



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Ray, Michigan	<b>Accident Number:</b>	CEN23LA213
<b>Date &amp; Time:</b>	May 20, 2023, 12:30 Local	<b>Registration:</b>	N586SB
<b>Aircraft:</b>	Piper PA-28-235	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Hard landing	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

The flight instructor demonstrated a simulated engine failure to his student while the airplane was on the crosswind leg in the traffic pattern. He reported that he attempted to land on the opposite runway from which they departed. He reported that while maneuvering to final approach the airplane was pushed to the left of the runway over a grassy area by a “sudden downward draft.” The flight instructor stated that he thought the airplane encountered “windshear coming down between the trees.” He landed the airplane in the wet grass between the taxiway and the runway, which resulted in a propeller strike. Post-accident examination revealed substantial damage to the engine mount. The flight instructor reported that there were no mechanical malfunctions or failures with the airplane that would have precluded normal operation.

The flight instructor reported that the wind at the time of the accident was 300° at 10 knots. The landing was made toward runway 10 which resulted in a 9-knot tailwind.

## Probable Cause and Findings

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

The flight instructor’s failure to maintain airplane control during simulated engine-out procedures. Contributing to the accident was the flight instructor’s decision to land with a tailwind.

## Findings

<b>Environmental issues</b>	Tailwind - Effect on operation
<b>Aircraft</b>	Directional control - Not attained/maintained
<b>Personnel issues</b>	Lack of action - Pilot
<b>Personnel issues</b>	Aircraft control - Pilot

## Factual Information

### History of Flight

<b>Landing-flare/touchdown</b>	Hard landing (Defining event)
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### Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	41, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine sea	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	None
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	February 27, 2023
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1812 hours (Total, all aircraft), 43 hours (Total, this make and model), 1567 hours (Pilot In Command, all aircraft)		

### Student pilot Information

<b>Certificate:</b>	Student	<b>Age:</b>	Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>		<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	0 hours (Total, all aircraft), 0 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N586SB
<b>Model/Series:</b>	PA-28-235	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1966	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	28-10781
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	Annual	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	0-540 SERIES
<b>Registered Owner:</b>	KAREON CONSULTING LLC	<b>Rated Power:</b>	250 Horsepower
<b>Operator:</b>	KAREON CONSULTING LLC	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KMTC, 580 ft msl	<b>Distance from Accident Site:</b>	8 Nautical Miles
<b>Observation Time:</b>	11:56 Local	<b>Direction from Accident Site:</b>	159°
<b>Lowest Cloud Condition:</b>	2600 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 2600 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	10 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	300°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.98 inches Hg	<b>Temperature/Dew Point:</b>	14°C / 7°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Detroit, MI (KDET)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Ray, MI (57D)	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	11:55 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	RAY COMMUNITY 57D	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	632 ft msl	<b>Runway Surface Condition:</b>	Holes;Soft;Wet
<b>Runway Used:</b>	010	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	2495 ft / 60 ft	<b>VFR Approach/Landing:</b>	Simulated forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	42.73,-82.88

## Administrative Information

**Investigator In Charge (IIC):** Abraham, Laura

**Additional Participating Persons:** David Schrader; FAA

**Original Publish Date:** August 31, 2023

**Last Revision Date:**

**Investigation Class:** [Class 4](#)

**Note:** The NTSB did not travel to the scene of this accident.

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=192280>

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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](#).