



National Transportation Safety Board Aviation Accident Final Report

Location:	CHICAGO, IL	Accident Number:	CHI88FA223
Date & Time:	08/27/1988, 1650 CDT	Registration:	N852TW
Aircraft:	BOEING 727-31	Aircraft Damage:	Substantial
Defining Event:		Injuries:	7 Minor, 61 None
Flight Conducted Under:	Part 121: Air Carrier - Scheduled		

Analysis

SCHEDULED DOMESTIC PART 121 FLIGHT COULD NOT GET LANDING GEAR TO EXTEND ON APPROACH TO CHICAGO MIDWAY AIRPORT. AFTER MISSED APPROACH, CREW TRIED UNSUCCESSFULLY TO EXTEND GEAR MANUALLY USING PROCEDURES IN COCKPIT CHECKLIST AND FLIGHT OPERATIONS MANUAL. EMERGENCY GEAR-UP LANDING WAS MADE AT CHICAGO O'HARE INTERNATIONAL AIRPORT. INVESTIGATION REVEALED A DISCONNECTED GEAR SELECTOR ACTUATING ROD FROM THE NORMAL LANDING GEAR RETRACT/EXTENSION ACTUATING ASSEMBLY. CREW DAMAGED MANUAL GEAR EXTENSION MECHANISM IN MANUAL EXTENSION ATTEMPTS. FAA APPROVED PROCEDURAL CHECKLIST HAD OMITTED CRITICAL STEP IN MANUAL GEAR EXTENSION PROCEDURE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: IMPROPER PROCEDURAL CHECKLIST IN WHICH A CRITICAL STEP WAS NOT LISTED.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

1. LANDING GEAR,NORMAL RETRACTION/EXTENSION ASSEMBLY - INOPERATIVE
 2. (C) MISSED APPROACH - PERFORMED
 3. (F) CHECKLIST - INACCURATE - COMPANY/OPERATOR MANAGEMENT
 4. (C) PROCEDURES/DIRECTIVES - IMPROPER - COMPANY/OPERATOR MANAGEMENT
 5. (C) CONDITION(S)/STEP(S) NOT LISTED - FAA(PRINCIPAL MAINTENANCE INSPECTOR)
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Occurrence #2: GEAR NOT EXTENDED
Phase of Operation: LANDING

Findings

6. WHEELS UP LANDING - PERFORMED - PILOT IN COMMAND

Factual Information

Pilot Information

Certificate:	Airline Transport	Age:	51, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	04/12/1988
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	16899 hours (Total, all aircraft), 6411 hours (Total, this make and model), 5266 hours (Pilot In Command, all aircraft), 195 hours (Last 90 days, all aircraft), 76 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BOEING	Registration:	N852TW
Model/Series:	727-31 727-31	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	18571
Landing Gear Type:	Retractable - Tricycle	Seats:	124
Date/Type of Last Inspection:	04/29/1988, Continuous Airworthiness	Certified Max Gross Wt.:	152000 lbs
Time Since Last Inspection:	720 Hours	Engines:	3 Turbo Fan
Airframe Total Time:	56099 Hours	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	JT8D-7B
Registered Owner:	TRANS WORLD AIRLINES, INC	Rated Power:	14000 lbs
Operator:	TRANS WORLD AIRLINES	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:	TRANS WORLD AIRLINES	Operator Designator Code:	TWAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ORD, 667 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1642 CDT	Direction from Accident Site:	160°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	5 Miles
Lowest Ceiling:	Broken / 1400 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	16° C / 16° C
Precipitation and Obscuration:			
Departure Point:	ST. LOUIS, MO (STL)	Type of Flight Plan Filed:	IFR
Destination:	CHICAGO, IL (MDW)	Type of Clearance:	IFR
Departure Time:	1457 CDT	Type of Airspace:	Class B; Class E

Airport Information

Airport:	CHICAGO O'HARE (ORD)	Runway Surface Type:	Asphalt
Airport Elevation:	667 ft	Runway Surface Condition:	Wet
Runway Used:	14L	IFR Approach:	ILS
Runway Length/Width:	10003 ft / 150 ft	VFR Approach/Landing:	Full Stop; Straight-in

Wreckage and Impact Information

Crew Injuries:	6 None	Aircraft Damage:	Substantial
Passenger Injuries:	7 Minor, 55 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	7 Minor, 61 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	MARK E DOUB	Report Date:	07/09/1990
Additional Participating Persons:	JOHN J DUSAK; CHICAGO, IL H B PRATT; ST. LOUIS, MO GREG POCHAPSKY; ST. CHARLES, MO KELVIN ANDERSON; CHICAGO, IL		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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