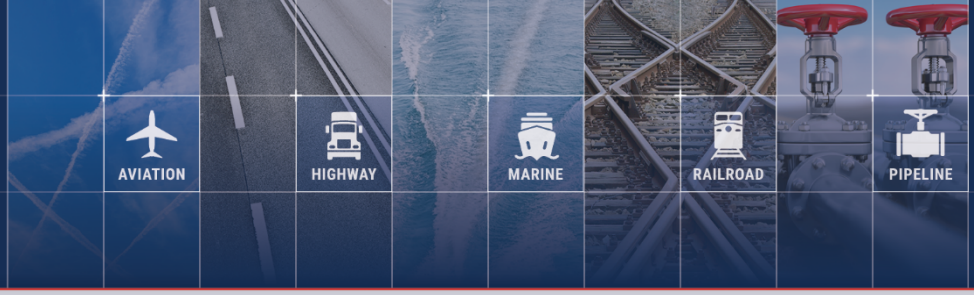

Aviation Investigation Final Report

Location:	GRANTS, New Mexico	**Accident Number:**	DEN01FA003
Date & Time:	October 10, 2000, 19:25 Local	**Registration:**	N182BG
Aircraft:	Cessna R-182	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot was flying a night VFR non-scheduled Part 135 cargo flight. Radar data indicates that he departed and climbed to a cruise altitude of 9,500 feet msl. Approximately 24 minutes after departure, the airplane began to climb again. The last radar return was received approximately 1 minute later. The airplane impacted heavily forested mountainous terrain at an elevation of approximately 10,500 feet. The MEA for a nearby airway was 13,300 feet. Examination of the airplane revealed no evidence of preimpact anomalies. A pilot who flew by the mountain the airplane impacted approximately 1 hour before the accident, reported IMC weather conditions with numerous low intensity rain showers in the area.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's continued VFR flight into IMC during cruise. Contributing factors were the dark night light conditions, and the cloudy weather conditions.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE

Findings
1. (F) LIGHT CONDITION - DARK NIGHT
2. (F) WEATHER CONDITION - CLOUDS

3. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND
4. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

HISTORY OF FLIGHT

On October 10, 2000, at approximately 1925 mountain daylight time, a Cessna R-182, N182BG, was destroyed when it collided with terrain during cruise near Grants, New Mexico. The instrument rated commercial pilot, the sole occupant in the airplane, was fatally injured. The aircraft was being operated by Durango Air Services, Inc., Durango, Colorado, as a non-scheduled domestic cargo flight under Title 14 CFR Part 135. Night instrument meteorological conditions (IMC) prevailed at the accident site, at the time of the accident. A VFR flight plan had been filed for the flight which originated from Gallup, New Mexico, approximately 25 minutes before the accident, with a destination of Albuquerque, New Mexico.

The airplane departed Durango, Colorado, at 0420 on the morning of the accident. The pilot reported, in a journal found in the airplane, that he had filed an instrument flight rules (IFR) flight plan for Albuquerque, and terminated the flight by flying an Instrument-Landing-System (ILS) approach to a full stop at approximately 0530.

The airplane departed Albuquerque for Farmington at 1205, arriving at approximately 1305. The pilot then flew to Durango to have the engine oil changed and to refuel. The pilot further reported in the journal that he was flying on a visual flight rules (VFR) flight plan, but documented that bad weather had forced him to fly in and out of instrument metrological conditions (IMC). He stated that there were "low clouds, rain, and reduced visibility" along his flight path. The pilot left Durango at an undetermined time, flew to Farmington, and then to Gallup.

According to the Federal Aviation Administration (FAA) Albuquerque Air Route Traffic Control Center (ARTCC) radar, the airplane left Gallup at approximately 1900 and climbed to 9,500 feet mean sea level (msl) where it cruised for approximately 15 minutes. Radar indicates that at 1924:07, the airplane started to climb at 418 feet per minute until the last radar return at 1725:43 (10,400 feet).

An Emergency Locator Transmitter (ELT) signal was received on Mount Taylor; a rescue team located the downed aircraft the following day.

PERSONNEL INFORMATION

The pilot was a British citizen. He had been flying since 1991, and his pilot flight logbook indicates that he had accumulated approximately 1,515 hours of flight experience by the time of the accident. Of his total flight time, he had 368 hours of multiengine time and 429 hours as a flight instructor. The pilot was flying under an FAA Statement of Demonstrated Ability

(SODA), dated December 20, 1993, for defective color vision. The pilot's last FAA flight medical was taken on August 2, 2000; it was a first class medical.

The pilot successfully completed an FAA Part FAR 135 Airman Proficiency Check on March 8, 2000. AIRCRAFT INFORMATION

The airplane was a single engine, propeller-driven, retractable gear, four seat airplane, which was manufactured by Cessna Aircraft Company, in 1978. It was powered by a Lycoming O-540-J3C5D, six cylinder, reciprocating, horizontally opposed, direct drive, air cooled, normally aspirated (carbureted) engine, which had a maximum takeoff rating of 235 horsepower at sea level. Aircraft maintenance records indicate that the last 100 hour inspection was accomplished on September 25, 2000. The airplane had accumulated approximately 3,471 hours of flight time, at the time of the accident.

Cargo manifest records indicate that the airplane was loaded with 285 pounds of cargo at the time of the accident.

METEOROLOGICAL INFORMATION

At 1853, the weather conditions at the Grant-Milan Municipal Airport (elevation 6,521 feet), 250 degrees 17 nautical miles (nm) from the accident site, were as follows: wind 150 degrees at 11 knots; temperature 45 degrees Fahrenheit; dew point 43 degrees Fahrenheit; altimeter setting 30.08 inches. At 1850, the weather conditions at the Gallup Municipal Airport (elevation 6,472 feet), 270 degrees 74 nm from the accident site, were as follows: wind 190 degrees at 10 knots; visibility 20 statute miles; cloud condition 2,000 feet scattered, 4,000 feet broken, 6,000 broken; temperature 54 degrees Fahrenheit; dew point 48 degrees Fahrenheit; altimeter setting 29.98 inches. There were reported rain showers in the vicinity.

The U.S. Naval Observatory reported that on October 10, 2000, the sunset was at 1842, and the end of civil twilight was at 1908. The moon was illuminated at 93% visible disk, and it rose at 1743.

A pilot flying by Mount Taylor (approximately 10 nm northeast on Victor airway 60) at 11,000 feet, at 1830, said that he was in instrument metrological conditions and that he encountered "numerous low intensity rain showers" in the vicinity of Mount Taylor. He said that it was very dark due to clouds and precipitation.

WRECKAGE AND IMPACT INFORMATION

The airplane was found inverted (N35 degrees, 14.52'; W107 degrees, 37.07', elevation 10,504 feet) on the heavily forested northwestern slope of Mount Taylor (elevation 11,301 feet). The trees were up to 18 inches in diameter, and up to 75 feet tall. There were downed trees, separated tree branches, and aircraft debris for 177 feet on an orientation of 154 degrees. The debris path was oriented directly into rising terrain (estimated to be 22 degrees up slope). The

impact site was approximately 1.5 nm north-northeast of Victor Airway 291, which has a Minimum En-route Altitude (MEA) of 13,300 feet msl.

All of the airplane's major components were accounted for at the accident site. Both wings were found separated from the fuselage. The flight control surfaces were all identified. Flight control continuity was established to the rudder and horizontal stabilizer, but not to the ailerons due to impact damage. The flaps and landing gear were determined to be in the up position. The instrument panel, engine controls, and cockpit area were crushed.

The engine was found with the mounts broken, and displaced aft into the cockpit area. The propeller, with its crankshaft flange, was found separated from the engine. The crankshaft was rotated by hand, and "thumb" compression was observed on all six cylinders. Mechanical continuity was observed throughout the valve train. The single drive dual magneto was found in place, and spark was produced on all 12 leads during hand rotation of the drive. One propeller blade exhibited "S" bending, leading edge gouging, and chordwise striations.

No preimpact engine or airframe anomalies, which might have affected the airplane's performance, were identified. There was no evidence of fire.

MEDICAL AND PATHOLOGICAL INFORMATION

The University of New Mexico's School of Medicine's Office of the Medical Investigator, Albuquerque, New Mexico, performed an autopsy on the pilot on October 12, 2000.

The FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma, performed toxicology tests on the pilot. According to CAMI's report (#200000294001), the pilot's blood was tested for carbon monoxide, cyanide, and drugs, with negative results. His vitreous was tested for volatiles (ethanol), with negative results.

ADDITIONAL INFORMATION

The airplane, including all components and logbooks, was released to the owner's insurance representative on December 4, 2000.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	40,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:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	August 2, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	1515 hours (Total, all aircraft), 300 hours (Total, this make and model), 1200 hours (Pilot In Command, all aircraft), 300 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N182BG
Model/Series:	R-182 R-182	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	R18200256
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	August 18, 2000 100 hour	**Certified Max Gross Wt.:**	3100 lbs
Time Since Last Inspection:	152 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3473 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	O-540-J3C5D
Registered Owner:	DURANGO AIR SERVICES, INC.	**Rated Power:**	235 Horsepower
Operator:		**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	CMIA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	GNT ,6521 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	250°
Lowest Cloud Condition:	Scattered / 3500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 7000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	150°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	45°C / 43°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	GALLUP , NM (GUP)	**Type of Flight Plan Filed:**	VFR
Destination:	ALBUQUERQUE , NM (ABQ)	**Type of Clearance:**	VFR
Departure Time:	19:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.149402,-107.829322(est)

Administrative Information

Investigator In Charge (IIC):	Struhsaker, James
Additional Participating Persons:	RANDY ROUNTREE; ALBUQUERQUE , NM
Original Publish Date:	November 1, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=50470