



National Transportation Safety Board Aviation Incident Final Report

Location:	LOS ANGELES, CA	Incident Number:	LAX90IA305
Date & Time:	08/27/1990, 1025 PDT	Registration:	N174UA
Aircraft:	BOEING 747-422	Aircraft Damage:	Minor
Defining Event:		Injuries:	25 Minor, 320 None

Flight Conducted Under: Part 121: Air Carrier - Scheduled

Analysis

THE CREW NOTED THAT THE NOSE AND MAIN BODY GEAR INDICATED UP AND LOCKED AFTER NORMAL GEAR EXTENSION. THE CREW USED THE ALT GEAR EXTENSION PROCEDURE, WHICH WAS UNSUCCESSFUL. THE AIRCRAFT LANDED WITH THE NOSE AND MAIN BODY GEAR RETRACTED WHEN THE FLIGHT REACHED THE MIN FUEL STATE. EXAM OF THE AIRCRAFT REVEALED THAT THE SELECTOR VALVE FOR THE AFFECTED GEAR WAS IN THE UP AND LOCKED POSITION, AND THE BOLT WHICH CONNECTS THE VALVE ARM TO THE COCKPIT CONTROL CABLE SYSTEM WAS MISSING. THE BOLT FOR WING GEAR SELECTOR VALVE ARM WAS FOUND PARTIALLY BACKED OUT; THE NUT AND COTTER PIN WERE MISSING. THE AIRCRAFT WAS DELIVERED TO UNITED IN JAN OF 1990 AND HAD 2,952 FLT HRS AND 402 CYCLES. DETAILED REVIEW OF THE MAINT RECORDS PROVED THAT UNITED HAD NOT PERFORMED ANY MAINT ON THE LANDING GEAR SYSTEM. A SECOND ALT GEAR EXTENSION PROCEDURE INVOLVING DE-ENERGIZING THE HYDRAULIC SYSTEM FOR THE AFFECTED GEAR IS NOT PUBLISHED IN THE CREW MANUALS, TAUGHT DURING INITIAL TRAINING, NOR AVAILABLE ON ANY CHECKLIST.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: THE FAILURE OF THE MANUFACTURER TO ENSURE THAT THE LANDING GEAR SELECTOR VALVES AND THEIR ASSOCIATED DRUM LINK ASSEMBLIES WERE PROPERLY INSTALLED PRIOR TO DELIVERY OF THE AIRCRAFT. A FACTOR IN THE ACCIDENT WAS THE LACK OF INFORMATION AVAILABLE TO THE CREW CONCERNING THE SECONDARY ALTERNATE GEAR EXTENSION PROCEDURE.

Findings

Occurrence #1: GEAR NOT EXTENDED

Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR,GEAR LEVER - DISCONNECTED
2. (C) MAINTENANCE,INSTALLATION - IMPROPER - MANUFACTURER
3. GEAR EXTENSION - NOT POSSIBLE - PILOT IN COMMAND
4. (F) INFORMATION UNAVAILABLE - PILOT IN COMMAND

Factual Information

Pilot Information

Certificate:	Airline Transport	Age:	57, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	08/03/1990
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	18795 hours (Total, all aircraft), 25 hours (Total, this make and model), 121 hours (Last 90 days, all aircraft), 42 hours (Last 30 days, all aircraft), 13 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BOEING	Registration:	N174UA
Model/Series:	747-422 747-422	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	24381
Landing Gear Type:	Retractable - Tricycle	Seats:	348
Date/Type of Last Inspection:	08/25/1990, Continuous Airworthiness	Certified Max Gross Wt.:	870000 lbs
Time Since Last Inspection:	31 Hours	Engines:	4 Turbo Fan
Airframe Total Time:	2952 Hours	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	JT 4056
Registered Owner:	UNKNOWN	Rated Power:	56000 lbs
Operator:	UNITED AIRLINES	Air Carrier Operating Certificate:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	UALA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	LAX, 126 ft msl	Observation Time:	1025 PDT
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Temperature/Dew Point:	24° C / 13° C
Lowest Ceiling:	None / 0 ft agl	Visibility	12 Miles
Wind Speed/Gusts, Direction:	10 knots, 250°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	SYDNEY, OF (ASSY)	Type of Flight Plan Filed:	IFR
Destination:	(LAX)	Type of Clearance:	IFR
Departure Time:	0300 UTC	Type of Airspace:	Class D; Class E

Airport Information

Airport:	LOS ANGELES INTL. (LAX)	Runway Surface Type:	Concrete
Airport Elevation:	126 ft	Runway Surface Condition:	Dry
Runway Used:	25R	IFR Approach:	None
Runway Length/Width:	12091 ft / 150 ft	VFR Approach/Landing:	Go Around; Touch and Go; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	20 None	Aircraft Damage:	Minor
Passenger Injuries:	23 Minor, 300 None	Aircraft Fire:	None
Ground Injuries:	2 Minor	Aircraft Explosion:	None
Total Injuries:	25 Minor, 320 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	JEFF RICH	Adopted Date:	12/30/1992
Additional Participating Persons:	GEORGE BRAUN; LOS ANGELES, CA		
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report.