

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



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EXAMINATION SUMMARY

February 12, 2025

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A. ACCIDENT

Location: Centralhatchee, Georgia
Date: November 20, 2024
Time: 1330 EST
1830 UTC
Airplane: AMS FLIGHT D O O, Carat A, N17GF

B. EXAMINATION SUMMARY

IIC Damian Galbraith
 NTSB OAS-ERA
 Vero Beach, Florida

FAA Inspector Michael Jones
 FAA/FSDO
 Atlanta, Georgia

C. SUMMARY

On November 20, 2024, about 1330 eastern standard time, an AMS Flight D O O Carat A motor glider, N17GF, was substantially damaged when it was involved in an accident at Sunset Strip Airport (7GE5), Centralhatchee, Georgia. The pilot sustained serious injuries. The motor glider was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that the motor glider departed with 14 gallons of fuel from Thomas Ridge Airport (3GA7), Rupert, Georgia, and was destined for Northeast Alabama Regional Airport (KGAD), Gadsden, Alabama. About 1 hour after departure, the pilot described that the engine experienced a partial loss of engine power and began to run rough. Shortly thereafter, the engine lost power completely. The pilot's attempt to restore power was unsuccessful and he performed a forced landing to 7GE5. During the landing, the motor glider landed hard and came to rest inverted.

Examination of the engine revealed that the No. 4 cylinder intake valve separated from its keepers and was ingested into the cylinder. The rocker arm adjustment screw's jamb nut was not attached. Abrasion was noted to both No. 4 cylinder rocker arms, consistent with the rocker arms contacting the rotocaps during engine operation.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The airplane came to rest inverted in a grassy area at the Sunset Strip Airport (7GE5), Centralhatchee, Georgia.

2.0 Airframe Examination

An FAA inspector performed the on-scene examination on November 20, 2024. A follow-up examination on the engine was performed on February 11, 2025, at a secure facility in Griffin, Georgia.



Photograph 1: Airplane overview.

2.1 Fuselage and Empennage

The engine and engine cowlings were separated from the fuselage. The fuselage was fractured in various areas, and the firewall was crushed aft. The canopy was fragmented and partially separated from the fuselage. All flight control surfaces were observed. Impact damage was noted to the vertical stabilizer. The rudder remained attached, and its control cables were continuous to the rudder pedal assembly. The horizontal stabilizer was impact separated from the empennage. The elevator remained attached, and its control rod was impact separated. Flight control continuity was established from the cockpit through impact and recovery separations to the control surfaces.

2.2 Wings

The right wing was separated about 5 ft from the wingtip and partially separated at the wing root. The right aileron remained attached to the wing and the spoiler was retracted. The aileron and spoiler control rods were recovery separated at the wing root. The left wing was separated about 7 ft from the wingtip and recovery separated at the wing root. The left aileron was fractured in two sections and partially separated from the wing. The spoiler was retracted. The spoiler and aileron control rods were recovery separated at the wing root. The main landing gear was impact damaged and was extended to the down position.

2.3 Cockpit

The forward cockpit area was fragmented, and impact damage was noted to the instrument panel. The battery and alternator switches, magneto and electronic ignitions, and electric fuel pump were in the ON positions. The fuel valve was observed in the ON position, and the throttle was open. Hobbs: 314.5, Tach: 152.3.

2.4 Fuel/Fuel System

The fuselage mounted fuel tank was impact damaged and breached. The fuel cap was secured to its receptacle, and no fuel was observed within the fuel tank. The fuel tank pickup screen was clear of debris.

3.0 Engine Examination

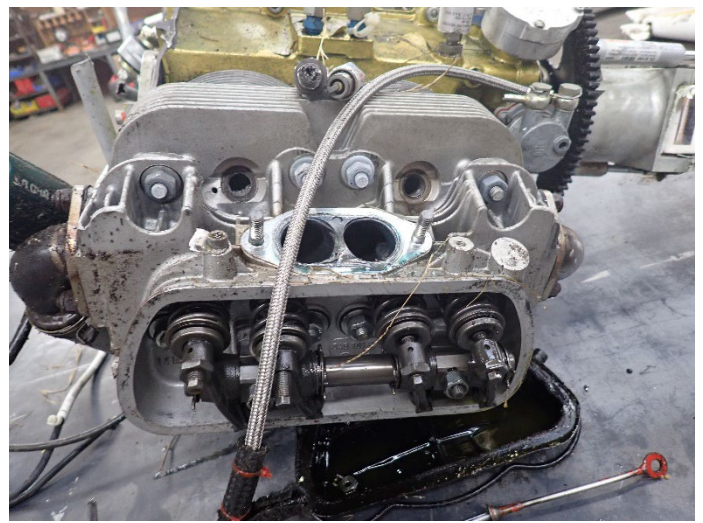
The engine was a Sauer GMBH, S18001 ES10. The engine was separated from the fuselage and its mount was fragmented. The right valve cover was impact separated from the engine. The engine oil sump contained about two quarts of oil and the oil screen was clear of debris. The carburetor was separated from the intake manifold and its control cables remained attached. No fuel was observed in the float bowl, and no anomalies were noted to its interior components. There were no preaccident anomalies noted to the exhaust system. The electronic ignition was fragmented, and the magneto was impact separated from the engine. The magneto produced spark from all four ignition towers during hand rotation of its attached drive coupler. The sparkplug electrodes from cylinders No. 1, 2, & 3 exhibited normal wear and coloration when compared to the Champion Check-A-Plug chart. The top sparkplug electrode of the No. 4 cylinder exhibit impact damage and the bottom sparkplug was seized and fractured during removal attempts.

The engine's crankshaft could not be rotated. Further examination revealed the No. 4 cylinder intake valve was fractured in three sections. The valve's head was found within the combustion chamber, and the stem was deformed and observed in the intake manifold. One of two valve keepers (safety wedges) was observed in the

valve cover and exhibited abrasion at its rotocap contact area: The other keeper was not located. The intake rocker arm's adjustment screw was backed off, and the jamb nut was separated and located in the valve cover. The jamb nut of the No. 4 cylinder exhaust rocker was secured, and its adjustment screw was backed off, inconsistent with the adjustments observed on the remaining three cylinders. The exhaust valve and keepers remained intact. Abrasion was noted to the No. 4 cylinder intake and exhaust rocker arms at their adjustment area, consistent with the rocker arms contacting the rotocaps during engine operation. Removal of the No. 2 & 4 cylinder head revealed impact damage to the interior of the No. 4 cylinder bore, piston and head. Following the removal of the cylinder head, crankshaft rotation and geartrain continuity was established.



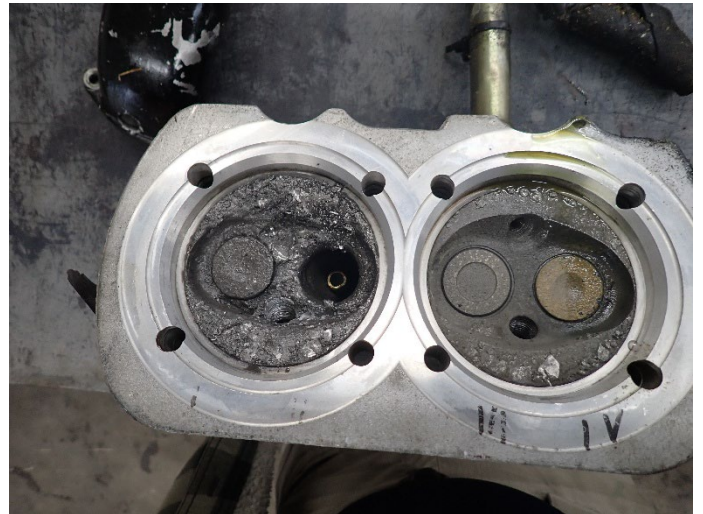
Photograph 2: Engine prior to full examination.



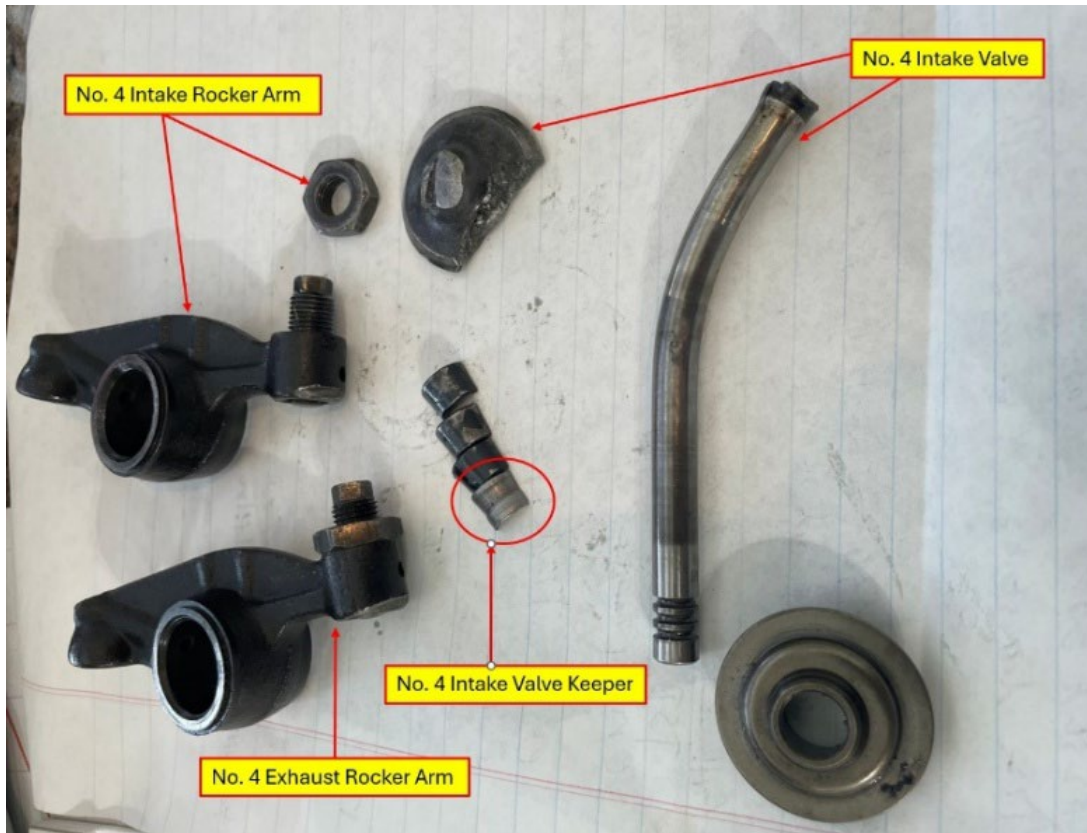
Photograph 3: No. 4 cylinder rocker arms.



Photograph 4: No. 4 cylinder impact damage.



Photograph 5: No. 4 cylinder head impact damage.



Photograph 6: Annotated photograph of the No. 4 cylinder rocker arms and intake valve.

4.0 Propeller Examination

The composite two-bladed forward-folding fixed pitched propeller remained attached to the engine. One propeller blade was separated at the hub, and the other blade was separated about 12 inches from the hub. The actuators remained attached and about 2-inches of the actuator pistons were exposed. Impact damage was noted to the pinion wheels and precluded articulation of the propeller blades.



Photograph 7: propeller.

5.0 Additional Information

Maintenance records showed the most recent condition inspection was completed on May 20, 2024, at a tachometer time of 114.0 hours and a total airframe time of 259.6 Hobbs hours. The intake and exhaust valves were last replaced on May 18, 2017, at a tachometer time of 45.2 hours. At the time of the accident, the airplane Hobbs time was 314.5 hours, and the tachometer time was 152.3 hours. Thus, the airplane had accrued 54.9 hours since its last condition inspection, and the engine had accrued 107.1 tachometer hours since replacement of the valves.

Submitted by:
Damian Galbraith
NTSB Aviation Accident Investigator