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Subject: ERA23LA349 (Engine Examination and Test Run)

The below contents are a summary of an engine test run performed by the NTSB:

- The airplane had been recovered to a recovery facility in Clayton, DE. The wings had been removed for recovery and the fuel had been drained by the fire department shortly after the accident.
- The engine cowling was removed. The engine oil was about 6 quarts. There was no observable damage to the engine cylinders. Three top spark plugs were removed and examined. They displayed normal combustion signatures.
- The engine was configured for an engine test run. Due to impact damage, the propeller was removed and replaced with a two blade propeller.
- A gas can with 100LL, and fuel line, was connected to the forward right wing fuel pickup.
- With this fuel source located above the fuselage, fuel was observed to exit out the left wing forward and rear fuel pickup (while the fuel selector was selected to BOTH).
- With the fuel selector selected to the right tank, and with the fuel shutoff valve on, no fuel was observed to be delivered to the fuel manifold. Once the fuel shutoff valve was turned off, with the fuel pump on, fuel was observed to be delivered to the fuel manifold.

Engine Test:

- The engine was primed via the electric fuel pump, and the starter was engaged. The engine started with minimal priming. The engine ran at idle power in addition to higher power settings, estimated about 1500-1800 RPM. The engine RPM gauge instrument was not responding to changes in RPM. The manifold pressure gauge was observed near 18-22 inches.

- The engine responded normally to throttle commands. The fuel boost pump was off for this test.
- The engine was also tested with the fuel boost pump on. The engine produced idle to slightly above power for about 20-30 seconds. It then began to run rough, and the engine quit as throttle was increased.

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