
Collision with de-icing truck, Airbus A319, October 10, 2005

Micro-summary: This Airbus A319 collided with a de-icing vehicle.

Event Date: 2005-10-10 at 1120 MDT


Investigative Body: National Transportation Safety Board (NTSB), USA

Investigative Body's Web Site: <http://www.nts.gov/>

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		NTSB ID: DEN06IA008		Aircraft Registration Number: N927FR	
		Occurrence Date: 10/10/2005		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Denver	State CO	Zip Code 80249	Local Time 1120	Time Zone MDT	
Airport Proximity: On Airport		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Airbus Industries		Model/Series A319-111		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On October 10, 2005, approximately 1124 mountain daylight time, an Airbus Industries A319-111, N927FR, operated by Frontier Airlines Inc., as flight 567, and piloted by an airline transport pilot, sustained minor damage when it collided with a de-icing vehicle while taxiing for takeoff from the de-icing pad at Denver International Airport (DEN), Denver, Colorado. Instrument meteorological conditions prevailed at the time of the incident. The scheduled, domestic passenger flight was destined for San Diego, California, and was being conducted under Title 14 Code of Federal Regulations Part 121. An instrument flight rules flight plan had been filed. The 5 crew members and 104 passengers sustained no injuries.</p> <p>According to a report submitted by Frontier Airlines, Inc., "during a snowstorm at DEN, flight 567 scheduled to San Diego, was de-iced on de-ice pad A-3. At 1118, the crew was given the de-ice report and told they were clear to contact ground control. They were cleared to taxi to runway 25 via taxiway G. As the aircraft moved forward, the crew felt a jolt and they thought they had run over a chunk of ice with the nose wheel. As they continued to taxi, they received an electronic centralized aircraft monitoring (ECAM) warning for flight control/slat fault. After performing ECAM actions, they received a call from a flight attendant, who was on board, stating that the passenger in row 10D had seen the de-ice truck or boom and the right wing leading edge collide. The aircraft was taxied back to the gate to be inspected for damage."</p> <p>According to the captain, who was the pilot in control at the time of the incident, "We moved forward and felt a jolt. I thought at the time we had run over a chunk of ice with the nose wheel." According to the co-pilot, "We began taxiing forward. We heard and sensed what felt like the nose wheel run over two chunks of ice. We continued to taxi the aircraft for takeoff and got an ECAM message the same as when we were taxiing in from the previous leg (flight control/slat fault), which cleared after cycling the flap. We got a call from the 'A' flight attendant that a passenger saw the right wingtip collide with the de-ice equipment on taxi out."</p> <p>According to a report submitted by the de-ice vehicle operator, Aircraft Services International Group TM (ASIG), approximately 1124, flight 567 received a clearance from tower to taxi from de-ice pad A-3. At that time, de-ice truck #57 was positioned on the west (departure) side of the de-ice pads between A-3 and A-4. Truck #57 was facing north with its rear toward de-ice pad A-3. The boom operator had the boom in a "1 o'clock position approximately 10 feet from the ground. The wingtip struck our lower boom at the joint where it meets the upper boom." At that time, both the boom operator and the de-ice truck driver "felt the truck shake from side to side." The bucket operator was "thrown from one side to the other side and then thrown to the bottom of the bucket." The driver of the de-ice vehicle and the bucket operator sustained no injuries.</p> <p>According to ASIG's report, prior to de-icing, the captain "indicated a growing sense of frustration" due to the lengthy amount of time it was taking to de-ice (approximately 1 hour and 17 minutes). The captain also stated that they were fuel critical and did not want to taxi back to the</p>					
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FACTUAL REPORT

AVIATION

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Narrative (Continued)


gate for more fuel. In an attempt to expedite the de-icing process, the captain requested only one step (Type I de-icing fluid) of the regular two step (both Type I and Type IV de-icing fluid) de-icing process. All other aircraft were requesting the two step process of both Type I and Type IV de-icing fluid.

According to ASIG's Aircraft De/Anti-icing OJT Facilitator Guide (August 2005), the post de-icing procedures are: When the [de-ice] operation is complete, ensure all trucks are in their designated safety areas. Relay post De/Anti-icing report. Advise crew 'the Post De/Anti-icing Check is complete.'" Also, employees are to "evaluate situations and/or conditions that could affect the safety of the personnel and equipment. Give consideration to personnel, limited visibility, weather conditions, ramp/roadway conditions, etc. For example, during periods of limited visibility due to inclement weather it may be appropriate to add a second person in the truck cab." De-ice truck #57 had a two person crew during the time of the incident; one person was operating the boom and the other was operating the truck. The routine aviation weather report (METAR) indicated visibility at the time of the accident as 1/4 statute mile with snow and fog.

Damage sustained to the airplane's right wing included; the number 5 slat had a scratch 10 inches long by 5 inches wide and 1 inch deep, and the navigation light lens was broken. There was a scrape from the aft end of the navigation light lens to the leading edge of the wing, and the right winglet had an 8 inches long by 1 inch wide tear. Damage to the de-ice truck included a scratch approximately 3 feet long by 8 inches wide on the right side of the boom, and one of the bolts on the elbow of the boom was sheared causing damage to the internal gear of the boom.

Weather at the time of the incident was winds 330 at 10 knots, 1/4 SM visibility, snow, fog, temperature 0 degrees C., dew point minus 1 degree C., and altimeter setting of 30.06 inches of mercury.

		NTSB ID: DEN06IA008			
		Occurrence Date: 10/10/2005			
		Occurrence Type: Incident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Denver International Airport	DEN	5431 Ft. MSL	NA		
Runway Surface Type:					
Runway Surface Condition:					
Type Instrument Approach: Unknown					
VFR Approach/Landing: Unknown					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
Airbus Industries		A319-111		2209	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 140	Certified Max Gross Wt.	155204 LBS	Number of Engines: 2	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	General Electric	CFM56-5B5/P	22000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Continuous Airworthiness	06/2005	1182 Hours	5063 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
International Lease Finance Corp.		City	State	Zip Code	
		Los Angeles	CA	90067	
Operator of Aircraft		Street Address			
FRONTIER AIRLINES INC		City	State	Zip Code	
		Denver	CO	80249	
Operator Does Business As:			Operator Designator Code: F3LA		
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s): Flag Carrier/Domestic; Supplemental					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 121: Air Carrier					
Type of Flight Operation Conducted: Scheduled; Domestic; Passenger Only					
FACTUAL REPORT - AVIATION					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: DEN061A008
	Occurrence Date: 10/10/2005
	Occurrence Type: Incident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 58
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Sex: M	Seat Occupied: Right	Principal Profession: Occupational Pilot	Certificate Number: On File
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Certificate(s): Airline Transport; Flight Instructor

Airplane Rating(s): Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea

Rotorcraft/Glider/LTA: Airship; Free Balloon; Glider; Gyroplane; Helicopter

Instrument Rating(s): Airplane; Helicopter

Instructor Rating(s): Airplane Multi-engine; Airplane Single-engine; Glider; Helicopter; Instrument Airplane; Instrument Helicopter

Type Rating/Endorsement for Accident/Incident Aircraft?	Current Biennial Flight Review? 03/2005
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Medical Cert.: Class 1	Medical Cert. Status: Without Waivers/Limitations	Date of Last Medical Exam: 02/2005
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	13000	1300								
Pilot In Command(PIC)										
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? No	Second Pilot? Yes
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Flight Plan/Itinerary

Type of Flight Plan Filed:				
Departure Point	State	Airport Identifier	Departure Time	Time Zone
Same as Accident/Incident Location		DEN	1118	MDT
Destination	State	Airport Identifier		
San Diego	CA	SAN		


Type of Clearance: IFR

Type of Airspace:

Weather Information

Source of Briefing:
Internet

Method of Briefing:

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
DEN	1132	MDT	5431 Ft. MSL	NM	Deg. Mag.

Sky/Lowest Cloud Condition: Unknown Ft. AGL Condition of Light: Day

Lowest Ceiling: Overcast 300 Ft. AGL Visibility: 0.25 SM Altimeter: 30.16 "Hg

Temperature: 0 °C Dew Point: -1 °C Wind Direction: 330 Density Altitude: Ft.

Wind Speed: 10 Gusts: Weather Conditions at Accident Site: Instrument Conditions

Visibility (RVR): 2200 Ft. Visibility (RVV) 25 SM Intensity of Precipitation:

Restrictions to Visibility: Moderate - Blowing - Snow; Patches - Fog

Type of Precipitation:

Accident Information

Aircraft Damage: Minor Aircraft Fire: None Aircraft Explosion: None

Classification:

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot				1	1
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants				3	3
Other Crew					
Passengers				104	104
- TOTAL ABOARD -				109	109
Other Ground					
- GRAND TOTAL -				109	109

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: DEN06IA008

Occurrence Date: 10/10/2005

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

Arnold W. Scott

Additional Persons Participating in This Accident/Incident Investigation:

Jeff Graves

Denver Flight Standards District Office

Denver, CO