



National Transportation Safety Board Aviation Accident Final Report

Location:	ORLANDO, FL	Accident Number:	MIA94LA166
Date & Time:	06/24/1994, 0804 EDT	Registration:	N495UE
Aircraft:	BRITISH AEROSPACE BAE 3201	Aircraft Damage:	Substantial
Defining Event:		Injuries:	16 None

Flight Conducted Under: Part 135: Air Taxi & Commuter - Scheduled

Analysis

THE CAPTAIN STATED THAT HE APPLIED THE PARKING BRAKE DURING THE SHUTDOWN CHECKLIST BUT THE AIRPLANE ROLLED FORWARD. THE LEFT ENGINE PROPELLER CONTACTED A GROUND POWER UNIT (GPU) THAT WAS CORRECTLY PREPOSITIONED AT THE GATE. THE CVR WAS READOUT WHICH REVEALED THAT THE CAPTAIN DID STATE THAT THE PARKING BRAKE WAS SET BUT AFTER THE GPU CONTACT, THE CAPTAIN STATED THAT THE BRAKE IS SET TO WHICH THE FIRST OFFICER (F/O) RESPONDED 'I JUST SET IT.' THE F/O FURTHER STATED 'RELEASED IT WHEN YOU...' AFTER THE ACCIDENT A TUG AND TOW BAR WERE ATTACHED TO THE NOSE LANDING GEAR OF THE AIRPLANE AND THE PARKING BRAKE WAS APPLIED. ATTEMPTS TO MOVE THE AIRPLANE WERE UNSUCCESSFUL. THE PARKING BRAKE ASSEMBLY WAS REMOVED FOR EXAMINATION WHICH REVEALED NO EVIDENCE OF MECHANICAL FAILURE OR MALFUNCTION. IT WAS NOTED THAT THE SECOND NOTCH FROM THE BOTTOM WAS WORN. THE MAINTENANCE MANUAL STATES THAT BEYOND THREE NOTCHES THE HANDLE SHOULD PULL TIGHT. POST ACCIDENT INSPECTION OF THE PARKING BRAKE REVEALED NO EVIDENCE OF FAILURE OR MALFUNCTION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: INADVERTENT DEACTIVATION OF THE PARKING BRAKE BY THE PILOT-IN-COMMAND. CONTRIBUTING TO THE ACCIDENT WAS THE WORN CONDITION OF THE PARKING BRAKE ASSEMBLY.

Findings

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

Findings

1. (F) LANDING GEAR,PARKING BRAKE - WORN
2. (C) PARKING BRAKES - INADVERTENT DEACTIVATION - PILOT IN COMMAND

Factual Information

On June 24, 1994, about 0804 eastern daylight time, a British Aerospace BAE Jetstream 3201, N495UE, registered to First Security Bank of Utah, operated by Atlantic Coast Airlines (ACA) dba United Express, collided with a ground power unit while arriving at the gate after landing at the Orlando International Airport, Orlando, Florida. The flight was operating under 14 CFR Part 135 as flight 5500, a scheduled, domestic, passenger flight. Visual meteorological conditions prevailed at the time and an IFR flight plan had been filed. The airplane was substantially damaged and the airline transport-rated pilot, first officer, and 14 passengers were not injured. The flight originated from the Jacksonville Municipal Airport, Jacksonville, Florida, about 0710.

The captain stated that after stopping the airplane at the parking spot at the gate, he advised the first officer that "Cool down's complete, parking brake is set." When the engine instruments indicated that the engines were at 50 percent rpm, the power levers were moved to the full reverse position during which the left propeller contacted the ground power unit (GPU) that was prepositioned at the gate. The passengers were later deplaned and the airplane was secured. The cockpit voice recorder (CVR) was removed and sent to the NTSB laboratory in Washington, DC.

The CVR was read out at the NTSB laboratory in Washington, DC. Review of the transcript revealed that the captain did call out over the interphone system, "cool down's complete-brake's set." About 1 minute 5 seconds after the propeller contacted the GPU, the captain was heard stating "the brake is set." About 1 second later the first officer responded by saying "I just set it." About 4 seconds later the first officer stated "released it when you..."

The maintenance manual for the airplane states that testing of the parking brake is accomplished by verifying that the airplane remains stationary with both engines operating to full power with the handbrake fully applied. Damage to the left engine propeller precluded performing this test; however, a tow bar and tug were attached to the nose landing gear of the airplane and with the parking brake handle engaged, attempts to move the airplane were unsuccessful. Additionally, the parking/emergency system was inspected according to the maintenance manual with no discrepancies noted. The parking/emergency system is described as incorporating a brake lever mounted on the left side of the center console. The brake lever is horn shaped with a notched pull-on shaft, the notches locating the shaft at selected pull-on brake settings. A trigger release serves to release the handle and also retain the shaft in the required setting. The handbrake shaft is painted orange on the top and sides to provide a warning indication that the handbrake is on. A spring assists in returning the shaft to the off position.

Immediately following the operational test of the parking brake it was discovered by the Regional Flight Manager of ACA and the FAA inspector that the handbrake could be disengaged by movement of only the handbrake shaft. The handbrake assembly was removed from the airplane for examination.

Examination of the handbrake housing assembly revealed evidence that the second notch from the bottom of the handbrake housing was slightly worn. There were no other discrepancies noted. The painted orange stripe was visible. Review of the maintenance manual regarding adjustment of the handbrake cable revealed that the handle should be pulled out three notches and beyond this point the handle should pull solid.

According to the airplane manufacturer, there have not been any reported problems associated with inadvertent release of the handbrake assembly. Review of the FAA Service Difficulty Reports data base revealed no records regarding the handbrake assembly used on Jetstream 3201 aircraft. Review of the maintenance completion report records for the accident airplane from January 1, 1994, to the date of the accident revealed no discrepancies regarding the parking brake system.

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	32, 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):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	03/04/1994
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	4192 hours (Total, all aircraft), 3182 hours (Total, this make and model), 2760 hours (Pilot In Command, all aircraft), 231 hours (Last 90 days, all aircraft), 77 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BRITISH AEROSPACE	Registration:	N495UE
Model/Series:	BAE 3201 BAE 3201	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	818
Landing Gear Type:	Retractable - Tricycle	Seats:	21
Date/Type of Last Inspection:	06/21/1994, AAIP	Certified Max Gross Wt.:	16314 lbs
Time Since Last Inspection:	14 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	6623 Hours	Engine Manufacturer:	GARRETT
ELT:	Installed, not activated	Engine Model/Series:	TPE331-12UAR
Registered Owner:	FIRST SECURITIES BANK OF UTAH	Rated Power:	1050 hp
Operator:	ATLANTIC COAST AIRLINES	Air Carrier Operating Certificate:	Commuter Air Carrier (135)
Operator Does Business As:	UNITED EXPRESS	Operator Designator Code:	VTZA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	MCO, 96 ft msl	Observation Time:	0752 EDT
Distance from Accident Site:	1 Nautical Miles	Direction from Accident Site:	360°
Lowest Cloud Condition:	Scattered / 14000 ft agl	Temperature/Dew Point:	26° C / 26° C
Lowest Ceiling:	Broken / 25000 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	7 knots, 200°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	JACKSONVILLE, FL (JAX)	Type of Flight Plan Filed:	IFR
Destination:		Type of Clearance:	None
Departure Time:	0710 EDT	Type of Airspace:	Class D

Airport Information

Airport:	ORLANDO INTERNATIONAL (MCO)	Runway Surface Type:	
Airport Elevation:	96 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	14 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	16 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	TIMOTHY W MONVILLE	Adopted Date:	01/12/1995
Additional Participating Persons:	WILLIAM C HAMILTON; ORLANDO, FL GREG MCLYCHOK DAVID N ANDERSON; ORLANDO, FL		
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/ .		

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