
Multiple bounces and airplane damage, McDonnell Douglas MD-11, April 30, 1993

Micro-summary: This McDonnell Douglas MD-11 landed hot, bounced twice, and experienced various damage as a result.

Event Date: 1993-04-30 at 2113 PDT


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


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


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|--|-------------|---------------------------------|----------------------------------|--------------------------------------|--|
|  | | NTSB ID: LAX93IA198 | | Aircraft Registration Number: N803DE | |
| | | Occurrence Date: 04/30/1993 | | Most Critical Injury: None | |
| | | Occurrence Type: Incident | | Investigated By: NTSB | |
| Location/Time | | | | | |
| Nearest City/Place LOS ANGELES | State CA | Zip Code 90045 | Local Time 2113 | Time Zone PDT | |
| Airport Proximity: On Airport | | Distance From Landing Facility: | | Direction From Airport: | |
| Aircraft Information Summary | | | | | |
| Aircraft Manufacturer MCDONNELL DOUGLAS | | Model/Series MD-11 | | 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 April 30, 1993, at 2113 hours Pacific daylight time, Delta Airlines Flight 88, a McDonnell Douglas MD-11, N803DE, landed hard on Runway 24R at Los Angeles International Airport, Los Angeles, California. The airplane, operating as a scheduled international passenger flight under 14 CFR Part 121, sustained minor damage. There were no injuries to the 14 crewmembers or 263 passengers. Night visual meteorological conditions prevailed. The flight originated at Anchorage, Alaska, at 1545 hours.</p> <p>According to the FAA, the pilot was instructed to go-around on his first approach due to the preceding traffic on the runway. On the second approach, the airplane landed hard and bounced. The pilot added power to cushion the landing, which subsequently stowed and disarmed the wing spoilers.</p> <p>Examination of the airplane revealed damage to both nose gear tires and wheel rims, damage to the heat shield on the center body gear, small holes in the fuselage aft of the nose gear, and ingestion of tire rubber in the number 1 engine inlet.</p> <p>Delta Airlines System Manager Flight Safety reported in part, "On arrival into LAX, the crew was cleared for an ILS 24R with about 18,000 pounds of fuel remaining. A go-around was required from short final due to failure of traffic ahead to clear the runway. On short final, [the] aircraft felt like it was sinking, but an instrument check indicated a stable approach. The Captain added additional throttle and back pressure to the controls. The aircraft touched down, the nose pitched up and the aircraft became airborne."</p> <p>The system manager also stated that, "The Captain added additional power and forward pressure to the controls to counter the nose pitch-up. The second touchdown was firm and during the rollout the aircraft vibrated, but was controlled with brakes and engine reversing."</p> <p>Delta Airlines did not report any mechanical failures or malfunctions with the airplane preceding the incident. Delta Airlines also reported that "training in last minute high sink rate situations and recovery techniques after a hard landing could prevent a similar occurrence."</p> | | | | | |
| FACTUAL REPORT - AVIATION | | | | | |

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|--|-------------------------|--------------------------------------|--------------------------------|----------------------|--------------|
|  National Transportation Safety Board FACTUAL REPORT AVIATION | | NTSB ID: LAX931A198 | | | |
| | | Occurrence Date: 04/30/1993 | | | |
| | | Occurrence Type: Incident | | | |
| Landing Facility/Approach Information | | | | | |
| Airport Name | Airport ID: | Airport Elevation | Runway Used | Runway Length | Runway Width |
| LOS ANGELES INTERNATIONAL | LAX | 126 Ft. MSL | 24R | 8925 | 150 |
| Runway Surface Type: Concrete | | | | | |
| Runway Surface Condition: Dry | | | | | |
| Type Instrument Approach: Visual | | | | | |
| VFR Approach/Landing: Traffic Pattern | | | | | |
| Aircraft Information | | | | | |
| Aircraft Manufacturer | | Model/Series | | Serial Number | |
| MCDONNELL DOUGLAS | | MD-11 | | 48474 | |
| Airworthiness Certificate(s): Transport | | | | | |
| Landing Gear Type: Tricycle | | | | | |
| Homebuilt Aircraft? No | Number of Seats: 240 | Certified Max Gross Wt. | 602500 LBS | Number of Engines: 3 | |
| Engine Type: | Engine Manufacturer: | Model/Series: | Rated Power: | | |
| Turbo Fan | P&W | PW4460 | 60000 LBS | | |
| - Aircraft Inspection Information | | | | | |
| Type of Last Inspection | Date of Last Inspection | Time Since Last Inspection | Airframe Total Time | | |
| Continuous Airworthiness | 03/1993 | Hours | 4572 Hours | | |
| - Emergency Locator Transmitter (ELT) Information | | | | | |
| ELT Installed? No | ELT Operated? No | ELT Aided in Locating Accident Site? | | | |
| Owner/Operator Information | | | | | |
| Registered Aircraft Owner | | Street Address | | | |
| DELTA AIRLINES | | HARTSFIELD-ATLANTA AIRPORT | | | |
| | | City | State | Zip Code | |
| | | ATLANTA | GA | 30320 | |
| Operator of Aircraft | | Street Address | | | |
| Same as Reg'd Aircraft Owner | | Same as Reg'd Aircraft Owner | | | |
| | | City | State | Zip Code | |
| | | | | | |
| Operator Does Business As: | | | 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; International; Passenger/Cargo | | | | | |

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|--|-----------------------------|
|  <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p> | NTSB ID: LAX93IA198 |
| | Occurrence Date: 04/30/1993 |
| | Occurrence Type: Incident |

First Pilot Information

| | | | | |
|-----------------|-----------------|------------------|--------------------------|-----------|
| Name On File | City On File | State On File | Date of Birth On File | Age 57 |
|-----------------|-----------------|------------------|--------------------------|-----------|

| | | | |
|--------|---------------------|--------------------------------------|-----------------------------|
| Sex: M | Seat Occupied: Left | Principal Profession: Civilian Pilot | Certificate Number: On File |
|--------|---------------------|--------------------------------------|-----------------------------|

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? |
|---|---------------------------------|

| | | |
|------------------------|--|------------------------------------|
| Medical Cert.: Class 1 | Medical Cert. Status: Valid Medical--no waivers/lim. | Date of Last Medical Exam: 03/1993 |
|------------------------|--|------------------------------------|

| - 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 | 21150 | 1250 | | | | | | | | |
| Pilot In Command(PIC) | | | | | | | | | | |
| Instructor | | | | | | | | | | |
| Last 90 Days | 150 | 150 | | | | | | | | |
| Last 30 Days | | | | | | | | | | |
| Last 24 Hours | 5 | 5 | | | | | | | | |

| | | | |
|--------------------|----------------------------|--------------------------|-------------------|
| Seatbelt Used? Yes | Shoulder Harness Used? Yes | Toxicology Performed? No | Second Pilot? Yes |
|--------------------|----------------------------|--------------------------|-------------------|

Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

| | | | | |
|------------------------------|-------------|---------------------------|------------------------|------------------|
| Departure Point ANCHORAGE | State AK | Airport Identifier ANC | Departure Time 1445 | Time Zone PDT |
|------------------------------|-------------|---------------------------|------------------------|------------------|

| | | | |
|---|-------|---------------------------|--|
| Destination Same as Accident/Incident Location | State | Airport Identifier LAX | |
|---|-------|---------------------------|--|


Type of Clearance: VFR

Type of Airspace: Class D; Class E

Weather Information

Source of Briefing: Company

Method of Briefing:

| | |
|--|-----------------------------|
|  National Transportation Safety Board FACTUAL REPORT AVIATION | NTSB ID: LAX93IA198 |
| | Occurrence Date: 04/30/1993 |
| | Occurrence Type: Incident |

Weather Information

| WOF ID | Observation Time | Time Zone | WOF Elevation | WOF Distance From Accident Site | Direction From Accident Site |
|--------|------------------|-----------|---------------|---------------------------------|------------------------------|
| LAX | 2121 | PDT | 126 Ft. MSL | 1 NM | 360 Deg. Mag. |

| | | |
|-------------------------------------|--------------|--------------------------------|
| Sky/Lowest Cloud Condition: Unknown | 1400 Ft. AGL | Condition of Light: Night/Dark |
|-------------------------------------|--------------|--------------------------------|

| | | | |
|--------------------------|--------------|------------------|----------------------|
| Lowest Ceiling: Overcast | 1400 Ft. AGL | Visibility: 7 SM | Altimeter: 29.00 "Hg |
|--------------------------|--------------|------------------|----------------------|

| | | | |
|--------------------|------------------|---------------------|-----------------------|
| Temperature: 17 °C | Dew Point: 14 °C | Wind Direction: 120 | Density Altitude: Ft. |
|--------------------|------------------|---------------------|-----------------------|

| | | |
|---------------|--------|--|
| Wind Speed: 5 | Gusts: | Weather Conditions at Accident Site: Visual Conditions |
|---------------|--------|--|

| | | |
|-------------------------|-----------------------|-------------------------------------|
| Visibility (RVR): 0 Ft. | Visibility (RVV) 0 SM | Intensity of Precipitation: Unknown |
|-------------------------|-----------------------|-------------------------------------|

Restrictions to Visibility: None

Type of Precipitation: None

Accident Information

| | | |
|------------------------|---------------------|--------------------------|
| Aircraft Damage: Minor | Aircraft Fire: None | Aircraft Explosion: None |
|------------------------|---------------------|--------------------------|

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 | | | | 1 | 1 |
| Cabin Attendants | | | | 11 | 11 |
| Other Crew | | | | | |
| Passengers | | | | 263 | 263 |
| - TOTAL ABOARD - | | | | 277 | 277 |
| Other Ground | 0 | 0 | 0 | | 0 |
| - GRAND TOTAL - | 0 | 0 | 0 | 277 | 277 |

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: LAX93IA198

Occurrence Date: 04/30/1993

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

THOMAS H. WILCOX,

Additional Persons Participating in This Accident/Incident Investigation:

JEFF GORDON
FAA, WP-LAX-FSDO
LOS ANGELES, CA