



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

|                                |                                      |                         |             |
|--------------------------------|--------------------------------------|-------------------------|-------------|
| <b>Location:</b>               | Cleburne, Texas                      | <b>Accident Number:</b> | GAA19CA048  |
| <b>Date &amp; Time:</b>        | November 1, 2018, 14:00 Local        | <b>Registration:</b>    | N3984L      |
| <b>Aircraft:</b>               | Cessna 172                           | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         | Fuel exhaustion                      | <b>Injuries:</b>        | 1 Minor     |
| <b>Flight Conducted Under:</b> | Part 91: General aviation - Personal |                         |             |

## Analysis

The pilot reported that, during the final approach to the destination airport, the engine lost power. Due to homes that were in line with the approach end of the runway, he decided to perform an emergency landing in a field, during which the airplane slid and then came to rest in trees.

The airplane sustained substantial damage to the left wing.

The pilot reported that he had not considered the engine's fuel burn for touch-and-go landings or headwinds during his preflight planning. During postaccident examination, a Federal Aviation Administration inspector reported that the fuel gauges read zero and that no fuel was found in the right fuel tank and only 10 ounces of fuel were found in the left fuel tank. Fuel was added to the airplane, and the engine started and operated normally. He added that he talked to the pilot, and he stated that he had flown 3.6 hours and performed at least six touch-and-go landings. The pilot also stated that the airplane usually has a 3.5-hour maximum range at 1,000 ft above ground level at 8 to 9 gallons per hour and that he likely did not properly monitor the engine's fuel consumption, which led to fuel exhaustion. Given the evidence, it is likely the pilot did not ensure that there was sufficient fuel onboard the airplane for the flight and that he did not monitor it properly during the flight, which resulted in fuel exhaustion and the subsequent total loss of engine power.

## Probable Cause and Findings

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

The pilot's improper preflight fuel planning and in-flight fuel management, which resulted in fuel exhaustion and the subsequent total loss of engine power.

## Findings

|                             |                                  |
|-----------------------------|----------------------------------|
| <b>Aircraft</b>             | Fuel - Fluid level               |
| <b>Personnel issues</b>     | Fuel planning - Pilot            |
| <b>Aircraft</b>             | Fuel - Fluid management          |
| <b>Environmental issues</b> | Tree(s) - Contributed to outcome |

## Factual Information

### History of Flight

|                            |                                    |
|----------------------------|------------------------------------|
| Approach-VFR pattern final | Fuel exhaustion (Defining event)   |
| Approach-VFR pattern final | Loss of engine power (total)       |
| Landing                    | Off-field or emergency landing     |
| Landing                    | Collision with terr/obj (non-CFIT) |

### Pilot Information

|                           |  |                                   |                  |
|---------------------------|--|-----------------------------------|------------------|
| Certificate:              | Private  | Age:                              | 25,Male          |
| Airplane Rating(s):       | Single-engine land   | Seat Occupied:                    | Left             |
| Other Aircraft Rating(s): | None   | Restraint Used:                   | Lap only         |
| Instrument Rating(s):     | None   | Second Pilot Present:             | No               |
| Instructor Rating(s):     | None   | Toxicology Performed:             | No               |
| Medical Certification:    | Class 1 With waivers/limitations   | Last FAA Medical Exam:            | August 20, 2018  |
| Occupational Pilot:       | No   | Last Flight Review or Equivalent: | October 26, 2018 |
| Flight Time:              | (Estimated) 62 hours (Total, all aircraft), 62 hours (Total, this make and model), 22 hours (Pilot In Command, all aircraft), 41 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft) |                                   |                  |

### Aircraft and Owner/Operator Information

|                               |                          |                                |                 |
|-------------------------------|--------------------------|--------------------------------|-----------------|
| Aircraft Make:                | Cessna                   | Registration:                  | N3984L          |
| Model/Series:                 | 172 G                    | Aircraft Category:             | Airplane        |
| Year of Manufacture:          | 1966                     | Amateur Built:                 |                 |
| Airworthiness Certificate:    | Normal                   | Serial Number:                 | 17254153        |
| Landing Gear Type:            | Tricycle                 | Seats:                         | 4               |
| Date/Type of Last Inspection: | 100 hour                 | Certified Max Gross Wt.:       | 2500 lbs        |
| Time Since Last Inspection:   |                          | Engines:                       | 1 Reciprocating |
| Airframe Total Time:          |                          | Engine Manufacturer:           | Continental     |
| ELT:                          | Installed, not activated | Engine Model/Series:           | O-300-C         |
| Registered Owner:             |                          | Rated Power:                   | 145 Horsepower  |
| Operator:                     | On file                  | Operating Certificate(s) Held: | None            |

## Meteorological Information and Flight Plan

|   |                                  |   |                  |
|---|----------------------------------|---|------------------|
| <b>Conditions at Accident Site:</b>     | Visual (VMC)                     | <b>Condition of Light:</b>                  | Day              |
| <b>Observation Facility, Elevation:</b> | KCPT,854 ft msl                  | <b>Distance from Accident Site:</b>         | 0 Nautical Miles |
| <b>Observation Time:</b>                | 19:15 Local                      | <b>Direction from Accident Site:</b>        | 227°             |
| <b>Lowest Cloud Condition:</b>          | Scattered / 5000 ft AGL          | <b>Visibility</b>                           | 10 miles         |
| <b>Lowest Ceiling:</b>                  |                                  | <b>Visibility (RVR):</b>                    |                  |
| <b>Wind Speed/Gusts:</b>                | 11 knots /                       | <b>Turbulence Type Forecast/Actual:</b>     | None / None      |
| <b>Wind Direction:</b>                  | 360°                             | <b>Turbulence Severity Forecast/Actual:</b> | N/A / N/A        |
| <b>Altimeter Setting:</b>               | 29.95 inches Hg                  | <b>Temperature/Dew Point:</b>               | 16°C / 5°C       |
| <b>Precipitation and Obscuration:</b>   | No Obscuration; No Precipitation |   |                  |
| <b>Departure Point:</b>                 | Mineral Wells, TX (MWL )         | <b>Type of Flight Plan Filed:</b>           | None             |
| <b>Destination:</b>                     | Cleburne, TX (CPT )              | <b>Type of Clearance:</b>                   | None             |
| <b>Departure Time:</b>                  | 13:30 Local                      | <b>Type of Airspace:</b>                    | Class G          |

## Airport Information

|                             |                   |                                  |  |
|-----------------------------|-------------------|----------------------------------|--|
| <b>Airport:</b>             | CLEBURNE RGNL CPT | <b>Runway Surface Type:</b>      | Asphalt                                  |
| <b>Airport Elevation:</b>   | 854 ft msl        | <b>Runway Surface Condition:</b> | Dry                                      |
| <b>Runway Used:</b>         | 33                | <b>IFR Approach:</b>             | None                                     |
| <b>Runway Length/Width:</b> | 5697 ft / 100 ft  | <b>VFR Approach/Landing:</b>     | Forced landing;Full stop;Traffic pattern |

## Wreckage and Impact Information

|                            |         |                             |                           |
|----------------------------|---------|-----------------------------|---------------------------|
| <b>Crew Injuries:</b>      | 1 Minor | <b>Aircraft Damage:</b>     | Substantial               |
| <b>Passenger Injuries:</b> |         | <b>Aircraft Fire:</b>       | None                      |
| <b>Ground Injuries:</b>    | N/A     | <b>Aircraft Explosion:</b>  | None                      |
| <b>Total Injuries:</b>     | 1 Minor | <b>Latitude, Longitude:</b> | 32.355834,-97.431663(est) |

## Administrative Information

|  |   |
|--|---|
| <b>Investigator In Charge (IIC):</b>     | Swenson, Eric   |
| <b>Additional Participating Persons:</b> | Gavin M Hill; FAA; Irving, TX   |
| <b>Original Publish Date:</b>            | June 10, 2019   |
| <b>Note:</b>                             | This accident report documents the factual circumstances of this accident as described to the NTSB.   |
| <b>Investigation Docket:</b>             | <a href="https://data.nts.gov/Docket?ProjectID=98598">https://data.nts.gov/Docket?ProjectID=98598</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](#).