Aviation Investigation Final Report

Location:	Marble, Colorado	**Accident Number:**	DEN05FA101
Date & Time:	June 29, 2005, 13:50 Local	**Registration:**	N44269
Aircraft:	Taylorcraft BC12-D	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to several witnesses in the area, the pilot had been attempting to land to the west on a grass strip. The pilot had made approximately five attempts to land prior to the accident. During the sixth approach, the airplane touched down approximately midfield, the pilot added power and the airplane became airborne again. Witnesses stated that the airplane struck a road embankment at the end of the runway, continued in a steep climb, and then struck several 60-foot high aspen trees approximately 150 feet west of the end of the runway. The airplane rolled off hard to the right, and impacted the southbound lane of a county road in a nose low attitude. Airport elevation was approximately 7,800 feet mean sea level. Density altitude was calculated to be 10,063 feet. The airport runway is surrounded on every side by vegetation and terrain elevation rises dramatically in all directions. According to the owner of the airport, it is recommended that pilots land to the east and depart to the west due to the obstacles and terrain near the airport. The pilot had successfully completed a flight review on March 10, 2005.The pilot's logbook contained no record of flight activity between the flight review and the accident flight and no evidence of mountain flight experience or training. An examination of the airplane revealed no anomalies.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's improper decision to perform a go-around, and failure to maintain clearance from terrain and obstacles during a go-around. Factors contributing to the accident include the pilot's lack of recency of experience and lack of mountain flying experience, and the trees.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: GO-AROUND (VFR)

Findings
1. (F) TERRAIN CONDITION - BERM
2. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (F) LACK OF RECENT EXPERIENCE - PILOT IN COMMAND
4. GO-AROUND - DELAYED - PILOT IN COMMAND
5. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
6. WEATHER CONDITION - HIGH DENSITY ALTITUDE

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: GO-AROUND (VFR)

Findings
7. (F) OBJECT - TREE(S)

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: GO-AROUND (VFR)

Findings
8. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
9. TERRAIN CONDITION - ROADWAY/HIGHWAY

Factual Information

HISTORY OF FLIGHT

On June 29, 2005, approximately 1350 mountain daylight time, a Taylorcraft BC12-D, N44269, operated by a private pilot, was substantially damaged when it impacted terrain during a go-around at Marble Airport, Marble, Colorado. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under the provisions of Title 14 CFR Part 91 without a flight plan. The pilot sustained fatal injuries. The cross-country flight departed Taos, New Mexico, approximately 1130.

According to several witness in the area, the pilot had been attempting to land to the west on a grass strip, just north of Marble, Colorado. The pilot had made approximately five attempts to land prior to the accident. During the sixth approach, the airplane touched down approximately midfield, the pilot added power and the airplane became airborne again. Witnesses stated that the airplane struck a road embankment at the end of the runway, continued in a steep climb, and then struck several 60-foot high aspen trees approximately 150 feet west of the end of the runway. The airplane "rolled off hard to the right," and impacted the southbound lane of County Road 3 in a nose low attitude.

PERSONNEL INFORMATION

The pilot, age 76, held a private pilot certificate with airplane single-engine land privileges. This certificate was issued on October 16, 1990. The pilot had been issued a third class airman medical certificate on December 20, 2002. The certificate contained the limitations "Must wear corrective lenses for near and distant vision" and "Not valid for any class after December 21, 2004."

The pilot was operating the airplane under Title 14 CFR Part 61.303 (b), as it applies to light-sport aircraft. This entitled the pilot to operate an aircraft without a current medical certificate; however, he must hold a current and valid U.S. driver's license. No license was found on his person or in the wreckage.

According to the pilot's personal logbook, he had logged approximately 382 hours total flight time; 90 hours of which were in the accident airplane. The pilot had successfully completed a flight review on March 10, 2005. In addition, the pilot had received a tail wheel endorsement on June 6, 2000. The pilot's logbook contained no record of flight activity between the flight review and the accident flight and no evidence of mountain flight experience or training.

AIRCRAFT INFORMATION

The accident airplane, a Taylorcraft BC12-D (serial number 10069), was manufactured in 1946. It was registered with the Federal Aviation Administration with a standard airworthiness certificate. The airplane was equipped with a Teledyne Continental Motors O-200-A engine rated at 100 horsepower at 2700 rpm. The engine was equipped with a two-blade fixed-pitch propeller.

The airplane was registered to and operated by the pilot, and was maintained under an annual inspection program. The maintenance records indicated that the airplane underwent an annual inspection on August 18, 2004, at a tachometer time of 1,224 and a total time of 2,124. The airplane had flown approximately 30 hours between the last annual inspection and the accident.

METEOROLOGICAL INFORMATION

The Aspen (ASE) METAR (routine aviation weather report), located 18 nautical miles to the northeast of Marble, reported the weather as, winds, variable at 5 knots; visibility, 10 statute miles; sky condition, scattered 10,000 feet; temperature, 21 degrees Celsius (C); dewpoint, 6 degrees C; altimeter, 30.23 inches. Airport elevation was approximately 7,800 feet mean sea level. Density altitude was calculated to be 10,063 feet.

AIRPORT INFORMATION

The Marble airport is not depicted on any U.S. Department of Transportation, Federal Aviation Administration, national aeronautical chart. Further, the airport is not registered with FAA. FAA records indicated that the airport was abandoned on June 10, 1980, and the site location was cancelled on December 31, 1982.

According to the airport caretaker, the runway is oriented in an east/west direction and has a length of 4,600 feet, 4,000 feet of which are useable. The airport elevation is approximately 7,800 feet msl. The airport runway follows an adjacent riverbed and is surrounded on every side by vegetation in the form of deciduous and coniferous trees. Terrain elevation rises dramatically in all directions.

According to a telephone conversation with the airport owner, he advises pilots to treat the airport as a one-way airstrip. He advises that pilots land to the east and depart to the west due to the obstacles and terrain near the airport. In addition, the owner advises pilots to utilize a left hand traffic pattern.

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board arrived on scene approximately 0800 on June 30, 2005.

The accident site was located in the westbound lane of County Road 3, approximately 2 miles

north and west of Marble, Colorado. A global positioning system (GPS) receiver reported the location as 39 degrees 04.572 minutes north latitude and 107 degrees 13.329 minutes west longitude. The accident elevation was estimated to be approximately 7,800 feet msl. The airplane impacted on an approximate heading of 270 degrees.

The initial ground impact point was located to the west of the departure end of the west runway, on an embankment next to a gravel road. The vegetation in this area had been disturbed and the ground contained a short scrape mark and red paint flecks. The area immediately to the west of the initial ground impact point, along the gravel road, was scattered with branches and leaves from the disturbed vegetation. Across the gravel road to the west and within the river embankment were three aspen trees that had been sheared towards their top. These trees were approximately 60 feet in height. The airplane came to rest, inverted, on the south edge of the road. The main wreckage consisted of the engine and propeller assembly, the fuselage, empennage, and both the right and left wing assemblies.

The right wing, to include the right aileron, was crushed up and aft from the tip of the wing inboard for 3.5 feet. The forward wood spar was broken 20 inches inboard from the wing tip, and the entire wing assembly was broken aft longitudinally at the wing root. The leading edge of the wing assembly was crushed in 3 inches in depth, approximately 30 inches inboard from the wing tip. The right aileron exhibited a tear in the fabric approximately 9 inches outboard of the inboard edge of the control, extending longitudinally to the trailing edge of the control surface. The tear was approximately 10 inches in length and contained tree bark and leaves at the end of the tear. Control continuity to the right aileron was established.

The left wing, to include the left aileron, was crushed aft 13 inches outboard from the wing root. The top of the wing assembly was wrinkled. The left aileron was partially separated at the outboard hinge. Control continuity to the left aileron was established.

The empennage included the vertical stabilizer, rudder, horizontal stabilizer, elevator, and tail wheel. The top of the vertical stabilizer was crushed down approximately 1 inch. The rudder, horizontal stabilizer, and elevator were unremarkable. Vegetation was found in the tail wheel spring and the left rudder control cable. Control continuity to the elevator and rudder was established.

The engine and propeller assembly was crushed up and aft, into the cockpit, reducing the occupiable space of the cockpit. Gravel was compressed into the engine exhaust stack and vegetation was imbedded in the air filter. Both propeller blades exhibited 90 degree chordwise scratches and s-shape bending throughout the length of each blade. The engine was examined on scene for continuity and compression. The intake manifold on the number two cylinder had separated and compression was not established on that cylinder. No anomalies were noted that would have precluded the engine from producing power.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy was performed in Montrose, Colorado, on July 1, 2005, as authorized by the Gunnison County Coroner's Office. The autopsy revealed no evidence of physical incapacitation or impairment that would have been causal to the accident. According to the autopsy, the cause of death was due to "multiple acute traumatic injuries."

A toxicology was performed by the Federal Aviation Administration's Civil Aviation Medical Institute, Oklahoma City, Oklahoma. The toxicology revealed metoprolol in the urine. Tests for carbon monoxide, cyanide, or ethanol were negative.

ADDITIONAL INFORMATION

The Federal Aviation Administration, represented by an inspector from the Denver Flight Standards District Office, was party to this investigation.

The wreckage was released to the airport caretaker on June 30, 2005.

Pilot Information

Certificate:	Private	**Age:**	76,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	None None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 1, 2005
Flight Time:	382 hours (Total, all aircraft), 90 hours (Total, this make and model), 24 hours (Pilot In Command, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Taylorcraft	**Registration:**	N44269
Model/Series:	BC12-D	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	10069
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	August 1, 2004 Annual	**Certified Max Gross Wt.:**	1300 lbs
Time Since Last Inspection:	30 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2154 Hrs at time of accident	**Engine Manufacturer:**	Teledyne Continental
ELT:	Installed, not activated	**Engine Model/Series:**	O-200-A
Registered Owner:	On file	**Rated Power:**	100 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ASE,7815 ft msl	**Distance from Accident Site:**	18 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	60°
Lowest Cloud Condition:	Scattered / 10000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.22 inches Hg	**Temperature/Dew Point:**	21°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	TAOS, NM (SKX)	**Type of Flight Plan Filed:**	None
Destination:	Marble, CO	**Type of Clearance:**	None
Departure Time:	11:30 Local	**Type of Airspace:**	

Airport Information

Airport:	Marble Airport	**Runway Surface Type:**	Grass/turf
Airport Elevation:	7600 ft msl	**Runway Surface Condition:**	Wet
Runway Used:	280	**IFR Approach:**	None
Runway Length/Width:	4600 ft / 50 ft	**VFR Approach/Landing:**	Go around;Straight-in;Valley/terrain following

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	39.0825,-107.22583

Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	Steven Scully; FAA Flight Standards District Office; Denver, CO
Original Publish Date:	March 28, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=61833