

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA22FA262

WRECKAGE EXAM

A. <SELECT OR ENTER THE TYPE EVENT>

Location: Greenville, OH
Date: June 7, 2022
Time: 0940 EDT
1340UTC
Helicopter: Enstrom F28F

B. WRECKAGE EXAM

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C. SUMMARY

On June 7, 2022, about 0940 eastern daylight time, an Enstrom F28F helicopter, N600TA, was substantially damaged when it was involved in an accident near Greenville, Ohio. The private pilot and his wife (a student pilot) were fatally injured. No flight plan was filed for the personal flight conducted under Title 14 Code of Federal Regulations Part 91.

The pilot owned the helicopter, which was used for agricultural spraying on his family farm. The helicopter was based at a private hangar facility in Greenville. According to a Federal Aviation Administration (FAA) inspector, who visited the facility after the accident, the pilot, and his wife, were observed on surveillance video departing the facility at 0925. The spray equipment had been removed from the helicopter. Several witnesses saw the helicopter flying in the local area at an altitude between 500 and 1,000 ft mean sea level (msl). About 0940, law enforcement received a 911 call that the helicopter had crashed in the driveway of the pilot's residence, which was about 3 miles from the hangar facility.

There were no eyewitnesses or video of the accident. The pilot was not in contact with air traffic control, and no flight plan had been filed. A search for air traffic control radar data revealed no radar data was captured for the flight. Automatic Dependent Surveillance-Broadcast (ADS-B) flight tracking equipment was installed on the helicopter, but no tracking data was captured for the accident flight.

According to a pilot that flew spraying operations in the accident helicopter, he said the pilot had planned to fly to the Warren County Airport (I68), Lebanon, Ohio, that day to drop the helicopter off for scheduled maintenance. His wife was going to drive down and pick him up after he dropped off the helicopter. There was no vehicle at the pilot's home, so the purpose of the accident flight has yet to be determined.

HELICOPTER INFORMATION

The last annual inspection was completed on April 24, 2022, at a total airframe time of 2,656.3 hours. A review of the engine maintenance logbook, the No. 3 cylinder was replaced with an overhauled cylinder on May 27, 2022, about 15 hours before the accident.

WRECKAGE DESCRIPTION

The helicopter came to rest upright (skids fully spread) on a magnetic heading of about 245 degrees. A postaccident fire consumed the aft cockpit area to the forward tail boom area, including the engine and both Fiberglass fuel tanks. All three main rotor blades remained secured to the main rotor head. The No.1 and No. 2 blades were undamaged, and the No. 3 blade, which came to rest above the postaccident fire, was partially delaminated and exhibited heat damage. The tail rotor gear box was intact, and one tail rotor blade was bent about 90 degrees. The other blade sustained minor damage. The main rotor blades were manually rotated and continuity to the tail rotor was free and smooth. The tail rotor guard was broken in two sections and found about 20-30 feet behind the main wreckage, along with a cargo door.

A ½-inch coaxial cable that ran from a power-pole on the street directly to the home was severed and laying on the ground to the left and right of the main wreckage. One end of the cable was frayed and part of the black outer jacket of the cable was scraped away. Material from the cable was smeared on the leading edge of the No. 2 main rotor blade from the tip to about 88-inches inboard.

The cockpit area was crushed downward, but the instrument panel was intact and undamaged. The wind/glareshield was shattered and numerous pieces of Plexiglas were sitting on the ground in front of the nose of the helicopter. Both the left and right seat structures were crushed downwards. There were no ground scars

or impact marks observed around the main wreckage, consistent with the helicopter impacting the ground hard in a near vertical descent.

Both sets of flight controls were installed in the helicopter and move in sync (interconnected) with each other when manually moved. Though breaks in the flight control system were observed due to fire and impact damage in the aft cockpit area, flight control continuity for both cyclics, the collectives and anti-torque pedals was established.

The drive belts were mostly disintegrated in the postaccident fire. The overrunning clutch felt smooth and locked up and freewheeled in the appropriate directions.

The helicopter was equipped with an STC oil filter. The filter sustained fired damage and the element exhibited a small amount of silver-colored flakes. These flakes did not respond to a magnet and appeared to be aluminum.

The on/off fuel shut off valve handle in the cockpit was bent downwards and the fuel selector valve was found in the "on" position. Both fuel tanks remained in place, but the resin had burned away from both tanks.

The engine sustained extensive fire damage and the accessory case was heavily burned. The engine was removed from the airframe, and the valve covers, and the top spark plugs were removed from all four cylinders. Manual rotation of the crankshaft produced compression on the No. 1 and No. 3 cylinders, and weak compression on the No. 2 and No. 4 cylinders. Valve train continuity was also observed on all four cylinders. An internal inspection of the No. 2 and No. 4 cylinders with a lighted borescope revealed that both intake and exhaust valves were properly seating. These cylinders were removed, and no anomalies were noted that would have contributed to the low compression. The piston rings were unremarkable on each piston. The No. 4 outer exhaust valve spring was found broken, but there were no indications that it would have contributed to an engine issue.

The single-drive dual magneto remained attached to the accessory case, and the case had partially burned away exposing the drive shaft. When the engine was rotated, this drive was observed rotating. The ignition leads were consumed in the postaccident fire. Due to fire damage, the magneto could not be tested.

The oil sump screen was removed and absent of debris.

The fuel injector nozzles were removed and exhibited a light amount of debris, but not enough to keep fuel from passing through. The flow divider was intact, but the diaphragm sustained heat damage.

The spark plugs were removed, and no irregularities were noted.

Submitted by:

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