

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA023

WRECKAGE EXAMINATION

October 18-20, 2022

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A. ACCIDENT

Location: Miramar, FL.

Date: October 17, 2022

Time: 1241

Aircraft: Amateur Built Aventura II

Registration: N32856

B. WRECKAGE EXAMINATION

Investigation Team:

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FAA Inspector	Jaun Garcia FAA/Orlando FSDO Miramar, FL.
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C. SUMMARY

- D.** At 1241 eastern daylight time, on October 17, 2022, an amateur-built Aventura II, N32856, was destroyed when it impacted a residential home in Miramar, Florida. The flight instructor and student pilot were fatally injured. The personal flight was operating under Title 14 Code of Federal Regulations Part 91.

E. DETAILS OF THE EXAMINATION

1.0 Accident Site

The aircraft came to rest alongside a residential home. The fuselage remained intact, with structural damage observed in the cockpit area. Both wings were separated from the airframe and exhibited impact damage. The engine remained partially attached to the airframe via the engine mounts.



Recovered Aircraft Wreckage

2.0 Airframe Examination

The wreckage was examined and documented at the accident site on October 18, 2023. A follow-up examination on the engine was performed on 10/31/2023 at FAR, Jacksonville, FL.

2.1 Fuselage

The engine and avionics instruments panel were separated from cockpit and located near the main wreckage. The instruments were impact damaged.

Examination of the fuselage revealed the wing assembly was partially detached from the hull/fuselage. The wings were impact damaged. The empennage was attached to the fuselage and had scuffing throughout. All flight control

surfaces were observed. Flight control cable and push rod continuity was established from all control surfaces to the cockpit.

2.2 Empennage

The vertical stabilizer and rudder remained attached to the airframe and did not show impact damage. The left and right horizontal stabilizers and elevator remained attached to the airframe and did not show impact damage.

2.3 Wings

The wing assembly was impact damaged and separated from the fuselage. The wing struts were buckled and still attached to the wing and parts of the fuselage assembly. Both wings displayed buckling throughout the span of the wings.

2.4 Landing Gear

The main landing remained attached to the fuselage and was in the "down" position at the accident site. The landing gear operating handle was connected to all push pull tubes of the assembly. The tailwheel remained attached and was undamaged.

2.5 Cockpit

The cockpit was crushed aft, and the flight instrument were impact damaged. Both fuel selector switches were in the on position. Fuel was observed leaking from the breached fuel system. Due to post accident impact damage, the engine control positions at the time of impact could not be determined.

2.6 Survivability

The accident was not survivable. The cockpit seats were fitted with 4-point restraints; all seats and restraints were pulled from the fuselage attachment points during the impact. The airplane was lodged between the house and fence.

2.7 Fuel/Fuel System

The airframe fuel system breached due to impact and fuel was observed leaking out of the fuel system. About 15 gallons of fuel was recovered from the fuel tank and system during the recovery.

3.0 Engine Examination

Examination of the engine revealed no visible damage; however, all wiring connections were found to be loose because of pulling during the accident sequence. The battery terminals wires were also loose but observed to be stretched because of the accident sequence. Previous communications from the operator indicated that the pilot was in the process of troubleshooting these issues and intended to check the wiring connections prior to the flight.

After the visual inspection, an engine test run was conducted to replicate the reported power loss. The engine started and initially ran without issue but experienced a power loss after several minutes. Inspection of the ECU wiring revealed that the ECUs were connected to a "computer on" selector switch, contrary to the Viking 110 wiring upgrade service bulletin, which required the removal of this switch to allow operation of a single ECU at a time.

The Viking 110 service bulletin stated: "Remove ECU select switch in order 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. If done correctly, the engine will start and run normally, and the TAC (RPM) will function."

During troubleshooting, the ECU wiring was separated to isolate ECU 1, as stated in the Viking 110 service bulletin. The engine was restarted using ECU 1 and ran without anomalies.

Propeller Examination

The Warp drive three-bladed, fixed pitch composite propeller remained attached to the engine during impact. The blades were undamaged and displayed light scoring on all blades.

Submitted by:

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