

# CHECK FLIGHT CERTIFICATE



HS.125 700B & F.600B

CFS180 issue 1

Date:	Crew:	Observer:	Registration:
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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**

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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 airtests may conduct the test.

General notes on test conduct can be found in the CAA Handbook for Airworthiness Flight Testing.

This sheet replaces any flight test 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 Handbook for Airworthiness Flight Testing.

*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 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



## HS.125 700B & F.600B (GARRETT AIRSEARCH TFE 731-3-1H or 731-3R-1H)

CFS 180 issue 1

### INTRODUCTION

The data contained in this schedule is correct at the time of issue but may not be in agreement with subsequent Flight Manual amendments. In cases of conflict the current Flight Manual data must be used where relevant. Any such changes should be recorded.

The schedule is applicable only to HS.125 Services 700B and F.600B aircraft. The schedule is based on the assumption that the everyday operation of the aircraft serves as a continuous check on the functioning of all normal services. On this test flight, however, the crew are expected generally to monitor the behaviour of all the equipment and report any unserviceable items. In addition to completing all the tests in the schedule any handling or functioning characteristics which are considered to be unsafe or undesirable must be recorded.

It is illegal to carry passengers on a test flight made without a current Certificate of Airworthiness except passengers performing duties in the aircraft in connection with the flight. Although it may be legal to carry passengers on a test flight with a C of A in force, the pilot in command should, before accepting any passengers on an Airworthiness Test Flight, inform them that the risk is greater than on an ordinary flight.

### LOADING AND CALCULATION OF AIRCRAFT WEIGHT

The aircraft should be loaded with 300 lb of fuel per side in the wing tanks and full auxiliary tanks with ballast such that the zero fuel weight centre of gravity is not aft of .28 A.M.C. This should give an approximate loading of 21,300 lb.  $\pm$  500 lb. (9660 kg  $\pm$  225 kg). Check maximum T.O.W. for airfield conditions.

**NOTE:** This fuel distribution is contrary to the Flight Manual limitations (Section 2 - LIMITATIONS - FUEL LOADING) but is approved by the CAA Airworthiness Division and British Aerospace for the purposes of these tests.

Actual WEIGHT	Lbs/Kgs	Actual C.G.	
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### PRE FLIGHT INFORMATION

Total airframe hours		
	Left	Right
Engine serial number		
Hours run		
Test-bed value of N1 RPM at maximum take-off/maximum continuous rating, sea-level U.S. standard day static conditions (given on computer printout inserted in "Engine Data" section of log book).		

Except where otherwise indicated the flight techniques are those associated with normal operation of the aircraft, the example yaw damper engaged. Fuel symmetry must be maintained within the Flight Manual limit of 500 lb., particularly during and after the engine out climbs.

1. PRE FLIGHT CHECKS

Before take-off, on aircraft equipped with APR, carry out normal service-ability checks on APR as per Flight Manual and record:

Stabilised idle N <sub>2</sub> rpm of both engines with APR ARMED		
idle N <sub>2</sub> rpm of both engines after APR ARM disengaged (approx. 1% decrease)		

2. TAKE-OFF

Carry out normal take-off.	Record any unusual characteristics:	
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3. FUNCTIONING

Recommended FL 40 (limits 3000' AGL to FL 80)
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3.1 High Speed Warning

- Before transferring fuel from the auxiliary tanks, increase speed to the onset of the high speed warning horn. If below 6000 ft., windscreen heat must have been selected on for at least 10 minutes in ambient temperatures above 15°C or at least 30 minutes in ambient temperature below 15°C.

Record the actual setting of the horn (between 282 and 286 KIAS Series 700, or 283 and 292 KIAS Series F600).

NOTE Auxiliary tank fuel transfer should not be selected until after test 4.1.

3.2 Engine Accelerations

At 130 KIAS, flaps 15°, with engine anti-icing, synchroniser and air bleeds off, engine computers in AUTO, check and record:

steady max. N <sub>1</sub> for each engine	<input style="width: 100%; height: 20px;" type="text"/>
flight idling N <sub>1</sub> for each engine	<input style="width: 100%; height: 20px;" type="text"/>
slam acceleration times to max. N <sub>1</sub> less 1% (7 secs. max).	<input style="width: 100%; height: 20px;" type="text"/>

Tests to be repeated with engine computers in MANUAL  
In cold ambient conditions do not exceed N<sub>1</sub> REF. (see Flight Manual fig. 5-9)

steady max. N <sub>1</sub> for each engine	<input style="width: 100%; height: 20px;" type="text"/>
flight idling N <sub>1</sub> for each engine	<input style="width: 100%; height: 20px;" type="text"/>
slam acceleration times to max. N <sub>1</sub> less 1% (25 secs. max).	<input style="width: 100%; height: 20px;" type="text"/>

4 PERFORMANCE AND FUNCTIONING

The climbs should be made clear of cloud and turbulence and on a constant heading. Start recording when in a stabilised trimmed condition at the scheduled speed using not more than 5° bank towards the operative engine. Aim to maintain IAS within ±2 kts. of scheduled speed, and to adjust the operative engine as necessary to maintain the scheduled thrust setting. The achieved rate of climb must be compared with the relevant gross performance information in the Flight Manual section 5-12.

4.1 Engine Idling Take-off Climb Recommended FL 40  
(limits 3000' AGL to FL 80)

- With
- Gear up, flaps 15°
  - No.2 engine idling, throttle closed
  - No.1 engine at maximum take-off power or full throttle (not exceeding 101.5% N<sub>1</sub>, 907°C ITT or 100% N<sub>2</sub>). Do not ARM APR.
  - take-off safety speed for weight altitude and temperature (see fig. 5-12 of the Flight Manual)
  - all air bleeds off
  - Rudder trim neutral with applied bank to maintain steady heading.

Zero Fuel Weight	
Fuel Contents	
Start Weight	
V <sub>2</sub>	

Time	Altimeter ft	ASI kt	OAT °C	N1
0				
½				
1				
1½				
2				
2½				
3				
3½				
4				
4½				
5				

ASI Cross Check 

<b>Capt.</b>	<b>F/O</b>

 SAT/UNSAT

Trim Settings

Rudder		Bank Angle	
Aileron		Direction	
Stabiliser		Residual force	

No.1 Engine Data at 3 minutes.

N1 %	
N <sub>2</sub> %	
ITT °C	

Oil Pressure psi	
Oil Temperature °C	
Fuel Flow kg/hr	

Zero Fuel Weight	
Fuel Contents	
Finish Weight	

Mean Weight kg	
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Weather	
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Check functioning of fuel crossfeed	SAT/UNSAT
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At the end of the climb, select auxiliary tank fuel transfer.

4.2 Pressurisation and ITT Limiter

In climb to FL 150 approx

Continue to climb with air bleeds off Check and record

Cabin altitude warning (9,300 ft. ± 500 ft.)		
Oxygen drop out (12,000 ft. ± 500 ft.)		
Mask, oxygen flow and microphones		
	Left	Right
Trip and reset each generator in turn		
Operation of engine ITT limiter: select engine anti-icing ON and both main air valves OPEN; increase power on each engine in turn to limiter operation – (ITT overswing should not exceed 927°C and ITT should reduce to 907 ± 5°C within 10 secs.)		

Re-pressurise and set a low cabin altitude in preparation for test 6.

4.3 Engine Out En-Route Climb

Recommended start FL 150 (limits FL100 to FL300)

NOTE: The auxiliary tank fuel transfer must be complete before starting the climb.

- With
- gear and flap up
  - No.1 engine inoperative, H.P. cock closed
  - No.2 engine at maximum continuous power (885°C ITT)
  - engine out en-route climb speed for the weight (see fig. 5-37 of Flight Manual)
  - pressurisation on
  - engine anti-icing off
  - rudder trim neutral.

Zero Fuel Weight	
Fuel Contents	
Start Weight	
Climb speed	

<b>Time</b>	<b>Altimeter ft</b>	<b>ASI kt</b>	<b>OAT °C</b>	<b>N1</b>
0				
½				
1				
1½				
2				
2½				
3				
3½				
4				
4½				
5				

ASI Cross Check	<b>Capt.</b>	<b>F/O</b>	SAT/UNSAT

Trim Settings	Rudder		Bank Angle	
	Aileron		Direction	
	Stabiliser		Residual force	

No.2 Engine Data at 3 minutes.

N1 %		Oil Pressure psi	
N2 %		Oil Temperature °C	
ITT °C		Fuel Flow kg/hr	

Zero Fuel Weight		Mean Weight kg	
Fuel Contents			
Finish Weight			

Weather	
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Check functioning of fuel crossfeed and wing tank fuel transfer.	SAT/UNSAT
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#### 4.4 Engine Relight

After completion of the climb, with 15° flap at 120 KIAS time an assisted relight on No.1 engine.

Windmill N <sub>1</sub> rpm.	
Windmill N <sub>2</sub> rpm.	
Time to ITT rise (10 secs. max).	

5. CLIMB

to FL 350

Continue a normal climb to FL350. During the climb check and record:

Elevator trim		
Aileron trim (not more than 1/2 division from neutral)		
Rudder trim (not more than 1 division from neutral)		
	Capt	Copilot
Altitude		
IAS		
Machmeter		
	Left	Right
N1		
N2		
ITT		
Oil pressure		
Oil temperature		
Controls for backlash, weight, response and break-out loads		
Trimmers for effectiveness, friction and backlash		

6. FUNCTIONING

FL 350

In a typical cruise condition check and record:

Yaw damper operation	
Control of cabin maximum differential pressure, 8.35 psi ± 0.20 psi.	
Close No. 2 main air valve and fully close No. 1 throttle, check cabin altitude does not increase. (There will be a transient cabin VSI indication.) Reinststate No.2 main air valve and repeat with No. 1 main air valve closed and No.2 throttle fully closed.	

7. HIGH MACH RUN

FL 350 to FL300

Trim the aircraft accurately at  $M_{MO}$  (or maximum mach number if  $M_{MO}$  is not achievable) in level flight on the lowest reading CSI.

Increase speed to  $M_{MO} + .02$  IMN on the lowest reading CSI mach scale.

Check and record:

Series 700	That overspeed warning occurs, not before airspeed pointer reaches the limit pointer and not later than $M_{MO} + 0.02$ on the CSI Mach scale. The limit pointer should read 0.77 IMN within the thickness of the Mach scale line. Check each CSI in turn by tripping alternate circuit breakers located on panel DA-D (breaker B8 supplies the RH CSI and C8 the LH CHI).	
Series F600	The overspeed warning occurs between $M_{MO} + 0.005$ and $M_{MO} + 0.02$ on the lowest reading Mach indicator.	
That handling qualities are normal and no buffeting or significant trim changes occur.		
Satisfactory operation of the airbrakes.		

The test should be completed by an altitude of 30,000 ft., in order to avoid exceeding  $V_{MO}$ .

8. ENGINE SHUT DOWN AND RELIGHT

FL 350

Shut down No.2 engine for 2 minutes and then times a windmill relight at 220 KIAS at 30,000 ft. (It may not be possible to maintain altitude on one engine. If not carry out the relight at the resultant altitude but increase airspeed to remain within the windmill relight envelope in fig. 4-1 of the Flight Manual).

Windmill N <sub>1</sub> % rpm	
Windmill N <sub>2</sub> % rpm	
Time to ITT rise (10 sec. Max.)	

9. STALLING

FL2010 to FL1000

Prior to each stall trim the aircraft with throttles closed and yaw damper off at about 40% above the scheduled stalling speed and reduce speed at approximately 1 kt. per second until the aircraft stalls. See page 13 for scheduled speeds and allowable tolerances.

Gear up flaps 0° (check operation of gear warning horn 145-153 kt.)	SAT/UNSAT
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Zero fuel weight	
Fuel weight	
Aircraft weight	
Trim speed	
Elevator trimmer setting at trim speed	
	Scheduled
	Achieved
Stick shaker speeds	
Stall speeds	
Characteristics - buffet level, nose or wing drop, full back stick	

Gear up flaps 15° with No 2 stall warning inoperative (breaker B7 pulled)
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Zero fuel weight	
Fuel weight	
Aircraft weight	
Trim speed	
Elevator trimmer setting at trim speed	
	Scheduled
	Achieved
Stick shaker speeds	
Stall speeds	
Characteristics - buffet level, nose or wing drop, full back stick	

Gear down flaps 45° with No 1 stall warning inoperative (breaker B7 re-instated and A7 pulled)
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Zero fuel weight	
Fuel weight	
Aircraft weight	
Trim speed	
Elevator trimmer setting at trim speed	
	Scheduled
	Achieved
Stick shaker speeds	
Stall speeds	
Characteristics - buffet level, nose or wing drop, full back stick	

10. HIGH IAS RUN \_\_\_\_\_ FL100 approx

Increase speed to Vmo + 20 kts., avoiding significant turbulence.		
Series 700	Check that overspeed warning occurs, not before IAS pointer reaches limit pointer on CSI and not later than Vmo + 12 kts. The limit pointer should read Vmo +/- 3 : ie 317 KIAS to 320 KIAS below 11,700 feet.	
	Check LH CSI in turn by tripping B8 circuit breaker ; reset after test	
	Check RH CSI in turn by tripping C8 circuit breaker ; reset after test	
Series F600	Check that overspeed warning occurs between Vmo + 3 and Vmo + 12 kts.	
	Flying controls over small angles for weight and response	
	General airframe behaviour	
	Satisfactory operation of the airbrake	

11. FUNCTIONING \_\_\_\_\_ Any convenient FL

Time flaps 0° to 15° at 220 KIAS		Max. 5.5 secs. ; min. 4 secs.
Time gear down at 220 KIAS		Max. 7 secs.
Time flaps 15° to 25° at 175 KIAS		Max. 3.5 secs. ; min. 2.5 secs.
Time flaps 25° to 45° at 160 KIAS		Max. 7.5 secs. ; min. 5.5 secs.
Time flaps 45° to 15° at 160 KIAS		Max. 6 secs.
Time gear up at 220 KIAS		Max. 7 secs.
Time flaps 15° to 0° at 220 KIAS		Max. 4 secs.

Emergency gear lowering. Check by pulling the red EMERG. U/C handle and hand pumping the gear down.	SAT/UNSAT
Check that the landing gear lights indicate satisfactory lowering and locking.	SAT/UNSAT
Select landing gear DOWN on normal selector and select EMERG. U/C handle in. Re-cycle gear on normal selector.	SAT/UNSAT
<b>NOTE:</b> Sufficient fluid will remain for a further emergency lowering if a genuine failure occurs. The auxiliary hydraulic low level warning light only indicates that the tank is not full.	

Ram Air Operation. Open the dump valve (thus operating the ram air valve) and with the fan off and flood flow off check that air is flowing through the flight deck supply.	SAT/UNSAT
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Airframe de-icing. Select airframe de-icing ON approximately 5 minutes before landing.

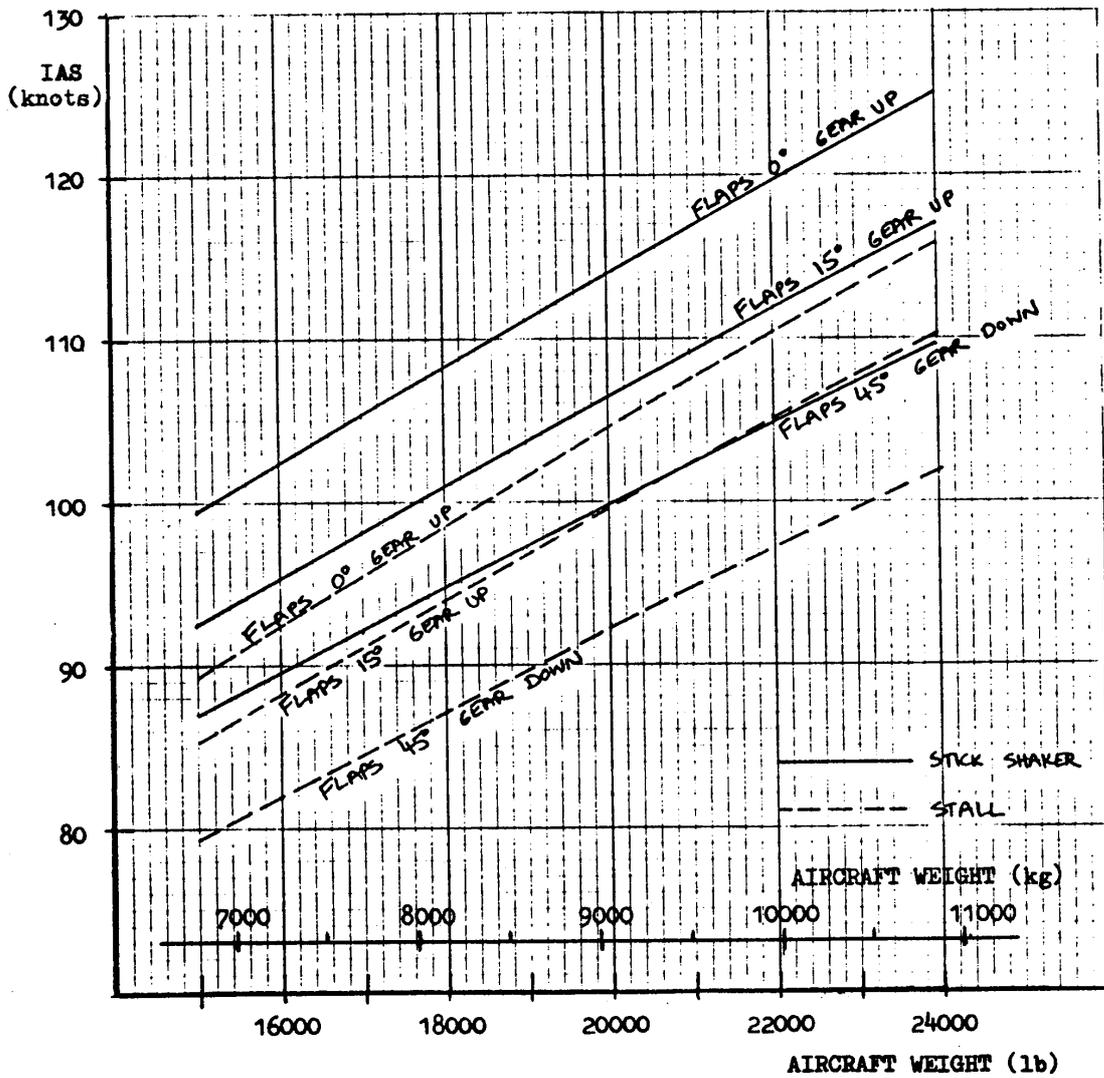
12. LANDING

Carry out a normal landing and record any unusual handling characteristics.	
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13. FUNCTIONING AFTER LANDING

	Left	Right
Check satisfactory functioning of each engine LP cock by closing the cock fully until a drop of fuel flow or RPM is realised, then reinstate immediately. NOTE: this may take up to 60 seconds.	SAT/UNSAT	SAT/UNSAT
Select flight deck valve open and check for flow then release.	SAT/UNSAT	
Shut down engines and then check:		
- emergency flap lowering (main pressure can be exhausted by use of the airbrakes). Note the flap indicator will not indicate and a visual check should be made of the flaps.	SAT/UNSAT	
- select battery switch to emergency and check flight deck emergency lighting.	SAT/UNSAT	
- wing and tail de-icing strips for satisfactory distribution of fluid.	SAT/UNSAT	
- any deficiencies regarding internal or external placarding	SAT/UNSAT	
<b>NOTE :</b> after flight the hydraulic system must be checked and the replenishment of the emergency hydraulic tank etc. carried out.		
<b>Complete the Check Flight Certificate at the front of this document</b>		

H.S. 125-700B AND F600B  
 STICK SHAKER AND STALL SPEEDS  
 C.G. 0.27 AMC



TOLERANCES: Stall Warning  $\pm 3$  knots.  
 Stall Speed  $\pm 3$  knots.  
 Minimum margin between stall warning  
 and stall 5 knots.