

From: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Subject: Engine Run IO-470-C - (1)
Date: Friday, October 23, 2020 2:27:52 PM
Attachments: [REDACTED]

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Brian,

Attached below is an open invoice from **Twin Aircraft Engines, LLC**. If you'd like to mail a check, please mail to the address below.

Engine run action is as follows...
Model: IO-470-C - (1)
SN: 227206-R

Before the test run, we removed and replaced PN: 626089 Engine Mounts x4 that were destroyed, PN: 626527 x1 Balance Tube was also destroyed, and PN: 629599 x1 Rear Manifold. Engine was installed on a test stand and serviced with 7 QTS of oil. Oil temperature, oil pressure, and RPMs were monitored. Engine started with minimal assistance and idled at 1100RPM. Oil pressure was high but slowly dropped to a normal range as temperature increased.

Once temperature reached operating temperature, throttle was increased to 1800 RPM. We did a mag check in which the left-hand and right-hand mags were at a 175-200 drop. Throttles advanced to 2200RPM and the engine would not take an increase with throttle and slowly shut down. After shut down, the engine was not seized and turning the test club was still possible.

Next, the oil filter was cut open and contamination including small amounts of aluminum flakes and a tiny amount of ferrous material was found.

Thank you,

Earl Register

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office: [REDACTED]
mail: [REDACTED]
Newnan, GA 30263



MEMORANDUM FOR RECORD

Brian C. Rayner
Senior Air Safety Investigator
Eastern Region

Date: July 26, 2021
Person: Earl Register – A&P Mechanic
NTSB Accident Number: ERA21LA002 Green Sea, SC
Subject: Mooney M20 – IO-470 Engine Run

Narrative:

Mr. Register was the owner/operator of Twin Aircraft Engines, LLC. Mr. Register and one of his mechanics, Brian Mitchell (A&P Mechanic) mounted the engine in one of their test stands and performed an engine run under the supervision of FAA Aviation Safety Inspectors. The airplane was equipped with a controllable pitch propeller, but it was damaged in the accident, and a fixed-pitch club propeller was installed for the run.

Mr. Register provided a brief written statement describing what tasks were performed, as well as the results that were witnessed when they started and ran the engine. Mr. Register was then contacted by telephone to clarify some of the language in his statement.

Mr. Register was asked specifically about the following sentence in his written statement:

Throttles advanced to 2200 RPM and the engine would not take an increase with throttle and slowly shut down.

Mr. Register explained that the engine was rpm-limited because the fuel mixture was too rich, and it was not possible to determine which part of the fuel system required adjustment to reach full operating rpm, and whether the differences were in the rigging of the test stand vs the airplane, or due to impact damage.

Mr. Mitchell was also contacted by telephone at Twin Aircraft Engines, LLC and he concurred with the digest above.