Aviation Investigation Final Report

Location:	CEDAR CITY, Utah	**Accident Number:**	DEN00LA066
Date & Time:	March 22, 2000, 16:30 Local	**Registration:**	N3311H
Aircraft:	Cessna 310C	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor said that he shut down the right engine to practice single engine flight. Attempts to restart the engine were unsuccessful (it was later determined that the mixture control cable had failed). The pilot did not feather the right engine, and he reported that the left engine was providing insufficient power to maintain flight. The flight instructor performed a gear down landing in the rough, brush covered desert. The owner of the airplane said that the practice engine shut down was performed at 9,500 feet mean sea level, or approximately 3,800 feet above the terrain. He said that the practice maneuver was not initiated over a landing airfield, but that two were available within 5 miles of this location. The airplane's Owner's Manual performance section indicates that the single engine best rate of climb would be from 50 feet per minute to 250 feet per minute, depending on altitude and outside air temperature. A manufacturer's representative said that a non-feathered propeller would reduce the rate of climb by approximately 400 feet per minute, and landing gear extended would reduce it an additional 300 feet per minute.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the right engine mixture control cable, which prevented the pilot from restarting the engine. Contributing factors were the pilot's failure to follow procedures by not feathering the right propeller, the rough terrain, and the high vegetation.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: MANEUVERING

Findings
1. 1 ENGINE
2. (C) MIXTURE CONTROL,CABLE - FAILURE,TOTAL

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
3. (F) PROCEDURES/DIRECTIVES - NOT FOLLOWED - PILOT IN COMMAND
4. PROPELLER FEATHERING - NOT PERFORMED - PILOT IN COMMAND

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings
5. (F) TERRAIN CONDITION - ROUGH/UNEVEN
6. (F) TERRAIN CONDITION - HIGH VEGETATION

Factual Information

On March 22, 2000, approximately 1630 mountain standard time, a Cessna 310C, N3311H, was substantially damaged during a forced landing near Cedar City, Utah. The flight instructor and his private pilot certificated multiengine student were not injured. The airplane was being operated by a private individual under Title 14 CFR Part 91. Visual meteorological conditions prevailed at the time of the accident. The local instructional flight originated from Cedar City, approximately 1 hour before the accident. No flight plan had been filed.

The flight instructor said that he shut down the right engine to practice single engine flight. Attempts to restart the engine were unsuccessful (it was later determined that the mixture control cable had failed). The pilot did not feather the right engine, and he reported that the left engine was providing insufficient power to maintain flight. The flight instructor performed a gear down landing in the rough, brush covered desert. The landing gear separated from the airplane, and the left wing leading edge and left horizontal stabilizer were damaged.

The owner of the airplane said that the practice engine shut down was performed at 9,500 feet mean sea level, or approximately 3,800 feet above the terrain. He said that the practice maneuver was not initiated over a landing airfield, but that two were available within 5 miles of this location.

The airplane's Owner's Manual performance section indicates that the single engine best rate of climb with the propeller feathered and the gear up would be from 50 feet per minute to 250 feet per minute, depending on altitude and outside air temperature. A manufacturer's representative said that a non-feathered propeller would reduce the rate of climb by approximately 400 feet per minute, and landing gear extended would reduce it an additional 300 feet per minute.

Pilot Information

Certificate:	Commercial	**Age:**	39,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	January 27, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	847 hours (Total, all aircraft), 39 hours (Total, this make and model), 796 hours (Pilot In Command, all aircraft), 231 hours (Last 90 days, all aircraft), 133 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N3311H
Model/Series:	310C 310C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	35835
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	100 hour	**Certified Max Gross Wt.:**	4830 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470-D
Registered Owner:	LEON MATHESON	**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:**	Day
Observation Facility, Elevation:	CDC ,5623 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	15:53 Local	**Direction from Accident Site:**	250°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	13°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(CDC)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	15:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	Rough;Vegetation
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	37.590087,-113.189491(est)

Administrative Information

Investigator In Charge (IIC):	Struhsaker, James
Additional Participating Persons:	MARK RUSHTON; SALT LAKE CITY , UT
Original Publish Date:	January 18, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=48866