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Date: 11/25/2025

Subject: ERA24FA078 Engine Examination

Contact: Russel Gait - Lycoming Engines Air Safety Investigator

The following is an excerpt from the examination summary provided by Russel Gait (Lycoming Engines) to Lynn Spencer (NTSB):

The engine arrived from Atlanta Air Salvage at Lycoming on 7-2-2024 and was secured in the NTSB room until the scheduled exam with the NTSB occurred on 7-9-2024. The fuel system, ignition system, and turbo charging system were not installed or shipped with the engine as those components were removed during the initial examination of the engine and were sent out for further testing by their respective manufacturers.

The engine was removed from the crate and secured to a Lycoming ring stand. The alternator, starter, propeller governor, vacuum pump, exhaust system, and induction tubes were all removed to facilitate the examination of the engine. The rocker arms, pushrods, and hydraulic lifter plunger and socket assemblies were removed from their respective cylinders, and then that cylinder was removed from the crankcase assembly. Each piston was removed from its connecting rod, and then each connecting rod was removed from the crankshaft assembly. The engine's accessory housing was removed, and the idler gears and crankshaft gear were removed. The oil sump assembly was removed. The crankcase was removed from the ring stand and the case was split to remove the crankshaft and main bearings. The oil pump was disassembled, and all the intake and exhaust valves were removed from their respective cylinders. Once all the components were examined and photo documented, the large components were wrapped in cellulose packing paper and the small components were placed in plastic bags, then the components were placed in

an engine crate, along with all trash generated during the exam, and shipped back to Atlanta Air Salvage in Griffin Georgia.

The examination did not reveal any major mechanical malfunctions with the core of the engine. Mechanical continuity was confirmed from the propeller flange to the accessory gear train. Thumb compression and suction was observed on all six cylinders, in the correct firing order, while the engine's crankshaft was rotated, and normal valve action was observed on all cylinders. No obstructions were noted in the engine's induction system. It was noted that the intake valves on cylinder 2,3,5, and 6 were dark and black in color from carbon, which was in line with the condition of the spark plugs as observed during the initial examination of the engine.

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