
Landing gear strut door separation, L-1011-385, May 15, 1997

Micro-summary: This Lockheed L-1011-385 experienced an in-flight separation of the left main landing gear strut door, while on climb.


Event Date: 1997-05-15 at 1025 CDT


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


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

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 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!***
 3. Reports may or may not represent reality. Many many non-scientific factors go into an investigation, including the magnitude of the event, the experience of the investigator, the political climate, relationship with the regulatory authority, technological and recovery capabilities, etc. It is recommended that the reader review all reports analytically. Even a "bad" report can be a very useful launching point for learning.
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|---|--|-----------------------------------|----------------------------------|--------------------------------------|------------------|
|  | | NTSB ID: CHI97IA134 | | Aircraft Registration Number: N11003 | |
| | | Occurrence Date: 05/15/1997 | | Most Critical Injury: None | |
| | | Occurrence Type: Incident | | Investigated By: NTSB | |
| Location/Time | | | | | |
| Nearest City/Place SAINT LOUIS | | State MO | Zip Code 63101 | Local Time 1025 | Time Zone CDT |
| Airport Proximity: Off Airport/Airstrip | | Distance From Landing Facility: 5 | | Direction From Airport: 120 | |
| Aircraft Information Summary | | | | | |
| Aircraft Manufacturer Lockheed | | Model/Series L-1011-385-1 | | 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 May 15, 1997, at 1025 central daylight time (cdt), a Lockheed L-1011-385, N11003, operated and registered to Trans World Airlines, Inc., as revenue flight 327, experienced an in-flight separation of the left main landing gear strut door, while on approach to the Lambert Saint Louis International Airport, Saint Louis, Missouri. There were no injuries to the 11 crewmembers or the 176 passengers aboard the airplane. The aircraft was operating as a scheduled domestic passenger flight under the provisions of title 14 CFR Part 121. Visual meteorological conditions existed at the time, and an instrument flight plan was on file for the flight. The flight departed Orlando, Florida, at 0801 cdt, with a destination of Saint Louis, Missouri.</p> <p>According to the flight crew's written statements, at approximately 28 minutes after take off while passing flight level 28.5 for flight level 290, they heard a loud bang of short duration. All systems and flight controls were checked with a visual examination of the wings, and engines number one and three were checked and found to be normal. The Captain maintained .80 mach and flight level 290 for the en route portion of the flight. The Flight Engineer felt a slight vibration around seat rows 24 and 25 located on the left aisle area near the left wing. No other abnormalities were felt. The Captain used conservative speeds for landing configuration and an uneventful landing was made. The Flight Engineer discovered the missing left main landing gear strut door and under wing damage during his post flight inspection.</p> <p>The left main landing gear strut door was discovered approximately five miles away on an extended centerline to runway 30L to Lambert Saint Louis International Airport. The landing gear door landed in downtown Saint Louis at the corner of Tucker Boulevard and Market Street.</p> <p>The NTSB on-scene investigation began at 0900 on May 16, 1997 at the TWA maintenance facility located at Lambert Saint Louis International Airport. Examination of the lower forward mounting bracket revealed the mounting eyebolt had rounded threads and its associated hardware was missing. The missing hardware consisted of a spacer, washer, castellated nut and cotter pin. All other mounting points revealed signs of overload fractures. The last maintenance performed in this area was on May 7, 1997.</p> | | | | | |
| FACTUAL REPORT - AVIATION | | | | | |

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|  National Transportation Safety Board FACTUAL REPORT AVIATION | | NTSB ID: CHI97IA134 | | | |
| | | Occurrence Date: 05/15/1997 | | | |
| | | Occurrence Type: Incident | | | |
| Landing Facility/Approach Information | | | | | |
| Airport Name | Airport ID: | Airport Elevation | Runway Used | Runway Length | Runway Width |
| LAMBERT ST LOUIS INTL | STL | 605 Ft. MSL | 30L | 11019 | 200 |
| Runway Surface Type: Concrete | | | | | |
| Runway Surface Condition: Dry | | | | | |
| Type Instrument Approach: ILS-complete | | | | | |
| VFR Approach/Landing: Full Stop | | | | | |
| Aircraft Information | | | | | |
| Aircraft Manufacturer | | Model/Series | | Serial Number | |
| Lockheed | | L-1011-385-1 | | 193B-1015 | |
| Airworthiness Certificate(s): Transport | | | | | |
| Landing Gear Type: Retractable - Tricycle | | | | | |
| Homebuilt Aircraft? No | Number of Seats: 271 | Certified Max Gross Wt. | 430000 LBS | Number of Engines: 3 | |
| Engine Type: | Engine Manufacturer: | Model/Series: | Rated Power: | | |
| Turbo Fan | Rolls-Royce | RB211-22B | 42000 LBS | | |
| - Aircraft Inspection Information | | | | | |
| Type of Last Inspection | Date of Last Inspection | Time Since Last Inspection | Airframe Total Time | | |
| Continuous Airworthiness | 02/1997 | Hours | 554 Hours | | |
| - Emergency Locator Transmitter (ELT) Information | | | | | |
| ELT Installed? Yes | ELT Operated? No | ELT Aided in Locating Accident Site? | | | |
| Owner/Operator Information | | | | | |
| Registered Aircraft Owner | | Street Address | | | |
| TRANS WORLD AIRLINES | | 1 CITY CENTER 515 N 6TH STREET | | | |
| | | City | State | Zip Code | |
| | | SAINT LOUIS | MO | 63101 | |
| 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: TWA | | | Operator Designator Code: TWAA | | |
| - 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/Cargo | | | | | |
| FACTUAL REPORT - AVIATION | | | | | |

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|  <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p> | NTSB ID: CHI97IA134 |
| | Occurrence Date: 05/15/1997 |
| | Occurrence Type: Incident |

First Pilot Information

| | | | | |
|-----------------|-----------------|------------------|--------------------------|-----------|
| Name On File | City On File | State On File | Date of Birth On File | Age 58 |
|-----------------|-----------------|------------------|--------------------------|-----------|

| | | | |
|--------|---------------------|--------------------------------------|-----------------------------|
| 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--w/ waivers/lim. | Date of Last Medical Exam: 11/1996 |
|------------------------|--|------------------------------------|

| - 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 | 15163 | 4045 | | 4045 | | | | | | |
| Pilot In Command(PIC) | 5690 | 3575 | | | | | | | | |
| Instructor | | | | | | | | | | |
| Last 90 Days | 200 | 200 | | 200 | | | | | | |
| Last 30 Days | 63 | 63 | | 63 | | | | | | |
| Last 24 Hours | | | | | | | | | | |

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

Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

| | | | | |
|----------------------------|-------------|---------------------------|------------------------|------------------|
| Departure Point ORLANDO | State FL | Airport Identifier MCO | Departure Time 0801 | Time Zone CDT |
|----------------------------|-------------|---------------------------|------------------------|------------------|

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


Type of Clearance: IFR

Type of Airspace: Class B

Weather Information

Source of Briefing:
Company

Method of Briefing:

| | |
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| | Occurrence Date: 05/15/1997 |
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|---------------------------------------|-----------------------|--|-------------------|---------------------------------|------------------------------|
| Weather Information | | | | | |
| WOF ID | Observation Time | Time Zone | WOF Elevation | WOF Distance From Accident Site | Direction From Accident Site |
| STL | 1155 | CDT | 605 Ft. MSL | 0 NM | 0 Deg. Mag. |
| Sky/Lowest Cloud Condition: Scattered | | | 10000 Ft. AGL | Condition of Light: Day | |
| Lowest Ceiling: None | | 0 Ft. AGL | Visibility: 10 SM | Altimeter: 30.00 | "Hg |
| Temperature: 16 °C | Dew Point: -1 °C | Wind Direction: 320 | | Density Altitude: 711 | Ft. |
| Wind Speed: 19 | Gusts: 24 | 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 |

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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 | | | | 1 | 1 |
| Cabin Attendants | | | | 8 | 8 |
| Other Crew | | | | | |
| Passengers | | | | 176 | 176 |
| - TOTAL ABOARD - | | | | 187 | 187 |
| Other Ground | 0 | 0 | 0 | | 0 |
| - GRAND TOTAL - | 0 | 0 | 0 | 187 | 187 |

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: CHI97IA134

Occurrence Date: 05/15/1997

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

TODD J. CARLSON

Additional Persons Participating in This Accident/Incident Investigation:

CARL D'AGNESE
10801 PEAR TREE LANE STE 200
ST. ANN, MO 63074