

VH-UPG

Super Decathlon (8KCAB)

Operating Notes

Written in conjunction with the Approved Flight Manual, the manufacturer's Pilot Operating Manual, the Lycoming Operator's Manual and relevant Service Letters.

These notes should be read in conjunction with the checklist for VH-UPG.

Version 4

23 September 2018

GENERAL INFORMATION

Engine: Lycoming AEIO 360 H1B of 180HP

Propeller: MT 2 blade composite constant speed

Fuel Capacity: 152 litres (usable)

Fuel grade: 100LL Avgas

Oil Capacity: 8 quarts (min. for aerobatics 6 quarts)

Oil grade: Use Shell W100 Plus or 15W-50

WEIGHT & BALANCE:

Max. Gross Weight (normal cat.): 884 kg

Max. Gross Weight (aerobatic cat.): 816 kg

Max. baggage (normal cat. only): 45 kg

Note revised seat moment arm per SL 448.

FLIGHT LOAD FACTORS:

Normal category: +3.8 -1.52

Aerobatic category: +6 -5

BUT PLEASE KEEP G'S BELOW 4.5 - see SL 445

SPEEDS (all CAS, KTS):

Vne: 174

Vno: 139

Va: 110-115 (aero cat) : 93 (normal cat)

Vy: 71

Vs₁: 47 (power off)

Best glide: 65

Threshold: 61

Max. demonstrated X-wind: 17

NORMAL PROCEDURES

TAXI – lean on the ground approx 30 mm to ensure the spark plugs do not foul. When stationary set 1000-1200 RPM.

TAKE OFF

Normal: Full throttle (stick back)
Raise tail by 40 kts
Rotate 55 kts
Climb 71 kts

Short/Obst: Full throttle (stick back)
Accelerate in tail down attitude
Lift off ASAP (43 kts)

Soft field: Full throttle (stick back)
Accelerate tail low but clear
Lift off ASAP (43 kts)

NB: CASA requirement for take-off safety speed to be achieved at 50 ft. Refer DoT P Chart and note take-off safety speed of 58 kts.

IMPORTANT: Short field take-offs would require pitch forward to a safe speed should a power failure occur during climb-out; failure to respond immediately may result in a stall at low altitude.

CLIMB

When the climb is stable after take-off, throttle back to 24" MP and reduce RPM to 2500 - the MP will increase as RPM drops. Maintain 25" & 2500 RPM during climb (approx 80% power).

Maintain best rate of climb speed IAS 70-75 kts until a safe height then cruise climb 80 kts if desired.

During take-off from high elevation airport or during climb, roughness or loss of power may result from over-richness. In such a case adjust mixture control only enough to obtain smooth operation – not for economy.

CRUISE

Use 65% power for circuits and normal training area operations. i.e. at low altitude: 21.5" MP & 2400 RPM. Normally, do not lean on short local flights as it takes quite some time to correctly lean with the EGT gauge but note that fuel flows will be much higher than shown below.

For cross-country flying, refer to the Operating Manual. Fuel flows below are with the mixture leaned.

2500ft:

75% power 24" MP & 2400 RPM 36.1 litre/hr

65% power 21.5" MP & 2400 RPM 32.3 litre/hr

5000ft:

75% power 23.6" MP & 2400 RPM 36.1 litre/hr

65% power 21" MP & 2400 RPM 32.3 litre/hr

7500ft:

75% power 23" MP & 2400 RPM 36.1 litre/hr

65% power 20.5" MP & 2400 RPM 32.3 litre/hr

Leaning:

The mixture should be leaned at any altitude when below 75% of maximum power or less. Lean to peak EGT if equipped. If no EGT is installed, lean until engine roughness or loss of power is noted then enrich until smooth. The fuel flow figures above are based on correct leaning.

DESCENT

Enrich mixture as required. Avoid low power descents (less than 15" MP) unless absolutely necessary (avoid windmilling). Typically use 17" MP and 2400 RPM with normal cruise speed.

CIRCUITS

Base leg: 80-85 KTS
Prop to max. RPM – full fine
(after power is reduced so the propeller is off the governor)

Final app: 65-70 KTS
Throttle as required
Sideslip if required to lose height

LANDING

Normal: Close throttle
Flare to 3 point attitude

Wheeler: Contact main wheels first
Hold tail up as long as possible
Lower tail gradually

Balloon or bounce – go around; failure to respond immediately may result in a stall at low altitude.

Short Field: Refer DoT P Chart and note the approach speed of 58 kts.

AEROBATICS

In normal aerobatic training use climb power 25” MP and 2500 RPM. Fuel flow at this power setting is about 60 litres/hour.

AD/CHA/15 requires aerobatic hours to be recorded on the maintenance release. “The hours are those actually spent in aerobatic flight and do not include positioning time.”

An aerobatic sequence of 10 figures takes <0.1 hr and a single figure typically only 10 - 20 secs. So, for a typical training sortie there may be 0.1 to 0.2 hr of aerobatics.

Do not reset the accelerometer – leave it for the next pilot to check. An electronic accelerometer is also installed for the owner’s reference – do not reset this.

BLOCK FUEL FLOW

For a typical training sortie of one hour duration from engine start to engine stop from Moorabbin, including operation at high power in the aerobatic area, a typical block fuel usage is about 40 litres.

IMPORTANT:

- **2600 RPM MAX**
- **Manoeuvre Speed, V_A – refer to the Flight Manual for appropriate limitations:**
 - **115 kts two up.**
 - **110 kts solo**
- **No snap/flick manoeuvres**
- **Please keep Gs below 4.5 – refer SL 445**

NOTES

1. Wing span 9.8 m (32 ft).
2. Tyre pressures main 24 ± 2 & tail 40 ± 5 psi.
3. Use step ladder to access wing fuel tanks. Do not stand on the strut.
4. Use the tow bar to assist with ground handling – keep the spring underneath and avoid hitting the rudder.
5. To secure the control stick use the front harness – fully loosen the crotch strap and wrap it two turns around the upper bend in the control stick – then secure the belts to the lower lap belt (i.e. do not use the one with the ratchet).

The harness with the ratchet cannot be tightened too far as it binds on the support straps and stops at the stitching – so just tighten it to remove slack – use the other lap belt to restrain the stick on the ground
Check by moving the stick – if full aileron is achieved then the controls are not secure.

Similarly with securing the rear seat harness while flying solo. Attach the shoulder belts and crotch strap to the lower lap belt (the one without the ratchet. Then make snug – check by raising the harness and moving the stick fully aft to check for fouling.

When securing yourself in the harness, all belts should be secured to the top lapbelt (the one with the ratchet) so as to minimise flight loads on the stitching.

