



FLIGHT TEST CHECKS

HYDRAULIC IN-FLIGHT ADJUSTABLE PROPELLERS

LAA/FT-HIFA PROP
Issue 3

A/C Type:	Reg:	Engine:	Gearbox ratio:	:1
Propeller Type/ Designation:	Dia:	in/mm*	Governor Make:	
Loaded Weight: (min 90% MTOW)	_____ lb* _____ kg*	CG: _____ in/mm* Aft/Fwd* of datum	OAT: _____ °C	QNH _____ mb

* Delete as appropriate.

1. ENGINE LIMITATIONS (From Pilot's Operating Handbook (POH))

MAX OIL TEMPERATURE	MIN/MAX OIL PRESSURE	MAX TEMPERATURE CHT/COOLANT*	MAX EGT
_____ °C _____ °F*	/ _____ bar/psi*	_____ °C _____ °F*	_____ °C _____ °F*

2. STATIC GROUND RUN - FINE PITCH STOP

With the propeller control lever at full fine pitch and with Wide Open Throttle (WOT), the engine must not over-speed and be RPM limited by the fine pitch stop, not the governor.

MAX ALLOWABLE ENGINE RPM		MAX ACHIEVED STATIC RPM	
WHEN AT FULL THROTTLE, IS IT POSSIBLE TO MOVE THE PROPELLER CONTROL A SMALL AMOUNT FROM FULL FINE PITCH WITHOUT AN EFFECT ON ENGINE RPM?			YES / NO

3. TAKE-OFF (Valid Permit Flight Release Certificate (PFRC) issued by LAA Engineering required)

The take-off is to be made with flaps (if fitted) in the take-off position, propeller lever to full fine and wide open throttle. As soon as possible after unstick, record: -

UNSTICK SPEED	_____ kts _____ mph*	UNSTICK RPM	
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4. CLIMB

Flight conditions: Clear of cloud and turbulence and well clear of any hills which could produce wave conditions.

Configuration: Normal for best rate of climb (see Manual).

Power: Maximum Continuous with air intake in 'Cold' or 'Ram' air position. With the throttle wide open in the climb, the engine must not over-speed. (CS-VLA 33 refers).

Speed: Enter scheduled best rate of climb speed, V_Y ; Establish the aircraft in the climb at best rate of climb speed and maintain steady heading (knots/mph* IAS) and speed ± 2 knots/mph throughout. (From POH)

Note: Where rate of climb exceeds 1500 ft/min a 3 minute climb will be acceptable.

TIME (min)	ALTITUDE (FT) 1013 mb	IAS knots / mph*	RPM	OIL TEMP °C / °F*	OIL PRESS bar / psi*	CHT/CLNT °C / °F*	EGT °C / °F*
0							
1							
2							
3							
4							
5							

Towards the end of the climb, record:

MANIFOLD PRESSURE	_____ in Hg	FUEL PRESSURE	_____ bar/psi*
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If there is any difficulty in recording these figures during the timed climb, maintain the climb speed and power, and record them at the end of the climb.

RPM data entered that exceeds the maximum permitted in the PFRC will fail the application.

5. VIBRATION

Check for signs of vibrations or buffeting throughout the rpm range and in all phases of ground running as well as in flight. This may result if the natural frequency of vibration of the engine on its mount rubbers, or the tail surfaces or fuselage, or of the engine/reduction drive coupling should happen to couple in an unfortunate way with the resonant frequency of the propeller blades in bending, or the aerodynamic buffer coming from the slipstream. It may also indicate that the propeller is out of track or out of balance.

SAT	UNSAT	COMMENTS:
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6. LEVEL FLIGHT

At a constant altitude not above 2000 feet, after at least 2 minutes at each of the throttle settings required (provided that this has no detrimental effect on the engine), record: -

POWER SETTING	RPM	MAN PRESS	IAS kts/mph*	OIL T °C /°F*	OIL P bar/psi*	CHT/CLNT °C/°F*	EGT °C/°F*	FUEL FLOW Lit/Gal*/ hr
WOT & MAX RPM								
NORMAL CRUISE								
ECONOMY CRUISE								

7. PROPELLER CONTROL

FOR PROPELLER SETTINGS THROUGHOUT THE FULL RANGE, IS RPM HUNTING EVIDENT?	YES / NO
WHEN MOVING THE PROPELLER CONTROL, IS PROPELLER RESPONSE SMOOTH AND PROPORTIONAL?	YES / NO
UPON RAPID THROTTLE OPENING, SUCH AS DURING A BAULKED LANDING, RPM WILL OVERSHOOT MAXIMUM GOVERNED RPM. RECORD OVERSHOOT RPM.	

8. BLADE FEATHERING

FITTED YES/NO

Only where it is possible to re-start the engine in flight, at a height sufficient to do so and over a suitable landing site, shut down the engine and check that blade feathering rpm is appropriate. Then, after engine stop, checking that un-feathering is satisfactory, re-start the engine. Check that the engine stops and re-starts without excessive vibration or other detrimental behaviour.

SAT	UNSAT	COMMENTS:
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9. COARSE PITCH STOP

THIS TEST MUST ONLY BE FLOWN IN SMOOTH AIR CONDITIONS

The purpose of this test is to check that flight at V_{NE} can be achieved without exceeding max permitted RPM. The V_{NE} speed is stated in the PFRC or Operating Limitations sheet. Never exceed the V_{NE} . Beware of false reading ASI. Airspeed or RPM data entered that exceeds the maximum permitted will fail the application.

With the propeller lever at full coarse pitch, increase speed up to V_{NE} at the shallowest dive angle possible by maintaining sufficient power but keeping manifold pressure and RPM within maximums permissible (refer to engine operator's manual). If any unusual vibration is felt, immediately reduce speed by closing the throttle and gradually pulling the control column back.

AIRSPEED (V_{NE})	_____ kts _____ mph*	RPM AT V_{NE}	
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10. COMPARISON WITH PREVIOUSLY FITTED PROPELLER

Previously fitted propeller Type/ Designation:	Dia: Inch/mm*	Pitch: ___ins/mm or ___deg at _____ % radius/tip*
If possible, comment on relative performance, vibration, etc.:		

11. CERTIFICATION

I certify that I have flown the above aircraft and that the above checks have been carried out to my satisfaction.

Name:	Signed:	Date:	Licence No.:
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Once completed, send this form to LAA Engineering. Send in also the aircraft Operating Limitations sheet.

Important note: Following conclusion of satisfactory flight test, the modified aircraft must not be flown until issue of modification final approval.