



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Hillsboro, OH	<b>Accident Number:</b>	CEN10FA181
<b>Date &amp; Time:</b>	04/01/2010, 2337 EDT	<b>Registration:</b>	N2190Y
<b>Aircraft:</b>	CESSNA 172D	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Collision with terr/obj (non-CFIT)	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

A witness located about 1/2 mile southeast of the accident site heard the sound of an airplane engine increasing in power followed by a crash. He estimated that this occurred within a few seconds and heard no sounds after the crash. The airplane wreckage was located the following morning at the departure airport, where the airplane had impacted the runway pavement about 100 feet from the threshold. A depression (crater) in the runway pavement was present at the impact point, and the pavement exhibited other impressions consistent with impact from the wings, propeller, and nose landing gear. The airplane was fragmented and the wings and empennage had separated from the fuselage. The main wreckage was located within 20 feet of the point of impact. The entire debris field was within approximately 75 feet of the impact point. Examination of the airframe and engine did not reveal any anomalies consistent with a preimpact failure or malfunction. The impressions in the runway pavement, the distribution of the wreckage, and the extensive damage to the airplane were consistent with a high-power, high-angle impact with the runway pavement.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Impact with the runway pavement for unknown reasons.

## Findings

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Not determined	Not determined - Unknown/Not determined (Cause)
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## Factual Information

### HISTORY OF FLIGHT

On April 1, 2010, about 2337 eastern daylight time, a Cessna 172D Skyhawk, N2190Y, piloted by a private pilot, was destroyed during an in-flight collision with terrain at the Highland County Airport (HOC), Hillsboro, Ohio. The personal flight was being conducted under 14 Code of Federal Regulations (CFR) Part 91 without a flight plan. Night visual meteorological conditions prevailed. The pilot sustained fatal injuries. The exact time of departure could not be determined.

About 2230, a witness located about 3 miles east of HOC reported observing the lights from two airplanes. One appeared to be about 3/4 mile north-northeast of her location. Its lights were on, and as she watched, it turned toward the west in the direction of HOC. She estimated the airplane's altitude at 500 feet above ground level (agl). She noted that nothing appeared unusual with the exception of its altitude, which seemed a little low to her. The second airplane was 5 or 10 miles north of her location and appeared to be headed in the direction of Wilmington or Dayton.

About 2337, a second witness located at the Rocky Fork State Park with his family, about 1/2 mile southeast of HOC, heard the sound of an airplane "throttle up" followed by a crash. He estimated that this occurred within a few seconds; "very quick." He heard no sounds after the crash. He and his wife got into their car to search the area including the airport, but did not see or hear anything. They eventually returned to their campsite.

At 0100, the accident pilot's brother contacted local authorities. He informed them that the pilot had not come home from work and that he had located the pilot's truck in the airport parking lot. A search of the fixed base operator's facilities revealed that the accident airplane was not in the hangar. In addition, the hangar door was open and the lights were on.

The airplane wreckage was located about 0718 the following morning near the Runway 23 threshold at HOC.

### PERSONNEL INFORMATION

The pilot held a private pilot certificate with a single-engine land airplane rating. He was issued a third-class airman medical certificate on October 7, 2008, with a restriction for corrective lenses.

The pilot's flight time logbook was not available to the NTSB. On his most recent application for a medical certificate, the pilot reported a total flight time of 600 hours, with 50 hours flown within the preceding 6 months.

Records indicated that the pilot owned a 1965 Champion 7GCAA Citabria, N9594S. He purchased that airplane in October 2006. A log kept with that airplane suggested that it had been flown 1.6 hours since January 1, 2010, with the most recent log entry dated February 14, 2010.

A flight instructor based at HOC reported that the accident pilot had successfully passed a flight review with him on November 23, 2008, in the pilot's Citabria. He began providing flight training to the accident pilot in 2003, and the pilot subsequently earned his private pilot certificate in 2004. Federal Aviation Administration records indicate that the accident pilot

was issued a private pilot certificate on April 26, 2004.

#### AIRCRAFT INFORMATION

The accident airplane was a 1963 Cessna 172D, N2190Y, serial number 17249690. It was a 4-place, single-engine airplane, configured with a tricycle landing gear configuration. It was powered by a 145-horsepower Continental O-300D reciprocating engine, serial number 27358-D-2-D, and a 2-bladed, fixed pitch McCauley 1C172 propeller.

Maintenance records indicated that the most recent annual inspection was completed on October 12, 2009, at a total airframe time of 5,475.6 hours. There were no entries in the maintenance logs subsequent to the annual inspection.

The flight instructor based at HOC stated that he had flown the accident airplane earlier that day with a different pilot and there were no issues with the aircraft.

The current owner purchased the accident airplane in April 2004. The accident pilot reportedly rented the airplane from the current owner for flight training and personal flying.

#### METEOROLOGICAL CONDITIONS

The Airborne Airpark (ILN) Automated Surface Observing System (ASOS), located 19 miles north-northwest of HOC, recorded conditions at 0054: Clear skies, wind from 200 degrees at 6 knots, 10 miles visibility, temperature 16 degrees Celsius, dew point 7 degrees Celsius, altimeter 29.94 inches of mercury.

Conditions recorded by the ILN ASOS between 2254 on April 1st and 0254 on April 2nd consisted of clear skies and southerly winds at 7 knots or less.

#### AIRPORT INFORMATION

The non-towered airport was served by a single runway. Runway 5-23 was 3,520 feet long by 75 feet wide, and composed of asphalt. Medium intensity runway lights and a two-light precision approach path indicator (PAPI) were installed for Runway 23.

#### WRECKAGE AND IMPACT INFORMATION

The airplane impacted the Runway 23 pavement about 100 feet from the threshold. The impact point was located right of the runway centerline, near the transition to the paved run-up/back taxi turn out area, northwest of the threshold. A depression (crater) in the runway pavement was present at the impact point. In addition, the pavement exhibited impressions consistent with being formed by impact from the wings, propeller, and nose landing gear adjacent to the depression. The pavement impressions were oriented on an approximate bearing of 264 degrees. A fan-shaped debris field, extending to about 75 feet from the initial impact, was also oriented on an approximate 264-degree bearing.

The main wreckage, which included the propeller, engine, instrument panel, cockpit/cabin seats, and fuselage structure, came to rest within approximately 20 feet of the impact point. The propeller has separated from the engine, and the engine had separated from the airframe. The aft fuselage/empennage section had separated from the remainder of the fuselage. It came to rest inverted about 20 feet from the impact point. The wing assembly and center section of the cockpit/cabin roof had separated from the fuselage. The assembly came to rest about 60 feet from the initial impact point.

The fuselage was fragmented. The wings were crushed aft and fragmented. The horizontal and

vertical stabilizers were deformed, but otherwise appeared intact. The flight controls remained attached to the airframe. Control continuity was established from the control surfaces to the wing root and aft fuselage separation point, as applicable.

The engine crankcase was fractured consistent with impact forces. The forward-left (#6) cylinder was separated from the engine. The remaining cylinders were deformed, but remained attached to the engine. The propeller, with the propeller flange attached, had separated from the crankshaft. The blades exhibited bending, twisting, and deformation, with leading edge gouges and chordwise scratches.

The postaccident examination of the airframe and engine did not reveal any anomalies consistent with a preimpact failure or malfunction.

#### MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of the pilot was performed at the Montgomery County Coroner’s Office in Dayton, Ohio, on April 3, 2010. The autopsy report noted the cause of death as “multiple blunt force injuries.”

The FAA Civil Aerospace Medical Institute forensic toxicology report was positive for ethanol in liver, lung, kidney, and muscle tissues. Blood, urine and vitreous fluid was not available for testing. The report indicated that the samples were received on May 13, 2010; 10 days after the autopsy. The report also noted “Putrefaction: Yes” regarding the condition of the samples.

### History of Flight

<b>Maneuvering</b>	Collision with terr/obj (non-CFIT) (Defining event)
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### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	46, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<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 Medical Exam:</b>	10/07/2008
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	350 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N2190Y
Model/Series:	172D	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	17249690
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	10/12/2009, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	5476 Hours	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	O-300 SER
Registered Owner:	On file	Rated Power:	145 hp
Operator:	On file	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	ILN	Observation Time:	0054 EDT
Distance from Accident Site:	19 Nautical Miles	Condition of Light:	Night
Direction from Accident Site:	327°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	16° C / 7° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	6 knots, 200°	Visibility (RVR):	
Altimeter Setting:	29.94 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hillsboro, OH (HOC)	Type of Flight Plan Filed:	None
Destination:	Hillsboro, OH (HOC)	Type of Clearance:	None
Departure Time:	EDT	Type of Airspace:	

## Airport Information

Airport:	Highland County Airport (HOC)	Runway Surface Type:	Asphalt
Airport Elevation:	977 ft	Runway Surface Condition:	Dry
Runway Used:	23	IFR Approach:	None
Runway Length/Width:	3520 ft / 75 ft	VFR Approach/Landing:	Unknown

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal		

## Administrative Information

**Investigator In Charge (IIC):** Timothy Sorensen **Adopted Date:** 04/12/2011

**Additional Participating Persons:** Norman L Johnson; FAA-Cincinnati FSDO; Cincinnati, OH  
Steve Miller; Cessna Aircraft Company; Wichita, KS  
Sara Irwin; Teledyne Continental Motors, Inc.; Mobile, AL

**Publish Date:** 04/12/2011

**Investigation Docket:** <http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=75625>

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