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Air Safety Investigator
AS-ERA

Date: 8/6/2024

Subject: ERA24LA239, Engine Examination

Contact: Rafael Cruz, A&P Mechanic, Unlimited Aircraft Solutions

On August 2, 2024, Mr. Cruz performed an examination of the engine from N6198K which was involved in an accident on June 1, 2024, under the supervision of Federal Aviation Administration Inspector Rafael Gonzalez. Below is a summary of the examination.

"Engine Information

Manufacturer: Continental Engines

Model: O-200-A(48)

S/N 253703

1. Description of wreckage when first inspected

- Aircraft was upside down, with engine cylinders #2 and #4 head pointing down
- Engine was still attached to the engine mounts
- Found carburetor shear off from engine
- Verified Throttle cable, Mixture cable and Carburetor Heat cable to be attached and secured to Carburetor

- Found Flexible Fuel line from Fuel Strainer to Carburetor Inlet shear off on carburetor side
- Found both magnetos lead connected and secure
- Found Alternator cables connected and secure
- Found Starter cables connected and secure

2. Remove Engine from wreckage by cutting engine mounts and relocate to repair station for further inspection

3. All engine accessories except the carburetor were installed and secure to the engine

4. External Oil Sump was installed secure but dented and puncture (post Crash Damage)

5. Remove around 5qts of oil

6. Vacuum Pump attached to engine, removed and found shear coupling ok. Rotated engine and pump coupling rotated as well.

7. Cylinder #1 and #3 Exhaust system attached and secure

8. Cylinder #2 and #4 Exhaust system attached, Cylinder#4 Crush by impact

9. Cylinder #3 Rocker Valve cover dented

10. Cylinder #4 Rocker Valve cover dented

11. Remove Propeller and was able to turn the engine 4 full turns, and heard magnetos impulsed coupling operating

12. Verified Ignition cable for sparks, except for Cylinder #2 and #4 Top Cables due to damage to the harness(Broken Off)

13. Performed Thumb Compression check and felt pressure on all cylinders

14. Remove all Cylinders rocker valve cover, to rotate the engine and verify proper valve movement.

15. All Cylinders except cylinder #2 operated normally.

16. When Rocker valve cover from cylinder #2 was removed, both rocker arms and pin were as a unit detached from the cylinder head journals. (broken off)

17. As instructed the Rocker pin, Rocker arms and broken off parts from the cylinders journals were bagged and secured for evaluation.

18. Carburetor fuel bowl was removed and found dry

19. Carburetor had full movement on both Mixture lever and Throttle Lever arms.

20. Carburetor show signs of fire(black soot were noticed)

21. Engine top case show signs of fire(black soot were noticed)

The Inspection was carried out as per NTSB Piston engine 100Hrs Inspection checklist, work was supervised by FAA Safety Inspector Mr. Rafael Gonzalez and Mr. Elvin Osorio

Rafael Cruz

Unlimited Aircraft Solutions"