

National Transportation Safety Board

Office of Aviation Safety

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WPR22LA202

AIRFRAME AND ENGINE EXAMINATION REPORT

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A. ACCIDENT

Location: Chelan, Washington
Date: 6/5/2022
Time: 1300 Pacific Daylight Time
Airplane: N15MF / Super Koala

B. AIRFRAME AND ENGINE EXAMINATION REPORT

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SUMMARY

On June 5, 2022, about 1300 Pacific daylight time, an experimental, amateur built, Super Koala airplane with no registration, was substantially damaged when it was involved in an accident near Chelan, Washington. The pilot was not injured. The airplane was operated as a Title 14, *Code of Federal Regulation* Part 91, personal flight.

The pilot reported that he overflew the runway, when he turned to the crosswind leg, the engine lost total power and the propeller continued to windmill. The pilot checked that the throttle was at maximum power setting and that the ignition switch was on, then initiated a forced landing to a field about 300 yards northwest of the airpark. The fuselage and wings were substantially damaged.

C. DETAILS OF THE EXAMINATION

1.0 Accident Site

The accident occurred on the Riverview Airport (91WT) Chelan, WA. The airport elevation was 1,210 ft mean sea level (msl). The accident site was an open, hilly and vegetation covered field.

2.0 Airframe Examination

2.1 Fuselage

The fuselage was constructed of wood and fabric and was substantially damaged. The mid-section of the fuselage was fractured and partially separated. The fabric covering was torn and the wooden structure was fractured in several locations.

2.2 Empennage

The empennage exhibited minor damage.

2.3 Wings

The wings were not available for examination; however, a review of photos, provided by the pilot after the accident, revealed that the left wing partially separated from the fuselage at the root. The left-wing tip, inboard to about 24 inches was crushed aft. The aileron remained attached to the wing and exhibited minor damage. The left-wing flap remained attached to the wing and exhibited minor damage.

The right wing remained attached to the fuselage and exhibited substantial damage to the wing inboard of the tip to about mid span. The right-wing aileron was bent chordwise. The right-wing flap remained attached to the wing and exhibited minor damage.

2.4 Landing Gear

The right-side main landing gear was fractured and buckled. The left-side main landing gear remained attached to the fuselage and exhibited minor damage. The brake assemblies remained attached to the respective wheels. The tail wheel remained attached to the fuselage and exhibited minor damage.

2.5 Cockpit

The cockpit exhibited minor damage and retained its integrity. The instrument panel exhibited minor damage. All instruments and switches remained attached. The throttle remained attached to the instrument panel.

2.6 Survivability

The fuselage and cabin area retained its shape. There was no postaccident fire.

2.7 Fuel/Fuel System

The fuel tank was not available for examination. The fuel lines ran from a fuel shutoff valve to the diaphragm pump, to the carburetors. The lines were new in appearance and did not exhibit any breaches or cracks. The diaphragm pump was examined and did not exhibit any anomalies that would preclude normal operation.

3.0 Engine Examination

The engine remained attached to the engine mount and the engine mount remained attached to the firewall. The engine could only be rotated about 30 to 40 degrees due to the airframe being placed on the ground. There was not method available to raise the airframe off the ground and rotated the engine further. The engine rotated about 30 to 40 degrees, freely and did not exhibit any signs of seizure or resistance to rotate. The two cylinders had thumb force compression.

The spark plugs exhibited a dark tan appearance at the electrodes. The spark plug leads remained attached to the coils and the spark plugs and exhibited a good appearance with no signs of embrittlement. The coils remained attached to the engine and exhibited a secure, clean condition. When the engine was rotated about 30 to 40 degrees, there was no spark produced.

The small oil tank, located above the engine, was secure and contained a full quantity of clean oil.

The rotating valve, located just inside of the intake manifold, exhibited corrosion but rotated freely.

The propeller gearbox was secure and without damage. When visually inspected, it exhibited clean internal components that appeared to have clean oil inside.

The exhaust manifold remained attached to the engine and the exhaust system exhibited minor damage to the muffler. A visual inspection of the inside of the exhaust revealed no damage or contamination.

4.0 Carburetors

The carburetors were partially separated from the engine intake manifold. Both carburetors were removed and shipped to the NTSB office in Federal Way, Washington where they were examined.. The carburetors were not identified as to which side they came off. The ASI identified one as carburetor A, and the other as carburetor B.

4.1 Carburetor A

Carburetor A was whole and exhibited a dirty exterior. The throttle cable and the fuel lines were cut. The slide moved freely by pulling the throttle cable.

The bowl was secured with a wire clip and a safety wire. The safety wire was removed, and the float bowl was removed. The seal around the bowl was whole, without damage, and pliable. The two composite floats released from the metal pins that were installed in the bowl. The right float was weighed at 3.07 grams, and the left float weighed in at 3.95 grams. The floats were in good condition. The brass float tabs were parallel to the top of the float bowl, in accordance with the Rotax Heavy Maintenance Manual (HMM). The bowl cavity was clean with little debris inside. The valve needle moved freely. The filter screen was clear of debris.

The main jet (larger jet) was removed. The orifice was clear of debris. The brass mount for the main jet was removed and exhibited a sticky substance, with the consistency of jelly on the components and inside the plenum for the main jet. The seat was removed and exhibited the same sticky substance. The pilot jet (Smaller jet) was removed. All orifices were clear of debris.

The idle screw mounted to the outside of the carburetor was found at 1 ¼ turns from bottomed out.

The choke was removed and exhibited slight corrosion on the brass arm. The spring had slight corrosion on it near the top.

The top of the carburetor was removed. The spring was clean. The brass needle exhibited some corrosion near the tip. The plastic insert was complete, and the outer surface of the slide exhibited scoring. The inner bore of the carburetor exhibited scoring.

4.2 Carburetor B

Carburetor B was whole and exhibited a dirty exterior. There was no choke on the exterior of carburetor B. In its place was a brass device.

The slide moved freely with no roughness or binding. The bowl was secured with a metal clip that was secured with a safety wire. The bowl was removed, and the two composite floats separated from the metal pins mounted in the bowl. The composite floats were whole. The right float weighed in at 3.39 grams, and the left float weighed in at 3.21 grams.

The bowl exhibited corrosion inside the bowl and along the upper section of the bowl. The bowl seal was soft and pliable.

The screen was clear of debris. The float tabs were parallel with the upper edge of the float bowl IAW the Rotax HMM.

The main jet was removed, and the orifice was clear of debris. All components of the main jet assembly exhibited a dry whitish corrosion. The inner components contained a sandy particle contamination. The pilot jet was removed. All orifices were clear of debris.

The Idle screw on the side of the carburetor was set at 3 full turns from bottomed out.

The brass unit that replaced the choke was removed. Inside was a spring that exhibited some corrosion. The inner area for the choke contained dirt and contamination.

The top of the carburetor was removed. The inside area was clean. The slide was removed. The brass needle exhibited a buildup of corrosion. The slide exhibited scoring along the side. The inner chamber of the carburetor exhibited scoring.

5.0 Propeller Examination

The two-bladed, wooden propeller fractured and liberated sections of both blades. The hub remained attached to the propeller flange.

6.0 Electrical

A visual inspection of the electrical components revealed that all connections were at least finger tight. There were no loose wires or disconnected items.

7.0 PHOTO ARRAY



Figure 1. N15MF, Right-side view (Photo courtesy of the pilot)



Figure 2. Front view (Photo courtesy of the pilot)



Figure 3. Cabin area



Figure 4. Engine



Figure 5. Spark plugs



Figure 6. Diaphragm fuel pump

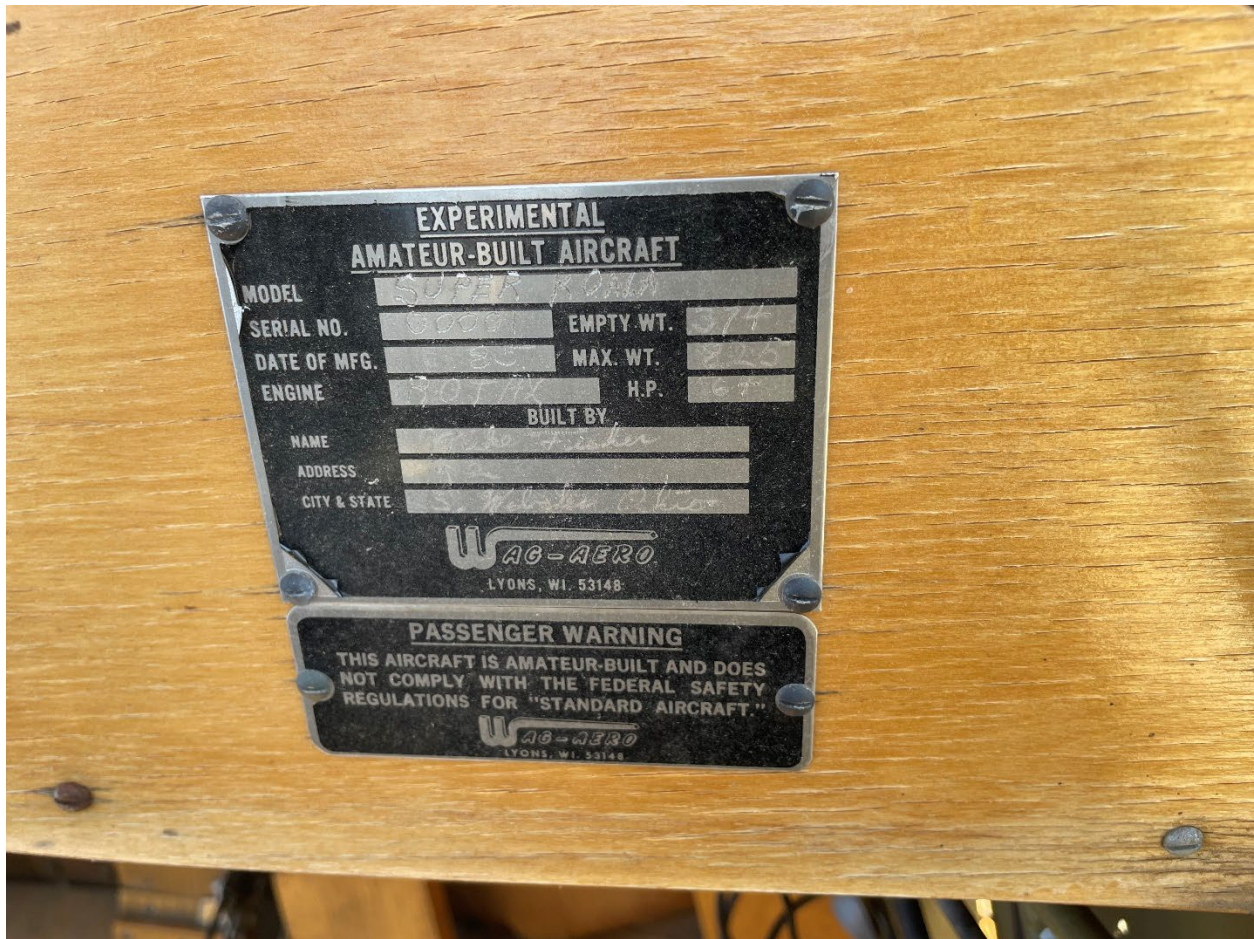


Figure 7. Airplane data plate

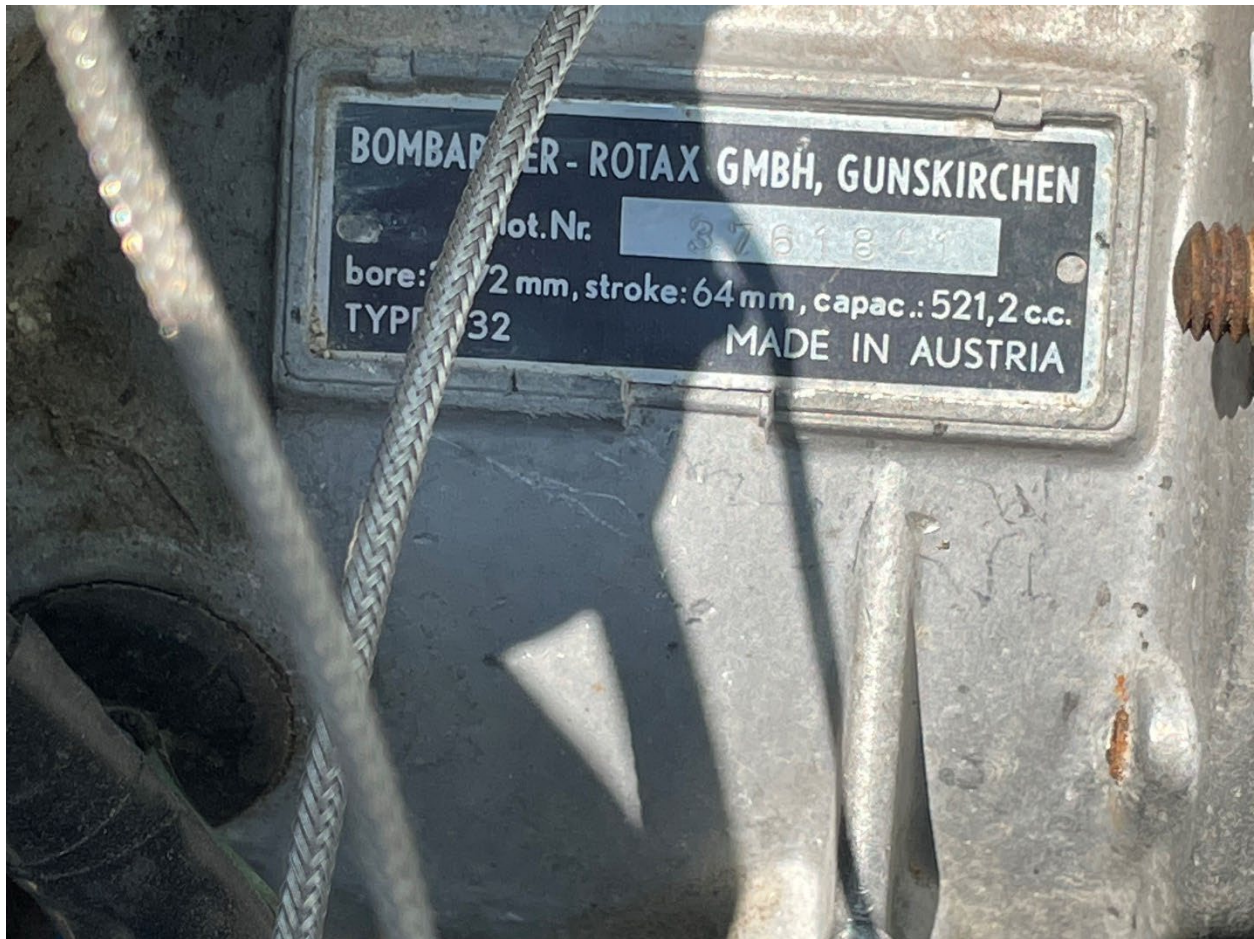


Figure 8. Engine data plate



Figure 9. Propeller

Submitted by:

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