
Runway overrun, McDonnell Douglas MD-88, November 11, 1996

Micro-summary: This McDonnell Douglas MD-88 overran a slippery runway on landing.

Event Date: 1996-11-11 at 2130 EST


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

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

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		NTSB ID: IAD97IA020		Aircraft Registration Number: N918DL	
		Occurrence Date: 11/11/1996		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place CLEVELAND	State OH	Zip Code 44181	Local Time 2130	Time Zone EST	
Airport Proximity: On Airport		Distance From Landing Facility: 1		Direction From Airport: 30	
Aircraft Information Summary					
Aircraft Manufacturer McDonnell Douglas		Model/Series MD-88		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>On November 11, 1996, about 2130 Eastern Standard Time, a McDonnell Douglas MD-88, N918DL, operated by Delta Airlines as flight 256, sustained minor damage when it ran off the departure end of a runway at Cleveland-Hopkins International Airport (CLE), Cleveland, Ohio. The certificated airline transport crew, three flight attendants, and 118 passengers were not injured. Instrument meteorological conditions prevailed and an instrument flight rules flight plan was filed. The flight was conducted under 14 CFR Part 121, and originated from Atlanta, Georgia.</p> <p>According to the captain, an ACARS message was received in the cockpit indicating that the field conditions at CLE were good with only patchy snow and ice on the runway. The initial ATIS obtained by the crew was for clear skies with 10 miles of visibility, landing on Runway 23L. The crew briefed the approach to 23L. A subsequent ATIS was received by the crew, which indicated a change to Runway 05R as the runway in use, and the winds from 240 degrees at 5 knots. An ILS Runway 05R approach was briefed and flown by the first officer. A 40-degree flap landing was planned and medium auto-brakes were selected. During the approach the crew noticed snow falling, but the visibility was good. On initial contact, the tower stated that a previous aircraft reported that the braking action was fair. On short final, the captain observed that the runway was fully covered with snow instead of the reported patchy snow. Touchdown was normal and in the landing zone. When the first officer selected reverse thrust, the crew noticed that the airplane was not slowing normally. The captain assumed control of the airplane, and applied maximum braking and reverse thrust. However, the airplane continued off the departure end of the runway. It came to rest on its landing gear, about 530 feet past the Runway 23L threshold lights, and 345 feet northeast beyond the edge of the Runway 23L hard surface.</p> <p>Before the airplane touched down, air traffic control (ATC) advised the flight crew that the braking action on Runway 05R was reported as "fair" by a Boeing 737 crew, and was acknowledged. Measurements taken immediately after the incident by a Federal Aviation Administration (FAA)-approved decelerometer, indicated braking action for Runway 05R was 38 (fair), 23 (poor), and 27 (poor). Rudimentary braking action testing in both directions of Runway 05R/23L was conducted about one hour after the incident. According to an observer who was seated in the vehicle that performed the testing, the runway surface was covered with what appeared to be a patchy layer of snow. The observer estimated the braking action was "intermittently fair in the center portion of the runway with predominantly poor at both ends." At no time did the observer "believe the braking action of the vehicle to be any less effective than fair to poor."</p> <p>A Supervisory Air Traffic Control Specialist (SATCS) located in the Cleveland Air Traffic Control Tower observed the airplane pass taxiway Romeo at a high rate of speed and asked another controller if the airplane was a departure.</p> <p>Delta Airlines personnel retrieved the airplane flight data recorder and the downloaded information was forwarded to the FAA. Review of the data by a FAA Aerospace Engineer revealed that the</p>					
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National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: IAD97IA020

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Narrative (Continued)

spoilers remained retracted at touchdown and during rollout to zero airspeed. A review of the airplanes previous flight and landing recorded data revealed normal deployment and retraction of the left and right spoilers.


According to the MD-80 Flight Crew Operating Manual, "When armed, the automatic brake system (ABS) will automatically apply brakes during landing and takeoff modes of flight... ABS landing mode is activated when spoilers are deployed either automatically or manually with throttles retarded and brake pedals released."


A review of the airplane's maintenance log entries for the previous 16 flights did not reveal any abnormalities related to the spoiler or brake systems.

According to the Delta Airlines Pilot's Reference Manual (PRM), during normal landing, "If the spoilers fail to deploy automatically after main wheel spin-up and ground shift, deploy them manually." Landing on wet/icy runways the PRM stated, "When landing wet/icy runways, use 40[degrees] Flaps and manually extend spoilers if they do not deploy on touchdown." In the Abnormal Flight Profiles, the PRM stated, "Ground spoilers significantly increase brake effectiveness. In order to achieve a maximum performance stop, ensure that ground spoilers have extended."

Review of the Delta Airlines MD-80/90 Normal Checklist revealed that it was the duty of the "pilot not flying" to ensure that spoilers were in the "ARM" position.

The weather reported by CLE, at 2033 was, winds from 250 degrees at 13 knots, 3/4 mile visibility, light snow and mist, few clouds at 200 feet, and an overcast cloud layer at 1,100 feet. The temperature and dew point were at 28 degrees Fahrenheit, and there was an altimeter setting of 30.36 inches of mercury.

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: IAD97IA020				
		Occurrence Date: 11/11/1996				
		Occurrence Type: Incident				
Landing Facility/Approach Information						
Airport Name CLEVELAND HOPKINS INT APT		Airport ID: CLE	Airport Elevation 786 Ft. MSL	Runway Used 5R	Runway Length 8999	Runway Width 150
Runway Surface Type: Concrete						
Runway Surface Condition: Snow--compacted; Snow--dry						
Type Instrument Approach: ILS-complete						
VFR Approach/Landing: None						
Aircraft Information						
Aircraft Manufacturer McDonnell Douglas		Model/Series MD-88		Serial Number 49583		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Retractable - Tricycle						
Homebuilt Aircraft? No		Number of Seats: 150	Certified Max Gross Wt. 149500 LBS		Number of Engines: 2	
Engine Type: Turbo Jet		Engine Manufacturer: P&W		Model/Series: JT8D219	Rated Power: 21000 LBS	
- Aircraft Inspection Information						
Type of Last Inspection Continuous Airworthiness		Date of Last Inspection 10/1996	Time Since Last Inspection 285 Hours		Airframe Total Time 23877 Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? No		ELT Operated?		ELT Aided in Locating Accident Site?		
Owner/Operator Information						
Registered Aircraft Owner WILMINGTON TRUST CO.		Street Address RODNEY SQUARE NORTH				
		City WILMINGTON		State DE	Zip Code 19890	
Operator of Aircraft DELTA AIRLINES		Street Address HARTSFIELD INT'L AIRPORT				
		City ATLANTA		State GA	Zip Code 30320	
Operator Does Business As: DELTA AIRLINES				Operator Designator Code: DALA		
- Type of U.S. Certificate(s) Held:						
Air Carrier Operating Certificate(s): Flag Carrier/Domestic						
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: IAD97IA020
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First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 50
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number: On File
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Certificate(s): Airline Transport

Airplane Rating(s): Multi-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review?
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Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 08/1996
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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	12000	1021								
Pilot In Command(PIC)										
Instructor										
Last 90 Days	146	146								
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: IFR

Departure Point ATLANTA	State GA	Airport Identifier ATL	Departure Time 2030	Time Zone EST
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Destination Same as Accident/Incident Location	State	Airport Identifier CLE	
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Type of Clearance: IFR

Type of Airspace: Class B

Weather Information

Source of Briefing:
Company

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
CLE	2133	EST	792 Ft. MSL	1 NM	30 Deg. Mag.
Sky/Lowest Cloud Condition: Scattered			200 Ft. AGL	Condition of Light: Night/Dark	
Lowest Ceiling: Overcast		1100 Ft. AGL		Visibility: 0.75 SM	Altimeter: 30.00 "Hg
Temperature: -2 °C	Dew Point: -2 °C	Wind Direction: 250		Density Altitude: 0 Ft.	
Wind Speed: 13	Gusts:	Weather Conditions at Accident Site: Instrument Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Light			
Restrictions to Visibility: None					
Type of Precipitation: Snow					

Accident Information

Aircraft Damage: Minor	Aircraft Fire: None	Aircraft Explosion: None
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Classification: U.S. Registered/U.S. Soil

- 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				113	113
- TOTAL ABOARD -				118	118
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	118	118

National Transportation Safety Board

FACTUAL REPORT

AVIATION



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Occurrence Date: 11/11/1996

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

JODI L. MOFFETT

Additional Persons Participating in This Accident/Incident Investigation:

PHIL STEELE

FSDO-25

CLEVELAND, OH 44135