Aviation Investigation Final Report

Location:	MIAMI, Florida	**Accident Number:**	MIA95LA030
Date & Time:	November 4, 1994, 19:41 Local	**Registration:**	N216Y
Aircraft:	CESSNA 310L	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious, 1 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

THE LEFT MAIN LANDING GEAR DID NOT FULLY RETRACT AFTER TAKEOFF. ATTEMPTS BY THE PILOT AND PILOT-RATED PASSENGER TO GET ALL THREE GEAR EXTENDED FOR LANDING WERE NOT SUCCESSFUL. ON LANDING ROLL-OUT, THE LANDING GEAR COLLAPSED AND THE AIRCRAFT WENT OFF THE RIGHT SIDE OF THE RUNWAY. AFTER THE ACCIDENT, THE LEFT AND RIGHT MAIN LANDING GEAR RETRACTION LINKAGES WERE FOUND BROKEN AT THE POINT EACH ATTACHED TO THE GEAR. NO OTHER EVIDENCE OF FAILURE OR MALFUNCTION WAS NOTED IN THE MAIN LANDING GEAR LINKAGES AND TRANSMISSION. THIS WAS THE PILOT'S FIRST FLIGHT IN THIS MAKE AND MODEL OF AIRCRAFT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE LANDING GEAR EXTENSION AND RETRACTION SYSTEM FOR AN UNDETERMINED REASON.

Findings

Occurrence #1: GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR,NORMAL RETRACTION/EXTENSION ASSEMBLY - UNDETERMINED

Factual Information

On November 4, 1994, about 1941 eastern standard time, a Cessna 310L, N216Y, registered to Twonesix Yankee, Inc., went off the runway when the landing gear collapsed during landing at Kendall-Tamiami Executive Airport, Miami, Florida, while on a 14 CFR Part 91 positioning flight. Visual meteorological conditions prevailed at the time and an instrument flight rules flight plan was filed. The aircraft received substantial damage and the commercial-rated pilot was not injured. The pilot-rated passenger received serious injuries. The flight originated at Kendall-Tamiami Executive Airport on November 4, 1994, about 1700.

The pilot stated that after takeoff from Kendall-Tamiami Executive Airport the tower reported that the left main landing gear appeared to still be down. He lowered and retracted the landing gear again and the tower reported the left main gear was still extended. The pilot-rated passenger read the emergency gear extension checklist and he attempted to perform a manual gear extension. This was unsuccessful. The pilot-rated passenger also attempted to manually lower the gear, with no success.

After several hours of flying around the airport to burn fuel he began to smell an odor similar to that of a wire burning. The instrument lights quit, and the leftengine manifold pressure gauge began to fluctuate. He then returned to the airport for landing. On touchdown the aircraft veered to the right and went off the right side of the runway where it came to rest in the grass. After exiting the aircraft the passenger fell in the grass and injured her ankle.

The mechanic who gave assistance to the pilot over the radio prior to landing, and who later recovered the aircraft, stated he initially observed the aircraft with the left main gear down and the right main gear and nose gear up. When the aircraft landed the left main gear and nose gear were down. The right main gear was extended about midway between the up and down position. When the aircraft was raised by a crane after the accident the mechanic used the manual extension system to lower and lock all three landing gear.

Examination of the aircraft by NTSB and FAA inspectors revealed the left and right main gear retraction and extension linkages were broken at the point they attach to the respective landing gear. A replacement linkage was installed on each main landing gear. The aircraft was placed on jacks and the manual extension system was used to raise and lower the landing gear. Each landing gear moved freely. The landing gear transmission and all linkages operated normally. The electric gear motor was not used due to damage to the aircrafts electrical system.

Examination of the left engine revealed the exhaust pipe at the no. 4 chlinder had cracked at a weld repair allowing exhaust gases to leak. The nos. 2 and 4 rocker box covers had been partially burned away and the no. 2 intake valve had stuck due to heat damage.

Electrical wiring from the left engine generator had been burned.

Examination of the aircraft indicated the left main landing gear attach structure was bent. The nose and nose wheel well structure was bent. The right wing leading edge structure was bent near the tip fuel tank.

The accident was reported to NTSB shortly after it occurred. Initial reports from FAA indicated the aircraaft had sustained minor damage and that the passenger had sustained minor injuries. On November 30, 1994, the passenger called NTSB and reported she had sustained serious injury to her ankle.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	33,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	October 31, 1994
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	1446 hours (Total, all aircraft), 4 hours (Total, this make and model), 1364 hours (Pilot In Command, all aircraft), 372 hours (Last 90 days, all aircraft), 119 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	**Registration:**	N216Y
Model/Series:	310L 310L	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	310L-0043
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	September 30, 1994 Annual	**Certified Max Gross Wt.:**	5200 lbs
Time Since Last Inspection:	2 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	4322 Hrs	**Engine Manufacturer:**	CONTINENTAL
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470-V
Registered Owner:	TWONESIX YANKEE, INC.	**Rated Power:**	260 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/bright
Observation Facility, Elevation:	TMB ,10 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	19:42 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	Scattered / 3000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	18°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(TMB)	**Type of Flight Plan Filed:**	IFR
Destination:	FT. LAUDERDALE , FL (FLL)	**Type of Clearance:**	None
Departure Time:	17:00 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	KENDALL-TAMIAMI EXEC. TMB	**Runway Surface Type:**	Asphalt
Airport Elevation:	10 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	9L	**IFR Approach:**	None
Runway Length/Width:	5002 ft / 150 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 None	**Latitude, Longitude:**	25.759178,-80.309944(est)

Administrative Information

Investigator In Charge (IIC):	Kennedy, Jeffrey
Additional Participating Persons:	LUIS CARMONA; MIAMI , FL
Original Publish Date:	May 23, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=37701