Aviation Investigation Final Report

Location:	Chadron, Nebraska	**Accident Number:**	CEN22FA042
Date & Time:	November 21, 2021, 19:20 Local	**Registration:**	N310JA
Aircraft:	Cessna T310R	**Aircraft Damage:**	Destroyed
Defining Event:	Medical event	**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed on a personal flight in dark night visual meteorological conditions. The airplane impacted terrain northwest of the airport about 30 seconds after departure. The distribution of the debris was consistent with a wings-level, slightly nose-down impact. The airplane was destroyed by impact forces and a postimpact fire. Postaccident examination of the airframe and engines revealed no mechanical anomalies that would have precluded normal operation.

Although toxicology results revealed that the pilot was taking at least two medications (chlorpheniramine and dextromethorphan) that may have impaired his performance, the fact that the medication levels were unquantifiable indicated that their levels were too low for them to have had significantly impairing effects at the time of the accident.

According to the autopsy findings, the pilot was actively having a heart attack in the hours before the accident. This placed him at severely increased risk for acute impairment/incapacitation from chest pain, shortness of breath, feeling faint, or becoming unconscious. Any of these symptoms would have likely led to the low altitude loss of control identified in this crash. Therefore, the pilot's ongoing myocardial infarction (heart attack) is the most likely cause of this accident.

Probable Cause and Findings

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

The incapacitating effects of a myocardial infarction (heart attack), which resulted in the pilot's loss of airplane control and impact with terrain.

Findings

Personnel issues	Cardiovascular - Pilot
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Prior to flight	Medical event (Defining event)
Takeoff	Loss of control in flight
Takeoff	Collision with terr/obj (non-CFIT)

On November 21, 2021, about 1920 mountain standard time, a Cessna T310R, N310JA, was destroyed when it was involved in an accident near Chadron, Nebraska. The pilot and two passengers sustained fatal injuries. The flight was operated under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight.

The airplane landed at the Chadron Municipal Airport (CDR), Chadron, Nebraska, dropped off a passenger, and refueled. About 40 minutes later, the airplane departed from runway 30 at CDR in dark night visual meteorological conditions. Airport security video showed the airplane takeoff roll and liftoff. Automatic dependent surveillance – broadcast (ADS-B) data showed the airplane climbed to about 200 ft, turned to the right, and descended into rising terrain (Figure 1).

According to a Federal Aviation Administration (FAA) inspector, the pilot had flown two legs the day before the accident flight. On November 20, 2021, the pilot departed his home airport about 1134 and returned to his home airport about 0023. The pilot departed about 6 hours later and arrived at CDR about 0630 on November 21, 2021, then proceeded to Flying Cloud Municipal Airport (FCM), Eden Prairie, Minnesota. The pilot departed FCM about 1704 central standard time and arrived at CDR about 1843. About 1920, the pilot departed CDR on the accident flight.

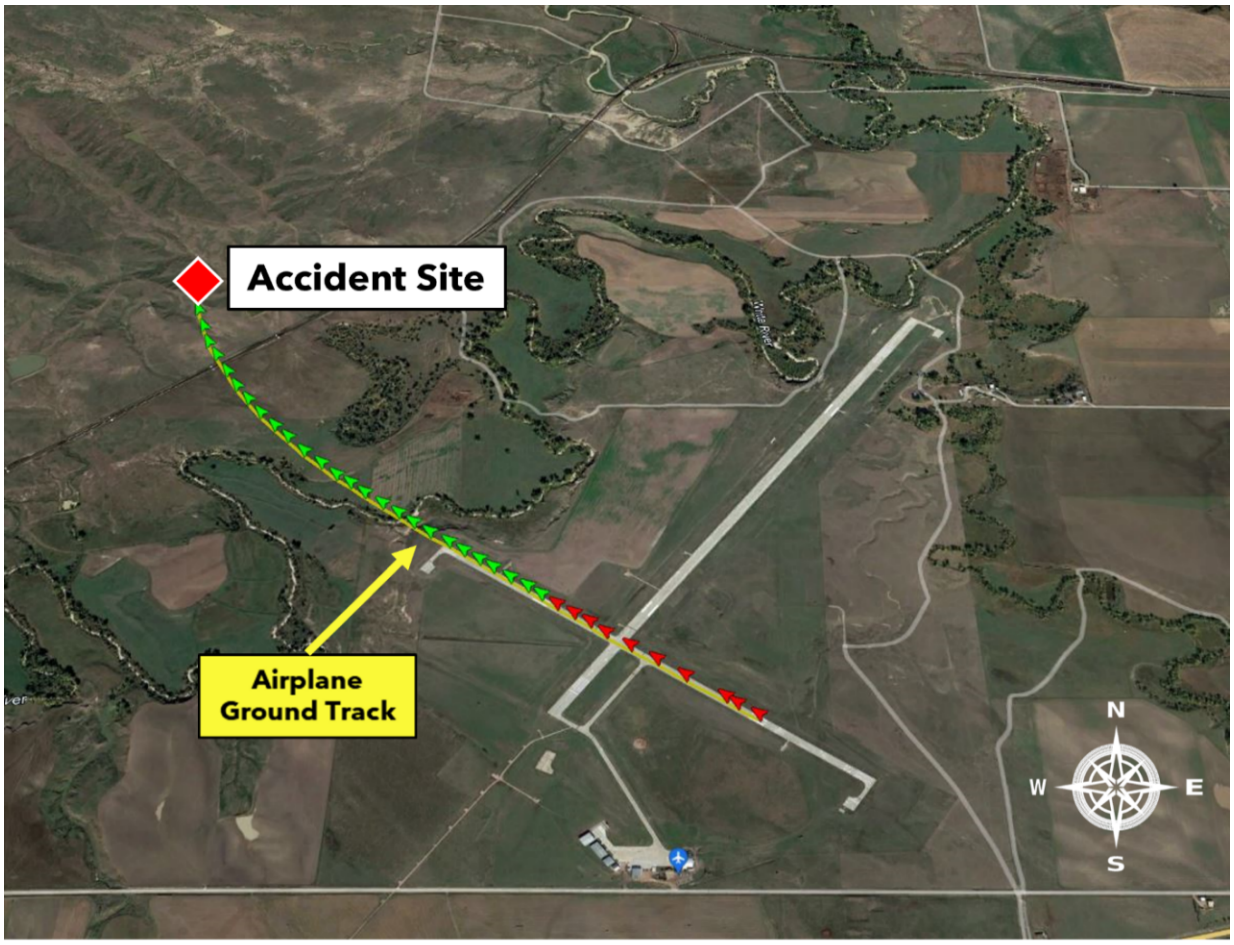

Figure 1 – ADS-B flight path.

Pilot Information

Certificate:	Private	**Age:**	44,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 27, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 2, 2020
Flight Time:	502.3 hours (Total, all aircraft), 88 hours (Total, this make and model), 20 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

The pilot held a private pilot certificate with a rating for airplane multi-engine land and airplane single-engine land. The pilot's most recent FAA medical examination was on July 27, 2020. At that time, the pilot reported civil flight experience of 445 total hours. He had reported hay fever and high blood pressure to the FAA and used losartan to treat his blood pressure. No significant abnormalities were identified during the exam, and he was issued a third-class medical certificate limited by a requirement to wear corrective lenses.

A review of the pilot's logbook revealed that the pilot had accumulated 502.3 total hours of flight experience as of November 20, 2021, the day before the accident. He had about 83 hours of flight experience in the accident airplane make and model. In the 30 days before the accident, he had accumulated about 10 hours, with about 7 hours in the 24 hours before the accident.

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N310JA
Model/Series:	T310R	**Aircraft Category:**	Airplane
Year of Manufacture:	1978	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	310R-1319
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	March 25, 2021 Annual	**Certified Max Gross Wt.:**	5500 lbs
Time Since Last Inspection:	36 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	5410 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-520-EB
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	KCDR,3296 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	130°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.24 inches Hg	**Temperature/Dew Point:**	-2°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Chadron, NE (KCDR)	**Type of Flight Plan Filed:**	None
Destination:	Fort Collins, CO (FNL)	**Type of Clearance:**	None
Departure Time:	19:20 Local	**Type of Airspace:**	Class E

Local airport personnel stated that the night was dark with no visible horizon at the departure end of the runway.

Airport Information

Airport:	Chadron Municipal CDR	**Runway Surface Type:**	Asphalt
Airport Elevation:	3298 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	30	**IFR Approach:**	None
Runway Length/Width:	4400 ft / 75 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:		**Aircraft Explosion:**	Unknown
Total Injuries:	3 Fatal	**Latitude, Longitude:**	42.84705,-103.11431

The initial ground impact was about 3,347 ft above mean sea level (msl), on an approximate heading of 350°. The wreckage debris was dispersed over 600 ft past the initial ground impact point. See Figure 2.

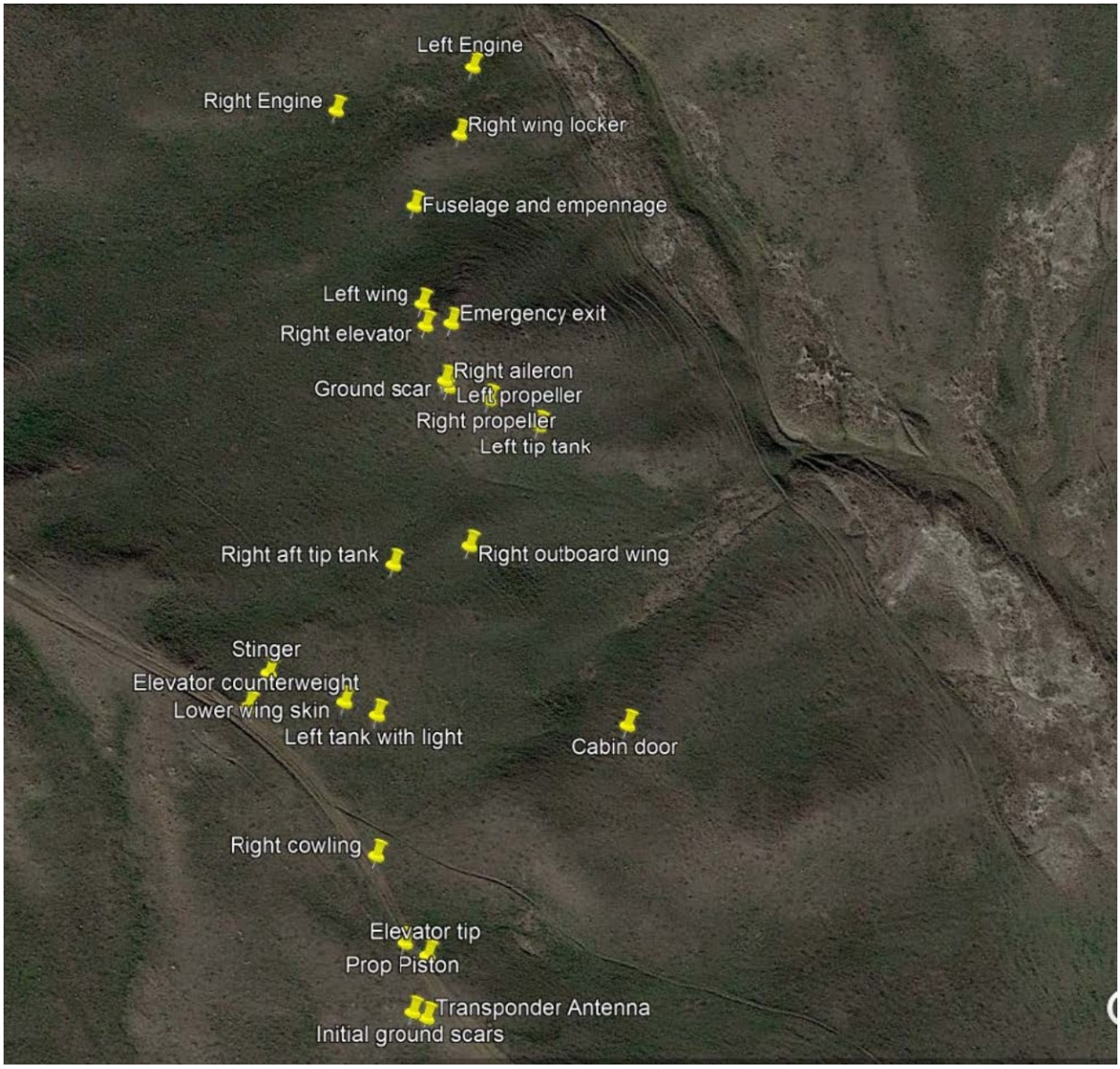

Figure 2. Wreckage Distribution.

A postcrash fire consumed most of the airplane. The distribution of the debris was consistent with a nearly-wings-level, slightly nose-down, high-speed impact. Ground scars from the propeller blades of both engines were present and consistent with rotation at the time of impact.

Although most of the airplane wreckage was consumed by fire, examinations of the flight controls did not reveal any preimpact anomalies. Both engines were examined and did not reveal any preimpact anomalies. Fuel was present in each engine's fuel distribution system. The damage to the propeller blade assemblies from both left and right engines were symmetrical, consistent with the engines producing similar power at the time of impact.

Medical and Pathological Information

An autopsy of the pilot was performed by Western Pathology Consultants. According to the autopsy report, the cause of death was blunt force injuries due to acute coronary thrombosis and the manner of death was accident.

The FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the pilot. Chlorpheniramine was detected. Chlorpheniramine is an antihistamine used to treat allergies and can cause drowsiness. Chlorpheniramine is acceptable for flying if it is used no more than 1-2 times per week and 5 days have elapsed before flying.

Dextromethorphan and its metabolite dextrorphan were detected. This medication is used as a cough suppressant and can cause drowsiness and nausea. Dextromethorphan is disqualifying for flying and requires at least 48 hours before performing pilot duties. Loratadine and the metabolite desloratadine was detected. Loratadine (Claritin) is a nonprescription nonsedating antihistamine used to treat allergies. It is acceptable for FAA medical certification.

Losartan was detected. Losartan (Cozaar) is an ACE-II inhibitor-type antihypertensive used to treat high blood pressure and is acceptable for FAA medical certification. This medication was reported on the most recent medical exam.

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander
Additional Participating Persons:	Greg Young; FAA FSDO ; Lincoln, NE Jennifer Barclay; Textron; Wichita, KS
Original Publish Date:	January 30, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=104284