



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Milford, New Jersey	<b>Accident Number:</b>	ERA24LA225
<b>Date &amp; Time:</b>	May 20, 2024, 16:23 Local	<b>Registration:</b>	N86RL
<b>Aircraft:</b>	NICKLE C R ACRO II	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel exhaustion	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot of the experimental amateur-built biplane stated that he had just purchased the airplane and intended to fly it to his home airport. Prior to the flight he asked the previous owner questions about the fuel indicator tube (a sight gauge indicating the fuel quantity) and noted that it had no markings. He subsequently departed for the planned the 2 hour and 12-minute flight with fuel tank completely filled with 26 gallons of fuel and assumed an 8 gallon per hour fuel consumption rate. About 1 hour and 15 minutes into the flight, the fuel sight gauge began showing a reduced fuel level in the tank, and indicated what the pilot though was 7/8 of a tank of fuel remaining. After flying 20 more minutes the fuel gauge indicated 1/2 tank of fuel, and after 15 more minutes of flying the fuel gauge was getting close to empty. He flew another 15 minutes and was about 10 minutes from his destination airport when the engine lost all power. He immediately looked for a place to make an emergency landing. He lined up on a field and landed smoothly. During the landing rollout, tall grass wrapped around the main landing gear and the airplane nosed over, resulting in substantial damage to the biplane's top wing and the vertical stabilizer. The pilot stated that there were no preimpact mechanical malfunctions or failures that would have precluded normal operation of the airplane and that the airplane ran out of fuel.

## Probable Cause and Findings

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

The pilot's lack of familiarity with the airplane's fuel system, which resulted in a total loss of engine power due to fuel exhaustion.

## Findings

Personnel issues	Knowledge of equipment - Pilot
Aircraft	Fuel - Fluid management

## Factual Information

### History of Flight

<b>Enroute</b>	Fuel exhaustion (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing
<b>Landing-landing roll</b>	Nose over/nose down

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	59,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Rear
<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>	
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	October 28, 2022
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	November 20, 2023
<b>Flight Time:</b>	1866 hours (Total, all aircraft), 12 hours (Total, this make and model), 1866 hours (Pilot In Command, all aircraft), 2 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	NICKLE C R	<b>Registration:</b>	N86RL
<b>Model/Series:</b>	ACRO II	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1987	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	459
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	September 1, 2023 Annual	<b>Certified Max Gross Wt.:</b>	1650 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	772 Hrs at time of accident	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	C91 installed, not activated	<b>Engine Model/Series:</b>	O-320 SERIES
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>	On file	<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>	ABE, 385 ft msl	<b>Distance from Accident Site:</b>	14 Nautical Miles
<b>Observation Time:</b>	14:51 Local	<b>Direction from Accident Site:</b>	281°
<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>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	120°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.98 inches Hg	<b>Temperature/Dew Point:</b>	27°C / 15°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Plymouth, MA (PYM)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Hedgesville, WV (WV22)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	14:15 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<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>	1 Minor	<b>Latitude, Longitude:</b>	40.59154,-75.124274(est)

## Administrative Information

Investigator In Charge (IIC):	Boggs, Daniel
Additional Participating Persons:	Michael Conte; FAA/FSDO; Allentown, PA
Original Publish Date:	June 28, 2024
Last Revision Date:	
Investigation Class:	<a href="#">Class 4</a>
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	<a href="https://data.nts.gov/Docket?ProjectID=194302">https://data.nts.gov/Docket?ProjectID=194302</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.

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