



Aviation Investigation Final Report

Location:	Fort Lauderdale, Florida	Accident Number:	DCA23LA395
Date & Time:	July 23, 2023, Local	Registration:	N229NV
Aircraft:	Airbus A320-214	Aircraft Damage:	None
Defining Event:	Near midair/TCAS alert/loss of separation	Injuries:	1 Serious, 181 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

Allegiant Air flight 485 flight crew performed a climb maneuver in response to a Traffic Collision Avoidance System (TCAS) advisory resulting in a serious injury to a flight attendant onboard. Flight 485 was at flight level (FL) 230 [23,000 feet] and enroute to the Blue Grass Airport (LEX), Lexington, Kentucky when the event occurred.

The flight crew reported they had been on a generally northern course since their departure from Fort Lauderdale-Hollywood International Airport (FLL) when they received a heading of 100 degrees from air traffic control (ATC). Jacksonville Center closed the airspace to the North in response to severe weather in the area. Minutes later, the flight crew reported receiving a TCAS traffic advisory (TA) followed immediately by a resolution advisory (RA) to which the flight crew followed the given climb rate, to avoid another aircraft in their path. After the flight crew returned to FL230, they received a call from the lead flight attendant to report that the unexpected climb caused one flight attendant to be “knocked to the ground” and was injured.

ATC declared an emergency for the flight after the flight crew reported the injury of the flight attendant and the flight subsequently diverted back to FLL due to significant weather over central Florida.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The flight crew's abrupt change in pitch in response to a traffic collision advisory system resolution advisory that resulted in a serious injury to a flight attendant.

Findings

Personnel issues	(general) - Flight crew
Personnel issues	Illness/injury - Cabin crew

Factual Information

History of Flight

Enroute-cruise	Near midair/TCAS alert/loss of separation (Defining event)
Enroute-cruise	Air traffic event
Enroute-cruise	Abrupt maneuver

Pilot Information

Certificate:	Airline transport	Age:	46,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	May 17, 2023
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 27, 2023
Flight Time:	12843 hours (Total, all aircraft), 5010 hours (Total, this make and model), 8852 hours (Pilot In Command, all aircraft), 124 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Flight instructor	Age:	53,
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	February 15, 2023
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 25, 2023
Flight Time:	2409 hours (Total, all aircraft), 128 hours (Total, this make and model), 1767 hours (Pilot In Command, all aircraft), 128 hours (Last 90 days, all aircraft), 61 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

Cabin crew Information

Certificate:	Age:	
Airplane Rating(s):	Seat Occupied:	Right
Other Aircraft Rating(s):	Restraint Used:	None
Instrument Rating(s):	Second Pilot Present:	Yes
Instructor Rating(s):	Toxicology Performed:	
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	Last Flight Review or Equivalent:	
Flight Time:		

Cabin crew Information

Certificate:	Age:	
Airplane Rating(s):	Seat Occupied:	Left
Other Aircraft Rating(s):	Restraint Used:	None
Instrument Rating(s):	Second Pilot Present:	Yes
Instructor Rating(s):	Toxicology Performed:	
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	Last Flight Review or Equivalent:	
Flight Time:		

Cabin crew Information

Certificate:	Age:	
Airplane Rating(s):	Seat Occupied:	Left
Other Aircraft Rating(s):	Restraint Used:	None
Instrument Rating(s):	Second Pilot Present:	Yes
Instructor Rating(s):	Toxicology Performed:	
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	Last Flight Review or Equivalent:	
Flight Time:		

Aircraft and Owner/Operator Information

Aircraft Make:	Airbus	Registration:	N229NV
Model/Series:	A320-214	Aircraft Category:	Airplane
Year of Manufacture:	1997	Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	730
Landing Gear Type:	Retractable - Tricycle	Seats:	187
Date/Type of Last Inspection:	July 31, 2023 Continuous airworthiness	Certified Max Gross Wt.:	169755 lbs
Time Since Last Inspection:		Engines:	2 Turbo fan
Airframe Total Time:	74706.4 Hrs as of last inspection	Engine Manufacturer:	CFM INTL
ELT:	C126 installed, not activated	Engine Model/Series:	CFM56-5B4/P
Registered Owner:	SUNRISE ASSET MANAGEMENT LLC	Rated Power:	27000 Lbs thrust
Operator:	Allegiant Air, LLC	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	WX0A

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KXMR	Distance from Accident Site:	7 Nautical Miles
Observation Time:	12:55 Local	Direction from Accident Site:	350°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.99 inches Hg	Temperature/Dew Point:	33°C / 24°C
Precipitation and Obscuration:			
Departure Point:	Fort Lauderdale, FL (KFL)	Type of Flight Plan Filed:	IFR
Destination:	Lexington, KY (KLEX)	Type of Clearance:	IFR
Departure Time:	17:28 UTC	Type of Airspace:	Class A

Wreckage and Impact Information

Crew Injuries:	1 Serious, 5 None	Aircraft Damage:	None
Passenger Injuries:	176 None	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Serious, 181 None	Latitude, Longitude:	28.4,-80.35(est)

Administrative Information

Investigator In Charge (IIC):	Brazy, Douglass
Additional Participating Persons:	Travis Schwieder; Allegiant; Las Vegas, NV Todd Gentry; FAA/AVP100; Washington, DC
Original Publish Date:	July 18, 2024
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=192791

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](#).