

National Transportation Safety Board

Office of Aviation Safety
Central Region



CEN21FA297

WRECKAGE EXAMINATION SUMMARY

ACCIDENT

Location: Curtiss, Wisconsin
Date: June 30, 2021
Time: 0450 central daylight time (0950 UTC)
Airplane: Earthstar Aircraft Gull 2000, Registration No. N1712L

PARTICIPANTS

Investigator-In-Charge Andrew Todd Fox
National Transportation Safety Board
Denver, Colorado

Group Member Timothy Spreen
Federal Aviation Administration
Milwaukee, Wisconsin

ACCIDENT SYNOPSIS

On June 30, 2021, about 0450 central daylight time, an Earthstar Aircraft Gull 2000 experimental light-sport airplane, N1712L, was substantially damaged when it was involved in an accident near Curtiss, Wisconsin. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

WRECKAGE EXAMINATION TIMELINE

On July 1, 2021, National Transportation Safety Board (NTSB) Investigator Fox documented the accident site and wreckage with the assistance of Federal Aviation Administration (FAA) Aviation Safety Inspector Spreen. The wreckage was examined and photographed at the accident site before it was recovered to Curtiss Fire Hall, Curtiss, Wisconsin, where it was further examined. The wreckage was subsequently placed into an enclosed trailer and transferred to the Clark County Ridge Road Evidence Storage Facility where it was secured until the registered owner claimed the wreckage.

AIRPLANE DESCRIPTION

The airplane was an Earthstar Aircraft Gull 2000, serial number (s/n) 007, registration number N1712L. The HKS 700E engine, s/n 100482, was normally aspirated with dual carburetors and an electronic ignition. The two-cylinder, four-stroke, engine was

rated at 60 horsepower at 6,200 rpm. The engine provided thrust through a three-blade, fixed pitch, Power Fin F-68 propeller. The high-wing airplane was constructed from steel tubing, sheet metal, and a fiberglass cockpit enclosure. The airplane was equipped with a fixed tricycle landing gear, wing flaps, and a ballistic recovery parachute. The airplane was not equipped for flight in instrument meteorological conditions (IMC) and/or under instrument flight rules (IFR).

According to the manufacturer, the airplane's empty and maximum takeoff weights were 248 lbs and 550 lbs, respectively. The airplane's wingspan and wing area were 20 ft and 95 sqft, respectively. The airplane's aerodynamic stall speed and maximum cruise speed were 27 mph and 63 mph, respectively. At maximum gross weight, the airplane's takeoff and landing distance were 125 ft and 75 ft, respectively.

MAINTENANCE SUMMARY

Recent Maintenance

According to maintenance logbook documentation, on June 10, 2020, the last annual inspection of the airplane and its engine was completed at 68.45 hours since new.

The airplane's electronic engine monitor was destroyed during impact and, as such, the airplane's total airframe and engine times at the time of the accident could not be determined.

WRECKAGE EXAMINATION SUMMARY (JULY 1, 2021)

The main wreckage was in a wooded area at the edge of a cornfield located south of Center Road and west of Romadka Avenue, near Curtiss, Wisconsin. The accident site location was 44.984025° north latitude, 90.461475° west longitude, at 1,313 ft mean sea level (msl). The accident site was about 0.33 nm southwest of the west end of the grass airstrip (1,275 ft long by 60 ft wide) that the pilot used for takeoff, as depicted in figure 1.

All structural components and flight control surfaces were located at the accident site, as shown in figure 2. The main wreckage consisted of the fuselage, tailboom, right wing, engine, and propeller. The right wing was intact with the aileron and flap attached, as shown in figure 3. The left wing and left flap separated from the fuselage during the impact sequence with the trees, as shown in figure 4. The empennage remained attached to the aft section of the tailboom, as shown in figure 5.

Based on damage to trees at the accident site, the airplane was traveling to the south as it descended into the trees in an approximately 30° nose-down flight path angle, as shown in figure 6.

The airframe parachute rocket deployed due to impact forces. The activation handle was stowed with the safety pin removed, as shown in figure 7.

The fuel tank contained fuel and there was evidence of a fuel leak at the accident site. Fuel samples did not contain any evidence of contamination.

The cockpit was destroyed during impact. The damaged components of an electronic engine monitor and an electronic artificial horizon device were retained for possible data download.

Flight control continuity could not be established due to damage; however, all flight control system separations were consistent with impact-related damage or were separated to facilitate recovery of the wreckage. All structural damage to the airplane was consistent with tree and ground impact.

The airframe examination did not reveal any evidence of a preexisting mechanical malfunction or failure that would have prevented normal operation.

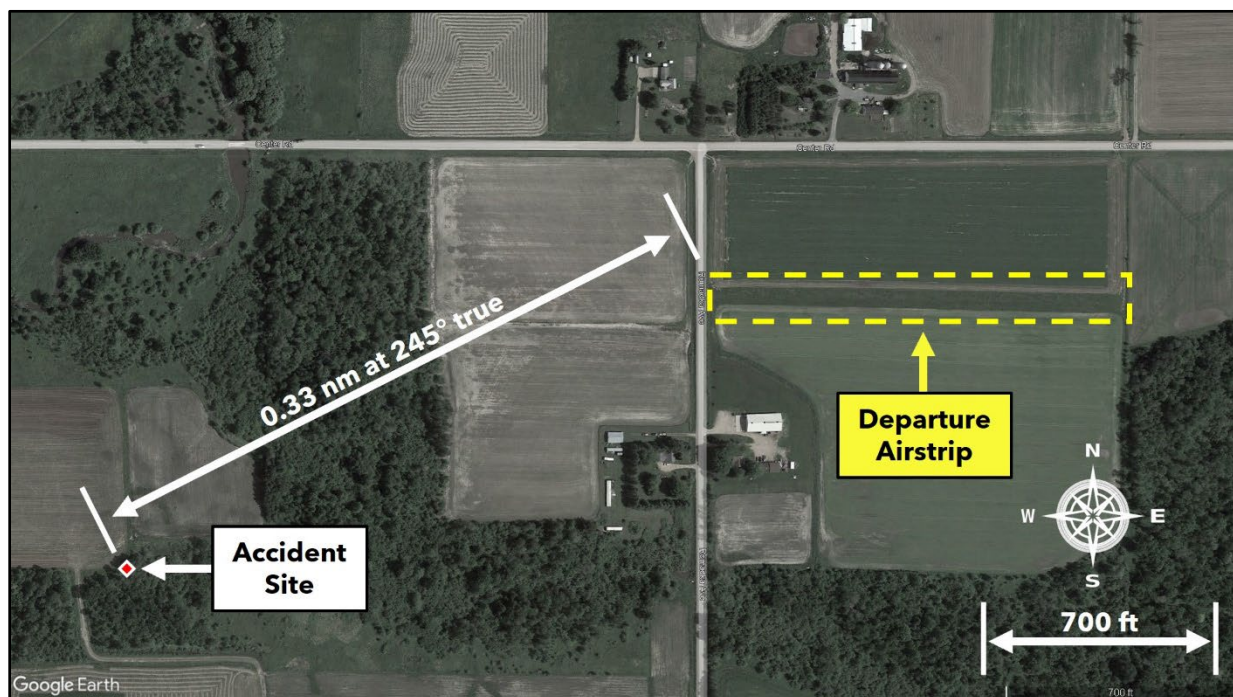


Figure 1 - Accident Site Overview



Figure 2 - Main Wreckage



Figure 3 - Right Wing



Figure 4 - Left Wing



Figure 5 - Empennage



Figure 6 - Airplane's Descent Path Through Trees



Figure 7 - Airframe Ballistic Recovery Parachute Activation Handle and Safety Pin

The aft-facing engine remained mounted at the rear of the fuselage, as shown in figure 8 and figure 9. The propeller remained attached to the engine crankshaft and all three propeller blades remained attached in the propeller hub, as shown in figure 10. The propeller blades exhibited minor leading-edge damage and light chordwise burnishing of the blade surfaces consistent with the propeller rotating at the time of the accident.

Examination of the engine's crankcase did not exhibit any holes or cracks. There was no evidence of an oil leak and the engine contained oil. The exhaust and intake pipes remained attached to both cylinders. Both carburetors contained uncontaminated fuel, as shown in figure 11. The spark plugs were removed and exhibited features consistent with normal engine operation, as shown in figure 12.

Internal engine and valve train continuity were confirmed while the engine crankshaft was rotated. Cylinder compression was confirmed by placing a finger over the open spark plug holes and feeling suction and expelled air from each cylinder while the crankshaft was rotated. A borescope examination of each cylinder confirmed no anomalies with the cylinders, pistons, valves, or valve seats.

The electronic ignition system could not be tested due to impact-related wiring damage.

The engine examination did not reveal any evidence of a preexisting mechanical malfunction or failure that would have prevented normal operation. All physical damage to the engine was consistent with tree and ground impact.

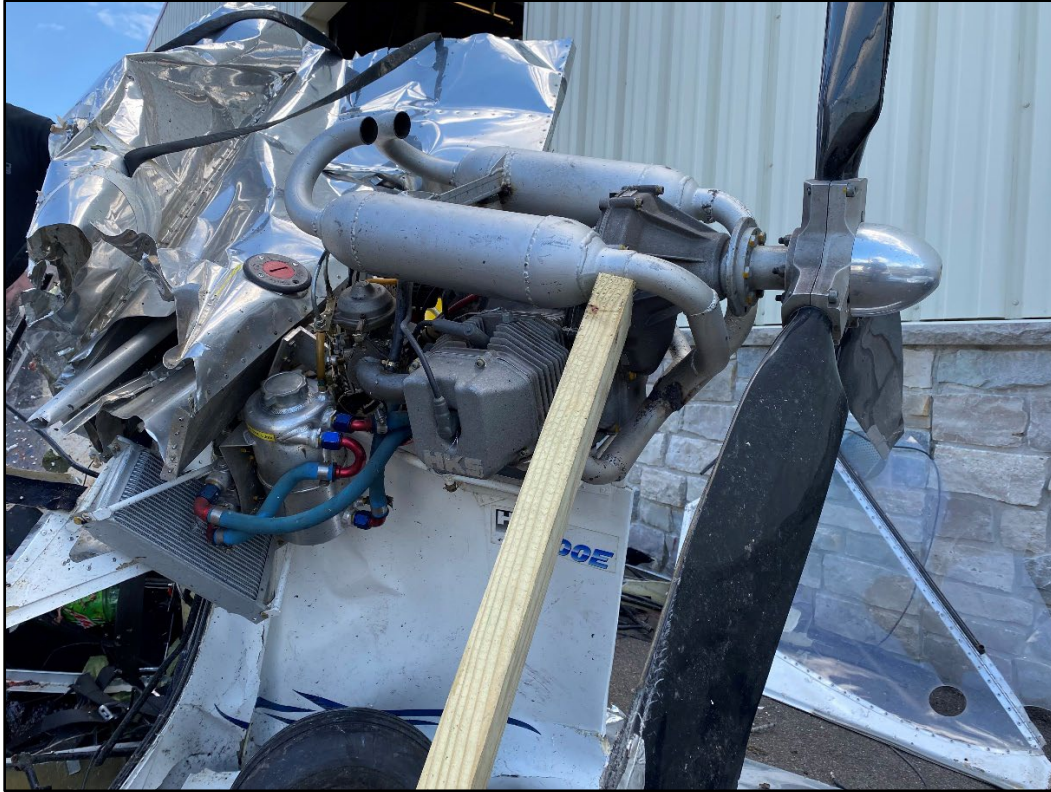


Figure 8 - Engine, Right Side



Figure 9 - Engine, Left Side



Figure 10 - Propeller



Figure 11 - Carburetor Fuel Bowls



Figure 12 - Sparkplugs