

CHECK FLIGHT CERTIFICATE



Single/Twin Seat, Piston-Engined Light Gyroplanes

CFS 301 Iss 4

Date:	Crew:	Observer:	Registration:
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Performance	Climb #1		Airfield:
Average Weight		lbs/Kg	Start Weight Kg/Lbs*:
Average Altitude		ft	
Average Temp.		°C	Takeoff cg:
Speed		MPH /KIAS	Performance: SATIS/UNSATIS/NOT APPLICABLE* <i>(delete as applicable)*</i>
Achieved Rate		fpm	
Scheduled Rate		fpm	
Margin		fpm	
Permitted Margin		fpm	

Defects

No.	Defect	-/R/FT	Action?

(use a continuation sheet as necessary)

Conclusions/Comments

I CERTIFY that I have tested the above aircraft and have detailed the deficiencies and unsatisfactory features above. Those items annotated R or FT must be dealt with as shown in the notes on the reverse side.

Name:	Signed:	Date:	Licence No.:
For CAA Use only	Report Logged by:	Date:	Report No.:

NOTES

General

Pilots using this document should be familiar with the tests and techniques needed. If the results are to be submitted to the CAA the pilot must be specifically approved by the CAA.

Reg: Enter the aircraft registration mark. If the aircraft is not on the UK register, add the manufacturers serial number and expected UK registration (if known).

Pilot: Captain and co-pilot (where applicable).

Airfield: Departure airfield.

Start Weight: Actual all up weight at engine start. Also delete Kg or Lbs as appropriate.

Takeoff cg: Actual cg at lift-off.

Performance

Climb: Enter in these columns data from the climb.

Average Weight: The aircraft all up weight at the midpoint of the measured climb.

Average Altitude: The altitude at which the line drawn to average the measured points passes through at the mid time.

Average Temp: The temperature at which the line drawn to average the measured points passes through at the mid time.

Speed: The target climb speed (Indicated Airspeed.)

Achieved Rate: The climb rate as given by the slope of the line drawn to average the measured altitude points in feet per minute.

Scheduled Rate: The expected gross rate of climb read from the appropriate graph in the Flight Manual with any adjustments for configuration differences.

Margin: The difference between the Scheduled and Achieved rates of climb (negative if achieved is lower than scheduled).

Permitted Margin: The maximum allowable difference between the Scheduled and Achieved rates of climb.

Defects

Enter all defects from the flight.

No.: The first column is to allow the items to be numbered.

Defect: Enter details of the defect.

-R/FT: Classify each defect according to its impact on safety. Items requiring rectification before further flight for hire or reward or before the issue of the CofA should be marked 'R'. Additionally, items that require re-checking in-flight following rectification (such as inadequate climb performance) should be marked 'FT'. Items requiring both should be marked 'R/FT'.

Conclusions/Comments

Any conclusions, notes or comments useful for tracking defects may be entered.

Name: Only the pilot who carried out the test may sign this sheet.

CAA Check Flight Schedules

It is the responsibility of the flight crew to ensure that the exercises and limitations in the CFS are correct for the aircraft under test. The prime source of information will be the aircraft flight manual and in the event of conflict the flight manual should be taken as overriding.

CAA policy is that pilots who conduct airtests on the behalf of the Authority must be acceptable to the Authority, must have been briefed on techniques and safety considerations before carrying out the tests in these schedules and must have carried out an airtest within the last 4 years.

The CAA does not accept responsibility for the use of a CAA CFS on a test flight not directly under their control.

CHECK FLIGHT SCHEDULE



Single/Twin Seat, Piston-Engined Light Gyroplanes

CFS 301 Issue 4

Registration

Test Date(s)

Type: _____

Modification State: _____

Constructors No: _____

Permit to Test Granted: (date) _____

Duration of Test: _____

1. Introduction

It is assumed that the routine operation of the gyroplane serves as a continuing check on the function of all normal controls. If any special device or control is fitted, which is not in use on every flight, it must be carefully checked in the course of the functioning tests which are included in this schedule.

The Flight Test must be carried out by a pilot experienced on the type.

Should there be any query about the Flight Test or its results, the local CAA Surveyor or the Flight Section of the CAA, Airworthiness Division can be consulted, but only general advice can be offered as no performance data or any information on the functioning of the equipment, has been established.

2. Loading

The gyroplane must be loaded as close to MAXIMUM WEIGHT as possible. A briefed observer should be used if available but passengers should not be used in lieu of ballast.

Aircraft weight from logbook: _____ lb/kg Pilot Weight: _____ lb/kg

Obs/Ballast Weight: _____ lb/kg Fuel contents: _____ lb/kg

Take-off weight: _____ lb/kg

If Max Weight not achieved explain why:

3. Pre-flight Information

Engine type/No: _____

Engine/Airframe hours since new/Overhaul: _____

Propellor type: _____

Pilot: _____ Licence No: _____

Location: _____ Air temp: _____ deg.C Surface wind: _____/_____

4. Pre-flight Inspection

Carry out all normal pre-flight inspection procedures, commenting on the following:

Seat, Safety Harness and Nacelle;	Sat/Unsat
Cyclic controls - freedom, travel, condition;	Sat/Unsat
Rudder system - freedom, travel, condition;	Sat/Unsat
Throttle controls - freedom, travel, condition;	Sat/Unsat
Placarding: legibility and accuracy;	Sat/Unsat
Propeller condition;	Sat/Unsat
Rotor pre-spin mechanism (if fitted);	Sat/Unsat

5. Start-up

Check for any difficulty or abnormality on start-up, Check ignition for any sign of rough running at idling and check for dead cut.

Comment: _____

Stable idling rpm: _____

Engine Test rpm: _____

Carb Heat Test (if Fitted) rpm drop: _____

Dual ignition (if fitted) rpm drop; Left _____ Right _____

VP Prop test (if applicable) _____

Wheel Brake/s hold gyro up to: _____ rpm (engine)

With the engine warmed up and all temperatures stabilised, check and record the following at engine test rpm and again at take-off;

	rpm	T.O.	Limitation
Engine rpm			
Manifold pressure			
Engine Oil temp.			
Engine Oil Pressure			
Cylinder Head temp.			

Wheel Brake/s (taxying): Sat/Unsat

Wheel Brakes from Rear Cockpit Sat/Unsat

Throttle response (taxying); Sat/Unsat

Rudder/Steering response (taxying); Sat/Unsat

Tendency to Nose wheel shimmy? _____

Best Turning Radii approx: _____

5.1. Take-Off

Carry out a normal take-off in accordance with Pilots Handbook procedures. Record the following:

Wheel Brakes Sat/Unsat

Pre rotator Sat/Unsat

Rotor spin up Sat/Unsat

Acceleration Sat/Unsat

Unstick & climb out Sat/Unsat

General comments (include max rotor rpm achieved at what engine rpm Note wind speed through the disc. Comment on vibration levels experienced)

6. Performance and Handling

Make a careful assessment of the performance and handling characteristics under the conditions listed below. DO NOT attempt to exceed the boundaries of the known and safe 'Flight Envelope' for the particular machine.

6.1 Performance Climb

With the altimeter set to 1013 mb, climb at maximum engine power (with prop set to "Climb" /fine) at the optimum climb speed for the machine for 3 mins with zero sideslip(string central). When a stable, yaw free heading has been achieved, in conditions as calm as possible, record the following:

Time min.	Alt. Ft.	OAT deg C / F	IAS kts/ mph	Rotor RPM	CHT deg C / F	Eng Oil Temp	Eng Oil Press	Engine RPM	MAP
0.00									
0.30									
1.00									
1.30									
2.00									
2.30									
3.00									

N.B. To achieve scheduled performance, ensure correct Flight Manual/POH configuration is used.

Delete or insert instrument units (i.e. mph) as appropriate. Obtain OAT from Meteorological Office if no gauge fitted.

Comment on the rate of climb, engine temperatures etc., should they appear in any way abnormal for the engine/machine in question.

6.2 Cruise

With normal cruise power stabilised (and prop set up for cruise), trim the gyroplane for straight and level flight and then record:

IAS		kts/mph
Altitude		feet (1013 mb)
OAT (if known)		deg C / F
Stable engine temp, CHT		deg C / F
Stable engine oil temp		deg C / F
Stable engine oil pressure		
Average engine rpm		
MAP		
Pitch trim set for		kts/mph
Rudder trim tab needs adjustment?		
Left/Right rudder needed?		
Rotor tracking error (Estimate any split)		(2 inches max)
Vibration level		
Can a positive rate of climb be achieved with prop fully coarse and full throttle?		

6.3 Steep Turns

Carry out steep turns (AOB dependant on type but normally 45°) in both directions with engine at full power. Check the controls for normal response, travel and position, noting general vibration levels.

Control response; _____

Control position; _____

Vibration levels; _____

Estimated bank angle (max); _____

Maximum 'g' recorded (if meter fitted): _____

6.4 Maximum and Minimum Speed

At a safe altitude, (with prop set up for cruise) increase airspeed to the placarded V_{NE} . Check control response turning up to 10 °AOB and note vibration level. Slow (setting prop to climb/fine) to V_{min} or $V_{mc(power\ on)}$ if faster. Record:

Altitude: _____ feet (1013 mb)
OAT: _____ deg C / F
Placard V_{NE} _____ kts/mph
Manifold Pressure (if known): _____
Engine rpm: _____
Rotor rpm: _____
Achieved speed _____ kts/mph
Control response: _____ Sat/Unsat
Vibration level: _____
Min speed (level flight): _____ kts/mph
Engine rpm _____
Manifold Pressure _____

6.5 Descent at Idle Power

From a height of not less than 2000 ft AGL, in a suitable area, reduce progressively the engine rpm to idle and record the following in the ensuing glide, which should be at the recommended airspeed for the particular machine.

Comment on speed, attitude changes and controllability on entry;

Vibration levels; _____
IAS _____ kts/mph
Medium turns _____ Sat/Unsat
Rotor rpm _____
Engine rpm _____

6.6 Descent at V_{MC(Power Off)}

From a height of not less than 2000 ft AGL, in a suitable area, from an Idle Power (prop fine) descent reduce progressively the aircraft speed to V_{MC(Power Off)}. Ensuring the aircraft can be yawed in each direction using the rudder pedals. Commence recover to power on climbing flight by 1000 ft AGL. NB: This test is carried out at Idle rpm; the engine is not required to be stopped.

Vibration levels; _____
 IAS _____ kts/mph
 Approx Yaw Rate _____ left _____ right
 Rotor rpm _____
 Engine rpm _____

7. Functioning Tests

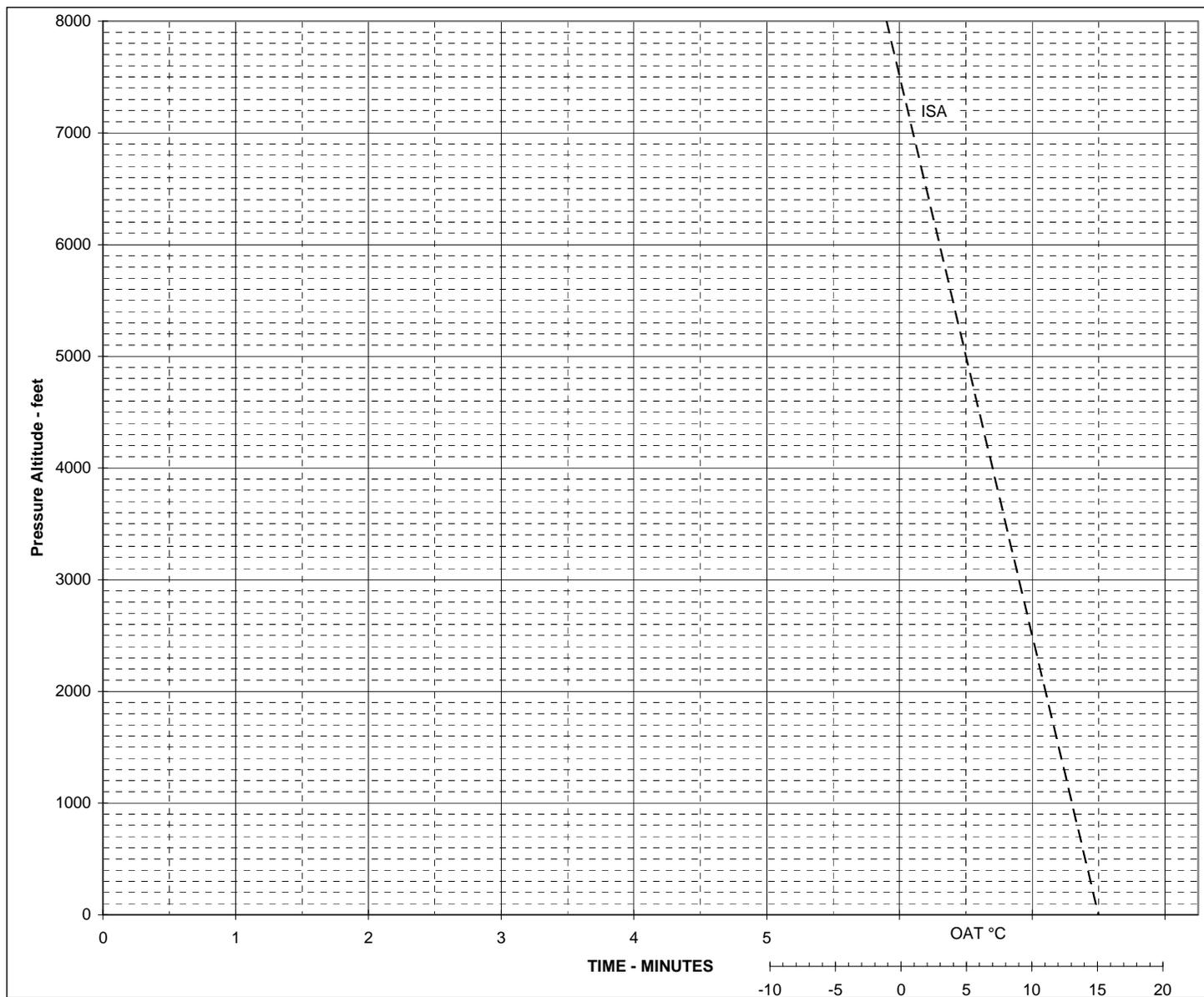
Check the following items at appropriate time during the flight, where applicable.

ASI	Sat/Unsat
Altimeter	Sat/Unsat
Engine rpm tachometer	Sat/Unsat
Engine Oil Pressure gauge	Sat/Unsat
Engine Oil Temperature gauge	Sat/Unsat
Rotor rpm tachometer	Sat/Unsat
Compass (check headings if possible)	Sat/Unsat
Fuel contents gauge	Sat/Unsat
Carburettor hot air system	Sat/Unsat
Rotor brake	Sat/Unsat
Drift Indicator	Sat/Unsat
Radio	Sat/Unsat
Landing gear	Sat/Unsat
Variable Pitch Prop	Sat/Unsat
Any other gauge/system including all avionics, list below..	
_____	Sat/Unsat
_____	Sat/Unsat
_____	Sat/Unsat

On touchdown, check that the landing gear functions correctly and, in particular, that there is no nose-wheel 'shimmy'. Sat/Unsat

Estimated landing run, after touchdown _____ feet/metres.

8 Post Flight Fuel shut off control Sat/Unsat



<u>AIRCRAFT TYPE</u>
<u>REGISTRATION</u>
<u>DATE OF TEST</u>

Mean Weight	_____ Kg/lb
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Mean Altitude	_____ feet
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Mean OAT	_____ °C
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SCHEDULED ROC	
Basic	_____ ft/min
Correction	_____ ft/min
Correction	_____ ft/min
Final SROC	_____ ft/min

Observed ROC	_____ ft/min
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Difference from Scheduled	_____ ft/min
<small>(Observed ROC minus Final SROC)</small>	