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## Cabin smoke evacuation, McDonald Douglas DC-9-82, April 16, 2003

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**Micro-summary:** After APU smoke permeates the cabin of this McDonald Douglas DC-9-82, an evacuation is ordered.

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**Event Date:** 2003-04-16 at 1158 CDT


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


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


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1. Accident reports can be and sometimes are revised. Be sure to consult the investigative agency for the latest version before basing anything significant on content (e.g., thesis, research, etc).
  2. Readers are advised that each report is a glimpse of events at specific points in time. While broad themes permeate the causal events leading up to crashes, and we can learn from those, the specific regulatory and technological environments can and do change. ***Your company's flight operations manual is the final authority as to the safe operation of your aircraft!***
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|  |  |                                 |                                  |                                      |                  |
|--|--|---------------------------------|----------------------------------|--------------------------------------|------------------|
|    |  | NTSB ID: FTW03LA132             |                                  | Aircraft Registration Number: N452AA |                  |
|  |  | Occurrence Date: 04/16/2003     |                                  | Most Critical Injury: Serious        |                  |
|  |  | Occurrence Type: Accident       |                                  | Investigated By: NTSB                |                  |
| Location/Time  |  |                                 |                                  |                                      |                  |
| Nearest City/Place<br>DFW Airport  |  | State<br>TX                     | Zip Code<br>75261                | Local Time<br>1158                   | Time Zone<br>CDT |
| Airport Proximity: On Airport  |  | Distance From Landing Facility: |                                  | Direction From Airport:              |                  |
| Aircraft Information Summary   |  |                                 |                                  |                                      |                  |
| Aircraft Manufacturer<br>McDonnell Douglas   |  | Model/Series<br>DC-9-82 (MD-82) |                                  | Type of Aircraft<br>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 16, 2003, at 1158 central daylight time, a McDonald Douglas DC-9-82 (MD-82), N452AA, operating as American Airlines Flight 2439 (AAL 2439), was not damaged when it encountered smoke in the cabin while taxiing after landing at the Dallas/Fort Worth International Airport (DFW), Texas. AAL 2439 was being operated by American Airlines, Inc., of Fort Worth, Texas under 14 Code of Federal Regulations Part 121, as a scheduled domestic passenger flight, from Nashville (BNA), Tennessee to DFW. One passenger sustained minor injuries, one passenger sustained a serious injury, 49 passengers and the 5 crewmembers were not injured during the emergency evacuation.</p> <p>AAL 2439 landed at DFW on runway 17L and took the high-speed exit Quebec Seven onto taxiway Echo Romeo. After crossing runway 17C, the airplane turned north onto taxiway Mike, and the first officer started the auxiliary power unit (APU). Shortly thereafter, the #1 flight attendant called the cockpit and reported smoke in the cabin, and "it smelled electrical." The captain shut off the recirculating fan and air conditioning packs, and turned on the ram air. The captain then requested a situation assessment from a deadheading American Airlines captain (Check Airman) who was in first class. The Check Airman reported to the captain that "you've got smoke, and its getting worse." The captain stopped the airplane on taxiway Mike short of taxiway Echo Lima and issued instructions to the flight attendants to evacuate the airplane. The flight attendants evacuated the passengers via the fore and aft service door slides, and forward entry door slide. After completing the ground evacuating checklist, the flight crew exited the airplane.</p> <p>One passenger sustained minor lacerations and scrapes on the right hand, and another passenger sustained a broken right ankle. The passenger with the broken ankle underwent surgery for the injury, and was hospitalized for a period exceeding 48 hours.</p> <p>American Airlines maintenance replaced all slides and a leaking O-ring on the hydraulic transfer pump before returning the aircraft to service. Examination of the aircraft revealed the smoke was caused when the APU ingested hydraulic fluid that leaked from the pump after APU start-up.</p> |  |                                 |                                  |                                      |                  |
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|--|----------------------|--------------------------------------|--------------------------------|---------------------|--------------------|
| <br><b>National Transportation Safety Board</b><br><b>FACTUAL REPORT</b><br><b>AVIATION</b> |                      | NTSB ID: FTW03LA132                  |                                |                     |                    |
|  |                      | Occurrence Date: 04/16/2003          |                                |                     |                    |
|  |                      | Occurrence Type: Accident            |                                |                     |                    |
| <b>Landing Facility/Approach Information</b>   |                      |                                      |                                |                     |                    |
| Airport Name   | Airport ID:          | Airport Elevation                    | Runway Used                    | Runway Length       | Runway Width       |
| Dallas-Ft.Worth International  | DFW                  | 607 Ft. MSL                          | 17L                            | 8500                | 150                |
| Runway Surface Type: Concrete  |                      |                                      |                                |                     |                    |
| Runway Surface Condition: Dry  |                      |                                      |                                |                     |                    |
| Type Instrument Approach:  |                      |                                      |                                |                     |                    |
| VFR Approach/Landing:  |                      |                                      |                                |                     |                    |
| <b>Aircraft Information</b>  |                      |                                      |                                |                     |                    |
| Aircraft Manufacturer  |                      | Model/Series                         |                                | Serial Number       |                    |
| McDonnell Douglas  |                      | DC-9-82 (MD-82)                      |                                | 49553               |                    |
| Airworthiness Certificate(s): Normal   |                      |                                      |                                |                     |                    |
| Landing Gear Type: Retractable - Tricycle  |                      |                                      |                                |                     |                    |
| Homebuilt Aircraft? No   | Number of Seats: 133 | Certified Max Gross Wt.              |                                | LBS                 | Number of Engines: |
| Engine Type:   | Engine Manufacturer: | Model/Series:                        |                                | Rated Power:        |                    |
| Turbo Fan  | Pratt & Whitney      | JT8D-200                             |                                |                     |                    |
| - Aircraft Inspection Information  |                      |                                      |                                |                     |                    |
| Type of Last Inspection  |                      | Date of Last Inspection              | Time Since Last Inspection     | Airframe Total Time |                    |
| Continuous Airworthiness   |                      | 04/2003                              | 3 Hours                        | 45607 Hours         |                    |
| - Emergency Locator Transmitter (ELT) Information  |                      |                                      |                                |                     |                    |
| ELT Installed? Yes   | ELT Operated?        | ELT Aided in Locating Accident Site? |                                |                     |                    |
| <b>Owner/Operator Information</b>  |                      |                                      |                                |                     |                    |
| Registered Aircraft Owner  |                      | Street Address                       |                                |                     |                    |
| American Airlines, inc.  |                      | 4333 Amon Carter Blvd                |                                |                     |                    |
|  |                      | City                                 | State                          | Zip Code            |                    |
|  |                      | Fort Worth                           | TX                             | 76155               |                    |
| Operator of Aircraft   |                      | Street Address                       |                                |                     |                    |
| Same as Reg'd Aircraft Owner   |                      | 4333 Amon Carter Blvd                |                                |                     |                    |
|  |                      | City                                 | State                          | Zip Code            |                    |
|  |                      | Fort Worth                           | TX                             | 76155               |                    |
| Operator Does Business As: American Airlines   |                      |                                      | Operator Designator Code: AALA |                     |                    |
| - 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  |                      |                                      |                                |                     |                    |

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|  <p><b>National Transportation Safety Board</b><br/><b>FACTUAL REPORT</b><br/><b>AVIATION</b></p> | NTSB ID: FTW03LA132         |
|  | Occurrence Date: 04/16/2003 |
|  | Occurrence Type: Accident   |

**First Pilot Information**

|                 |      |       |                          |           |
|-----------------|------|-------|--------------------------|-----------|
| Name<br>On File | City | State | Date of Birth<br>On File | Age<br>46 |
|-----------------|------|-------|--------------------------|-----------|

|        |                     |                                      |                             |
|--------|---------------------|--------------------------------------|-----------------------------|
| 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): Airplane Multi-engine; Airplane Single-engine

|   |   |
|---|---|
| Type Rating/Endorsement for Accident/Incident Aircraft? Yes | Current Biennial Flight Review? 03/2003 |
|---|---|

|                        |  |                                    |
|------------------------|--|------------------------------------|
| Medical Cert.: Class 1 | Medical Cert. Status: Valid Medical--no waivers/lim. | Date of Last Medical Exam: 02/2003 |
|------------------------|--|------------------------------------|

| - 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            |         | 6934                |                        |                       |       |            |           |            |        |                  |
| Pilot In Command(PIC) |         |                     |                        |                       |       |            |           |            |        |                  |
| Instructor            |         |                     |                        |                       |       |            |           |            |        |                  |
| Last 90 Days          |         | 126                 |                        |                       |       |            |           |            |        |                  |
| Last 30 Days          |         | 45                  |                        |                       |       |            |           |            |        |                  |
| Last 24 Hours         |         | 6                   |                        |                       |       |            |           |            |        |                  |

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

**Flight Plan/Itinerary**

Type of Flight Plan Filed: IFR

|                              |             |                           |                        |                  |
|------------------------------|-------------|---------------------------|------------------------|------------------|
| Departure Point<br>Nashville | State<br>TN | Airport Identifier<br>BNA | Departure Time<br>1014 | Time Zone<br>CDT |
|------------------------------|-------------|---------------------------|------------------------|------------------|

|   |       |                           |  |
|---|-------|---------------------------|--|
| Destination<br>Same as Accident/Incident Location | State | Airport Identifier<br>DFW |  |
|---|-------|---------------------------|--|


Type of Clearance: None

Type of Airspace:

**Weather Information**

Source of Briefing:

Method of Briefing:

|  |                             |
|--|-----------------------------|
|  <p><b>National Transportation Safety Board</b><br/><b>FACTUAL REPORT</b><br/><b>AVIATION</b></p> | NTSB ID: FTW03LA132         |
|  | Occurrence Date: 04/16/2003 |
|  | Occurrence Type: Accident   |

**Weather Information**

|                                   |                     |  |               |                                 |                              |
|-----------------------------------|---------------------|--|---------------|---------------------------------|------------------------------|
| WOF ID                            | Observation Time    | Time Zone  | WOF Elevation | WOF Distance From Accident Site | Direction From Accident Site |
| DFW                               | 1156                | CDT  | Ft. MSL       | NM                              | Deg. Mag.                    |
| Sky/Lowest Cloud Condition: Clear |                     |  |               | Ft. AGL                         | Condition of Light: Day      |
| Lowest Ceiling: None              |                     |  | Ft. AGL       | Visibility: 10 SM               | Altimeter: 29.76 "Hg         |
| Temperature: 26 °C                | Dew Point: 3 °C     | Wind Direction: 240                                    |               | Density Altitude: 2203 Ft.      |                              |
| Wind Speed: 17                    | Gusts: 21           | Weather Conditions at Accident Site: Visual Conditions |               |                                 |                              |
| Visibility (RVR): Ft.             | Visibility (RVV) SM | Intensity of Precipitation:                            |               |                                 |                              |
| Restrictions to Visibility: None  |                     |  |               |                                 |                              |
| Type of Precipitation: None       |                     |  |               |                                 |                              |

**Accident Information**

|                       |                     |                          |
|-----------------------|---------------------|--------------------------|
| Aircraft Damage: None | 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         |       |         |       |      |       |
| Cabin Attendants        |       |         |       | 3    | 3     |
| Other Crew              |       |         |       |      |       |
| Passengers              |       | 1       | 1     | 49   | 51    |
| - TOTAL ABOARD -        |       | 1       | 1     | 54   | 56    |
| Other Ground            |       |         |       |      |       |
| - GRAND TOTAL -         |       | 1       | 1     | 54   | 56    |

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: FTW03LA132

Occurrence Date: 04/16/2003

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Douglas D. Wigington

Additional Persons Participating in This Accident/Incident Investigation:

Elaine Santangelo  
Aviation Safety Inspector (Operations)  
DFW AMR CMO  
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