



Fort Meade Flying Activity

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Pilot Information File

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Subject: Valve Sticking & Spark Plug Contaminants

Procedure to help prevent valve sticking and spark plug contaminants
(Reference: Lycoming service letter)

Valve sticking can be a problem by contaminants in the oil and by combustion residues, (fuel). These form deposits on the stem and guide that interfere with the stem's movements. If the valve cannot open or close properly, incomplete combustion will result, this in turn, can lead to the formation of more deposits and increased valve sticking. Another drawback is prolonged ground-running in that the engine does not reach operating temperatures and operates on a richer mixture than when flying.

The engine should be operated at engine speeds between 1000 and 1200 RPM after starting and during the initial warm-up period. Avoid prolonged closed throttle idle engine speed operation (when possible). At engine speeds from 1000 and 1200 RPM, the spark plug core temperatures are hot enough to activate the lead scavenging agents contained in the fuel which retards the formation of the lead deposits on the spark plugs and exhaust valve stems. Avoid engine speed changes after start-up and use only the power setting required to taxi, after startup and during taxing, excessive leaning should be used, return to full rich on run-up and takeoff.

Prior to engine shut-down, the engine speed should be maintained between 1000 and 1200 RPM until the operating temperatures have stabilized, (about 30 to 60 sec. of taxing). At this time the engine speed should be increased to approximately 1800 RPM for 15 to 20 seconds, then reduce to 1000 to 1200 RPM and shut-down immediately using the mixture control.