



INSPECTION CHECKS

APPLICABLE TO THE INSPECTION OF LAA AIRCRAFT FITTED WITH VW AND VW BASED ENGINES TO CHECK SUITABILITY FOR USE OF UNLEADED MOGAS

LAA/IC-ULM-VW
Issue 5

A/C Type:

Reg:

Engine Model:

This checklist is to be completed by a suitably approved LAA inspector. LAA inspectors are only acceptable for carrying out this task if their LAA approval includes the ability to carry out LAA Permit renewal inspections on the aircraft concerned.

This checklist should be used in conjunction Cap 747, Section 2, Part 4, General Concession 5, and 'Operating Information – Unleaded Mogas' issue 7 dated 18th November 2010.

Item	Description	Inspector's Signature
1	Check that engine type is one of those listed below: VW, Acro, Aerovee, Ardem, Burden, Hapi, Peacock, Rectimo, Revmaster, Limbach.	
	For engines that are pump fed, check that the aircraft type is one of those listed below: Bensen B8, Cadet Motor Glider, Campbell Cricket, Colib MB2, Druine Turbulent, Evans VP-1 and VP-2, Falconar F9, Fournier RF-3, RF-4, RF-5, Fred Series 2, Jodel D9 and D92, Luton Minor, Rand KR2 onerai I and II, Taylor Monoplane, Topsy Nipper.	
	For those aircraft types not listed above, confirm that the fuel system does not include a fuel pump.	
2	Check that the engine's fuel system is installed in accordance with normal aviation practice.	
	Fuel tank is securely mounted	
	Vent is clear	
	Fuel pipes are in good condition	
	Fuel selector is in good condition	
	Fuel filter is clear	
	Fuel filter (finger strainer) situated in each tank.	
	Fuel tank fitted with provisions for draining.	
3	Fuel pipe material fire-resistant and correct bore. For fuel flows up to 24 litre/hr 5mm diameter bore fuel pipe may be used. (6mm preferred).	
	Check that the installation is configured in such a way as to make vapour-lock problems unlikely, in particular:	
	Fuel pipes not routed adjacent to hot components (metal heat shields may help).	
4	No 'S bends' (local high-points and low-points) in fuel pipe runs which will tend to trap vapour bubbles.	
	Check that the engine is fitted with a cylinder / piston shim combination giving a nominal compression ratio of 8.0:1* or less and is fitted with the later type cylinder heads with hardened valve seats (if the original heads are fitted without hardened valve seats, consult LAA for special operating procedure required). * Note: Due to the difficulty in accurately measuring compression ratio, it is permissible to round the result to the nearest 0.5.	

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5	Check that fuel tanks are not treated with a 'sloshing sealant' likely to chemically detach from the tank inner surface and block fuel outlet. If in doubt, test over two-week period and check condition.	
6	Check that fuel system components such as rubber or plastic pipes, seals in fuel cocks, sight gauge tubes, fuel tank floats, filters, fuel pump diaphragm, etc., are not made of a material likely to be chemically attacked by components within unleaded fuel. Any fuel system components manufactured for the automotive industry since around 1990 are likely to have been made compatible with unleaded fuel. If in doubt, test components in a jam jar of fuel and observe results after appropriate period (two weeks).	
7	Check carburettor ice protection provisions, heat mufflers, carb heaters etc. If reliance is placed on 'undercowl temperature' for carb ice protection, ensure that under cowl temperatures are not being accidentally reduced due to loose or worn baffles, air seals etc.	
8	Check that fuel level is visible in the fuel tank. Unleaded fuel, being almost clear in colour, may be hard to see if the glass fibre tank has become stained with age, in which case the tank must be replaced or an alternative form of fuel gauge fitted.	
9	Carry out engine ground run using 95 UL unleaded Mogas fuel to BS EN 228 and check that running and instrument indications are normal. Mixture strength should not need adjusting. Note that it is normal to find a slightly different grey exhaust pipe deposit with unleaded fuel than with leaded fuel which may give a false impression of changed mixture strength. Check fuel system for leaks and filter(s) for contamination	
10	Fit cockpit placard regarding unleaded Mogas fuel use (placard available from LAA).	
	Fit placard adjacent to each fuel filling point regarding unleaded Mogas fuel use (placards available from LAA).	
11	Identify '95 RON unleaded Mogas fuel to BS EN 228' on or adjacent to the fuel tank fillers using placards provided.	

After completion, this checklist is to be signed, dated and stapled into the aircraft's airframe logbook, together with the LAA covering letter to owners. The inspector is to add declarations in the engine and airframe logbooks stating:

'With effect from (date) this aircraft/engine may be run on unleaded petrol to BS EN 228 95 RON in accordance with CAP 747, Section 2, Part 4, General Concession 5.'

DECLARATION BY LAA INSPECTOR

I declare that the aircraft, registration G-_____, has been checked against items 1 to 11 listed above and has been found to comply in all respects.

Name:	Signed:	Insp. No.:	Date:
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