# Aviation Investigation Final Report

| | | | |
|---|---|---|---|
| **Location:** | Miramar, Florida | **Accident Number:** | ERA23FA023 |
| **Date & Time:** | October 17, 2022, 11:40 Local | **Registration:** | N32856 |
| **Aircraft:** | PERYERA ADVENTURA II | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Loss of engine power (total) | **Injuries:** | 2 Fatal |
| **Flight Conducted Under:** | Part 91: General aviation - Flight test | | |

## Analysis

According to a witness, the pilot and passenger reported that the experimental, amateur-built airplane had experienced engine issues in the days preceding the accident. According to the airplane and engine manufacturers, the passenger had reported an intermittent in-flight loss of engine power that occurred during a previous flight (both the pilot and passenger were employees of the airplane manufacturer). The pilot and passenger had been troubleshooting the power loss, and departed on a test flight. After takeoff, the pilot acknowledged air traffic control instructions to extend on the downwind leg of the airport traffic pattern, however, there were no further communications from the pilot. The accident site was located in a residential area about 1 mile south of the departure airport.

The investigation revealed that a service bulletin issued by the engine manufacturer had not been complied with. The bulletin required the removal of an "ECU select switch" connected to the engine's control units. During postaccident functional testing of the engine, a loss of power occurred consistent with the malfunction of the switch. After the switch was removed, the engine operated normally.

## 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 ECU select switch per the manufacturer's service bulletin, which resulted in a loss of engine power.

## Findings

| | |
|---|---|
| **Aircraft** | (general) - Incorrect service/maintenance |
| **Personnel issues** | Decision making/judgment - Pilot |

# Factual Information

## History of Flight

| | |
|---|---|
| **Approach-VFR pattern base** | Loss of engine power (total) (Defining event) |
| **Emergency descent** | Electrical system malf/failure |
| **Uncontrolled descent** | Collision with terr/obj (non-CFIT) |

On October 17, 2022, about 1140 eastern daylight time, an experimental, amateur-built Aventura II airplane, N32856, was substantially damaged when it was involved in an accident near Miramar, Florida. The commercial pilot and passenger were fatally injured. The flight was operated under Title 14 *Code of Federal Regulations* Part 91 as a test flight.

According to air traffic control information obtained from the Federal Aviation Administration, the pilot contacted North Perry Airport (HWO), Hollywood Florida, ground control at 1135 for taxi instructions to the active runway. The ground controller provided instructions to taxi to runway 10R and a subsequent takeoff clearance for right traffic off runway 10R, which the pilot acknowledged. At 1138, the local controller instructed the pilot to extend on the downwind leg, and the pilot acknowledged. There were no further communications from the pilot. At 1139, the controller advised the pilot that the airplane's transponder was not working and subsequently requested radio checks at 1140 and 1141, but received no response.

A witness who was at HWO, stated that the pilot and passenger visited his hangar on the day of the accident to borrow a screwdriver. He reported that their airplane had experienced problems in the days before the accident, but he was unsure of the exact issues. On the day of the accident, he observed that the airplane's engine "did not sound right" before departure.

A representative of the airplane manufacturer reported that the pilot and passenger were employees of the company. The passenger had contacted him several days before the accident, stating that the engine control unit (ECU) malfunctioned during flight, causing a power loss. The power returned shortly after, and the airplane landed safely. The incident was reported to the engine manufacturer, and troubleshooting began. On the day of the accident, the pilot and passenger were still troubleshooting the engine and the flight was intended as a test flight.

The engine manufacturer confirmed that the passenger had contacted him regarding the engine power loss and provided a video showing the engine shutting down and restarting in flight. The engine manufacturer suggested several checks and noted that the airplane required updates.

## Pilot Information

| | | | |
|---|---|---|---|
| **Certificate:** | Commercial; Flight instructor | **Age:** | 33,Male |
| **Airplane Rating(s):** | Single-engine land; Single-engine sea | **Seat Occupied:** | Right |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | 4-point |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | Airplane single-engine | **Toxicology Performed:** | Yes |
| **Medical Certification:** | Class 1 Unknown | **Last FAA Medical Exam:** | June 13, 2022 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | (Estimated) 1700 hours (Total, all aircraft), 10 hours (Total, this make and model), 500 hours (Last 90 days, all aircraft) | | |

## Passenger Information

| | | | |
|---|---|---|---|
| **Certificate:** | | **Age:** | 32,Male |
| **Airplane Rating(s):** | | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | | **Restraint Used:** | 4-point |
| **Instrument Rating(s):** | | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | | **Toxicology Performed:** | |
| **Medical Certification:** | | **Last FAA Medical Exam:** | |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 0 hours (Total, all aircraft), 0 hours (Total, this make and model) | | |

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | PERYERA | **Registration:** | N32856 |
| **Model/Series:** | ADVENTURA II | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | 2008 | **Amateur Built:** | Yes |
| **Airworthiness Certificate:** | Experimental (Special) | **Serial Number:** | AVII-92007 |
| **Landing Gear Type:** | Retractable - Tailwheel; Amphibian | **Seats:** | 2 |
| **Date/Type of Last Inspection:** | September 20, 2022 Condition | **Certified Max Gross Wt.:** | 1430 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 |
| **Airframe Total Time:** | 47 Hrs as of last inspection | **Engine Manufacturer:** | |
| **ELT:** | C126 installed, activated, did not aid in locating accident | **Engine Model/Series:** | |
| **Registered Owner:** | On file | **Rated Power:** | |
| **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:** | KHWO,44 ft msl | **Distance from Accident Site:** | 1 Nautical Miles |
| **Observation Time:** | 15:48 Local | **Direction from Accident Site:** | 180° |
| **Lowest Cloud Condition:** | Clear | **Visibility** | 10 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 11 knots / None | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 150° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 29.84 inches Hg | **Temperature/Dew Point:** | 29°C / 22°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | Miramar, FL | **Type of Flight Plan Filed:** | None |
| **Destination:** | Miramar, FL | **Type of Clearance:** | VFR |
| **Departure Time:** | | **Type of Airspace:** | Class G |

## Airport Information

| | | | |
|---|---|---|---|
| **Airport:** | PERRY-FOLEY FPY | **Runway Surface Type:** | |
| **Airport Elevation:** | 44 ft msl | **Runway Surface Condition:** | Dry |
| **Runway Used:** | | **IFR Approach:** | None |
| **Runway Length/Width:** | | **VFR Approach/Landing:** | Forced landing |

## Wreckage and Impact Information

| | | | |
|---|---|---|---|
| **Crew Injuries:** | 1 Fatal | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | 1 Fatal | **Aircraft Fire:** | None |
| **Ground Injuries:** | | **Aircraft Explosion:** | None |
| **Total Injuries:** | 2 Fatal | **Latitude, Longitude:** | 25.989988,-80.239037(est) |

The accident site was located about 1 mile south of HWO, with the airplane coming to rest partially on the roof of a residence. All major flight components were located at the main wreckage site. Flight control continuity was confirmed to all primary control surfaces. Both wings were impact-damaged but remained partially attached to the airframe. The engine, which showed no signs of impact damage, remained attached to its mounts. Although the engine controls were present, they were shifted due to impact forces. The instrument cluster was found separated within the wreckage. There was about a half tank of fuel in the fuel tank, with no breaches observed in the fuel lines or fuel tank.

Engine Examination and Test Run

Postaccident examination of the engine revealed no visible damage; however, all wiring connections were found to be loose consistent with pulling during the accident sequence. The battery terminal wires were also loose but observed to be stretched consistent with damage from the impact. The operator had previously communicated that the passenger was troubleshooting engine issues and planned to inspect the wiring connections before the flight.

A subsequent engine test run was conducted to replicate the reported power loss. The engine initially started and ran normally but sustained a power loss after several minutes of operation. Further inspection revealed that the ECU wiring was not in compliance with the engine manufacturer’s Service Bulletin Viking 110 Wiring Upgrade, which recommended removal of the "computer on" selector switch to allow operation on a single ECU.

The service bulletin specified, "Remove ECU select switch to operate on a single computer only. Locate the select switch on the panel, remove the three wires labeled ECU 1, ECU 2, and

SELECT. Disregard and tape the ECU 2 wire. Solder ECU 1 and SELECT together and protect with shrink tubing." After separating the ECU wiring to isolate each ECU, the engine operated normally.

## Medical and Pathological Information

An autopsy of the pilot was performed by the Boward County Medical Examiner. According to the autopsy report, the cause of death was blunt force injuries, and the manner of death was accident.

Toxicology testing performed at the FAA Forensic Sciences Laboratory found no ethanol or drugs of abuse.

## Tests and Research

Onboard Image Recorders

A GoPro Max and GoPro Hero7 compact digital camera were recovered from the accident site and forwarded to the NTSB Vehicle Recorders Laboratory, Washington, DC. No data was recovered from the microSD card from the GoPro Max camera.

The microSD card from the GoPro Hero7 did not capture that accident flight; however, it captured a flight on October 11, 2022, when the airplane experienced a sudden loss of engine power on final approach while the throttle was stationary. The throttle was briefly moved to idle and moved forward again. As the throttle moved forward, the engine power returned. The airplane landed on runway 10R at HWO without further incident.

The GoPro Hero 7 also captured a flight on the day of the accident, which began at approximately 1128 and lasted 7 minutes and 50 seconds. The airplane was airborne and on final approach for runway 10R at HWO. A red light to the left of the Viking View Engine Information System (EIS) was flashing for the duration of the recording, but the label for the light was not legible. The engine sounded normal and appeared to respond appropriately to

throttle lever movements. The airplane landed about 1130, the airplane subsequently stopped on a taxiway and the pilot and passenger had a discussion for about 2 minutes as they both pointed at the Viking View EIS. Their conversation was not audible due to the ambient engine noise and the values displayed on the screen were not visible. At 1131:45, the pilot started to taxi back to runway 10R for departure. At 1133:55, the airplane was holding short of runway 10R. At 1135:43, the pilot turned off the camera and the video ended.

## Administrative Information

| | |
|---|---|
| **Investigator In Charge (IIC):** | Alleyne, Eric |
| **Additional Participating Persons:** | Juan Garcia; FAA/FSDO; Miramar, FL<br>Jan Eggenfellner; Viking Aircraft Engines; Edgewater, FL |
| **Original Publish Date:** | January 2, 2025 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class 3 |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=106139 |

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.