



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Newark, New Jersey	<b>Accident Number:</b>	DCA13FA082
<b>Date &amp; Time:</b>	May 1, 2013, 19:24 Local	<b>Registration:</b>	N17560
<b>Aircraft:</b>	Embraer EMB-145LR	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Ground collision	<b>Injuries:</b>	34 None
<b>Flight Conducted Under:</b>	Part 121: Air carrier - Scheduled		

## Analysis

Flight 4226 was stationary on the taxiway with the parking brake set and was facing away from flight 908 at the time of the collision. Flight 4226 flight crew parked on taxiway R between taxiway M and taxiway Y. They were told to hold short of taxiway Y to give way to a B737 that would be passing on taxiway Y. It could not be determined where on taxiway R the airplane was parked, but to conflict with flight 908's wingtip, the airplane would have to be closer to taxiway M rather than closer to taxiway Y.

Since taxiway M would have been behind flight 4226's airplane, the crew most likely was not completely aware of how far ahead of taxiway M or how much clearance they were leaving behind them when they parked. If the airplane was parked with the airplane's longitudinal axis on or parallel to the centerline of taxiway R, the crew would not have been able to see flight 908's left wingtip or judge its proximity to their airplane before the collision.

If the crew of flight 908 had requested flight 4226's crew to taxi forward to provide adequate clearance, there would have been sufficient space on taxiway R for flight 4226 to move forward in order to ensure clearance between both flight 908 and the approaching B737. However, the crew of flight 908 did not make any communications request for flight 4226 to move their airplane forward on taxiway R.

As a result, flight 908 sustained minor damage to its left winglet and flight 4226 sustained substantial damage to their empennage due to the captain misjudging the clearance distance. The crew of flight 908 could see flight 4226's airplane parked ahead of them on taxiway M, and their statements indicated that in the turn they were concerned about whether they had sufficient clearance to taxi past the aircraft. The captain stated that he was focused on clearing the wing of the ExpressJet and neglected to focus on clearing the tail of the parked aircraft. If an anti-collision aid had been installed on flight 908's airplane, it may have prevented the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the failure of flight 908's captain to ensure adequate clearance between the wingtip of his airplane and flight 4226's empennage when he attempted to pass behind the other airplane.

### Findings

Aircraft	Taxiing - Related operating info
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# Factual Information

## History of Flight

Taxi-to runway	Ground collision (Defining event)
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On May 1, 2013, at about 1924 EDT, Express Jet flight 4226, an Embraer E145, N17560, was stationary on taxiway R when it was struck by the left wing of Scandinavian (SAS) flight 908, an Airbus A333, LN-RKO, at Newark Liberty International airport (KEWR), Newark, New Jersey. There were no injuries to any of the passengers or crew onboard both airplanes. Flight 4226 was substantially damaged and was operating under 14 Code of Federal Regulation (CFR) Part 121 as a scheduled passenger flight from KEWR to Nashville International Airport, Nashville, Tennessee (KBNA). Flight 908 received minor damage and was operating under 14 CFR Part 129 as a scheduled passenger flight from KEWR to Oslo Airport (ENGM), Oslo, Norway.

Flight 4226 pushed back from the gate at 1857, and after leaving the ramp area, the crew was instructed to hold short of taxiway Y on taxiway R. They were told to wait for and follow the first B737 that approached from their left. While waiting for the B737, they stopped on taxiway R facing toward the northeast and set the parking brake.

Flight 908 pushed back from the gate at 1901, with an additional crew member, a check pilot who occupied the cockpit jumpseat in order to supervise the new first officer. After leaving the gate area, flight 908 was initially cleared to taxi northbound on taxiway R, and to hold short of taxiway Y, however after taxiing past taxiway K, the ground controller first told flight 908 to make a left turn onto taxiway M, but since the turn was too sharp, he then told flight 908 to make a right turn onto taxiway M. They were then instructed to cross runway 22R on taxiway Y, then turn left on taxiway P to hold short of runway 22R on the east side of the runway.

Flight 908's crew said they saw flight 4226, but the sun was low on the horizon, which made it difficult to look in that direction. They were also checking runway 22R, which they were crossing, to ensure there was no conflicting traffic. Flight 908's crew said they evaluated the clearance between their airplane and flight 4226, and they estimated that their wing would clear the other airplane. As flight 908 turned on taxiway M, the winglet of their airplane contacted the tail section of flight 4226. Flight 908's crew said they did not feel the impact and were not initially aware of having collided with flight 4226. They were informed of the collision after crossing runway 22R and were on taxiway P.

Flight 4226's flight crew stated they did not see flight 908 pass behind them but felt the impact when flight 908's winglet struck the tail of their airplane. Flight 4226's flight crew shut down their engines and, after a safety evaluation, they were towed back to the gate.

Flight 4226 had a wingspan of 65 feet and 9 inches, was 98 feet long, and a horizontal stabilizer 22 feet with 2 inches wide and a vertical stabilizer 24 feet 9 inches long. Flight 908's wingspan was 197 feet and 10 inches long. KEWR taxiways were nominally 75 feet wide and marked with a centerline and taxiway

edge lines. There were no markers or other indications to provide guidance for traffic clearance on intersecting taxiways, nor were they required.

The distance between the centerline of taxiway Y to the centerline of taxiway M was about 487 feet. That was the area within which flight 4226 was instructed to hold short of taxiway Y on taxiway R, in order to give way to a B737 that would pass in front of them on taxiway Y. The wingspan of a B737 is about 113 feet, which would indicate that if the B737 was positioned on the centerline of taxiway Y, its wing would project about 56.5 feet from the centerline of taxiway, with about 19 feet that would project onto taxiway R. There were no hold short lines or other guidance indicators on taxiway R that would ensure wingtip clearance of a passing aircraft on taxiway Y, nor were such lines or guidance required. There were no lines or other guidance indicators on taxiway R that would ensure wingtip clearance from an airplane passing on taxiway M, nor were such lines or indicators required.



Figure 1 - Expanded view of airport diagram

In a follow-up statement, flight 908's captain stated he was watching the winglet of his airplane relative to the wingtip of flight 4226 but did not see the tail of the other airplane, which was struck. Flight 908's crew further stated that once they determined they would clear flight 4226, their focus was directed to the active runway crossing procedure.

A review of SAS manuals did not locate any specific training, guidance, procedures or techniques to ensure wingtip clearance during ground operations. They did however indicate that other than a ramp or apron area, with external guidance, taxiing past obstructions should only be attempted if the distance separating the obstruction was greater than one-quarter length the span of the airplane's wing, which would be 49.2 feet for the A330. SAS provided additional information about operating the A330, that it was possible to see the wingtips from the cockpit but it required "moving close to the side window and turning the torso backwards."

The manuals described techniques for taxiing the airplane on the centerline of the taxiway or runway but did not offer any specific guidance on how to ensure that the wingtips would clear obstructions when

taxiing straight or during turns. In addition, the operations manual stated than when in doubt request assistance from ATC.

The SAS A330/A340 Flight Crew Training Manual (FCTM) describes "judgmental oversteering." This technique is to ensure that the main landing gear path remains on the paved taxiway during turns. The technique is to allow the nose wheel to progress sufficiently beyond the midpoint of the taxiway so that the following main gear will essentially straddle the centerline during the turn, and not cut the corner across the unpaved area. The amount of oversteer depends on the angle of the turn and is a technique gained with experience.

As a result of twelve wingtip collision investigations since 1993, the NTSB issued Safety Recommendations A-12-38 and A-12-49. The safety recommendations highlighted the need for an anti-collision aid, such as a camera system, to help pilots determine the wingtip clearance and path during taxi. The recommendations were to require the installations on newly manufactured and newly type-certificated large airplanes and other airplane models, in addition to existing large airplanes and other airplane models, where the wingtips were not easily visible from the cockpit. The FAA responded to the recommendations by stating that either recommendation "does not justify the cost burden of an FAA mandate for their installation." As a result, both recommendations were classified by the NTSB as "closed -unacceptable" response. Flight 908 did not have an anti-collision aid installed.

## Information

**Certificate:**

**Age:**

**Airplane Rating(s):**

**Seat Occupied:**

**Other Aircraft Rating(s):**

**Restraint Used:**

**Instrument Rating(s):**

**Second Pilot Present:**

**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

<b>Aircraft Make:</b>	Embraer	<b>Registration:</b>	N17560
<b>Model/Series:</b>	EMB-145LR	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	145605
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	55
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	ROLLS-ROYCE
<b>ELT:</b>		<b>Engine Model/Series:</b>	AE 3007A1P
<b>Registered Owner:</b>	WELLS FARGO BANK NORTHWEST NA TRUSTEE	<b>Rated Power:</b>	8338 Lbs thrust
<b>Operator:</b>	EXPRESSJET AIRLINES INC	<b>Operating Certificate(s) Held:</b>	Commuter air carrier (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	C2XA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Dusk
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	19:20 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Few / 25000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	180°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.45 inches Hg	<b>Temperature/Dew Point:</b>	14°C / 7°C
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	Newark, NJ (EWR )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Nashville, TN (BNA )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>		<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Newark Liberty International EWR	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	174 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	3 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	31 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	34 None	<b>Latitude, Longitude:</b>	40.699722,-74.165832

## Administrative Information

**Investigator In Charge (IIC):** Ward, Effie Lorenda

**Additional Participating Persons:**

**Original Publish Date:** April 22, 2020

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=86792>

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](#).





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# Aviation Investigation Final Report

<b>Location:</b>	Newark, New Jersey	<b>Accident Number:</b>	DCA13FA082
<b>Date &amp; Time:</b>	May 1, 2013, 19:24 Local	<b>Registration:</b>	LN-RKO
<b>Aircraft:</b>	Airbus A330	<b>Aircraft Damage:</b>	Minor
<b>Defining Event:</b>	Ground collision	<b>Injuries:</b>	256 None
<b>Flight Conducted Under:</b>	Part 129: Foreign		

## Analysis

Flight 4226 was stationary on the taxiway with the parking brake set and was facing away from flight 908 at the time of the collision. Flight 4226 flight crew parked on taxiway R between taxiway M and taxiway Y. They were told to hold short of taxiway Y to give way to a B737 that would be passing on taxiway Y. It could not be determined where on taxiway R the airplane was parked, but to conflict with flight 908's wingtip, the airplane would have to be closer to taxiway M rather than closer to taxiway Y.

Since taxiway M would have been behind flight 4226's airplane, the crew most likely was not completely aware of how far ahead of taxiway M or how much clearance they were leaving behind them when they parked. If the airplane was parked with the airplane's longitudinal axis on or parallel to the centerline of taxiway R, the crew would not have been able to see flight 908's left wingtip or judge its proximity to their airplane before the collision.

If the crew of flight 908 had requested flight 4226's crew to taxi forward to provide adequate clearance, there would have been sufficient space on taxiway R for flight 4226 to move forward in order to ensure clearance between both flight 908 and the approaching B737. However, the crew of flight 908 did not make any communications request for flight 4226 to move their airplane forward on taxiway R.

As a result, flight 908 sustained minor damage to its left winglet and flight 4226 sustained substantial damage to their empennage due to the captain misjudging the clearance distance. The crew of flight 908 could see flight 4226's airplane parked ahead of them on taxiway M, and their statements indicated that in the turn they were concerned about whether they had sufficient clearance to taxi past the aircraft. The captain stated that he was focused on clearing the wing of the ExpressJet and neglected to focus on clearing the tail of the parked aircraft. If an anti-collision aid had been installed on flight 908's airplane, it may have prevented the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the failure of flight 908's captain to ensure adequate clearance between the wingtip of his airplane and flight 4226's empennage when he attempted to pass behind the other airplane.

### Findings

<b>Aircraft</b>	Taxiing - Related operating info
<b>Personnel issues</b>	Lack of action - Pilot

# Factual Information

## History of Flight

### Taxi-to runway

### Ground collision

On May 1, 2013, at about 1924 EDT, Express Jet flight 4226, an Embraer E145, N17560, was stationary on taxiway R when it was struck by the left wing of Scandinavian (SAS) flight 908, an Airbus A333, LN-RKO, at Newark Liberty International airport (KEWR), Newark, New Jersey. There were no injuries to any of the passengers or crew onboard both airplanes. Flight 4226 was substantially damaged and was operating under 14 Code of Federal Regulation (CFR) Part 121 as a scheduled passenger flight from KEWR to Nashville International Airport, Nashville, Tennessee (KBNA). Flight 908 received minor damage and was operating under 14 CFR Part 129 as a scheduled passenger flight from KEWR to Oslo Airport (ENGM), Oslo, Norwa

Flight 4226 pushed back from the gate at 1857, and after leaving the ramp area, the crew was instructed to hold short of taxiway Y on taxiway R. They were told to wait for and follow the first B737 that approached from their left. While waiting for the B737, they stopped on taxiway R facing toward the northeast and set the parking brake.

Flight 908 pushed back from the gate at 1901, with an additional crew member, a check pilot who occupied the cockpit jumpseat in order to supervise the new first officer. After leaving the gate area, flight 908 was initially cleared to taxi northbound on taxiway R, and to hold short of taxiway Y, however after taxiing past taxiway K, the ground controller first told flight 908 to make a left turn onto taxiway M, but since the turn was too sharp, he then told flight 908 to make a right turn onto taxiway M. They were then instructed to cross runway 22R on taxiway Y, then turn left on taxiway P to hold short of runway 22R on the east side of the runway.

Flight 908's crew said they saw flight 4226, but the sun was low on the horizon, which made it difficult to look in that direction. They were also checking runway 22R, which they were crossing, to ensure there was no conflicting traffic. Flight 908's crew said they evaluated the clearance between their airplane and flight 4226, and they estimated that their wing would clear the other airplane. As flight 908 turned on taxiway M, the winglet of their airplane contacted the tail section of flight 4226. Flight 908's crew said they did not feel the impact and were not initially aware of having collided with flight 4226. They were informed of the collision after crossing runway 22R and were on taxiway P.

Flight 4226's flight crew stated they did not see flight 908 pass behind them but felt the impact when flight 908's winglet struck the tail of their airplane. Flight 4226's flight crew shut down their engines and, after a safety evaluation, they were towed back to the gate.

Flight 4226 had a wingspan of 65 feet and 9 inches, was 98 feet long, and a horizontal stabilizer 22 feet with 2 inches wide and a vertical stabilizer 24 feet 9 inches long. Flight 908's wingspan was 197 feet and 10 inches long. KEWR taxiways were nominally 75 feet wide and marked with a centerline and taxiway

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The distance between the centerline of taxiway Y to the centerline of taxiway M was about 487 feet. That was the area within which flight 4226 was instructed to hold short of taxiway Y on taxiway R, in order to give way to a B737 that would pass in front of them on taxiway Y. The wingspan of a B737 is about 113 feet, which would indicate that if the B737 was positioned on the centerline of taxiway Y, its wing would project about 56.5 feet from the centerline of taxiway, with about 19 feet that would project onto taxiway R. There were no hold short lines or other guidance indicators on taxiway R that would ensure wingtip clearance of a passing aircraft on taxiway Y, nor were such lines or guidance required. There were no lines or other guidance indicators on taxiway R that would ensure wingtip clearance from an airplane passing on taxiway M, nor were such lines or indicators required.



Figure 1 - Expanded view of airport

In a follow-up statement, flight 908's captain stated he was watching the winglet of his airplane relative to the wingtip of flight 4226 but did not see the tail of the other airplane, which was struck. Flight 908's crew further stated that once they determined they would clear flight 4226, their focus was directed to the active runway crossing procedure.

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The manuals described techniques for taxiing the airplane on the centerline of the taxiway or runway but did not offer any specific guidance on how to ensure that the wingtips would clear obstructions when

taxiing straight or during turns. In addition, the operations manual stated than when in doubt request assistance from ATC.

The SAS A330/A340 Flight Crew Training Manual (FCTM) describes "judgmental oversteering." This technique is to ensure that the main landing gear path remains on the paved taxiway during turns. The technique is to allow the nose wheel to progress sufficiently beyond the midpoint of the taxiway so that the following main gear will essentially straddle the centerline during the turn, and not cut the corner across the unpaved area. The amount of oversteer depends on the angle of the turn and is a technique gained with experience.

As a result of twelve wingtip collision investigations since 1993, the NTSB issued Safety Recommendations A-12-38 and A-12-49. The safety recommendations highlighted the need for an anti-collision aid, such as a camera system, to help pilots determine the wingtip clearance and path during taxi. The recommendations were to require the installations on newly manufactured and newly type-certificated large airplanes and other airplane models, in addition to existing large airplanes and other airplane models, where the wingtips were not easily visible from the cockpit. The FAA responded to the recommendations by stating that either recommendation "does not justify the cost burden of an FAA mandate for their installation." As a result, both recommendations were classified by the NTSB as "closed -unacceptable" response. Flight 908 did not have an anti-collision aid installed.

## Information

**Certificate:**

**Age:**

**Airplane Rating(s):**

**Seat Occupied:**

**Other Aircraft Rating(s):**

**Restraint Used:**

**Instrument Rating(s):**

**Second Pilot Present:**

**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

<b>Aircraft Make:</b>	Airbus	<b>Registration:</b>	LN-RKO
<b>Model/Series:</b>	A330 343X	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	515
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Rolls Royce Trent
<b>ELT:</b>		<b>Engine Model/Series:</b>	772B-60
<b>Registered Owner:</b>	Rurik Ltd	<b>Rated Power:</b>	
<b>Operator:</b>	SCANDINAVIAN AIRLINES SYSTEM	<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	SCSF

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Dusk
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	19:20 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Few / 25000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	180°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.45 inches Hg	<b>Temperature/Dew Point:</b>	14°C / 7°C
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	Newark, NJ (EWR )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Oslo (ENGM)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>		<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Newark Liberty International EWR	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	174 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	11 None	<b>Aircraft Damage:</b>	Minor
<b>Passenger Injuries:</b>	245 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	256 None	<b>Latitude, Longitude:</b>	40.699722,-74.165832

## Administrative Information

**Investigator In Charge (IIC):** Ward, Effie Lorenda

**Additional Participating Persons:**

**Original Publish Date:** April 22, 2020

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=86792>

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.

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