Aviation Investigation Final Report

Location:	Colo. Springs, Colorado	**Accident Number:**	DEN03LA073
Date & Time:	April 26, 2003, 12:10 Local	**Registration:**	N6884E
Aircraft:	Cessna 175A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported on takeoff having a normal acceleration and run. The pilot said, "The airplane uncharacteristically failed to produce additional RPMs once airborne." The pilot determined that he would have to bring the airplane back for landing. The pilot said he initiated a left turn to crosswind and lowered an additional 10 degrees of flaps. The pilot said that it was at this point that he was near minimum controllable airspeed. The airplane started a slow descent. The pilot said he turned the airplane from crosswind to aim it back toward the center of the airport. The pilot said, "As I rolled level I noted the airspeed indicator at 40 miles per hour, which I maintained all the way down to touchdown in a stable descent." The pilot said that at approximately 20 feet above the ground, he pulled back slightly on the yoke in an attempt to flare the airplane. The right wing dropped, and the airplane impacted the ground, bounced, and went inverted. An examination of the airplane's engine showed the number 2 cylinder exhaust valve stuck in the open position. No other anomalies with the airplane were found. The density altitude for the area at the time of the accident was 8,133 feet. The pilot reported the winds on takeoff as 250 degrees at 8 knots. An examination of the engine logbook showed that 9 months earlier, the number 2 cylinder exhaust valve was found stuck open after an aborted takeoff. The valve was unstuck and an engine run and test flight was conducted. From the time of the aborted takeoff incident to the time of the accident, the airplane logged approximately 2 hours total time.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the stuck open exhaust valve on the engine's number 2 cylinder, the pilot's improper preflight planning, and his failure to maintain aircraft control. Factors contributing to the accident were the low altitude flight maneuver performed, the low airspeed, the tailwind, the high density altitude, and the inadvertent stall.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) PREFLIGHT PLANNING/PREPARATION - IMPROPER - PILOT IN COMMAND
2. (C) ENGINE ASSEMBLY,VALVE,EXHAUST - INOPERATIVE
3. (C) ENGINE ASSEMBLY,VALVE,EXHAUST - OPEN

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

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
4. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
5. (F) AIRSPEED - LOW
6. (F) LOW ALTITUDE FLIGHT/MANEUVER - PERFORMED - PILOT IN COMMAND
7. (F) STALL - INADVERTENT - PILOT IN COMMAND
8. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
9. (F) WEATHER CONDITION - TAILWIND

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

Findings
10. TERRAIN CONDITION - OPEN FIELD

Factual Information

On April 26, 2003, at 1210 mountain daylight time, a Cessna 175A, N6884E, piloted by a commercial pilot, was substantially damaged when it impacted in a field 1/4 mile south of Meadow Lake Airport, Colorado Springs, Colorado. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted on a visual flight rules flight plan under the provisions of Title 14 CFR Part 91. The pilot on board the airplane reported no injuries. The cross-country flight to Crawford, Colorado, was originating at the time of the accident.

The pilot reported setting his flaps to 10 degrees for takeoff prior to taking off on runway 15 (6,000 feet by 60 feet, dry asphalt). The pilot reported on takeoff having a normal acceleration and run. The pilot said, "The airplane uncharacteristically failed to produce additional RPMs once airborne." The pilot determined that he would have to bring the airplane back for landing. The pilot said he initiated a left turn to crosswind and lowered an additional 10 degrees of flaps. The pilot said that it was at this point that he was near minimum controllable airspeed. The airplane started a slow descent. The pilot said he turned the airplane from crosswind to aim it back toward the center of the airport. The pilot said, "As I rolled level I noted the airspeed indicator at 40 miles per hour, which I maintained all the way down to touchdown in a stable descent." The pilot said that at approximately 20 feet above the ground, he pulled back slightly on the yoke in an attempt to flare the airplane. The right wing dropped, and the airplane impacted the ground, bounced, and went inverted.

The airplane was examined at the accident scene. The airplane rested inverted in a field. The nose wheel was broken aft. The lower engine cowling was bent downward and crushed aft. The bottom engine mounts were broken downward. The engine was bent downward approximately 30 degrees. The propeller showed torsional bending and chordwise scratches. The windscreen was broken out. The right wing tip was bent upward approximately 10 degrees. The top wing skin inboard of the wing tip was crushed inward. The remaining top skin of the right wing was buckled. The left wing tip was bent upward and crushed aft along the leading edge. The top wing skin was buckled aft and wrinkled. The inboard aft portion of the left wing near the root was crushed downward. The left flap was bent downward at mid-span. The aft fuselage was bent downward midway between the baggage compartment and the empennage. The vertical stabilizer and rudder were crushed downward. The horizontal stabilizers and elevators were intact. Flight control continuity was confirmed. An examination of the engine showed the number 2 cylinder exhaust valve stuck in the open position. No other anomalies with the airplane were found.

The weather at Colorado Springs Municipal Airport, located 225 degrees at 14 miles, approximately 9 minutes after the accident, was clear skies, 10 miles visibility, temperature 64 degrees Fahrenheit, dew point 34 degrees F, winds 140 degrees at 5 knots, and an altimeter

29.77. The density altitude was calculated to be 8,133 feet. The pilot reported the winds at the time of the accident as 250 degrees at 8 knots.

An examination of the engine logbook showed the airplane underwent an annual inspection on June 29, 2002. The total airframe time at the last annual inspection was 3,496:01 hours. The last entry in the engine logbook was dated July 12, 2002, and read, "Abort takeoff, removed cowl, pulled upper plugs. Comp[ression] test accomplished. Found number 2 cylinder exhaust valve stuck in the open position. Removed valve cover, unstuck valve. Test run engine. Test flight aircraft. Operation normal within limits. End." The total airframe time at the last entry was 3,497:01 hours. The total airframe time at the accident was 3,499:03 hours.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	42,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	January 22, 2002
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 15, 2003
Flight Time:	700 hours (Total, all aircraft), 2 hours (Total, this make and model), 647 hours (Pilot In Command, all aircraft), 2 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N6884E
Model/Series:	175A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	56384
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	June 29, 2002 Annual	**Certified Max Gross Wt.:**	2350 lbs
Time Since Last Inspection:	3.2 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3499.03 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	GO-300-C
Registered Owner:	Doyle L. Shupps	**Rated Power:**	175 Horsepower
Operator:	Robert L. Buckley, Jr.	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	COS,6184 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	11:54 Local	**Direction from Accident Site:**	225°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.77 inches Hg	**Temperature/Dew Point:**	18°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Colo. Springs, CO (00V)	**Type of Flight Plan Filed:**	VFR
Destination:	Crawford, CO (99V)	**Type of Clearance:**	None
Departure Time:	12:10 Local	**Type of Airspace:**	Class C

Airport Information

Airport:	Meadow Lake Airport 00V	**Runway Surface Type:**	Asphalt
Airport Elevation:	6874 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	6000 ft / 60 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	38.945835,-104.569725

Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	Jim Vodicka; Federal Aviation Administration; Denver, CO Robert S Boyle; Teledyne Continental Motors; Arvada, CO
Original Publish Date:	November 25, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=56892