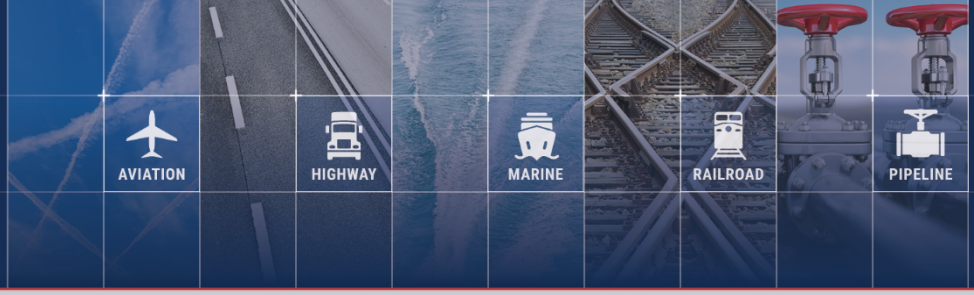

Aviation Investigation Factual Report

Location:	Friona, Texas	**Accident Number:**	CEN18FA140
Date & Time:	April 15, 2018, 21:00 Local	**Registration:**	N635DT
Aircraft:	BORDIUK CHALLENGER II	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

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:	Commercial; Flight instructor	**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:**	June 9, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 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 (Special)	**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:	On file	**Rated Power:**	52 Horsepower
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

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	CVN,4216 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	19:56 Local	**Direction from Accident Site:**	224°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	13°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bovina, TX (7TS9)	**Type of Flight Plan Filed:**	None
Destination:	Bovina, TX (7TS9)	**Type of Clearance:**	None
Departure Time:	20:20 Local	**Type of Airspace:**	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

Airport:	Hefner Farms 7TS9	**Runway Surface Type:**	Grass/turf
Airport Elevation:	4159 ft msl	**Runway Surface Condition:**	Vegetation
Runway Used:	22	**IFR Approach:**	None
Runway Length/Width:	1700 ft / 50 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	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 dextrorphan 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). Dextrorphan is a metabolite of dextromethorphan, which is a cough suppressant.

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Corey Wehmeyer; FAA Flight Standards; Lubbock, TX Jordan Paskevich; Rotech Flight Safety Inc.; Vernon
Report Date:	April 3, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97034

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties … and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available here.