



National Transportation Safety Board Aviation Incident Final Report

| | | | |
|-------------------------|----------------------|-------------------------|------------|
| Location: | DENVER, CO | Incident Number: | FTW971A112 |
| Date & Time: | 03/01/1997, 2012 MST | Registration: | N902AW |
| Aircraft: | Boeing 757-2S7 | Aircraft Damage: | Minor |
| Defining Event: | | Injuries: | 101 None |

Flight Conducted Under: Part 121: Air Carrier - Scheduled

Analysis

The airplane landed on runway 07, and the crew was instructed to contact ramp control. Ramp control, manned by airport personnel (not ATC personnel) instructed the crew to taxi east on taxiway AS to gate A44. The airplane was taxied underneath a pedestrian bridge/overpass (bridge). The airplane's vertical stabilizer struck the bridge. According to the company's procedures/directives, aircraft larger than the Airbus A320 were not to be taxied beneath the bridge, and the crew had been so advised via dispatch papers. In addition, a cautionary note in the airport taxi chart advised that the bridge provided for 40 foot tail and 117 foot wing clearance.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: the pilot-in-command's failure to comply with company procedures/directives to not taxi the aircraft beneath the bridge/overpass, and his misjudgment of clearance between the vertical stabilizer and the bridge/overpass.

Findings

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

Findings

1. (C) PROCEDURES/DIRECTIVES - NOT FOLLOWED - PILOT IN COMMAND
2. OBJECT - BRIDGE/OVERPASS
3. (C) CLEARANCE - MISJUDGED - PILOT IN COMMAND

Factual Information

On March 1, 1997, at 2012 mountain standard time, a Boeing 757-2S7, N902AW, owned by Meridian Trust Company of Reading, Pennsylvania, and operated by America West Airlines, Inc., of Phoenix, Arizona, sustained minor damage when it struck an overhead bridge while taxiing at Denver, Colorado, International Airport. There were no injuries to the two cockpit crew members, 4 cabin crew members, and 95 passengers. Visual meteorological conditions prevailed, and an IFR flight plan had been filed. The airplane was being operated as Flight 491, scheduled domestic passenger service, under Title 14 CFR Part 121. The flight originated at Phoenix, Arizona, at 1819 Pacific standard time.

According to the transcript of control tower communications, the airplane landed on runway 07. At 1952:49, as its landing roll was slowing, the crew was instructed to "turn left at (taxiway) bravo four" and to remain on the tower frequency until entering taxiway "alpha sierra, then contact ramp tower contact ramp control." The crew acknowledged. At 1953:08 the tower controller asked, "You don't normally fly a (Boeing) seven five (seven) in here, do you?" The crew did not answer, and there were no further transmissions between Denver control tower and flight 491.

There was a recording equipment malfunction in the B concourse control tower. As a result, only transmissions from the controller were recorded. According to the transcript, the controller instructed "Cactus 491, (taxi via) alpha sierra to the gate (A-44), sir. Be advised that we've got men in vehicles that are working in that area. They should give way to you but if you have any problems with that commute, give me a call back." The B concourse control tower is manned by airport personnel, not FAA air traffic control (ATC) personnel. According to the assistant deputy manager of aviation, most of the personnel are former military or civilian ATC personnel and have been thoroughly trained in ground operations.

To get to gate A-44 via taxiway alpha sierra, the airplane had to pass beneath an overhead bridge connecting the main terminal building and "A" concourse. As the airplane passed beneath the bridge, its vertical stabilizer struck the bridge, crushing the vertical stabilizer cap and rudder.

The following note appears on the Jeppesen taxi chart: "CAUTION: OVERHEAD PASSENGER BRIDGE ON SOUTH SIDE OF CONCOURSE A PROVIDES 40' TAIL AND 117' WINGSPAN CLEARANCE WHEN ON TAXIWAY CENTERLINES." The following America West NOTAM (Notice to Airmen) was contained in the dispatch release and was given to the flight crew: "757 AIRCRAFT EFFECTIVE 1 MARCH, DO NOT TAXI UNDER THE PASSENGER BRIDGE SOUTH SIDE OF CONCOURSE A."

According to the captain's statement, "it appeared that there was more than adequate clearance for the tail of the aircraft, but I became more concerned with the wingtip clearance from the side support of the bridge rather than the tail clearance."

In his statement the controller on duty in the B concourse control tower wrote, "All I could see was the aircraft's lights and told the aircraft to taxi alpha sierra. I was not expecting a (Boeing) 757 on this flight and did not see the aircraft was a 757."

According to an America West spokesman, this was the first time the airline had used the Boeing 757 on this particular route. They had previously used the Airbus 320. There is adequate clearance for the Airbus 320, but not the Boeing 757, to pass beneath the overhead

bridge.

Pilot Information

| | | | |
|----------------------------------|---|--|----------------------------|
| Certificate: | Airline Transport; Commercial | Age: | 56, Male |
| Airplane Rating(s): | Multi-engine Land; Single-engine Land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | Seatbelt, Shoulder harness |
| Instrument Rating(s): | Airplane | Second Pilot Present: | Yes |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 1 Valid Medical--w/ waivers/lim. | Last FAA Medical Exam: | |
| Occupational Pilot: | | Last Flight Review or Equivalent: | |
| Flight Time: | 17500 hours (Total, all aircraft), 2500 hours (Total, this make and model), 15000 hours (Pilot In Command, all aircraft), 130 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

| | | | |
|--------------------------------------|--------------------------------------|---------------------------------------|--------------------|
| Aircraft Make: | Boeing | Registration: | N902AW |
| Model/Series: | 757-2S7 757-2S7 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | No |
| Airworthiness Certificate: | Transport | Serial Number: | 23322 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 200 |
| Date/Type of Last Inspection: | 03/01/1997, Continuous Airworthiness | Certified Max Gross Wt.: | 240000 lbs |
| Time Since Last Inspection: | 5 Hours | Engines: | 2 Turbo Fan |
| Airframe Total Time: | 45376 Hours | Engine Manufacturer: | Rolls-Royce |
| ELT: | Not installed | Engine Model/Series: | RB 211-535E4 |
| Registered Owner: | MERIDIAN TRUST COMPANY | Rated Power: | 40000 lbs |
| Operator: | AMERICA WEST AIRLINES | Operating Certificate(s) Held: | Flag carrier (121) |
| Operator Does Business As: | | Operator Designator Code: | AWXA |

Meteorological Information and Flight Plan

| | | | |
|----------------------------------|--------------------------|---|------------------|
| Conditions at Accident Site: | Visual Conditions | Condition of Light: | Night/Dark |
| Observation Facility, Elevation: | DEN, 5431 ft msl | Distance from Accident Site: | 0 Nautical Miles |
| Observation Time: | 1953 MST | Direction from Accident Site: | 0° |
| Lowest Cloud Condition: | Scattered / 25000 ft agl | Visibility | 10 Miles |
| Lowest Ceiling: | None / 0 ft agl | Visibility (RVR): | 0 ft |
| Wind Speed/Gusts: | 5 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 160° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29 inches Hg | Temperature/Dew Point: | -1° C / -7° C |
| Precipitation and Obscuration: | | | |
| Departure Point: | PHOENIX, AZ (PHX) | Type of Flight Plan Filed: | IFR |
| Destination: | (DEN) | Type of Clearance: | IFR |
| Departure Time: | 1819 MST | Type of Airspace: | |

Airport Information

| | | | |
|----------------------|----------------------------|---------------------------|--|
| Airport: | DENVER INTERNATIONAL (DEN) | Runway Surface Type: | |
| Airport Elevation: | 5431 ft | Runway Surface Condition: | |
| Runway Used: | 0 | IFR Approach: | |
| Runway Length/Width: | | VFR Approach/Landing: | |

Wreckage and Impact Information

| | | | |
|---------------------|----------|----------------------|-------|
| Crew Injuries: | 6 None | Aircraft Damage: | Minor |
| Passenger Injuries: | 95 None | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 101 None | Latitude, Longitude: | |

Administrative Information

| | | | |
|-----------------------------------|--|--------------|------------|
| Investigator In Charge (IIC): | ARNOLD W SCOTT | Report Date: | 06/26/1998 |
| Additional Participating Persons: | RAYMOND TOWLES; DENVER, CO | | |
| 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 pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ . | | |

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](#).