



# National Transportation Safety Board Aviation Accident Final Report

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|                                |                                      |                         |             |
|--------------------------------|--------------------------------------|-------------------------|-------------|
| <b>Location:</b>               | Strasburg, CO                        | <b>Accident Number:</b> | CEN16LA239  |
| <b>Date &amp; Time:</b>        | 06/26/2016, 1950 CDT                 | <b>Registration:</b>    | N29042      |
| <b>Aircraft:</b>               | PIPER J3F 65                         | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         | Fuel related                         | <b>Injuries:</b>        | 1 Minor     |
| <b>Flight Conducted Under:</b> | Part 91: General Aviation - Personal |                         |             |

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## Analysis

The private pilot reported that he departed an airport with full gas and headed east to another airport to perform a touch-and-go landing. After the touch-and-go landing, the engine "never really seemed to perform" on climbout. He attempted to restore power without success, and the airplane began descending. The pilot conducted a forced landing to a field, where the airplane nosed over and sustained substantial damage to the left wing and fuselage. The weather conditions at the time of the accident were conducive to serious carburetor icing at a descent power setting. The loss of engine power likely occurred due to the accumulation of carburetor ice during the descent. The formation of ice would reduce rpm but might not result in rough engine operation. Thus, the reduction in rpm could have gone unnoticed given the typical engine power setting changes when the airplane was on approach for the touch and go.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A partial loss of engine power due to carburetor ice accumulation.

## Findings

|                      |   |
|----------------------|---|
| Aircraft             | Intake anti-ice, deice - Not used/operated (Cause)          |
| Environmental issues | Conducive to carburetor icing - Effect on equipment (Cause) |

## Factual Information

On June 26, 2016, about 1950 central daylight time (CDT), a Piper J3F-65 airplane, N29042, experienced a partial loss of engine power on climb out from Comanche Airfield LLC Airport (CO38) in Strasburg, Colorado. The pilot conducted a forced landing into a wheat field where during the landing the airplane nosed over. The airline transport pilot, the sole occupant, suffered minor injuries. The airplane sustained substantial damage to left-wing strut and fuselage longerons. The airplane was registered to and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not on a flight plan.

The pilot reported he departed from Front Range Airport (FTG), in Watkins, Colorado, about 1900 with full (11 gallons) gas. After takeoff from FTG, he departed the traffic area to the east. He lined up for runway 17 at CO38 and conducted a touch and go landing. During climb out, the pilot reported "the airplane made enough power to clear an interstate roadway and some powerlines, but never really seemed to perform." The pilot stated he advanced the throttle to full power; however, the airplane started to descend. He checked the mixture and magnetos but neither stopped the descent. The airplane "settled into a wheat field," nosed over and came to rest inverted.

The routine aviation weather report at FTG, taken at 1854, about the time of takeoff, recorded a temperature of 27°C and a dewpoint temperature of 10°C. Per the "Carburettor icing-probability chart" in an article on carburetor icing published by Flight Safety Australia, dated November-December 2004, revealed that the airplane was operating in an area favorable for the formation of serious icing at a descent power setting. Further, the article stated that if ice forms in the carburetor of a fixed-pitch propeller aircraft, the restriction to the induction airflow would reduce power and force a drop in rpm. According to the FAA Pilot's Handbook of Aeronautical Knowledge, under certain conditions, carburetor ice can build unnoticed until power is added.

### History of Flight

|                   |                                |
|-------------------|--------------------------------|
| Initial climb     | Fuel related (Defining event)  |
| Emergency descent | Off-field or emergency landing |
| Landing           | Nose over/nose down            |

## Pilot Information

|                                  |   |  |            |
|----------------------------------|---|--|------------|
| <b>Certificate:</b>              | Airline Transport   | <b>Age:</b>                              | 51, Male   |
| <b>Airplane Rating(s):</b>       | Multi-engine Land; Single-engine Land   | <b>Seat Occupied:</b>                    | Rear       |
| <b>Other Aircraft Rating(s):</b> | None  | <b>Restraint Used:</b>                   |            |
| <b>Instrument Rating(s):</b>     | Airplane  | <b>Second Pilot Present:</b>             | No         |
| <b>Instructor Rating(s):</b>     | None  | <b>Toxicology Performed:</b>             | No         |
| <b>Medical Certification:</b>    | Sport Pilot   | <b>Last FAA Medical Exam:</b>            |            |
| <b>Occupational Pilot:</b>       | Yes   | <b>Last Flight Review or Equivalent:</b> | 02/29/2016 |
| <b>Flight Time:</b>              | (Estimated) 10000 hours (Total, all aircraft), 300 hours (Total, this make and model), 2000 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft) |  |            |

## Aircraft and Owner/Operator Information

|                                      |  |                                       |                    |
|--------------------------------------|--|---------------------------------------|--------------------|
| <b>Aircraft Make:</b>                | PIPER  | <b>Registration:</b>                  | N29042             |
| <b>Model/Series:</b>                 | J3F 65 65  | <b>Aircraft Category:</b>             | Airplane           |
| <b>Year of Manufacture:</b>          | 1940   | <b>Amateur Built:</b>                 | No                 |
| <b>Airworthiness Certificate:</b>    | Normal   | <b>Serial Number:</b>                 | 6013               |
| <b>Landing Gear Type:</b>            | Tailwheel  | <b>Seats:</b>                         | 2                  |
| <b>Date/Type of Last Inspection:</b> | 06/10/2015, Annual   | <b>Certified Max Gross Wt.:</b>       |                    |
| <b>Time Since Last Inspection:</b>   |  | <b>Engines:</b>                       | 1 Reciprocating    |
| <b>Airframe Total Time:</b>          |  | <b>Engine Manufacturer:</b>           | Continental Motors |
| <b>ELT:</b>                          | C91 installed, activated, did not aid in locating accident | <b>Engine Model/Series:</b>           | C-85-RF            |
| <b>Registered Owner:</b>             | On file  | <b>Rated Power:</b>                   | 85 hp              |
| <b>Operator:</b>                     | On file  | <b>Operating Certificate(s) Held:</b> | None               |

## Meteorological Information and Flight Plan

|                                  |                                  |   |               |
|----------------------------------|----------------------------------|---|---------------|
| Conditions at Accident Site:     | Visual Conditions                | Condition of Light:                     | Day           |
| Observation Facility, Elevation: | FTG                              | Distance from Accident Site:            |               |
| Observation Time:                | 0152 UTC                         | Direction from Accident Site:           |               |
| Lowest Cloud Condition:          |                                  | Visibility                              | 30 Miles      |
| Lowest Ceiling:                  | Broken / 9000 ft agl             | Visibility (RVR):                       |               |
| Wind Speed/Gusts:                | 8 knots / 16 knots               | Turbulence Type<br>Forecast/Actual:     | /             |
| Wind Direction:                  | 180°                             | Turbulence Severity<br>Forecast/Actual: | /             |
| Altimeter Setting:               | 30.21 inches Hg                  | Temperature/Dew Point:                  | 27° C / 10° C |
| Precipitation and Obscuration:   | No Obscuration; No Precipitation |   |               |
| Departure Point:                 | Strasburg, CO (CO38)             | Type of Flight Plan Filed:              | None          |
| Destination:                     | Denver, CO (FTG)                 | Type of Clearance:                      | None          |
| Departure Time:                  | 1930 MDT                         | Type of Airspace:                       |               |

## Wreckage and Impact Information

|                     |         |                      |                              |
|---------------------|---------|----------------------|------------------------------|
| Crew Injuries:      | 1 Minor | Aircraft Damage:     | Substantial                  |
| Passenger Injuries: | N/A     | Aircraft Fire:       | None                         |
| Ground Injuries:    | N/A     | Aircraft Explosion:  | None                         |
| Total Injuries:     | 1 Minor | Latitude, Longitude: | 39.736111, -104.328611 (est) |

## Administrative Information

|                                   |   |              |            |
|-----------------------------------|---|--------------|------------|
| Investigator In Charge (IIC):     | Courtney Liedler  | Report Date: | 04/13/2020 |
| Additional Participating Persons: | Aaron E Gonzales; FAA; Denver, CO   |              |            |
| Publish Date:                     | 04/13/2020  |              |            |
| Note:                             | The NTSB did not travel to the scene of this accident.  |              |            |
| Investigation Docket:             | <a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93510">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93510</a> |              |            |

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).