELEO; TETERBORO, NJ,		
Publish Date:			
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).