



Aviation Investigation Final Report

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|--------------------------------|---------------------------------------|-------------------------|-------------|
| Location: | DENVER, Colorado | Accident Number: | DEN99LA027 |
| Date & Time: | December 21, 1998, 22:15 Local | Registration: | N269FE |
| Aircraft: | Boeing 727-233 | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 3 None |
| Flight Conducted Under: | Part 121: Air carrier - Non-scheduled | | |

Analysis

A tug was pushing the aircraft back from the gate when the wheels of the airplane got stuck in snow. The tow bar shear pin, designed to break under excessive loads, snapped in half. The tug struck the airplane, breaking its windshield and causing damage to the aircraft's radome and forward pressure bulkhead. Airport operations personnel are responsible for the removal of snow. According to a ramp manager from the Federal Express Corporation, the snow bank in which the aircraft became mired was 12-16 inches from both the ramp and service road. He stated that the snow should have been plowed but allowed to accrue in that location.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Snow removal not done by other person.

Findings

Occurrence #1: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: TAXI - PUSHBACK/TOW

Findings

1. TERRAIN CONDITION - SNOWBANK
2. (C) AIRPORT SNOW REMOVAL - NOT ATTAINED - OTHER PERSON
3. LIGHT CONDITION - DARK NIGHT

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: TAXI - PUSHBACK/TOW

Findings

4. OBJECT - VEHICLE

Factual Information

On December 21, 1998, at 2215 mountain standard time, a Boeing 727-233, N269FE, operated by Federal Express Corporation as flight 1004, was substantially damaged after being struck by a tug during push back at Denver International Airport, Denver, Colorado. The airline transport rated captain, first officer and flight engineer were not injured. The aircraft was being operated as a domestic cargo flight under Title 14 CFR Part 121, and visual meteorological conditions prevailed. An IFR flight plan was filed for the flight to Los Angeles International Airport, Los Angeles, California.

According to a Federal Express Corporation representative, a tug was pushing the aircraft back from the gate when the wheels of the airplane got stuck in a snow bank. The tow bar shear pin, designed to break under excessive loads, snapped in half. The tug struck the airplane, breaking its windshield and causing damage to the aircraft's radome and forward pressure bulkhead.

Denver International Airport operations personnel are responsible for the removal of snow. According to a ramp manager from the Federal Express Corporation, the snow bank in which the aircraft became mired was 12-16 inches from both the ramp and service road. He stated that the snow should have been plowed but not allowed to accrue in that location.

Pilot Information

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|----------------------------------|--|--|-------------------|
| Certificate: | Airline transport | Age: | 40, Male |
| Airplane Rating(s): | Multi-engine land | Seat Occupied: | Left |
| 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: | November 17, 1998 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | |
| Flight Time: | 4806 hours (Total, all aircraft), 4806 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 33 hours (Last 30 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|---|---------------------------------------|--------------------|
| Aircraft Make: | Boeing | Registration: | N269FE |
| Model/Series: | 727-233 727-233 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Transport | Serial Number: | 21675 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 5 |
| Date/Type of Last Inspection: | December 18, 1998 Continuous airworthiness | Certified Max Gross Wt.: | 19700 lbs |
| Time Since Last Inspection: | 6 Hrs | Engines: | 3 Turbo fan |
| Airframe Total Time: | 40578 Hrs | Engine Manufacturer: | P&W |
| ELT: | | Engine Model/Series: | JT8D-15AQM |
| Registered Owner: | WILMINGTON TRUST CO. | Rated Power: | |
| Operator: | FEDERAL EXPRESS CORPORATION | Operating Certificate(s) Held: | Flag carrier (121) |
| Operator Does Business As: | | Operator Designator Code: | FDEA |

Meteorological Information and Flight Plan

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|---|----------------------------------|---|---------------|
| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Night/dark |
| Observation Facility, Elevation: | DEN ,5431 ft msl | Distance from Accident Site: | |
| Observation Time: | 23:53 Local | Direction from Accident Site: | |
| Lowest Cloud Condition: | Scattered / 8000 ft AGL | Visibility | 10 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 8 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 100° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 30 inches Hg | Temperature/Dew Point: | -24°C / -18°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | | Type of Flight Plan Filed: | IFR |
| Destination: | LOS ANGELES , CA (LAX) | Type of Clearance: | IFR |
| Departure Time: | 00:00 Local | Type of Airspace: | Class B |

Airport Information

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|-----------------------------|--------------------------|----------------------------------|--|
| Airport: | DENVER INTERNATIONAL DEN | Runway Surface Type: | |
| Airport Elevation: | | Runway Surface Condition: | |
| Runway Used: | 0 | IFR Approach: | |
| Runway Length/Width: | | VFR Approach/Landing: | |

Wreckage and Impact Information

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|----------------------------|--------|-----------------------------|----------------------------|
| Crew Injuries: | 3 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 3 None | Latitude, Longitude: | 39.850994,-104.700347(est) |

Administrative Information

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| Investigator In Charge (IIC): | Scott, B. beach |
| Additional Participating Persons: | JEFF GRAVES; DENVER , CO |
| Original Publish Date: | September 23, 1999 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | |
| Investigation Docket: | https://data.ntsb.gov/Docket?ProjectID=45546 |

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).