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Subject: N7137T Engine Run Test
Date: Friday, July 30, 2021 9:17:05 AM

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Eric,

Per your request, I provided coordination and oversight to the engine run test at Big Lake Airport for N7137T on July 29, 2021.

Overall, the process took about 2 hours and the results were that the engine started and ran. Here are the particulars:

1. Mr. Mike Sidders (Mike) was the certificated A&P Mechanic with Inspector Authorization who performed the work. Mr. John Leavitt (owner) was present.
2. We began with a short discussion and the process included:
 - a. Removing the cowl and looking for anything out of the ordinary.
 - b. Checking the control functions of carb heat, throttle, mixture
 - c. Checking the oil 6.5 quarts
 - d. Checking the fuel tanks and fuel lines
 - e. Checking the propeller for damage and security
 - f. Securing the airplane for an engine run. The airplane was chocked on both main wheels and the tail was tied to a vehicle for security.
 - g. Engine Run-up
 - h. Fuel inspection
 - i. Fuel Tank exterior inspection
 - j. The key and aircraft logbooks were provided by the owner.
3. Here are the findings were primarily based on the observations and comments of Mike:
 - a. No damage that was likely caused from this accident was noted on the landing gear or the propeller.
 - b. #2 cylinder has previously been abnormally hot based on the discoloration of the cylinder.
 - c. Examined #2 sparkplug visually and cylinder with scope.
 - d. Carb. heat lever was stuck. Mike moved the carb heat manually in the engine compartment and it moved. It appears it may just be hard to move or was stuck. Afterwards the carb heat could be applied normally.
 - e. Mike pulled the propeller and noted the compression "felt" like it was extremely low.
 - f. Oil was 6.5 quarts and was very dark black.
 - g. Fuel sample visually appeared to be automotive grade fuel with no noted contaminants in either tank.
 - h. The fuel tanks were dipped using a paint stick. Found no measurable fuel in the left tank and significant fuel in the right tank.

- i. The left tank appears to have leaked fuel. This was verified by the insurance adjustor who recovered the aircraft. He stated that there was fuel dripping from the left tank when he arrived.
 - j. The engine was started and fired on about the 5th propeller turn. Engine appeared to run normally when the fuel selector was on the right fuel tank. Mike commented that the engine was somewhat rough running. He commented that there was significant oil leaking and it was likely “burning” significant oil based on the exhaust. On startup the oil pressure immediately reached 35 psi.
 - k. Mike indicated there was vibration. He believed the propeller indexing may have been off but visually inspected it after the engine shutdown and found it to be normal.
 - l. Did engine run-up to 1700 RPMs and it was “not smooth” but otherwise normal. The mag check and the carb heat checks were normal.
 - m. When the fuel was switched to the left fuel tank, the engine died of apparent fuel exhaustion in about 30 seconds.
 - n. The engine was shut-down, visually checked, and then repeated with virtually the same results.
- 4. Mike and the owner were asked if they had anything else that they felt should be examined and both were satisfied with the engine test procedures. I photographed the engine logbooks and certificates and the owner left.
 - 5. Mike stated he would reinstall the cowling and return the aircraft to the tie down.

Photographs of the process and a video of the second engine run-up are available as well as a sample of the fuel and the dipstick used in the direct fuel tank measurements.

Regards,

Patrick

Patrick A. Teagarden

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Aviation Safety Inspector OPS

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