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Date: 1/5/2024

Subject: ERA24LA033 engine examination debrief

Contact: FAA Inspector Hugo Villanueva

During a telephone interview, inspector Villanueva discussed the findings of the airplane and engine pre/post examination.

Inspector Villanueva who responded to the accident site reported the fuselage, both wings were buckled. The engine was partially separated from the airframe. Both fuel tanks contained an adequate amount of fuel. Approximately 30 gallons of 100LL was defueled by the fire department from both fuel tanks at the accident site. After the airplane was removed, fuel was still observed leaking from the fuel system. The cockpit fuel selector was found in the "Both" tank position. The airplane was recovered to Florida Air Recovery where further examination was arranged.

During the engine examination the crankshaft was turned through by manually rotating the propeller. The engine turned freely through 720° with no binding or unusual noise evident. All cylinders showed compression and suction when the crankshaft was rotated. A lighted borescope was inserted inside the cylinders and no anomalies were noted. The pistons moved up and down normally and valve action was correct. There were no holes or damage to the pistons or valves.

The engine-driven fuel pump was removed for examination. Fuel was found inside the lines from the fuel pumps to the fuel servo. The fuel strainer was opened; the strainer was full of fuel and the screen was clean and unobstructed. The lever-action pumps functioned normally when operated by hand. The servo was impact damaged and broken away from the engine. All cockpit controls were connected, but unreliable due to the engine being partially separated from the mounts.

The oil filter was removed for examination. The unit contained oil. The screen was removed, and no particulates or contamination were observed.

The spark plugs were removed for examination. The electrodes were normal in wear and dark in color when compared to a Champion Check-a-Plug chart.

The magnetos were removed and tested by rotating with a power drill. Both magnetos produced spark when rotated.

The McCauley two-bladed aluminum propeller remained securely attached to the engine. The propeller spinner was crush damaged. The propeller blades exhibited minor impact damage; one blade was bent aft midspan. There was no chordwise scratching on the surfaces of the blades or leading-edge damage.

Further examination of the engine, ignition system and fueling system could not determine the loss of power. A review of the maintenance record excerpts did not reveal any discrepancies.