



# National Transportation Safety Board Aviation Accident Final Report

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|                                |   |                         |             |
|--------------------------------|---|-------------------------|-------------|
| <b>Location:</b>               | Friona, TX                                | <b>Accident Number:</b> | CEN18FA140  |
| <b>Date &amp; Time:</b>        | 04/15/2018, 2100 CDT                      | <b>Registration:</b>    | N635DT      |
| <b>Aircraft:</b>               | BORDIUK CHALLENGER II                     | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         | Unknown or undetermined                   | <b>Injuries:</b>        | 2 Fatal     |
| <b>Flight Conducted Under:</b> | Part 91: General Aviation - Instructional |                         |             |

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## Analysis

The flight instructor and the student pilot departed at sunset on a local flight in the airplane from a private airstrip adjacent to the flight instructor's home. About 25 minutes after takeoff, the flight instructor's sister was about 3 miles from the airstrip and observed the airplane fly over her position about 3 miles from the airstrip. She reported that the airplane was low, but nothing seemed unusual and both pilots waved to her. When the airplane did not return to the airstrip, the flight instructor's wife reported it overdue. The wreckage was located early the following morning. There were no known witnesses to the accident.

Postaccident airframe and engine examinations did not reveal any anomalies consistent with a preimpact failure or malfunction. In the absence of any witnesses, or an identified preimpact failure or malfunction with respect to the airplane, the investigation was unable to determine the cause of the impact with the terrain.

The student pilot's toxicology testing was positive for dextropropoxyphene and doxylamine in liver tissue but not in cavity blood; however, the levels present were far too low to have had any significant effects.

## Probable Cause and Findings

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

An in-flight impact with terrain for reasons that could not be determined due to a lack of evidence.

## Findings

Not determined

Not determined - Unknown/Not determined (Cause)

## Factual Information

### History of Flight

|         |  |
|---------|--|
| Enroute | Unknown or undetermined (Defining event) |
|---------|--|

On April 15, 2018, about 2100 central daylight time, an experimental, amateur-built David Bordiuk Challenger II Special airplane, N635DT, was substantially damaged during an in-flight collision with terrain near Friona, Texas. The flight instructor and student pilot were fatally injured. The airplane was owned by the student pilot and was being operated by the flight instructor as a Title 14 *Code of Federal Regulations* Part 91 instructional flight. Night visual meteorological conditions prevailed, and the flight was not operated on a flight plan. The local flight originated from the Hefner Farms Airport (7TS9), Bovina, Texas, about 2020.

The flight instructor's wife reported that the flight departed "right at sunset" from an airstrip located immediately north of their home. About 2045, the flight instructor's sister was about 3 miles north of the airstrip and observed the airplane fly over a couple of times. She noted that the airplane was low, but that nothing seemed unusual. Both the flight instructor and the student pilot waved.

When the pilots did not return from the flight, the flight instructor's wife called both pilots' cellphones with no response. She checked the airstrip and the hangar/garage area, but the airplane was not there. She then contacted the local authorities to report the flight overdue. The airplane was subsequently located about 0100 the following morning. There were no known witnesses to the accident.

### Flight Instructor Information

|                           |   |                                   |            |
|---------------------------|---|-----------------------------------|------------|
| Certificate:              | Flight Instructor; Commercial   | Age:                              | 24, Male   |
| Airplane Rating(s):       | Single-engine Land  | Seat Occupied:                    | Rear       |
| Other Aircraft Rating(s): | None  | Restraint Used:                   | 3-point    |
| Instrument Rating(s):     | Airplane  | Second Pilot Present:             | Yes        |
| Instructor Rating(s):     | Airplane Single-engine  | Toxicology Performed:             | Yes        |
| Medical Certification:    | Class 2 Without Waivers/Limitations   | Last FAA Medical Exam:            | 06/09/2017 |
| Occupational Pilot:       | No  | Last Flight Review or Equivalent: | 11/11/2017 |
| Flight Time:              | 632.4 hours (Total, all aircraft), 0 hours (Total, this make and model), 599.7 hours (Pilot In Command, all aircraft), 12.1 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft) |                                   |            |

## Student Pilot Information

|                           |         |                                   |          |
|---------------------------|---------|-----------------------------------|----------|
| Certificate:              | Student | Age:                              | 25, Male |
| Airplane Rating(s):       | None    | Seat Occupied:                    | Front    |
| Other Aircraft Rating(s): | None    | Restraint Used:                   | 3-point  |
| Instrument Rating(s):     | None    | Second Pilot Present:             | Yes      |
| Instructor Rating(s):     | None    | Toxicology Performed:             | Yes      |
| Medical Certification:    | None    | Last FAA Medical Exam:            |          |
| Occupational Pilot:       | No      | Last Flight Review or Equivalent: |          |
| Flight Time:              |         |                                   |          |

The flight instructor's most recent logbook entry was dated March 31, 2018. His logbook did not include any entries related to a Challenger airplane. However, he had logged 11.1 hours in a Kolb Twinstar Mark III airplane. An entry dated April 10, 2016 included the remark, "Flight with [the student pilot] to get his Challenger."

Federal Aviation Administration (FAA) records indicated that the student pilot was issued a third-class airman medical certification in February 2012, with a restriction for night flying and color signal control. The medical certificate expired for all classes on February 28, 2017. The student pilot reported no civil flight experience at the time of the application.

## Aircraft and Owner/Operator Information

|                               |                       |                                |                 |
|-------------------------------|-----------------------|--------------------------------|-----------------|
| Aircraft Make:                | BORDIUK               | Registration:                  | N635DT          |
| Model/Series:                 | CHALLENGER II SPECIAL | Aircraft Category:             | Airplane        |
| Year of Manufacture:          | 1996                  | Amateur Built:                 | Yes             |
| Airworthiness Certificate:    | Experimental          | Serial Number:                 | CH20295CW1294   |
| Landing Gear Type:            | Tricycle              | Seats:                         | 2               |
| Date/Type of Last Inspection: |                       | Certified Max Gross Wt.:       | 800 lbs         |
| Time Since Last Inspection:   |                       | Engines:                       | 1 Reciprocating |
| Airframe Total Time:          |                       | Engine Manufacturer:           | Rotax           |
| ELT:                          | Not installed         | Engine Model/Series:           | 503             |
| Registered Owner:             | None                  | Rated Power:                   | 52 hp           |
| Operator:                     | On file               | Operating Certificate(s) Held: | None            |

The airplane was issued an FAA experimental, amateur-built special airworthiness certificate in August 1996. FAA records indicated that the registration was cancelled in August 2012 following a reported sale of the airplane. The necessary documentation to complete the registration process as required by the FAA had not been submitted. No additional documentation was on file with the FAA and the airplane remained unregistered at the time of the accident.

An individual reported that he had owned the airplane from 2006 until early 2016. He flew the airplane once in the spring of 2007. He recalled that during that flight he encountered turbulent wind conditions and he never flew the airplane again. He had several friends that would fly it occasionally. There were no issues with the airplane at that time. He stated that the airplane was sold to the flight instructor in early 2016. He did not file any paperwork with the FAA related to either the purchase or the sale of the airplane.

The flight instructor's wife stated that the student pilot purchased the airplane in early 2016. Her husband worked on the airplane re-wiring the electrical system and performing routine maintenance on the brake system. The first flight under the student pilot's ownership was on April 5, 2017; about one year after the airplane was purchased. The accident flight was the second flight since it was purchased by the student pilot.

A review of the available airplane maintenance records revealed that the most recent logbook entries were dated December 2004. A bill of sale, dated December 2006, was included with the airplane records.

### Meteorological Information and Flight Plan

|   |                                  |   |                   |
|---|----------------------------------|---|-------------------|
| <b>Conditions at Accident Site:</b>     | Visual Conditions                | <b>Condition of Light:</b>                  | Dusk              |
| <b>Observation Facility, Elevation:</b> | CVN, 4216 ft msl                 | <b>Distance from Accident Site:</b>         | 15 Nautical Miles |
| <b>Observation Time:</b>                | 1956 MDT                         | <b>Direction from Accident Site:</b>        | 224°              |
| <b>Lowest Cloud Condition:</b>          | Clear                            | <b>Visibility</b>                           | 10 Miles          |
| <b>Lowest Ceiling:</b>                  | None                             | <b>Visibility (RVR):</b>                    |                   |
| <b>Wind Speed/Gusts:</b>                | 8 knots /                        | <b>Turbulence Type Forecast/Actual:</b>     | /                 |
| <b>Wind Direction:</b>                  | 140°                             | <b>Turbulence Severity Forecast/Actual:</b> | /                 |
| <b>Altimeter Setting:</b>               | 30.12 inches Hg                  | <b>Temperature/Dew Point:</b>               | 13° C / -8° C     |
| <b>Precipitation and Obscuration:</b>   | No Obscuration; No Precipitation |   |                   |
| <b>Departure Point:</b>                 | Bovina, TX (7TS9)                | <b>Type of Flight Plan Filed:</b>           | None              |
| <b>Destination:</b>                     | Bovina, TX (7TS9)                | <b>Type of Clearance:</b>                   | None              |
| <b>Departure Time:</b>                  | 2020 CDT                         | <b>Type of Airspace:</b>                    | Class G           |

The flight instructor's sister described the weather that evening as "very nice." It was clear and "not windy."

Sunset occurred at 2024 on the day of the accident, with civil twilight ending at 2050. The moon set at 2011 and was in a new moon phase.

### Airport Information

|                             |                     |                                  |            |
|-----------------------------|---------------------|----------------------------------|------------|
| <b>Airport:</b>             | Hefner Farms (7TS9) | <b>Runway Surface Type:</b>      | Grass/turf |
| <b>Airport Elevation:</b>   | 4159 ft             | <b>Runway Surface Condition:</b> | Vegetation |
| <b>Runway Used:</b>         | 22                  | <b>IFR Approach:</b>             | None       |
| <b>Runway Length/Width:</b> | 1700 ft / 50 ft     | <b>VFR Approach/Landing:</b>     | None       |

### Wreckage and Impact Information

|                            |         |                             |                        |
|----------------------------|---------|-----------------------------|------------------------|
| <b>Crew Injuries:</b>      | 2 Fatal | <b>Aircraft Damage:</b>     | Substantial            |
| <b>Passenger Injuries:</b> | N/A     | <b>Aircraft Fire:</b>       | None                   |
| <b>Ground Injuries:</b>    | N/A     | <b>Aircraft Explosion:</b>  | None                   |
| <b>Total Injuries:</b>     | 2 Fatal | <b>Latitude, Longitude:</b> | 34.608333, -102.866111 |

The accident site was located in a harvested corn field about 0.4-mile northwest from the departure airstrip. The airplane came to rest upright and was oriented on a south heading. An irrigation boom was located about 400 feet north-northwest from the airplane; however, no obvious signs of impact to the boom were observed.

Postaccident airframe and engine examinations were conducted by the NTSB investigator-in-charge with the assistance of a technical representative associated with the engine manufacturer. The examination did not reveal any anomalies consistent with a preimpact failure or malfunction. A detailed summary of the examination is included in the docket associated with the investigation.

### Medical And Pathological Information

South Plains Forensic Pathology, Lubbock, Texas, performed autopsies of the flight instructor and the student pilot. Their deaths were attributed to blunt force injuries sustained in the accident. The FAA's Bioaeronautical Science Research Laboratory, Oklahoma City, Oklahoma, performed toxicology testing on specimens from the flight instructor and the student pilot. The flight instructor's toxicology testing was negative for all substances in the testing profile. The student pilot's toxicology testing was positive for dextropropofol and doxylamine in liver tissue but not in cavity blood.

Doxylamine is an over-the-counter, antihistamine medication that can be used in combination with decongestants and other medications to relieve sneezing, runny nose, and nasal congestion caused by the common cold and allergies. This medication could impair the mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, flying, and operating heavy machinery). Dextropropofol is a metabolite of dexpropofol, which is a cough suppressant.

### Administrative Information

|  |   |                     |            |
|--|---|---------------------|------------|
| <b>Investigator In Charge (IIC):</b>     | Timothy Sorensen  | <b>Report Date:</b> | 05/29/2019 |
| <b>Additional Participating Persons:</b> | Corey Wehmeyer; FAA Flight Standards; Lubbock, TX<br>Jordan Paskevich; Rotech Flight Safety Inc.; Vernon, BC                    |                     |            |
| <b>Publish Date:</b>                     | 05/29/2019  |                     |            |
| <b>Note:</b>                             | The NTSB traveled to the scene of this accident.  |                     |            |
| <b>Investigation Docket:</b>             | <a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=97034">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=97034</a> |                     |            |

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).