



Aviation Investigation Final Report

Location:	Huntsville, Alabama	Accident Number:	ERA22LA213
Date & Time:	May 1, 2022, 17:05 Local	Registration:	N1218B
Aircraft:	Vans RV7	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Review of flight track data for the personal flight showed that the airplane flew on an easterly course for about 3 hours before the airplane’s altitude, heading, and groundspeed began to deviate. The airplane overflew the intended destination airport, circled several times, and impacted terrain about 600 ft short of a private airstrip about 16 nautical miles to the northeast of the intended airport.

Postaccident examination of the wreckage revealed no preimpact anomalies or malfunctions that would have precluded normal flight. The pilot stated that he had not eaten on the day of the accident, had consumed one beer before the accident flight, and had consumed additional alcoholic beverages in the airplane during the flight. The pilot recalled nothing from the last portion of the flight; however, evidence (open alcohol containers found in the wreckage) confirmed that he had consumed alcohol during the flight.

Toxicology testing detected ethanol in the pilot’s blood at 0.172 gm/dL and his urine at 0.267 gm/dL. These concentrations were four to five times higher than the Federal Aviation Administration’s regulatory limit of 0.04 gm/dL; such concentrations would be impairing, and the pilot likely experienced degraded judgment and deficient coordination, psychomotor skills, perception, and attention. The airplane’s flightpath also demonstrated pilot impairment due to alcohol consumption before and during the flight. In addition, open alcohol containers were recovered in the wreckage, and the pilot admitted to consuming alcohol before and during the flight. The pilot likely experienced alcohol-related difficulties with cognitive and motor skills and was thus unable to safely manage the flight, resulting in a subsequent loss of airplane control.

Probable Cause and Findings

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

The pilot's impairment due to the effects of ethanol, which resulted in a loss of airplane control and an impact with terrain on approach to landing.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Alcohol - Pilot
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Enroute	Miscellaneous/other
Approach	Loss of control in flight (Defining event)

On May 1, 2022, about 1705 central daylight time, an experimental amateur-built Van's Aircraft RV-7A, N1218B, was substantially damaged when it was involved in an accident near Huntsville International Airport-Carl T Jones Field (HSV), Huntsville, Alabama. The pilot was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations (CFR)* Part 91 personal flight.

According to the pilot, earlier on the day of the accident, he had flown from HSV to McKinney National Airport (TKI), Dallas, Texas. The pilot reported that he had not eaten that day but had consumed one beer while in Dallas. He recalled consuming additional alcoholic beverages in the airplane on the flight back to Huntsville but recalled nothing after the airplane crossed into Mississippi.

Review of Federal Aviation Administration (FAA) flight track data revealed that the airplane was first detected about 1328 shortly after departing TKI. The airplane climbed to an altitude of about 10,500 ft mean sea level and continued on an easterly course for about 2 hours 48 minutes. Afterward, large deviations were observed in the airplane's altitude, heading, and groundspeed data. The airplane circled right and left east of Huntsville for about 30 minutes before entering a low approach over runway 9 at Moontown Airport (3M5), Huntsville, Alabama, which was about 16 nautical miles northeast of HSV, the intended airport. The airplane then made a left 180° turn and flew west for about 8 miles before it turned back and descended again toward 3M5. The airplane impacted terrain about 600 ft short of the runway 9 threshold.

The airplane came to rest inverted, and it sustained substantial damage to the wings, empennage, and fuselage. Recovery personnel reported fuel in the wing tanks at the accident site as well as opened and empty containers of alcohol. Postaccident examination of the airplane and engine revealed no preimpact anomalies that would have prevented normal operation.

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected ethanol in the pilot's hospital admission blood (0.172 gm/dL) and his urine (0.267 gm/dL). The concentration of ethanol in blood collected 3 hours after hospital admission was 0.118 gm/dL.

Ethanol is a social drug commonly consumed by drinking beer, wine, or liquor. Ethanol acts as a central nervous system depressant; it impairs judgment, psychomotor functioning, and vigilance. Effects of ethanol on aviators are generally well understood; it significantly impairs pilot performance, even at very low levels. At blood ethanol concentrations above 0.15 gm/dL, individuals may experience significant loss of muscle control and major loss of balance. Title 14 *CFR* 91.17(a) prohibits any person from acting or attempting to act as a crewmember of a civil aircraft “within 8 hours after the consumption of any alcoholic beverage” and “while having an alcohol concentration of 0.04 or greater in a blood or breath specimen.”

Pilot Information

Certificate:	Private	Age:	48, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	July 7, 2020
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1300 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Vans	Registration:	N1218B
Model/Series:	RV7 A	Aircraft Category:	Airplane
Year of Manufacture:	2018	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	72061
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	1950 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Teledyne Mattituck Services
ELT:	C126 installed	Engine Model/Series:	TMX-390
Registered Owner:	On file	Rated Power:	210 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	HSV,644 ft msl	Distance from Accident Site:	17 Nautical Miles
Observation Time:	16:53 Local	Direction from Accident Site:	249°
Lowest Cloud Condition:	Scattered / 3700 ft AGL	Visibility	10 miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.97 inches Hg	Temperature/Dew Point:	27°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Dallas, TX (TKI)	Type of Flight Plan Filed:	None
Destination:	Huntsville, AL (HSV)	Type of Clearance:	None
Departure Time:	13:29 Local	Type of Airspace:	Class G

Airport Information

Airport:	Moontown Airport 3M5	Runway Surface Type:	Grass/turf
Airport Elevation:	655 ft msl	Runway Surface Condition:	Rough
Runway Used:	09	IFR Approach:	None
Runway Length/Width:	2180 ft / 160 ft	VFR Approach/Landing:	Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	34.747365,-86.46744

Administrative Information

Investigator In Charge (IIC):	Spencer, Lynn
Additional Participating Persons:	Ken Lancaster; FAA/FSDO; Birmingham, AL Mike Childers; Lycoming
Original Publish Date:	October 19, 2023
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=105026

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](#).