



U.S. Department
of Transportation
**Federal Aviation
Administration**

South Florida Flight Standards District Office 19
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Miramar, FL 33027

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Inspector Statement

Examination:

Inspection of Piper PA-38-112, Serial Number 38-79A0433, Registration N2420F, engine Lycoming O-235 series, involved in an accident on December 2nd 2020 at North Perry Airport with a CFI and Student on board. Piper PA-38-112 engine had damage to exhaust system, air filter box and gascolator due to impact with ground, pushing lower engine section upward.

Cylinder compression check performed and found the following: Cylinder no. 1/70 psi, 2/79 psi, 3/74 psi and 4/62. Cylinder number 4 was found to be leaking thru the intake valve. Inspection of all lower/bottom plugs found oily, top plugs found slightly oily but looked normal. Left and right magneto timing found in normal operating and times correctly.

Inspection of exhaust system found damage from accident, but minor, some corrosion areas found with 2 exhaust tubes from cylinder 1 and 3 with cracking and corrosion sections, but no indication of prior exhaust leaks.

Air filter box found compressed and damaged from accident but still had core structure intact, inspection of box found no obstructions inside and look normal, air filter found in good condition air filter found with sand and dirt from accident.

Inspection of left and right wet wing tanks found to be clean with internal float indicator systems free of movement, no fuel found in tanks. Inspection plates from both wing tanks removed seals found in good condition with no evidence of leakage or seepage into tanks. Both fuel caps inspected found seals in good condition with proper sealing and no play once caps secured. The fuel selector switch inside cockpit was found to be operating normally with turning and clicking to each position right, left and off.

Gascolator was found damaged on impact with no fuel found inside, but some minor dried brown/orange corrosion staining at the bottom of the gascolator bowl. The electric fuel pump was found to be operating electrical normal, removal of the lower drain cap found brown/orange water contamination and corrosion. Removal of carburetor and disassembly found small amount of brown/orange water with dried brown/orange dust, staining and debris at the bottom of the bowl. Engine driven fuel pump was newly installed with 1 hour of time found with same dried brown/orange dust and debris and a small amount of brown/orange water found on the gasket.

[REDACTED] water contamination found thru out the aircraft fuel system, gascolator, electric engine fuel pump, engine driven fuel pump and carburetor bowl. The CFI stated the engine quit once they were in the turn, both fuel tanks and gascolator were drained and inspected for water contamination with no contamination found. The design of the aircraft wet wing tanks with its multiple internal channels sections it is possible for water to get trapped in these sections and in addition the fuel tank intake feeds are approximately 1 inch above the bottom of the tank unusable fuel. Water contamination found below the fuel tank feed line mixed in with unusable fuel would not drain into the fuel strainer indicating water contamination in the fuel until the aircraft was operating or in a banking turn when the water would move around the fuel tank.

Inspection of electrical system in the engine compartment and behind the cockpit panel wiring found no signs of burning. The CFI stated a burning smell before they entered the turn and the engine stopped, the CFI stated the smell was little a pasty smell. The PA-38-112 has exterior intake venting allowing unfiltered outside air to enter the cockpit behind the cockpit panel on both sides of the aircraft. The water found in the fuel contamination is a separate issue from the burning smell the CFI stated and might have come from outside and not from aircraft.

[REDACTED]


[REDACTED]

Juan C Garcia
Aviation Safety Inspector