CHECK FLIGHT CERTIFICATE

Cessna 425 Corsair (PT6A-112 Engines) **CFS 198 Issue 1**

Date:	Crew:	Observer:	Registration:

Performance	Climb #1	Climb #2	
Average Weight			
Average Altitude			ft
Average Temp.			°C
Speed			KIAS
Achieved Rate			fpm
Scheduled Rate			fpm
Margin			fpm
Permitted Margin	-70	-70	fpm

Airfield:

Start Weight Kg/Lbs*:

Takeoff cg:

Performance:

SATIS/UNSATIS/NOT APPLICABLE*

*(delete as applicable)**

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

Only CAA personnel or pilots specifically briefed to carry out CAA check flights may conduct the test.
General notes on test conduct can be found in the CAA Check Flight Handbook.
This sheet replaces any check flight certificate given in the schedule.
Registration: If the aircraft is not on the UK register, add the manufacturers serial number and expected UK registration (if known).
Crew: Captain, co-pilot, Flight engineer (where applicable).
Airfield: Departure airfield.
Start Weight: Actual all up weight at first engine start. Also delete Kg or Lbs as appropriate.
Takeoff cg: Actual cg at lift-off, preferably as a % of the Mean Aerodynamic Chord.

Performance

A full description of climb analysis is given in the CAA Check Flight Handbook.
Climb#1/Climb#2: Enter in these columns data from the first and second climbs.
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. For large aircraft, the basic gross data are normally to be found in a separate supplement labelled 'Additional Flight Test Data'.
Margin: The difference between the Scheduled and Achieved rates of climb (negative if achieved is lower than scheduled).

Defects

Enter all defects from the flight. All defects must also be entered in the Technical Log. Procedural items entered in the Technical Log (such as re-stowing oxygen masks) need not be entered here. Items affecting flight safety which were known before the flight, whether or not they were deferred should be entered. In the latter case, the defect should be annotated accordingly after the details.
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, regardless of whether it can be deferred according to the MEL. Any deferrals should be dealt with in the normal way in the Technical Log. Items requiring rectification (or deferral under the MEL) 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'.
Action?: This column should be left blank unless further information is required from the engineers or the item is considered to be of sufficient import that CAA action is considered necessary, then the person/department/agency from whom further action is required should be noted in this column. Annotate accordingly if an MOR or similar report is to be raised.

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

All CAA Check Flight Schedules (CFSs) are prepared based on a design standard which, before September 2003, was the UK Type Certificate. Following the creation of EASA there may be different design standards in service within the European Union (EU) - this may include modifications approved in any EU country.

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 check flights on 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 a check flight 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

Cessna 425 Corsair (PT6A-112 Engines) **CFS 198 Issue 1**

Registration	
Flight Date	

INTRODUCTION

This schedule is applicable to Cessna 425 aircraft. It is based on the assumption that the everyday operation of the aeroplane serves as a continuous check on the functioning of all normal services. On this check flight, however, the pilot is expected generally to monitor the behaviour of all equipment and report any unserviceable items. In addition to completing all the tests in this schedule, any characteristics which are considered to be unsafe or undesirable must be recorded.

The minimum crew for the check flight shall be one pilot, and one observer to record the results of the tests. The tests should, if possible, be carried out in the sequence of this schedule; altitude conditions must be observed. Except where otherwise indicated, the flight techniques are those associated with normal operation of the aeroplane. The limitations and procedures of the Pilot's Operation Handbook and British Aeroplane Flight Manual must be observed.

Commanders are reminded that it is illegal to carry passengers on a check flight made under 'A' Conditions, except where they are required to perform duties in the aircraft in connection with the flight. While it is legal to carry passengers on a test flight of an aircraft with a valid Certificate of Airworthiness, the practice is not recommended. If passengers are carried, however, they should be informed that the risk is greater than on an ordinary flight.

The data contained in this schedule is correct at the time of writing, but may not be in agreement with subsequent Pilot's Operating Handbook and Flight Manual amendments. In cases of conflict the current Manuals are overriding; CAA Flight Department should be informed of the conflict.

LOADING

The aircraft is to be loaded with fuel up to but not exceeding maximum landing weight.

Record:

Weight		Cg Position	

Where the aircraft weight is required to be recorded for particular tests, it should be calculated from the fuel gauges; the aircraft must be in steady level flight when they are read.

PRE-FLIGHT INFORMATION

Record:

Total airframe hours	

		LEFT	RIGHT
Engine serial number	**S/N**		
Engine hours run	**TSN**		

POST-FLIGHT ACTION

This flight test report, containing the results of all the tests specified, the statement of defects, and the Flight Test Certificate must be completed. The observed climb performance data are to be plotted on the attached graph and compared with the scheduled gross performance given in Appendix A to the British Aeroplane Flight Manual.

The complete report is then to be passed to the CAA Area Office.

PRE-FLIGHT INFORMATION

Aircraft Registration	
Operator/Maintenance organisation	
Airframe hours	

	LEFT	RIGHT
Engine S/N		
Engine hours		

Crew:	Pilot	
	Observer	
Airfield		
Date		
Loading:	Ramp Weight	lb
	Cg position	

CHECK FLIGHT SCHEDULE

1. PRE-FLIGHT CHECKS

1.1 Oxygen System

Check the oxygen quantity is adequate and oxygen masks are readily available for all occupants.

Select oxygen ON.

Check all occupants' oxygen masks for oxygen supply	SAT/UNSAT
Check both pilots' oxygen mask microphones	SAT/UNSAT

1.2 V_{MO} pointers

Record both pilots' V_{MO} pointer readings

Pilot	KIAS	Co-pilot	KIAS

Check both limits (226-234 KIAS)	SAT/UNSAT

2. TAKE-OFF

Carry out a normal take-off using the normal schedule take-off speeds.

Record:

Any unusual characteristics	

Propeller rpm after unstick, while maintaining take-off power	**Left**		**Right**	

Both within limits (1,900 rpm max)	SAT/UNSAT

Select 10,000 ft cabin altitude in preparation for test 4.

3. PERFORMANCE AND FUNCTIONING

recommended FL 40
(limits 3,000' AGL to FL150)

3.1 Engine out en-route climb

Carry out an en-route climb for five minutes with the port engine inoperative. The recording of instrument readings should not be started until the aircraft is trimmed out in a steady climb in the required configuration. Airspeed should be kept within 3 knots of the required speed and a constant heading maintained throughout the climb. The climb should be carried out clear of cloud and significant turbulence.

Configuration:

- gear and flaps up
- PROP SYNC switch OFF
- starboard engine at take-off power (1,244 ft lb torque, 1,900 N_p or as limited by ITT or N_G)
- port engine inoperative, fuel off, propeller feathered and engine securing procedure completed
- one engine inoperative en-route climb speed = 111 KIAS
- aircraft trimmed about all axes with 5° bank to starboard
- altimeter set to 1013 mb.

Record data as requested below. The starboard engine data should be recorded after about three minutes.

Aircraft weight at start of climb _____ lb

Time Mins	Altitude ft	IAS kt	OAT ^oC
0			
½			
1			
$1^1/_2$			
2			
$2^1/_2$			
3			
$3^1/_2$			
4			
$4^1/_2$			
5			

Trim settings:

Elevator _____ Rudder _____ Aileron _____

Starboard engine data:

Torque _____ ft lb Prop rpm _____

ITT _____ ^oC N_G _____ %

Oil pressure _____ psi Oil temperature _____ ^oC

Aircraft weight at end of climb _____ lb

3.2 Engine relight

On completing the climb relight the port engine at 115 KIAS using the starter assist technique.

Record:

Time from fuel control lever at RUN to ITT rise (20 sec max)	sec	SAT/UNSAT
Max ITT	^{o}C	
Time from fuel control lever at RUN to stabilised idle power (60 sec max)	sec	SAT/UNSAT

Crossfeed fuel as necessary to maintain fuel balance.

4. FUNCTIONING

recommended FL 170
limits FL 160 to FL 200

Cabin altitude warnings

Select oxygen ON and with all occupants breathing oxygen select Pressurisation Source Selector OFF.

Check and record:

Cabin altitude at which Cabin Altitude caption illuminates (limits 10,000' ± 500')	ft	SAT/UNSAT
Cabin altitude at which Cabin Press Warn caption illuminates (limits 15,000' ± 500')	ft	SAT/UNSAT

Reselect Pressurisation Source Selector to BOTH and set the cabin altitude to sea level in preparation for test 8. Once the cabin altitude is below 10,000 ft oxygen flow can be selected off.

5. FLYING CONTROLS

climb to FL 240

Establish a normal two-engine climb at maximum climb power (1,900 prop rpm, 1,244 ft lb Torque or as limited by ITT or N_G). Airspeed 140 KIAS.

Check and record:

Each primary control in turn for backlash, breakout forces, centring, forces and response.

	Backlash	Breakout	Centring	Forces	Response
Elevator					
Ailerons					
Rudder					

(tick if satisfactory)

Each trimmer in turn for backlash, friction and response.

	Backlash	Friction	Response
Elevator			
Ailerons			
Rudder			

(tick if satisfactory)

6. CRUISE — at FL 240

Establish a normal cruise.

Check and record:

Both pilots' instruments as follows:

	Pilot	Co-pilot
IAS		
V_{MO} pointers		
Altitude		

(215-223 KIAS) SAT/UNSAT

Engine instruments as follows:

	Port	Starboard
Torque		
N_p		
ITT		
N_G		
Fuel flow		
Oil pressure		
Oil temperature		

7. ENGINE SHUTDOWN AND RELIGHT — FL 200

Shut down the starboard engine using the Engine Securing Procedure. After not less than two minutes shutdown, relight the engine using the starter assisted technique at 115 KIAS.

Check and record:

Time from fuel control lever at RUN to ITT rise (20 sec max)	sec	SAT/UNSAT
Max ITT	^{o}C	
Time from fuel control lever at RUN to stabilised idle power (60 sec max)	sec	SAT/UNSAT

8. FUNCTIONING

recommended FL 150
limits FL 200 to FL 120

Pressurisation

With sea level cabin altitude selected, check and record:

Stabilised cabin differential pressure with PRESS SOURCE SELECT on BOTH (limits 5.0 ± 0.1 psi)	psi	SAT/UNSAT
Stabilised cabin differential pressure with PRESS SOURCE SELECT on RH (limits 5.0 ± 0.1 psi)	psi	SAT/UNSAT
Stabilised cabin differential pressure with PRESS SOURCE SELECT on LH (limits 5.0 – 0.1 psi)	psi	SAT/UNSAT
Confirm operation of selector by noting transient changes in cabin rate of climb indication		SAT/UNSAT

Reset PRESS SOURCE SELECT to BOTH and select 3,000 ft cabin altitude in preparation for test 11.

9. V_{MO} POINTERS AND HIGH IAS

recommended FL 150
limits FL 200 to FL 50

Check and record both pilots' V_{MO} pointers:

Pilot	KIAS	Co-pilot	KIAS	SAT/UNSAT

limits 226-234 KIAS

Increase speed slowly to 230 KIAS. **Check and record:**

Flying control forces and response over small angles	SAT/UNSAT
General airframe, engine and propeller behaviour	SAT/UNSAT

At 230 KIAS slowly move the power levers to flight idle.

Check and record behaviour of engines and propellers including any tendency to overspeed	SAT/UNSAT

10. STALLS AND FUNCTIONING

recommended FL 80
limits FL 100 to 5,000' AGL

Select PROP SYNC switch OFF throughout.

Prior to each stall determine the trim and scheduled stall speeds (see graph on page 15). Trim the aircraft with the power levers at flight idle at the scheduled trim speed then reduce speed at approximately 1 knot/second until the aircraft stalls.

10.1 Clean configuration stall

Check and record:

Aircraft weight	lb
Trim speed	KIAS
Elevator trimmer setting at trim speed	

Scheduled and achieved speeds (from Captain's ASI):

	Scheduled	Achieved	Limits	
Stall warning				
Stall			± 4 knots	SAT/UNSAT
Margin between stall warning and stall			not less than 5 knots	SAT/UNSAT

Aircraft behaviour at stall (eg nose or wing drop, or stick hard back) and any abnormal buffet or behaviour during approach to and recovery from the stall:	

10.2 Functioning and landing configuration stall

Check and record:

Time for flap extension for 0 to 15° at 150 KIAS (limits 4 seconds max)	sec	SAT/UNSAT
Time for gear extension at 150 KIAS (limits 9 seconds max)	sec	SAT/UNSAT
Time for flap extension 15° to 45° at 120 KIAS (limits 11 seconds max)	sec	SAT/UNSAT

Aircraft weight	lb
Trim speed	KIAS
Elevator trimmer setting at trim speed	

Scheduled and achieved speeds (from Captain's ASI):

	Scheduled	Achieved	Limits	
Stall warning				
Stall			± 4 knots	SAT/UNSAT
Margin between stall warning and stall			not less than 5 knots	SAT/UNSAT

Aircraft behaviour at stall (eg nose or wing drop, or stick hard back and any abnormal buffet or behaviour during approach to and recovery from the stall:	

10.3 Functioning

Check and record:

Time for flap retraction 45° to 15° at 120 KIAS (limits 7 seconds max)	sec	SAT/UNSAT
Time for gear retraction at 120 KIAS (limits 7 seconds max)	sec	SAT/UNSAT
Time for flap retraction 15° to 0 at 150 KIAS (limits 4 seconds max)	sec	SAT/UNSAT

11. FUNCTIONING

as convenient between FL 60 and 3,000' AGL

11.1 Cabin pressurisation switch

Select cabin pressurisation switch to DE-PRESSURISE. Check that cabin pressure falls to zero.	SAT/UNSAT

11.2 Cabin vent control

Select PRESS SOURCE SELECT to OFF and confirm that there is no airflow from the air distribution outlets. Pull DUMP/RAM knob and check that air is entering the cabin.	SAT/UNSAT
Push in DUMP/RAM knob and check that ventilating air flow has stopped. Reset PRESS SOURCE SELECT to BOTH. Select cabin altitude to field elevation +500 ft.	

12. LANDING

Carry out a normal landing, using the scheduled landing speeds. Use reverse thrust after touchdown within limitations.

Check and record:

Carry out a normal landing, using the scheduled landing speeds. Use reverse thrust after Touchdown within limitations.

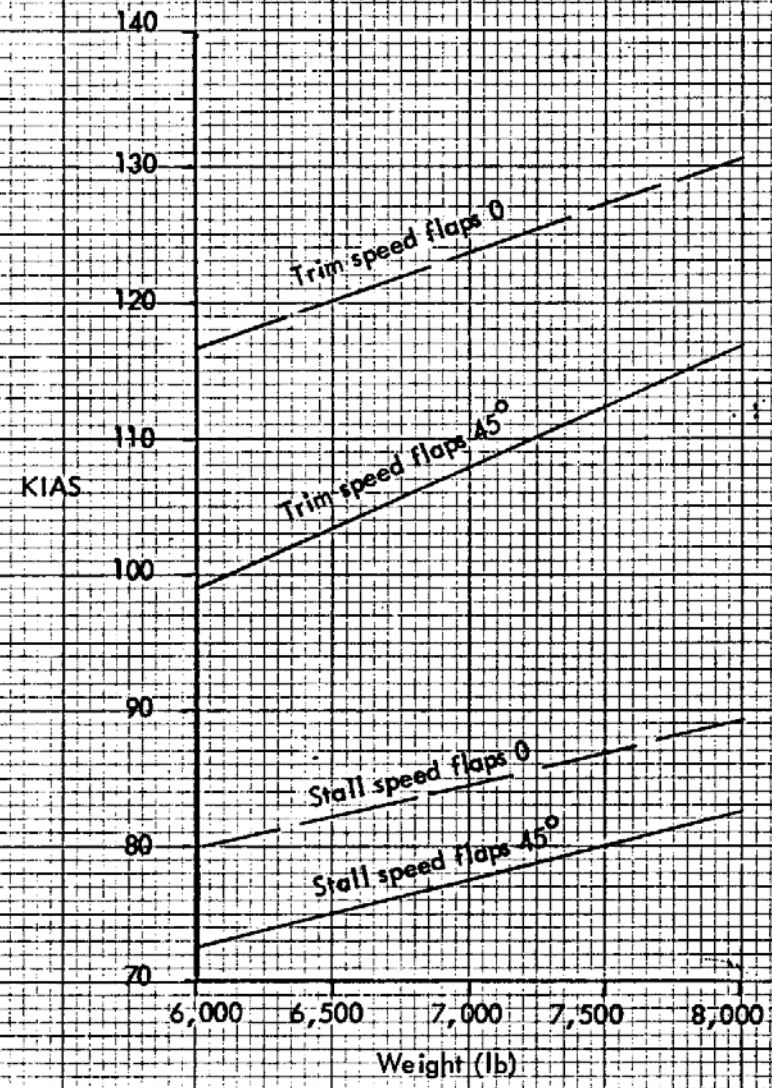
Check and record:

Engine operation in reverse	SAT/UNSAT
Any unusual characteristics:	

13. AFTER LANDING

Check airframe and engine placards and colouring coding for presence, accuracy and legibility.	SAT/UNSAT

TRIM AND SCHEDULED STALL SPEEDS



EN-ROUTE CLIMB
Climb weight (lb)
Mean altitude (ft)
Indicated temp at mean alt °C
Scheduled rate of climb from BAFM (ft/min)
Observed rate of climb (ft/min)
Difference from scheduled (ft/min)
0
1
2
3
4
5
Time - Minutes
-20
-10
0
+10
IOAT °C
Pressure altitude feet (1013 mb)