Aviation Investigation Final Report

Location:	Boston, Massachusetts	**Accident Number:**	DCA24LA092
Date & Time:	February 8, 2024, 11:37 UTC	**Registration:**	N956JT (A1); N2157J (A2)
Aircraft:	Airbus A321-231 (A1); Airbus A321 (A2)	**Aircraft Damage:**	Substantial (A1); Minor (A2)
Defining Event:	Ground collision	**Injuries:**	210 None (A1); 154 None (A2)
Flight Conducted Under:	Part 121: Air carrier - Scheduled (A1); Part 121: Air carrier - Scheduled (A2)		

Analysis

While taxiing within the Amelia Earhart de-icing pad area, the left sharklet of JetBlue Airways flight 777 collided with the right horizontal stabilizer and elevator of JetBlue Airways flight 551 at the General Edward Lawrence Logan International Airport (BOS), Boston, Massachusetts. There were no injuries to the 210 passengers and crew on flight 551 or the 154 passengers and crew on flight 777.

The flight crew of flight 551 stated that, following a normal preflight and uneventful taxi from the gate to the de-icing pad, they were guided by a “follow me” vehicle operated by JetBlue contractor, Aeromag (see figure 1). The flight crew proceeded to follow the vehicle to the D2 parking spot. A yellow painted “T” inside a black square marked the proper stopping point location for the airplane’s nose tires when parked. Nearing the stopping point, the “follow me” vehicle turned to the right and stopped with its headlights facing toward the back of the airplane. The driver of the “follow me” vehicle communicated with the flight crew via radio and began a “countdown” for when the captain should stop the airplane.

Upon the verbal stop command, the captain stopped the airplane and set the parking brake. After the de-ice procedure was complete, the flight crew received instructions to taxi the airplane to runway 9 for departure. Immediately after releasing the airplane’s parking brake, the flight crew felt jolts and vibrations and the airplane swayed back and forth. The captain set the parking brake and the first officer (FO) contacted air traffic control (ATC) and was informed they had been struck by another aircraft.

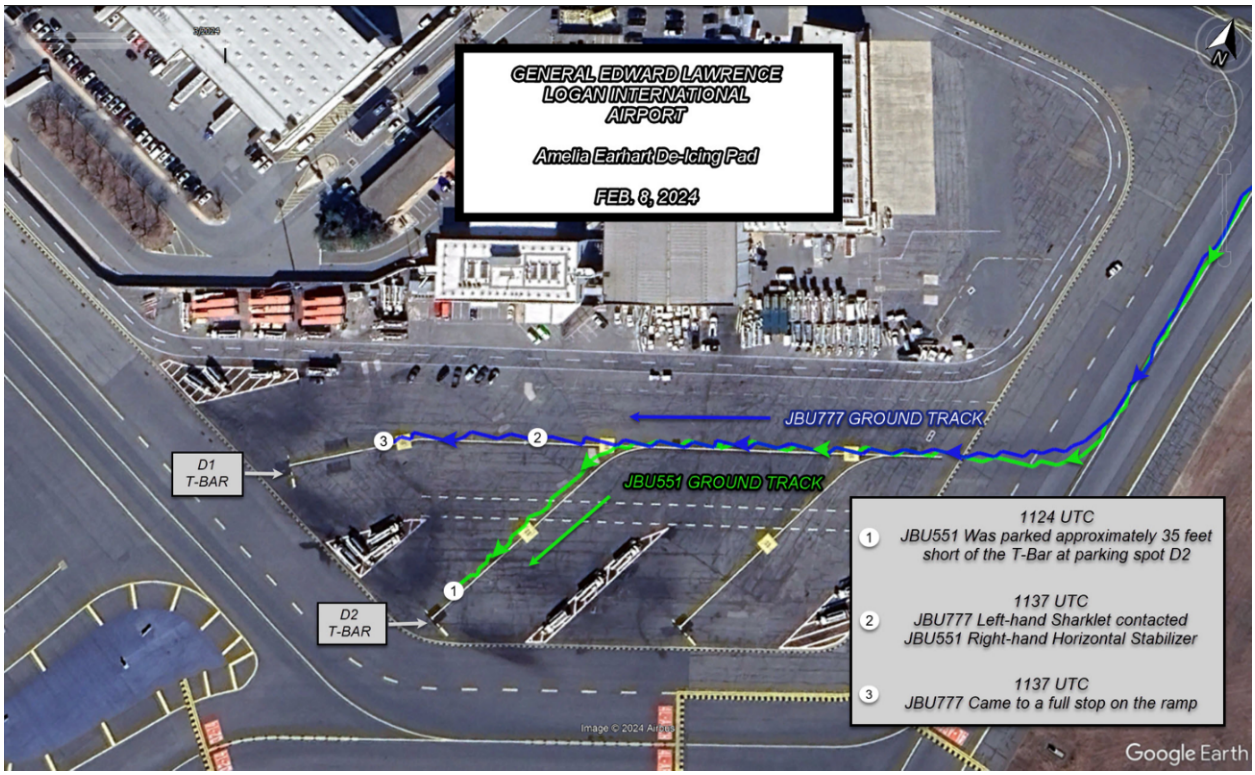

Figure 1. Google Earth image showing the ground position tracks of both airplanes.

In a post-accident statement, the driver of the "follow me" vehicle indicated that he stopped the airplane (flight 551) at what he thought was the normal stopping point. He had difficulty seeing the yellow "T" -bar due to the dark night conditions and the de-icing fluid that was present on the ground (figure 2). A post-accident inspection found that the airplane was about 35 ft short of the normal stopping point.

Figure 2. Photograph showing N956JT (JetBlue flight 551) about 35 feet from the yellow “T” bar. (Source: JetBlue)

The flight crew of flight 777 indicated that after a normal preflight and uneventful taxi from the gate to the de-icing pad they were guided to the D1 spot by a “follow me” vehicle. The captain stated spacing appeared to be tight and he focused on the yellow taxi line to ensure proper clearance from other airplanes in the area. Shortly thereafter, while taxiing, the flight crew heard a grinding noise and felt a vibration. While still moving forward, they heard another aircraft on the Aeromag radio frequency ask if something had struck their airplane.

The flight crew of flight 777 stopped their airplane and set the parking brake. The captain had difficulty seeing the left sharklet due to the dark night conditions but noted that it was intact. In addition, he was unable to see the empennage of flight 551 parked at the D2 location as it was behind them.

Flight 551 (N956JT) sustained substantial damage to the left horizontal stabilizer and the left elevator.

As a result of this event, Aeromag investigated and produced a February 12, 2024, memo to their BOS-JBU [JetBlue] operations staff discussing an amendment to the Coordinator of Traffic and Movement (CTM) phraseology and aircraft stopping procedures. The memo outlined the updated procedures and phraseology as:

- "Follow me" truck is now required to verbally confirm with the flight crew that the aircraft is correctly stopped on the deicing "T"-Bar.
- JetBlue will add to the Airport Briefing Guide (ABG) that the pilot will not configure the aircraft until confirmation that the aircraft is correctly stopped on the deicing "T"-Bar.
- The "follow me" truck is required to check the rear of the aircraft to ensure that it is within the bay and clear of the zipper line before confirming brake set.
- Safety Lead will perform a secondary check, reconfirming with the CTM that the aircraft has stopped on the deicing "T"-Bar. Safety Lead will also verify that the rear of the aircraft is clear of the zipper line and within the bay.
- Truck positioning and aircraft deicing will commence after these checks have been completed.

Additionally, once CTM has confirmed with the flight crew that they have a visual on the "follow me" truck, the "follow me" truck operator will follow these steps:

1. Guide the aircraft into the assigned bay.
2. Ensure the aircraft is properly stopped on the deicing "T"-Bar.
3. Confirm that the rear of the aircraft is within the bay, clear of the zipper line, before bringing any other aircraft in.

Finally, the Safety Lead will:

1. Inspect and confirm with CTM that the aircraft is properly stopped on the deicing "T"-Bar.
2. Inspect that the rear of the aircraft is well within the bay and clear of the zipper line.

Aeromag also increased its daily roster to include sufficient qualified staff to allocate a Safety Lead dedicated to each operational bay regardless of operating conditions. Long term prevention strategies identified were:

- Repainting and reviewing the color format of the delineated markings using high-visibility paint and/or reflective inset markers.
- Investigating the feasibility of adding high mast lighting for the Earhart facility.
- Operational audits to focus on the correct positioning of aircraft while maintaining the safety buffer zones.
- Explore opportunities to locate Aeromag tower personnel in elevated positions.

Probable Cause and Findings

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

The “follow me” driver stopping the airplane (flight 551) about 35 feet from the normal stopping point due to a difficulty in seeing the yellow “T”-bar because of the dark night conditions and the presence of de-icing fluid on the ground.

Findings

Personnel issues (A1)	Identification/recognition - Ground crew
Personnel issues (A2)	Identification/recognition - Flight crew

Factual Information

History of Flight

Standing-engine(s) operating (A1)	Ground collision (Defining event)
Taxi (A2)	Ground collision

Pilot Information (A1)

Certificate:	Airline transport; Commercial	**Age:**	58
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:**	
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	October 24, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	February 1, 2023
Flight Time:	23145 hours (Total, all aircraft), 13128 hours (Total, this make and model), 18077 hours (Pilot In Command, all aircraft), 125 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Co-pilot Information (A1)

Certificate:	Airline transport; Commercial	**Age:**	59
Airplane Rating(s):	Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	October 9, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	10533 hours (Total, all aircraft), 1494 hours (Total, this make and model), 3528 hours (Pilot In Command, all aircraft)		

Pilot Information (A2)

Certificate:	Airline transport	**Age:**	54
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:**	
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	October 20, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	February 1, 2023
Flight Time:	11970 hours (Total, all aircraft), 9500 hours (Total, this make and model)		

Co-pilot Information (A2)

Certificate:	Airline transport; Commercial	**Age:**	50
Airplane Rating(s):	Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	March 9, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	June 8, 2023
Flight Time:	16000 hours (Total, all aircraft), 9500 hours (Total, this make and model)		

Aircraft and Owner/Operator Information (A1)

Aircraft Make:	Airbus	**Registration:**	N956JT
Model/Series:	A321-231	**Aircraft Category:**	Airplane
Year of Manufacture:	2015	**Amateur Built:**	
Airworthiness Certificate:	Transport	**Serial Number:**	6791
Landing Gear Type:	Retractable - Tricycle	**Seats:**	206
Date/Type of Last Inspection:	Continuous airworthiness	**Certified Max Gross Wt.:**	205000 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo fan
Airframe Total Time:		**Engine Manufacturer:**	IAE
ELT:	Installed	**Engine Model/Series:**	V2533-A5
Registered Owner:	JETBLUE AIRWAYS CORP	**Rated Power:**	31600 Lbs thrust
Operator:	JETBLUE AIRWAYS CORP	**Operating Certificate(s) Held:**	Flag carrier (121)

Aircraft and Owner/Operator Information (A2)

Aircraft Make:	Airbus	**Registration:**	N2157J
Model/Series:	A321	**Aircraft Category:**	Airplane
Year of Manufacture:	2023	**Amateur Built:**	
Airworthiness Certificate:	Transport	**Serial Number:**	11397
Landing Gear Type:	Retractable - Tricycle	**Seats:**	246
Date/Type of Last Inspection:	Continuous airworthiness	**Certified Max Gross Wt.:**	205000 lbs
Time Since Last Inspection:		**Engines:**	2
Airframe Total Time:		**Engine Manufacturer:**	
ELT:	Installed	**Engine Model/Series:**	
Registered Owner:	JETBLUE AIRWAYS CORP	**Rated Power:**	
Operator:	JETBLUE AIRWAYS CORP	**Operating Certificate(s) Held:**	Flag carrier (121)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dawn
Observation Facility, Elevation:	KBOS	**Distance from Accident Site:**	
Observation Time:	06:54 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 4000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None /
Wind Direction:		**Turbulence Severity Forecast/Actual:**	Unknown /
Altimeter Setting:	30.32 inches Hg	**Temperature/Dew Point:**	-1.7°C / -2.8°C
Precipitation and Obscuration:			
Departure Point:	Boston, MA (A1); Boston, MA (A2)	**Type of Flight Plan Filed:**	None (A2)
Destination:		**Type of Clearance:**	Unknown (A1); Unknown (A2)
Departure Time:		**Type of Airspace:**	Unknown (A1); Unknown (A2)

Airport Information

Airport:	General Edward Lawrence Logan International Airport BOS	**Runway Surface Type:**	
Airport Elevation:	19 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	Unknown
Runway Length/Width:		**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information (A1)

Crew Injuries:	6 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	204 None	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	210 None	**Latitude, Longitude:**	42.3643,-71.005203

Wreckage and Impact Information (A2)

Crew Injuries:	6 None	**Aircraft Damage:**	Minor
Passenger Injuries:	148 None	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	154 None	**Latitude, Longitude:**	42.3643,-71.005203

Administrative Information

Investigator In Charge (IIC):	Hauf, Michael
Additional Participating Persons:	Stuart Ochs; Jet Blue ASI Todd Gentry; FAA AVP
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=193765