



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Preliminary Report

Location:	Chattanooga, TN	Accident Number:	DCA24FA002
Date & Time:	October 4, 2023, 23:47 Local	Registration:	N977FD
Aircraft:	Boeing 757-236	Injuries:	3 None
Flight Conducted Under:	Part 121: Air carrier - Non-scheduled		

On October 4, 2023, about 23:47 eastern daylight time, Federal Express (FedEx) flight 1376, a Boeing 757-236, experienced a failure with its left hydraulic system shortly after takeoff from Chattanooga Metropolitan Airport-Lovell Field (CHA), Chattanooga, Tennessee. The airplane turned back to CHA, and, while preparing to land, the landing gear failed to extend normally. The landing gear also failed to extend using the alternate extend system. The flight crew declared an emergency and the airplane sustained substantial damage during the emergency landing. The two flight crew members and the jump seat occupant aboard the airplane were not injured. The flight was operating under the provisions of Title 14 *Code of Federal Regulations* Part 121 as a non-scheduled domestic cargo flight from CHA to Memphis International Airport (MEM), Memphis, Tennessee.

The flight crew reported that the airplane had no maintenance issues before the flight and that the push-back, engine start, and taxi were all uneventful. The captain was the pilot flying, and the first officer was the pilot monitoring. Digital flight data recorder (DFDR) data showed that the airplane departed CHA about 22:24.

According to the flight crew, after rotation and confirmation of a positive rate of climb, the first officer (FO) raised the landing gear control lever to retract the landing gear. DFDR data showed that both the main gear and the nose gear retracted to their up and locked position. About 1 minute later, the flap handle was positioned in its up (flaps 0) position. The flight crew reported that immediately thereafter, a "TE FLAP DISAGREE" message was displayed on the engine indication and crew alerting system (EICAS), along with an associated master caution light, a "TRAILING EDGE" discrete light, and the aural alert caution beeper. Per the captain's direction, the FO began accomplishing the "TE FLAP DISAGREE" checklist in the Quick Reference Handbook (QRH).

The FO was able to retract the flaps to their up position via alternate means in accordance with the appropriate checklist contained in the QRH. While completing this checklist, the flight crew

received an "L HYD SYS PRESS" EICAS message at 22:24:33 at an altitude of about 1978 ft above ground level (agl). The status page showed that the left hydraulic system fluid quantity was near zero and that the system was not pressurized. The captain directed the FO to run the QRH checklist for "L HYD SYS PRESS". The flight crew decided to return to CHA.

Upon positioning the landing gear control lever to its down position to extend the gear for landing, the flight crew received a gear unsafe indication via illumination of the amber "GEAR" disagreement light and a "GEAR DISAGREE" message on the EICAS. Also, the lack of illumination of the three green landing gear indicator lights indicated that the gear was not down and locked. The FO then conducted the "Alternate Gear Extension" procedure embedded in the L HYD SYS PRESS checklist, which was unsuccessful. After multiple attempts to lower the landing gear, the flight crew declared an emergency.

The flight crewmembers asked Chattanooga approach if they could conduct a low approach over the runway so that tower personnel could visually confirm the position of the landing gear. The airplane descended to about 150 ft agl and flew the length of the runway, which was followed by a go-around. Approach control relayed confirmation that the landing gear was not in the down position. Subsequently, the flight crew completed the deferred items on the "GEAR UNSAFE" QRH checklist and the airplane was cleared to land on runway 20.

The flight crewmembers reported that during the initial touchdown, the airplane bounced slightly but they were able to maintain directional control and the runway's centerline. The flight crew was unable to stop the airplane and it slid off the departure end of runway 20 and impacted localizer antennas before coming to rest about 830 ft beyond the end of the runway, (see figure 1).



Figure 1. Airplane in its final resting position. (Source: Chattanooga Fire Department).

After the airplane came to a complete stop, the flight crew performed the “EVACUATION” checklist, and the jump seat occupant attempted to open the left-hand door (L1). The door rotated halfway open and then became bound, and the slide did not deploy (figure 2, upper photo). The jump seat occupant then attempted to open the right-hand door (R1), but it became lodged on the packing of the raft/slide. The jump seat occupant subsequently forced the door open, and the slide deployed. The flight crew and the jump seat occupant then egressed the airplane via the R1 door/slide (figure 2, lower photo).



Figure 2. Photos of the airplane in its final resting position. (Source for upper photo: Chattanooga Fire Department; source for lower photo Federal Aviation Administration.)

Postaccident examination of the airplane revealed that the left main landing gear door actuator retract port hose was leaking hydraulic fluid (see figure 3). The hose was removed and retained by the NTSB for further investigation. The examination also found a discontinuity in the wiring of the landing gear alternate extension system. The section of that wire was retained for further examination.

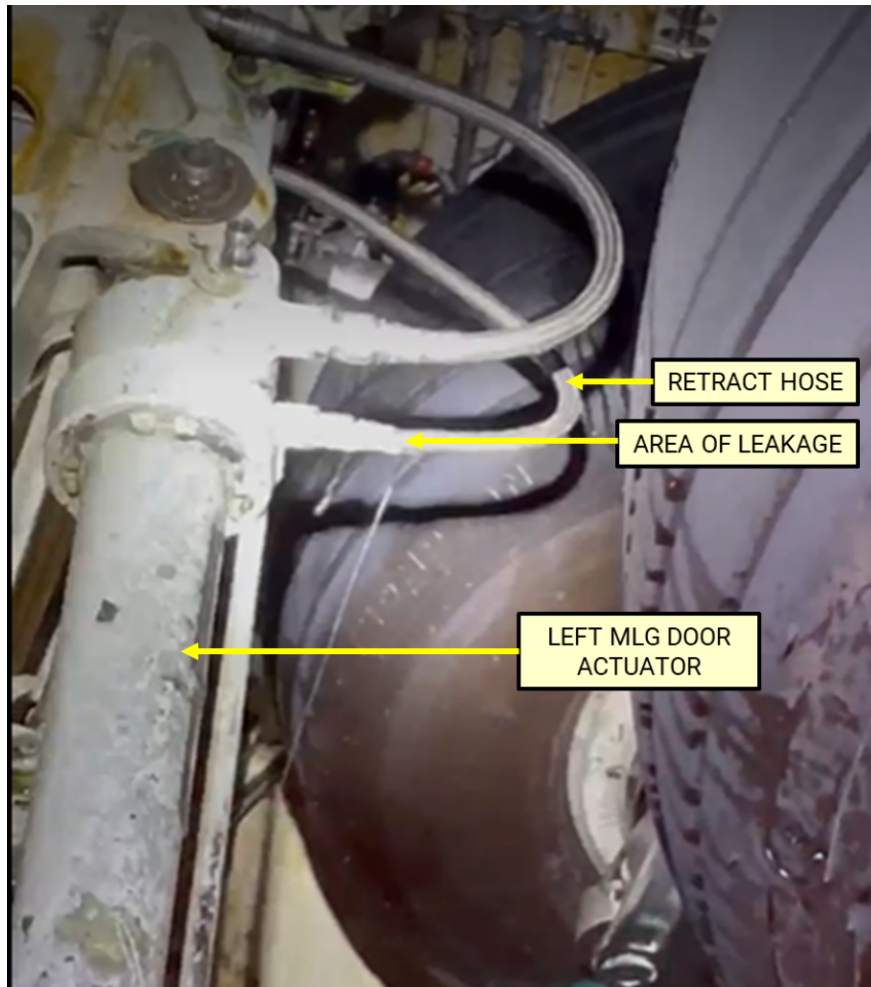


Figure 3. Left MLG door actuator showing the area of leakage.

The following NTSB specialists were assigned to investigate the accident: systems, survival factors, cockpit voice recorder (CVR), and DFDR. The Federal Aviation Administration (FAA), Federal Express, The Boeing Company, Safran Evacuation Systems, and the Air Line Pilots Association (ALPA) are parties to the investigation.

The DFDR and the CVR were removed from the airplane and shipped to the NTSB's Vehicle Recorder Laboratory in Washington, DC, for download of the data. The DFDR was downloaded, and a review of the preliminary data indicates that the left hydraulic system began losing pressure shortly after takeoff.

The CVR was downloaded, and the data are currently being analyzed.

The investigation is continuing.

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N977FD
Model/Series:	757-236	Aircraft Category:	Airplane
Amateur Built:			
Operator:	FEDERAL EXPRESS CORP	Operating Certificate(s) Held:	Flag carrier (121)
Operator Designator Code:			

Meteorological Information and Flight Plan

Conditions at Accident Site:		Condition of Light:	
Observation Facility, Elevation:		Observation Time:	
Distance from Accident Site:		Temperature/Dew Point:	
Lowest Cloud Condition:		Wind Speed/Gusts, Direction:	
Lowest Ceiling:		Visibility:	
Altimeter Setting:		Type of Flight Plan Filed:	
Departure Point:	Chattanooga, TN	Destination:	Memphis, TN (MEM)

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	35.035301,-85.203796

Administrative Information

Investigator In Charge (IIC):	Hauf, Michael
Additional Participating Persons:	Patrick Lusch; FAA Jacob Zeiger; Boeing David Frassinelli ; FedEx Express Ian Carrero; ALPA Paul Lacy; Safran Aerosystems Evacuation
Investigation Class:	Class 3
Note:	