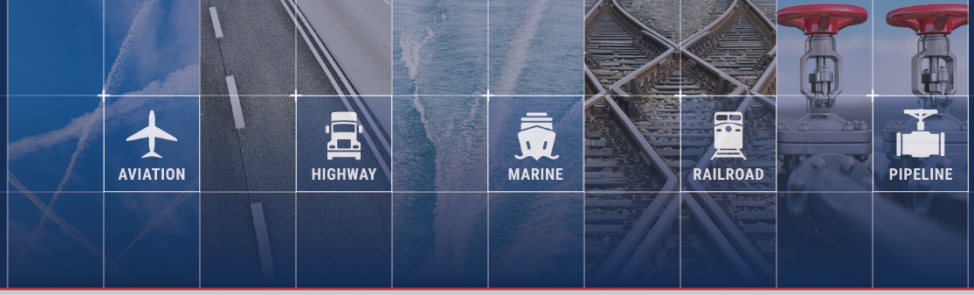

Aviation Investigation Final Report

Location:	GREENVILLE, Texas	**Accident Number:**	FTW94FA233
Date & Time:	July 14, 1994, 18:45 Local	**Registration:**	N310AE
Aircraft:	CESSNA 310Q	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

DURING A MULTIENGINE TRAINING FLIGHT, THE AIRPLANE WAS OBSERVED ENTERING A LEFT DOWNWIND PATTERN FOR A SINGLE ENGINE APPROACH TO THE RUNWAY. DURING THE FINAL APPROACH THE AIRPLANE WAS ALIGNED WITH A TAXIWAY THAT PARALLELED THE RUNWAY. A GO-AROUND WAS INITIATED AND FOLLOWING THE TURN TO CROSSWIND, THE AIRPLANE ENTERED AN UNCONTROLLED DESCENT TO THE LEFT AND IMPACTED THE GROUND LEFT WING FIRST. THE PILOT-IN-COMMAND WAS INSTRUCTING THE SECOND PILOT FOR HIS MULTIENGINE INSTRUCTOR RATING. BOTH PILOTS HELD A MULTIENGINE RATING. THERE WERE NO MECHANICAL DISCREPANCIES FOUND DURING THE INVESTIGATION. THE GEAR WAS IN THE DOWN INSTEAD OF THE UP POSITION. MANUFACTURER EMERGENCY PROCEDURES FOR A SINGLE ENGINE GO-AROUND REQUIRES THE LANDING GEAR TO BE RETRACTED. THE LEFT PROPELLER WAS EXAMINED AND DETERMINED TO BE IN THE FEATHERED POSITION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE CFI'S FAILURE TO MAINTAIN AIRSPEED ABOVE VMC, RESULTING IN A LOSS OF CONTROL DURING THE SINGLE ENGINE G0-AROUND. FACTORS WERE NOT ATTAINING RUNWAY ALIGNMENT AND THE CFI'S FAILURE TO RETRACT THE LANDING GEAR FOR THE GO-AROUND PROCEDURE.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: GO-AROUND (VFR)

Findings
1. EMERGENCY PROCEDURE - SIMULATED - PILOT IN COMMAND(CFI)
2. (F) PROPER ALIGNMENT - NOT ATTAINED - PILOT IN COMMAND(CFI)
3. (C) AIRSPEED(VMC) - NOT MAINTAINED - PILOT IN COMMAND(CFI)
4. (F) GEAR RETRACTION - NOT SELECTED - PILOT IN COMMAND(CFI)

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT:

On July 14, 1994, at 1845 central daylight time, a Cessna 310Q, N310AE, was destroyed while maneuvering near Greenville, Texas. The airline transport rated pilot/multiengine instructor pilot- in-command (PIC) and the commercial pilot received fatal injuries. Visual meteorological conditions existed for the instructional flight.

During interviews with the owner/operator, it was revealed that the commercial pilot had rented the airplane. The owner reported that both pilots were rated to fly the multiengined airplane. Both pilots were rated as single engine and instrument flight instructors. The airline transport rated pilot was also rated as a multiengined instructor and was preparing the commercial pilot for his multiengine instructor rating. Single engine approaches were planned. The airplane was full of fuel and the flight departed McKinney, Texas, at 1615 for a flight to Greenville, Texas. At the time of departure the commercial pilot occupied the right front seat and the multiengine flight instructor the left front seat.

During an interview, the pilot of an airplane holding short for an intersection takeoff on runway 17 at Majors Field Airport reported the following information. A radio transmission from the Cessna pilot indicated the airplane was entering a left downwind for runway 17 for a single engine approach and full stop landing. The witness observed the Cessna fly a left downwind pattern and arrive on final approach at an altitude of 600 feet, while aligned with a taxiway parallel to runway 17.

As the Cessna passed midfield on the go around, the witness observed that the propeller was not turning on one of the engines. He also observed that the flaps were retracted and at least one gear was extended. Manufacturer emergency procedures (see enclosed copy) for a single engine go-around requires the landing gear to be in the "UP" position. As the Cessna turned crosswind the altitude decreased to 200 feet above the ground. The witness stated "the airplane snapped a hard left and descended vertically to the ground."

Local authorities first on scene reported fuel present. They stated "the left engine was cold to the touch and the right engine was warm."

PERSONNEL INFORMATION:

Numerous attempts were made to obtain the Pilot/Operator Report (NTSB Form 6120.1/2) from the operator. It was not received.

Dated October 8, 1993, Federal Aviation Administration (FAA) medical records for the PIC

indicated 2,200 total flight hours. Available logbook records through October 24, 1993, showed a total flight time of 1,987.2 hours with 196.7 hours of multiengine reciprocating engine flight time and 53 hours of turbojet flight time. Logbooks listed 15.2 hours total flight time in the Cessna 310. FAA records dated March 3, 1994, showed the PIC was issued the Lear-jet type rating by a designated examiner. However, interviews with an FAA inspector revealed that in response to an FAA reexamination letter, the PIC voluntarily surrendered the type rating on May 2, 1994.

FAA records and pilot logbook from the operator revealed the following information for the commercial pilot. He obtained the multiengine rating on September 24, 1993. He received the flight instructor single engine land rating on March 22, 1994, and the instrument instructor rating on May 18, 1994. By July 9, 1994, he had accumulated 95 hours of multiengined flight time of which 31 hours was in a Cessna 310. Flight time in N310AE included dual with another instructor. This was the second instruction flight in the airplane with this instructor. The PIC's logbook listed a 1.4 hour dual instruction flight on July 8, 1994, with the commercial pilot for preparation of the multiengine instructor rating.

AERODROME INFORMATION:

Majors Field Airport, Greenville, Texas, runway 17/35 is 8,029 feet long and 150 feet wide. The runway is paralleled on the west side by a taxiway that is 5,500 feet long and 150 feet wide. The non federal tower is operated part time and was closed at the time of the accident. According to a witness, the pilot announced his intentions on the common traffic advisory frequency (CTAF) frequency 118.65.

WRECKAGE AND IMPACT INFORMATION:

Numerous ground scars and tree branches were distributed along a measured magnetic heading of 256 degrees. The left tip tank was found in a ground scar 56 feet from the main wreckage. The left engine propeller and hub was buried in muddy ground 39 feet from the main wreckage. Except for the outboard three inches of one propeller blade, the right engine propeller and hub was buried in muddy ground 32 feet from the main wreckage. The airplane came to rest in an up right position on a measured magnetic heading of 056 degrees. For additional details see the enclosed wreckage diagram.

The wings were crushed along the leading edges. The left propeller blades were straight. The right propeller blades exhibited twisting, bending, and scoring. Both engines were found separated from the mounts and the left engine was inverted.

See the enclosed manufacturer report for a description of the impact damage to the engines. The left engine auxiliary fuel pump switch was found in the "HIGH" position. All gear was verified in the down and locked position. The investigation did not reveal any evidence of airframe or system failure/malfunction or lack of control continuity. Physical evidence of fuel was present at the site.

MEDICAL AND PATHOLOGICAL INFORMATION:

The autopsies were performed by the Southwest Institute of Forensic Sciences in Dallas, Texas. Toxicological findings were negative.

TEST AND RESEARCH:

On July 15, 1994, all Majors Field airport navigation aids were tested (see enclosed report) and found to be operating normally.

On August 1, 1994, the engines were examined at Lancaster, Texas. There were no anomalies that would have contributed to a power loss of the left engine. During the right engine examination the fuel pump was not removed prior to rotation of the crankshaft. Upon removal and subsequent examination of the fuel pump, a fractured fuel pump drive coupling was found.

On August 11, 1994, the fuel pump drive coupling was examined (see enclosed report) at Dallas, Texas. The fuel pump drive coupling "failed in a ductile manner due to a single event torsional overload."

The propellers were examined (see enclosed report) on August 31, 1994, at Vandalia, Ohio. There was no indication of any type of "propeller failure prior to impact." The left propeller was in the "feather position and not rotating prior to impact."

ADDITIONAL INFORMATION:

The airplane was released to the owner following the investigation.

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	42,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:**	Yes
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	October 8, 1993
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	1987 hours (Total, all aircraft), 15 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	**Registration:**	N310AE
Model/Series:	310Q 310Q	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	310Q0701
Landing Gear Type:	Retractable - Tricycle	**Seats:**	5
Date/Type of Last Inspection:	May 20, 1994 100 hour	**Certified Max Gross Wt.:**	5300 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	6080 Hrs	**Engine Manufacturer:**	CONTINENTAL
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470-VO
Registered Owner:	ADKINS, LEWIS D.	**Rated Power:**	260 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	DALE ADKINS WESTERN ART	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GVT ,535 ft msl	**Distance from Accident Site:**	
Observation Time:	20:48 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 4000 ft AGL	**Visibility**	12 miles
Lowest Ceiling:	Overcast / 12000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	23°C / 22°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	MCKINNEY , TX (TKI)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	18:15 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	MAJORS GVT	**Runway Surface Type:**	Asphalt
Airport Elevation:	535 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17	**IFR Approach:**	
Runway Length/Width:	8029 ft / 150 ft	**VFR Approach/Landing:**	Go around

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	33.190124,-96.110092(est)

Administrative Information

Investigator In Charge (IIC):	Smith, Joyce
Additional Participating Persons:	JOSEPH MONTEROSSO; DALLAS , TX
Original Publish Date:	January 26, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=18913