

Lycoming Valves

Any time the valves in a piston engine stick, even intermittently, it's a serious problem. So what can be done to prevent it, and how can Lycoming operators maintain their engines and rectify valve train problems?

Imagine the small space between each valve stem and its guide. There are many ways it can become compromised, so it pays to keep on top of maintenance. Always ensure your engine is running clean oil and breathing clean air.

Filter it out

"Contaminants ingested into the engine are a known major cause of valve train problems," says CAA Airworthiness Inspector, Brendan Odell.

The first line of defence against contamination is filtration.

The air filter can prevent dirt and abrasives from entering the engine, but only if it forms a good seal when fitted and isn't bypassed by leaks elsewhere in the induction system.

In extremely dusty conditions, the air filter could even need changing every few hours.

"An operator's maintenance programme should be appropriate to the operation of the engine and the conditions it operates in," says Brendan.

Equally, contaminants in the engine oil need to be filtered out.

Most of today's opposed Lycoming engines are fitted with a full-flow oil filter. Older engines with pressure screens may be converted to the newer system for more effective cleaning.

400-hour valve inspection

Some operators have misunderstood the intention of Lycoming Service Bulletin No. 388, using it as the guide for their regular 400-hour valve inspection. In fact, the service bulletin only relates to exhaust valves, and should be complied with *in addition* to the regular inspection.

The process outlined in the relevant Lycoming operator's manual and the latest version of Lycoming SSP 1776 *Table of Limits* should still be used as the reference for inspection. It covers both inlet and exhaust valve trains.

Rectifying problems

Should valve train problems like sticking valves, camshaft problems, or low compression occur, the *correct* inspections are necessary to ensure the problem doesn't repeat.

Failing to do so could prove a lot more costly in the long run.

The latest revision of Lycoming Service Instruction 1425 provides recommendations to reduce the possibility of valve sticking. It also outlines a procedure for reaming valve guides without removing the engine from the aircraft, or the cylinders from the engine.

Let us know

Always remember to file a CA005D *Defect Report* when a problem of this type is found. Sharing information helps the whole industry. ■

