



# Aviation Investigation Final Report

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<b>Location:</b>	Mandan, North Dakota	<b>Accident Number:</b>	CEN20LA227
<b>Date &amp; Time:</b>	June 13, 2020, 14:00 Local	<b>Registration:</b>	N836JC
<b>Aircraft:</b>	Vans RV8	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Collision during takeoff/land	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

While the airplane was parked on the ramp before the flight, a witness noted that the aft cockpit seatbelt was wrapped around the control stick to secure the flight control surfaces; the conditions at the airport at the time were described by a second witness as "very windy." The first witness reminded the pilot to remove the belt before departure. Both witnesses noted that the airplane's elevator was up as the airplane taxied out for departure. The airplane's takeoff ground roll was short, and as the airplane became airborne, it entered a steep climb to about 50 ft above the ground, rolled left, then entered a vertical descent to ground contact. The witnesses noted that the airplane's elevator was in the full up position at the accident site and as the fire continued, the elevator slowly lowered.

Postaccident examination of the wreckage did not reveal any preimpact anomalies that would have precluded normal operation of the airplane. The seat belt webbing was not identified in the charred cockpit. Given the available information, it is likely that the pilot, seated in the front cockpit of the tandem-configured airplane, failed to remove the seat belt from the aft control stick before departure, resulting in a loss of control during the initial climb and subsequent impact with terrain. The elevator likely lowered as the webbing material melted due to the fire.

## Probable Cause and Findings

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

The pilot's failure to remove the seat belt used as a flight control lock from the aft cockpit control stick before takeoff, which resulted in a loss of control during takeoff and collision with terrain.

## Findings

**Personnel issues**

(general) - Pilot

## Factual Information

### History of Flight

<b>Prior to flight</b>	Preflight or dispatch event
<b>Takeoff</b>	Collision during takeoff/land (Defining event)

On June 13, 2020, about 1400 central daylight time, a Vans RV8 airplane, N836JC, was destroyed when it was involved in an accident near Mandan, North Dakota. The private pilot sustained fatal injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

One witness had a meeting with the pilot and others just before the accident flight. The witness walked over to the airplane after the meeting and noticed that the aft cockpit seatbelt was strapped around the control stick. The pilot said that this was done to hold the airplane's flight controls while parked with windy conditions present. This witness reminded the pilot to remove the belt from around the rear seat controls before departure. The witness walked away from the parking area on the ramp and saw the pilot turn around while in the cockpit, but could not see what he was doing. The witness noticed that the airplane's elevator was up as the airplane departed. The airplane became airborne quickly, flew straight up, rolled left, and then went straight down before impacting the ground; a fire ensued. The witness observed that the elevator was in an up position at the accident site and slowly lowered as the fire continued.

Another witness stated that it was very "windy," and he noticed that the wind swung the airplane around during its taxi for departure. The pilot continued a 360° turn on the ramp and then taxied the airplane to the runway for departure. The witness noticed that the airplane's elevator was up during this time and it stayed up throughout the takeoff. Upon lifting off the runway, the airplane "immediately" went straight up to about 50 ft above the ground, entered a left bank, then entered a nose-down, vertical descent to impact. The witness along with another witness tried to pull the pilot out, but the airplane was engulfed in flames.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	57, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	March 24, 2019
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	April 23, 2020
<b>Flight Time:</b>	(Estimated) 1022 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Vans	<b>Registration:</b>	N836JC
<b>Model/Series:</b>	RV8 Undesignat	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2002	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	81012
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	November 21, 2019 Condition	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	694.9 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	IO-360-A1B6D
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

The airplane was a low-wing, tailwheel-equipped airplane with a tandem seating configuration. Both forward and aft seating positions were equipped with seatbelts and flight controls.

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KY19,1946 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	13:55 Local	<b>Direction from Accident Site:</b>	100°
<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>	18 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	130°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	27°C / 17°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Mandan, ND (Y19 )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Stanton, ND (PVT )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	14:00 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	MANDAN MUNI Y19	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	1944 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	13	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4399 ft / 75 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	46.768054,-100.89444(est)

Federal Aviation Administration inspectors examined and documented the wreckage site. The inboard portions of both wings, the engine, and sections of the fuselage were thermally damaged consistent with a postimpact fire. A ground scar was present south of the wreckage. Linear gouges were observed within the ground scar. The propeller blades exhibited leading

edge nicks and chordwise abrasion. The trim tab on the left elevator was displaced downward, consistent with nose-up trim. The cockpit interior was discolored, deformed, and charred. The seatbelt webbing was not identified.

## **Medical and Pathological Information**

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The North Dakota Department of Health State Forensic Examiner conducted an autopsy on the pilot and took toxicological samples. The cause of death was listed as blunt head and chest injuries with burning by fire.

Toxicology testing performed at the FAA Forensic Sciences Laboratory was negative for carboxyhemoglobin, ethanol, and drugs of abuse.

## **Additional Information**

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The airplane kit manufacturer had a stated policy in place for all its company pilots that only the pilot's stick is to be wrapped around the control stick whenever an airplane's controls are secured by wrapping. The copilot/passenger stick is not to be used to secure the controls under any circumstances.

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Malinowski, Edward
<b>Additional Participating Persons:</b>	John O Kline; Federal Aviation Administration; Fargo, ND Mitch Lock; Van's Aircraft; Aurora, OR Troy Helgeson; Lycoming Engines; Williamsport, PA
<b>Original Publish Date:</b>	May 6, 2021
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 2</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=101430">https://data.nts.gov/Docket?ProjectID=101430</a>

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](#).