
Control difficulties, McDonnell Douglas MD-11, October 21, 1998

Micro-summary: A shop rag jammed a control pulley, causing roll control difficulties for this MD-11.


Event Date: 1998-10-21 at 1015 HST


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


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

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 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: LAX99IA013		Aircraft Registration Number: N581FE	
		Occurrence Date: 10/21/1998		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place HONOLULU		State HI	Zip Code 96819	Local Time 1015	Time Zone HST
Airport Proximity: On Airport		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series MD-11		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 October 21, 1998, at 1015 hours Hawaiian standard time, Federal Express flight 77, a Boeing MD-11, N581FE, returned to Honolulu, Hawaii, after it experienced roll control problems during the climb-to-cruise phase. The airplane departed from Honolulu at 0936 and returned for an uneventful landing without incident or damage. Federal Express Corporation operated the airplane under 14 CFR 121 as flight 77, a scheduled international cargo flight from Honolulu to Sydney, Australia. The airline transport pilot licensed captain, first officer, and reserve pilot were not injured. Visual meteorological conditions prevailed, and an IFR flight plan had been filed.</p> <p>According to the crews' written statements, the first officer was the flying pilot on the takeoff and detected a heavy right wing, with difficulty in controlling the roll attitude of the aircraft. The crew declared an emergency, dumped fuel, and returned for landing 40 minutes after departure. Upon arrival at the gate a Federal Aviation Administration inspector noted three of the five spoilers on top of the right wing were fully deployed. At the time, the engines were off, and the auxiliary power unit was operating. Examination of the airplane by maintenance personnel revealed that a general-purpose style shop rag was lodged in the pulley system that operates the Nos. 1, 4, and 5 spoilers on the right wing.</p> <p>The pulley area where the mechanics found the rag was an open and unprotected area in the center body landing gear wheel well. The center gear doors are normally closed on the ground; however, maintenance personnel can open the doors to work in this area. The doors open and the center body landing gear retracts forward into this area during normal operation.</p> <p>Review of the aircraft records disclosed that the last maintenance completed in this area was 2 days prior to the accident at Los Angeles, California. A contract fuel systems repair company opened several lines to check for leaks. This company works in the FedEx hangar and follows FedEx procedures. The supervisor stated his mechanics completed the work on a Sunday. They could not find any rags, so he brought rags from another FedEx hangar. He was positive that he provided diaper style rags rather than shop style rags. His company only used the diaper style rag because it was more absorbent than a regular shop rag. A FedEx mechanic said they normally used colored general-purpose shop towels. They occasionally used white terrycloth towels.</p> <p>The airplane completed 9 flights through various line stations prior to the mishap. A FedEx mechanic stated that on a walk around inspection, mechanics did not normally open the center body wheel well doors and look at the spoiler pulley system. The FedEx maintenance manual requires a daily service check. During this check, the mechanic lowers the center gear wheel well doors and inspects the inside area for condition and integrity. Records for this service check are only retained for 60 days, and no record was available to verify the last date of inspection. The manufacturer's specifications do not require the flight crew to open the center gear doors or check inside the center gear well during their preflight inspection.</p>					
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 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: LAX991A013				
		Occurrence Date: 10/21/1998				
		Occurrence Type: Incident				
Landing Facility/Approach Information						
Airport Name HONOLULU INTERNATIONAL		Airport ID: HNL	Airport Elevation 13 Ft. MSL	Runway Used 26R	Runway Length 12357	Runway Width 150
Runway Surface Type: Asphalt						
Runway Surface Condition: Dry						
Type Instrument Approach: Visual						
VFR Approach/Landing: Precautionary Landing						
Aircraft Information						
Aircraft Manufacturer Boeing		Model/Series MD-11		Serial Number 48419		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Retractable - Tricycle						
Homebuilt Aircraft? No		Number of Seats: 4	Certified Max Gross Wt. 633000 LBS		Number of Engines: 3	
Engine Type: Turbo Fan		Engine Manufacturer: GE		Model/Series: CF6-80C2D1F	Rated Power: 62400 LBS	
- Aircraft Inspection Information						
Type of Last Inspection Continuous Airworthiness		Date of Last Inspection 10/1998	Time Since Last Inspection 119 Hours		Airframe Total Time 26857 Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed?		ELT Operated?		ELT Aided in Locating Accident Site?		
Owner/Operator Information						
Registered Aircraft Owner WILMINGTON TRUST CO		Street Address 100 N MARKET ST				
		City WILMINGTON		State DE	Zip Code 19890	
Operator of Aircraft FEDERAL EXPRESS CORPORATION		Street Address 3131 DEMOCRAT BLDG C				
		City MEMPHIS		State TN	Zip Code 38118	
Operator Does Business As:				Operator Designator Code: FDEA		
- 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; Cargo						
FACTUAL REPORT - AVIATION						

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: LAX99IA013
	Occurrence Date: 10/21/1998
	Occurrence Type: Incident

First Pilot Information

Name On File	City On File	State On File	Date of Birth	Age 54
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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: 10/1998
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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	4097	1360		4097						
Pilot In Command(PIC)	4097	1360		4097						
Instructor										
Last 90 Days	53	53		53						
Last 30 Days	26	26		26						
Last 24 Hours	2	2		2						

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 Same as Accident/Incident Location	State	Airport Identifier HNL	Departure Time 0936	Time Zone HST
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Destination SYDNEY AUSTRALI	State OF	Airport Identifier	
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Type of Clearance: IFR

Type of Airspace: Class B

Weather Information

Source of Briefing:
No record of briefing

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
HNL	1053	HST	13 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Scattered			4000 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken			4900 Ft. AGL	Visibility: 10 SM	Altimeter: 30.00 "Hg
Temperature: 27 °C	Dew Point: 20 °C	Wind Direction: 160		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: None	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					
Other Crew				1	1
Passengers					
- TOTAL ABOARD -				3	3
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	3	3

National Transportation Safety Board

FACTUAL REPORT
AVIATION



NTSB ID: LAX99IA013

Occurrence Date: 10/21/1998

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

HOWARD D. PLAGENS

Additional Persons Participating in This Accident/Incident Investigation:

SCOTT CROSIER
WP-HNL-FSDO
HONOLULU, HI 96819