Aviation Investigation Final Report

Location:	Loveland, Colorado	**Accident Number:**	CEN19LA107
Date & Time:	March 23, 2019, 10:43 Local	**Registration:**	N7879N
Aircraft:	Cessna R172E	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Serious, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

As the pilot approached the airport, another pilot heard him on the radio and advised him of "significant down drafts" on the approach to runway 15. The pilot acknowledged the transmission and continued his approach. When he turned onto the base leg, he encountered the "severe down-draft/microburst" the other pilot had mentioned. He applied full power in an attempt to climb out, but the airplane continued to descend striking a power-line and tree, and subsequently impacted terrain.

A review of the weather showed that a complex wind pattern existed over the area during the period with a wind shift occurring immediately after the time of the accident. No support for convective microburst activity was noted over the area; however, a large area of light intensity precipitation with some potential for some outflow was noted, which could have been resulted in the different winds occurring over the accident site during the period. In addition, the High Resolution Rapid Refresh model sounding and satellite imagery and pilot reports noted support for mountain wave activity over the area, which supported downslope winds and downdraft activity in the area at the time of the accident. The National Weather Service had AIRMET advisories for turbulence and IFR and mountain obscuration conditions over the area, but no advisory for low-level wind shear.

It is likely the pilot encountered shifting winds due to weather system in the area. With his reduced engine power on the base leg of the traffic pattern, the pilot most likely got into a downdraft that produced a sink rate that he could not recover from.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An inflight loss of control on landing approach due to encountering a down-draft, and the pilot's failure to take timely action to abandon the approach and perform a go-around.

Findings

Environmental issues	Downdraft - Awareness of condition
Environmental issues	Downdraft - Contributed to outcome
Personnel issues	Incorrect action performance - Pilot

Factual Information

History of Flight

Approach-VFR pattern base	Other weather encounter
Approach-VFR pattern base	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On March 23, 2019, at 1043 mountain daylight time, a Cessna R172E, N7879N, was destroyed when it struck a power line and impacted a dairy farm 1.5 miles northwest of runway 15 at Northern Colorado Regional Airport (FNL), Loveland, Colorado. The pilot was seriously injured and his two passengers sustained minor injuries. The airplane was registered to the U.S. Air Force and operated by the Peterson Air Force Base (AFB) Aero Club, Peterson AFB, Colorado, under the provisions of Title 14 *Code of Federal Regulations* (CFR) Part 91. Visual meteorological conditions prevailed at the time of the accident, and no flight plan had been filed for the personal cross-country flight. The flight originated from the City of Colorado Springs Municipal Airport (COS), and was en route to FNL.

The pilot, a 10-year U.S. Army UH-60M Blackhawk helicopter pilot, said he was accumulating fixed-wing civilian flight time and had brought along two passengers. According to the pilot, he and his passengers intended to fly from COS to FNL and return. He said he was weather briefed for the flight and received multiple weather briefings before takeoff. As they approached FNL from the southwest, he made a call on FNL's common traffic advisory frequency (CTAF) and reported he was entering a right traffic pattern for runway 15. Another pilot heard the report and advised him of "significant down drafts" on the approach to runway 15. The pilot acknowledged the transmission and continued his approach. When he turned onto the base leg, he encountered the "severe down-draft/microburst" the other pilot had mentioned. He applied full power in an attempt to climb out, but the airplane struck a power-line and tree, and impacted terrain.

At 1056, the automated weather observation station at FNL reported, wind 170° at 11 kts, visibility of 10 miles, light rain, few clouds at 1,600 ft, ceilings 3,800 ft broken, 4,800 ft overcast, temperature 43° F, dew point 36° F, and altimeter setting 29.93 inches of Mercury.

A NTSB Meteorologist's review of the weather showed that a complex wind pattern existed over the area during the period with a wind shift occurring immediately after the time of the accident. No support for convective microburst activity was noted over the area; however, a large area of light intensity precipitation with some potential for some outflow was noted, which could have been resulted in the different winds occurring over the accident site during the period. In addition, the High Resolution Rapid Refresh model sounding and satellite imagery and pilot reports noted support for mountain wave activity over the area, which supported downslope winds and downdraft activity in the area at the time of the accident. The National Weather Service had AIRMET advisories for turbulence and IFR and mountain obscuration conditions over the area, but no advisory for low-level wind shear.

Pilot Information

Certificate:	Commercial; Military; Private	**Age:**	31,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	January 14, 2019
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 11, 2018
Flight Time:	1235 hours (Total, all aircraft), 52 hours (Total, this make and model), 31 hours (Pilot In Command, all aircraft), 7 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N7879N
Model/Series:	R172E	**Aircraft Category:**	Airplane
Year of Manufacture:	1967	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	R172-0270
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	January 2, 2019 Annual	**Certified Max Gross Wt.:**	2500 lbs
Time Since Last Inspection:	44.3 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	17752.1 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	IO-360-DB
Registered Owner:		**Rated Power:**	210 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:	fnl,5016 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	10:56 Local	**Direction from Accident Site:**	135°
Lowest Cloud Condition:	Few / 1600 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 3800 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	6°C / 2°C
Precipitation and Obscuration:			
Departure Point:	Colorado Sprngs, CO (COS)	**Type of Flight Plan Filed:**	Military VFR
Destination:	Loveland, CO (FNL)	**Type of Clearance:**	VFR
Departure Time:	09:15 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Northern Colorado Regional FNL	**Runway Surface Type:**	Asphalt
Airport Elevation:	5016 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	8500 ft / 100 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 2 Minor	**Latitude, Longitude:**	40.451946,-105.01139(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	Mark G Petrosky; FAA Flight Standards District Office; Denver, CO
Original Publish Date:	September 27, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=99171