



Aviation Investigation Final Report

Location:	ASHEVELLE, North Carolina	Accident Number:	MIA01LA030
Date & Time:	November 20, 2000, 16:00 Local	Registration:	N630AS
Aircraft:	Aerospatiale ATR-72-212	Aircraft Damage:	None
Defining Event:		Injuries:	1 Serious, 39 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

At 10,000 feet msl, while maneuvering for landing, the flight encountered an area of moderate turbulence. The seat belt sign was 'ON' and the flight attendants were performing pre-landing duties. One of the flight attendants broke a bone during the turbulence event. The captain was not informed about the injured flight attendant until he walked to the back of the aircraft after arriving at the gate. According to the injured flight attendant (F/A-A), she was briefed '...only [that it]...would be a little rough getting out of Atlanta, but once we got up everything would be ok...no warning from the cockpit at all of rough air/turbulence' Both flight attendants were knocked to the floor to a sitting position, and both said the turbulence didn't stop. The injured flight attendant said, 'I...was knocked to the floor over and over...up into the service door and the passenger door; my head hit the steps and ended up on the floor flat down...I stayed on the floor...no bells were given when the aircraft was descending...the only 4 bells I heard was at landing time. Also no announcements from [the] cockpit was made when descending through 10,000 feet to the passengers because we were in 0.75 moderate turbulence at the time.' SIGMET [significant metrological] November 2, and AIRMET (Airmen Meteorological Information Network) Tango update 3, calling for a large area of moderate turbulence below 12,000 feet, were current and applicable to the flight's descent into Asheville. The company verified that both the SIGMET and AIRMET were part of the captain's weather briefing, and he had them both in his possession before departure.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the flight encountered forecasted turbulence, which resulted in serious injury to a flight attendant. Factors in this accident were; the captain's inadequate briefing to the cabin crew; and the insufficient information about the known turbulence that would be encountered during

descent.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: DESCENT - NORMAL

Findings

1. (F) CREW/GROUP BRIEFING - INADEQUATE - PILOT IN COMMAND
2. (F) INFORMATION INSUFFICIENT - PILOT IN COMMAND
3. (C) WEATHER CONDITION - MOUNTAIN WAVE

Factual Information

On November 20, 2000, about 1600 eastern standard time, an Aerospatiale ATR-72-212, N630AS, operated by Atlantic Southeast Airlines (ASA) Inc., flight CAA4276, operating as a regularly scheduled domestic air carrier flight, had an in flight encounter with turbulence. Visual meteorological conditions prevailed at the time, and an IFR flight plan was filed for the 14 CFR Part 121 flight. The airplane was not damaged. The airline transport-rated pilot/captain, commercial-rated first officer (FO) pilot, 1 flight attendant and 36 passengers reported no injuries. One flight attendant reported serious injuries. The flight departed from Atlanta, Georgia, at 1500.

At an altitude of 10,000 feet msl, while maneuvering for landing, the flight encountered an area of moderate turbulence. The seat belt sign was "ON" and the flight attendants were performing pre-landing duties. One of the flight attendants broke a bone during the turbulence event. The captain stated, "...I was not informed about [the] injury sustained to flight attendant...until I walked to the back of the aircraft after arriving at the gate." There was a SIGMET [significant meteorological], and an AIRMET (Airmen Meteorological Information Network) calling for a large area of moderate turbulence below 12,000 feet, and according to the company the captain was in possession of these reports.

According to the injured flight attendant's (F/A-A) written report, "...my original Captain informed me that crew scheduling was putting him on another flight and we would be getting a reserve captain instead. Everything at the time was very rushed... F/A-B was not briefed at all [by the captain] about how the...flight will go. I [F/A-A] was briefed 'only' we would be a little rough getting out of Atlanta, but once we got up everything would be ok...bound for Ashville, NC, [about] 3/4 of the way through the smooth flight...[F/A-B] was close to row 8abcd...to ask the passenger to fasten her seat belt... F/A-A was near the service door in the galley area...no warning from the cockpit at all of rough air/turbulence...[F/A-B] and I...[were] knocked to the floor to a sitting position, the turbulence didn't stop...[I] was next to a jump seat and reach to pull it down, but was unable to do so. I...was knocked to the floor over and over...up into the service door and the passenger door; my head hit the steps and ended up on the floor flat down. I tried to sit up to look at the [other] flight attendant...she was in a passenger seat...and she was strapped in...she continued to look at me in the back, I just said stay in your seat and I landed on my tailbone really hard. I tried to scoot away and up the isle, but realized I was injured at that point...we were approaching landing, and F/A-B crawled back to me, and strapped in my jump seat and held on to me because I couldn't move so I stayed on the floor...no bells were given when the aircraft was descending...the only 4 bells I heard was at landing time. Also no announcements from [the] cockpit was made when descending through 10,000 feet to the passengers because we were in 0.75 moderate turbulence at the time."

F/A-B stated, "...none of the crew had any warning about the rough air/turbulence...[F/A-

A] and I were both knocked to the floor to a sitting position. The turbulence didn't stop...[F/A-A] was injured, and stayed put with turbulence still bumping her around...after the initial 4 tones I went back to the F/A jump seat...we landed with [F/A-A] on the floor."

SIGMET November 2 valid until 1615, and AIRMET Tango update 3, calling for a large area of moderate turbulence below 12,000 feet, were current and applicable to the flight's descent into Asheville.

SIGMET November 3 stated, "OCNL SEV TURB BLW 120 DUE TO STG MID AND LOW LVL FLOW ACRS MTNUS TERRAIN. RPT BY ACFT INVOF AVL. CONDS CONTG BYD 2115Z."

"Occasional sever turbulence below 12,000 due to strong mid and low level flows across mountainous terrain. Reported by aircraft in the vicinity of Asheville. Conditions continuing beyond 1615."

AIRMET Tango update 3 stated, "OCNL MOD TURB BLW FL180. CONDS SPRDG EWD ACRS AREA...CONTG BYD 21Z THRU 03Z."

" Occasional moderate turbulence below 18,000. Conditions spreading eastward across area...continuing beyond 1600 thru 2200."

The company verified that both the SIGMET and AIRMET were part of the captain's weather briefing, and that he had them both for the flight before departure from Atlanta.

According to the airline's [ASA], Standard Practice, Page 14, paragraph 35, Flight Crew Briefings: "The Captain is designated by FAR's and the Company as directly responsible for the aircraft and crew during operation of the aircraft. As such the Captain is...the team leader. The most effective means for the Captain to build team effort is with effective briefings with the entire crew (team) prior to their first flight together. The following items should be included in a Captain's briefing...F. Weather along route, including forecast of turbulence."

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer; Flight instructor	Age:	28, 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 multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	August 2, 2000
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	1900 hours (Total, all aircraft), 1300 hours (Total, this make and model), 600 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aerospatiale	Registration:	N630AS
Model/Series:	ATR-72-212 ATR-72-212	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	336
Landing Gear Type:	Retractable - Tricycle	Seats:	71
Date/Type of Last Inspection:	November 13, 2000 Continuous airworthiness	Certified Max Gross Wt.:	48501 lbs
Time Since Last Inspection:	145 Hrs	Engines:	2 Turbo prop
Airframe Total Time:	17787 Hrs	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	PW 127
Registered Owner:	ATLANTIC SOUTHEAST AIRLINES	Rated Power:	
Operator:		Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:	DELTA CONNECTION	Operator Designator Code:	CAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	AVL ,2165 ft msl	Distance from Accident Site:	
Observation Time:	14:13 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	14 knots / 22 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	310°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	6°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	ATLANTA , GA (ATL)	Type of Flight Plan Filed:	IFR
Destination:	(AVL)	Type of Clearance:	IFR
Departure Time:	16:00 Local	Type of Airspace:	Class B

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Serious, 3 None	Aircraft Damage:	None
Passenger Injuries:	36 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 39 None	Latitude, Longitude:	35.590908,-82.559028(est)

Administrative Information

Investigator In Charge (IIC): Yurman, Alan

Additional Participating Persons: NONE ;

Original Publish Date: July 2, 2001

Last Revision Date:

Investigation Class: [Class](#)

Note: The NTSB traveled to the scene of this accident.

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=50660>

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](#).