

DHC-1 Chipmunk

G-HDAE

Pilot Notes

Normal Operation

Daytime VFR ONLY

Flight NOT permitted in IMC or at night

On approaching aircraft:

- | | |
|-----------|--|
| Position | - Clear of obstacles and other aircraft |
| Situation | - Aircraft sitting correctly - no fluids leaking |

Internal checks:

- | | |
|--------------------------|-----------------------------|
| Brakes | - FULLY ON |
| Ground/Flight switch | - Check- GROUND |
| Fuel cock | - Check - ON and gated |
| Throttle | - Check - CLOSED |
| Mixture control | - Check - Fully RICH (Back) |
| Carb. Air intake control | - Check - COLD |
| Ignition - both cockpits | - Check - OFF |
| Starter isolator switch | - Check - OFF |
| Loose articles | - NONE |

External checks:

- | | |
|-----------------------|--|
| Port flap | - Condition and position |
| Port aileron | - Condition - control lock removed |
| Port navigation light | - Condition |
| Port wing | - Condition; panels secure
Pitot tube condition
Fuel tank contents; cap secure
Fuel gauge condition; reading
Fuel vent condition |
| Port undercarriage | - Fairing secure
Taxy lamp condition
Extension of oleo leg
Brake pipe condition
Tyre condition/creep |

Engine	- Propellor/spinner condition - Cowlings secure - No oil leaks - Exhaust pipe condition/security - Intakes clear of obstruction - Oil level - Sufficient - Brake fluid level - Sufficient - Oil filter - turn key 90 deg (first flight of the day only)
Starboard undercarriage	- Fairing secure
Starboard wing	- ID lamp condition - Extension of oleo leg - Brake pipe condition - Tyre condition/creep - Condition; panels secure - Fuel tank contents; cap secure - Fuel gauge condition; reading - Fuel vent condition - Aerial condition
Starboard navigation light	- Condition
Starboard aileron	- Condition - control lock removed - Trim tab security
Starboard flap	- Condition and position
Starboard wing	- Condition of upper surface
Starboard fuselage	- Condition - panels secure
Starboard tailplane	- Condition
Starboard elevator	- Condition - Trim tab security - Control lock removed
Fin/Rudder	- Condition - Control lock removed - Trim tab security
Tail fairing	- Condition
Port elevator	- Condition - Control lock removed
Port tailplane	- Condition
Tailwheel	- Extension of strut - Tyre condition/creep
Port fuselage	- Condition - panels secure
Canopy	- Security - Condition of runners - Emergency panels secure - Jettison levers flush with panels - Securing pins in place

Priming the engine:

Carb. Flooding device	- Hold out
Priming lever	- Operate until fuel drips from overflow vent
If cold	- Turn propellor through six revolutions by hand

If aircraft is to be flown solo, carry out the following checks in the rear cockpit:

Rear compartment	- No loose articles
Baggage locker	- Contents secure; Closed
Safety harness	- Secured, straps tightened
Control column	- Free of obstructions
Ignition switches	- ON
Throttle friction nut	- Loosened
Direction Indicator	- Caged
Canopy	- Freedom of movement - set half closed

Front cockpit internal checks:

- | | |
|-------------------|----------------------|
| Control locks | - Removed and stowed |
| Fire extinguisher | - In position |
| Rudder pedals | - Adjust for length |

Front cockpit checks (after strapping in):

- | | |
|-----------------------------|---|
| Flying controls | - Full, free and correct movement |
| Ground/Flight switch | - FLIGHT |
| Emergency lamp switch | - OFF |
| Taxi lamp switch | - OFF |
| Navigation lights switch | - OFF |
| Cockpit lamps switch | - OFF |
| Identification light switch | - OFF |
| Pitot heat switch | - OFF |
| Elevator trim | - Full and correct movement - set 2 divs nose heavy |
| Brake lever | - Freedom of movement - Full ON |
| Throttle | - Fully OPEN |
| Mixture | - Fully FORWARD (LEAN) |
| Throttle | - CLOSE; Check that mixture lever moves back as closing |
| Mixture | - Fully RICH |
| Throttle friction | - Adjust |
| Ignition switches | - OFF |
| Generator warning light | - ON |
| Intercom | - ON; Check operation |
| Radio/Transponder | - OFF |
| G-meter | - Zero |
| Magnetic compass | - Condition |
| Flight instruments | - Condition, Altimeter set as required, DI caged |
| Engine instruments | - Condition |
| Fuel cock | - ON and gated |
| Flap lever | - Check operation - set UP |
| Carb. air intake control | - Freedom of movement - set COLD |

Starting engine:

- | | |
|-------------------------|---|
| Propellor | - Clear |
| Ignition switches | - ON |
| Starter isolator switch | - ON |
| Throttle | - Set 1/2 in OPEN |
| Starter button | - PRESS until engine fires |
| Starter warning light | - OUT |
| Oil pressure | - 30PSI minimum - if not shut down engine |

Failure to start - overpriming:

- | | |
|--------------------------|-------------------------------|
| <i>Ignition switches</i> | - OFF |
| <i>Throttle</i> | - Fully OPEN |
| <i>Engine</i> | - Turn over backwards by hand |
- Re-attempt starting procedure*

After starting engine:

- | | |
|-----------------------------|---|
| RPM | - Set 1,100 RPM |
| Oil temperature | - 15 deg C minimum |
| Generator warning light | - Out |
| Ignition switches | - Test for dead cut |
| Carburettor hot air control | - As required |
| Direction indicator | - SET and uncage |
| Artificial horizon | - Erecting |
| Taxi lamp | - ON |
| Radio | - ON, frequency selected, Test |
| Transponder | - STBY, code set |
| Brake lever | - As required for braking effect at full rudder |

Taxying:

- | | |
|---------------------|------------------|
| Direction indicator | - Check accuracy |
| Artificial horizon | - Check accuracy |
| Temps and pressures | - Check |

Exercising/testing engine:

- | | |
|-------------------|---------------------------------------|
| Brakes | - Fully ON |
| Control column | - Hard back |
| Oil temperature | - 15 deg minimum |
| Oil pressure | - 30 to 40 PSI |
| RPM | - Set 1,800 RPM |
| Ignition switches | - Test each in turn - Max 75 RPM drop |
| Throttle | - Steadily to idle |
| RPM | - Check - 650 RPM |
| RPM | - Set 1,100 RPM |

After maintenance or at pilot's discretion:

Full power check (do not prolong):

- | | |
|--------------------------|--------------------------|
| <i>Throttle</i> | - Steadily to full power |
| <i>RPM</i> | - Check 2,000 to 2,100 |
| <i>Ignition switches</i> | - Test each in turn |

Max 120 RPM drop

**Before take off
checks:**

Trim - elevator	- 2 divs. Nose heavy
Mixture	- Full RICH
Throttle friction	- Adjust
Carb. air intake	- As required
Fuel cock	- ON and gated
Fuel contents	- Sufficient
Flaps	- UP (15 deg for short take off)
Pressure head heat	- As required
Transponder	- ON
Gauges	- Temp and Pressure OK
Harness	- Tight
Canopy	- Latched closed
Emergency briefing	- Complete
<i>Note take off time</i>	

During take off:

Brakes - OFF
Open throttle slowly
Keep aligned with runway using rudder
Leave ground at 45 kts
At safe height raise flaps

Climbing:

Climb at full throttle
Normal climb speed - 70 kts
Max rate of climb - 65 kts
Mixture - Fully RICH
At altitude move forward only
to eliminate rough running

Cruise:

Max weak RPM - 2,100 RPM
Recommended cruise RPM - 2,050 RPM
Recommended cruise speed - 90 kts

At altitude lean mixture by moving mixture lever forward until RPM drop or rough running commences. Then move back towards RICH until original RPM restored.

Mixture setting will be correct for all throttle settings at that altitude.

Recommended speed for endurance - 65 kts

Engine is susceptible to carburettor ice build up. Carb heat should be selected HOT at first sign of RPM reduction or rough running.

En route checks:

Fuel	- Contents sufficient
Radio	- Correct frequency
Engine	- Ts and Ps Carb heat as required
Direction indicator	- Aligned with compass
Altimeter	- Set to regional QNH

Checks before stalling, spinning and aerobatics:

Height	Sufficient
Airframe	Flaps - UP Brakes - OFF
Security	Canopy - Latched closed Harness - Tight

	Loose articles - None
	DI - Caged
Engine	Mixture - Fully RICH
	Ts and Ps - Within limits
Location	Clear of built-up areas, controlled airspace, cloud.
Lookout	Clear of other aircraft

Stalling speeds:

Power OFF; Flaps UP	45 kts
Power OFF; Flaps DOWN	35 kts
Power ON; Flaps DOWN	35 kts (Approach config)

Aerobatic entry speeds:

Roll	115-120 kts
Loop	125-130 kts
Half roll off loop	135-140 kts

Do NOT exceed RPM limits at high speed

Spin recovery:

Throttle	- CLOSED
Ailerons	- NEUTRAL
Rudder	- FULL opposite rudder
Control column	- Move forward until rotation ceases Fully forward movement may be required and may need moderate force

Checks before arriving at destination airfield:

Fuel	- Contents sufficient
Radio	- Correct frequency
Engine	- Ts and Ps within limits Carb heat - HOT
Direction indicator	- Aligned with compass
Altimeter	- Set to QFE

Checks before landing:

Brakes	- OFF
Harness	- TIGHT
Mixture	- Fully RICH
Carb air intake	- HOT
Fuel	- Contents sufficient
Harness	- TIGHT
Canopy	- Closed and latched
Flaps	- As required

Base leg speed	- 70 kts
Final approach speed	- 60 kts
Threshold speed	- 55-60 kts

Baulked landing:

At full throttle the aircraft will climb with full flap.
Climb at 65 kts with the flaps lowered.
At a safe height raise flaps in two stages.

After landing checks:

Brakes	- Set for taxiing
Flaps	- UP
Transponder	- OFF

Note landing time

Shutdown:

RPM	- Set 1,100 RPM for 1 minute
Ignition switches	- Check for dead cut
Radio	- OFF
Throttle	- CLOSED
Ignition switches	- OFF
AND	
Throttle	- Fully OPEN

When engine has stopped:

Throttle	- CLOSED
Fuel cock	- OFF
Electrical services	- All OFF
Starter isolator switch	- OFF
Ground/Flight switch	- Ground
Direction indicator	- Caged
Control locks	- In position
Brakes	- OFF (in hangar/apron, or as required)

Limitations

Engine RPM:

	Max RPM	Max Oil Temp
Max take-off (Max 5 min)	- 2,550 RPM	85 deg C
Max continuous - RICH mixture	- 2400 RPM	85 deg C
Max continuous - WEAK mixture	- 2300 RPM	85 deg C
Max diving at 1/3 throttle	- 2,675 RPM	
	20 second limit	

Oil pressure:

Normal	- 40-45 lb/sq.in.
Emergency Minimum	- 30 lb/sq.in.

Oil Temperature:

Minimum for take off	- 15 deg C
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Flying limitations:

Maximum diving speed	- 155 kts
Vne	
Maximum speed with 15 deg flap	- 93 kts
Maximum speed with 30 deg flap Vfe	- 71 kts
Maximum permissible all up weight	- 2,000 lb
Best rate of climb Vy	- 65 kts
Recommended climb speed	- 70 kts
Cruise RPM	- 2,050 RPM
Stalling speed - flaps up Vs0	- 45 kts
Stalling speed - flaps 15 or 30 degrees Vs1	- 35 kts
Best glide speed	- 65 kts

Emergency Procedures

Engine fire on the ground
Engine fire in the air
Cockpit fire/fumes in cockpit
Engine failure after take-off
Engine failure in the air
Restarting engine
Forced landing
Rough running

Engine fire on the ground:

- Fuel valve - OFF
- Throttle - CLOSED
- Ignition - OFF
- Brake - OFF

Collect hand fire extinguisher and vacate aircraft.

Engine fire in the air:

Reduce speed to 60 kts

- Fuel valve - OFF
- Throttle - CLOSED
- Ignition - OFF
- Brake - OFF

Carry out forced landing checks.

Do not attempt to re-start engine.

Cockpit fire:

- Electrical services - OFF

Use hand fire extinguisher if necessary.

Fumes in cockpit:

Open canopy to first stage.

Land as soon as possible.

Engine failure after take-off:**Immediate actions:**

Select attitude for 65 kts glide speed.

Pick a landing area.

Use flap as necessary.

Subsequent actions:

Make RT call.

Carry out forced landing checks.

Engine failure in flight:

Reduce speed to 65 kts glide speed.

Check:

- Carb Heat - HOT
- Fuel valve - ON
- Mixture - RICH
- Ignition - ON
- Throttle - Exercise

If engine does not re-start:

Select field for landing.

- Fuel valve - OFF
- Throttle - CLOSED
- Ignition - OFF

Restarting the engine in flight:

Do not attempt to restart after mechanical failure.

Fuel valve	- ON
Mixture	- RICH
Ignition	- ON
Throttle	- Slightly open

Propellor windmilling:

Open throttle.

If engine does not pick up, close throttle and carry out forced landing drill.

Propellor stationary:

Press starter button and release it immediately the engine fires.

Forced landing:

Check:

- | | |
|------------|---------------------|
| Fuel valve | - OFF |
| Throttle | - CLOSED |
| Ignition | - OFF |
| Harness | - TIGHT |
| Canopy | - Closed and locked |
| Brake | - OFF |

Use flaps as necessary.

- | | |
|----------------------|----------|
| Final approach speed | - 65 kts |
|----------------------|----------|

Rough running:

Ensure positive g applied.

Check fuel contents.

- | | |
|------------|------------|
| Carb heat | - HOT |
| Fuel valve | - Check ON |

Check engine controls correctly set.

If power restored, continue sortie.

If power not restored, recover to nearest airfield.