



Aviation Investigation Preliminary Report

Location:	Southport, NC	Accident Number:	ERA23FA273
Date & Time:	June 25, 2023, 20:20 UTC	Registration:	N13LV
Aircraft:	Mooney M20R	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

On June 25, 2023, about 1620 eastern daylight time, a Mooney M20R, N13LV, was destroyed when it was involved in an accident near Southport, North Carolina. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to a mechanic at Cape Fear Regional Jetport (SUT), Oak Island, North Carolina, the airplane had been in for maintenance since October 2022. The private pilot/owner had requested that the mechanic troubleshoot interior lighting, service the brakes, attach a standby vacuum hose, and repair an exhaust leak. The mechanic could not complete the work as he could not start and run-up the engine due to dead batteries.

When he inspected the batteries, he realized that they were unairworthy. Specifically, the airplane was designed with a 24-volt electrical system that utilized two 24-volt batteries; however, the mechanic found four 12-volt batteries installed. When the mechanic contacted the pilot about the discrepancy, the pilot instructed him to reinstall the four 12-volt batteries. The mechanic refused as it would have been an unapproved and unairworthy installation. The pilot then stated he wanted his airplane back. The mechanic told him that the airplane was unairworthy as he had not completed repairs on it, and also noted that it was unairworthy on the invoice.

Witnesses at the airport observed excessive white exhaust smoke and oil leaking from the airplane onto the ground, as it taxied from the mechanic's hangar to runway 23 for takeoff. Shortly after takeoff, the pilot reported an engine failure on the common traffic advisory frequency and that he was returning to runway 23. Review of Federal Aviation Administration ADS-B data revealed that the airplane departed runway 23 about 1617 and flew a left circuit back to runway 23; however, it impacted a residential area about 1/2-mile prior to the runway threshold.

The wreckage came to rest in a residential yard, near the left rear side of the home, and a postcrash fire ensued; however, it did not ignite the home. The wreckage was laying on its right side, oriented about a 090° magnetic heading. An approximate 125-ft debris path was observed, beginning with the right aileron suspended in an approximate 40-ft tree, on a northwest course to the main wreckage. The left wing remained partially attached to the fuselage. The aileron and flap remained attached to the left wing. The flap was observed in an extended position; however, the flap control in the cockpit could not be identified. The right wing had separated and was resting underneath the left wing. The right aileron and flap had separated from the right wing. The flap was recovered near the right wing and the aileron was recovered from the tree. The landing gear was observed in an extended position. The empennage remained intact and oil streaks were noted on the underside. Flight control continuity was confirmed from the cockpit via push-pull tubes to all flight control surfaces, except for the separated right wing, where aileron continuity was confirmed to the wing root. The cockpit and cabin were consumed by fire.

The engine came to rest inverted, and the propeller remained attached to the engine. An oil sump accessory port plug was observed loose, with oily blue stained baffling material resting below it. Additionally, the No. 4 connecting rod had protruded through the top of the engine case. A check of the oil dipstick revealed no measurable oil in the engine.

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N13LV
Model/Series:	M20R No Series Exists	Aircraft Category:	Airplane
Amateur Built:			
Operator:	On file	Operating Certificate(s) Held:	None
Operator Designator Code:			

Meteorological Information and Flight Plan

Conditions at Accident Site:	VMC	Condition of Light:	Day
Observation Facility, Elevation:	SUT,26 ft msl	Observation Time:	16:10 Local
Distance from Accident Site:	1 Nautical Miles	Temperature/Dew Point:	32°C /22°C
Lowest Cloud Condition:	Scattered / 5500 ft AGL	Wind Speed/Gusts, Direction:	7 knots / , 200°
Lowest Ceiling:	Broken / 8500 ft AGL	Visibility:	10 miles
Altimeter Setting:	2992 inches Hg	Type of Flight Plan Filed:	None
Departure Point:	Southport, NC	Destination:	North Myrtle Beach, SC (CRE)

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	33.942625,-78.062524

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Mark Allen; FAA/FSDO; Greensboro, NC
Investigation Class:	Class 3
Note:	