

CHECK FLIGHT CERTIFICATE



Socata TBM700

CFS 339 Issue 1

Registration:

Date:

Crew:

Observer:

Performance

Climb #1

| | | |
|------------------|-----|------|
| Average Weight | | |
| Average Altitude | | ft |
| Average Temp. | | °C |
| Speed | | KIAS |
| Achieved Rate | | fpm |
| Scheduled Rate | | fpm |
| Margin | | fpm |
| Permitted Margin | -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 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 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 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



SOCATA TBM700

CFS 339 Issue 1

| | |
|--------------|--|
| Flight Date | |
| Registration | |

INTRODUCTION

This schedule is only applicable to Socata TBM700 aircraft. It is based on the assumption that the everyday operation of the aeroplane serves as a continuous check on the correct 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 test flight shall be one pilot, and one observer to record the results of the tests. The tests should, if possible, be flown 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 Operating Handbook and UK Supplement must be observed.

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

Commanders are reminded that it is illegal to carry passengers on a test 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.

PART 1 - LOADING AND CALCULATION OF WEIGHT

The aircraft is to be loaded with fuel to the maximum ramp weight, using ballast as necessary to keep the C.G. within the Flight Manual limits.

RECORD: AIRCRAFT WEIGHT: (kg/lb)

 FUEL CONTENTS:(USgal)

 FUEL CONTENTS:(kg/lb)
 (1 USgal=6.7 lb=3.04 kg)
 CG:
 (inches/meters AOD)

| | |
|--|--|
| | |
| | |
| | |
| | |

PART 2 - TEST SCHEDULE

Except where otherwise indicated, the flight techniques are those associated with normal operation of the aircraft.

1. PRE-FLIGHT FUNCTIONING CHECKS

Check flight deck placards for presence, accuracy and legibility. SAT/UNSAT

Carry out a comprehensive external and internal pre-flight check SAT/UNSAT

Check all external lights (note: aft facing white nav lights on wing tips) SAT/UNSAT

Check pitots and stall warning vane heaters SAT/UNSAT

Check the Stall Warning by lifting the vane on the right wing SAT/UNSAT

Check all filaments are working correctly. Check the annunciator panel lights Using TEST 1 and TEST 2, the de-ice system lights using LTS TEST SAT/UNSAT

Check both pilot seats locking in all positions SAT/UNSAT

2. ENGINE START

During engine start note :

| | | |
|-----------------------------------|--|-----------|
| Maximum ITT achieved (degrees C) | | Max: 1000 |
| Time to stabilized idle (seconds) | | |

3. AFTER ENGINE START

3.1 After the autopilot has been tested, check each control trimmer for satisfactory operation and indication over its full range:

Check satisfactory operation of electric pitch trim from both control columns. Confirm trim does not operate when single half of switch moved SAT/UNSAT

Manual pitch trim SAT/UNSAT

Aileron SAT/UNSAT

Rudder SAT/UNSAT

Check that holding the AP/TRIMS DISC switch disables Pitch trim, ALT Pitch trim, Aileron, Rudder trim

| | |
|----------------------|-----------|
| Left Control Column | SAT/UNSAT |
| Right Control Column | SAT/UNSAT |

3.2 Autopilot Override

Set the heading bug to the actual heading.

Engage the autopilot in HDG and HEIGHT modes

Confirm autopilot clutches can be overridden

in pitch

SAT/UNSAT

and roll

SAT/UNSAT

Check that moving the trim switches disengages the autopilot

SAT/UNSAT

3.3 Check alternate gear indication using CHECK DN

SAT/UNSAT

3.4 Check pilot oxygen masks for flow and mic operation

SAT/UNSAT

3.5 Check engine manual control using the MAN OVRD lever

SAT/UNSAT

4. TAXYING

Check brake efficiency

SAT/UNSAT

5. TAKE-OFF

Set cabin altitude to 8000 ft for a later test.

Carry out normal take-off - Record any unusual characteristics

6. PERFORMANCE CLIMB

Recommended Starting Altitude
Not Above FL50

Carry out a climb for three minutes. 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 should be maintained throughout the climb. The climb should be carried out clear of cloud or turbulent air and away from areas likely to be affected by standing waves.

| | | |
|----------------|--|-------------|
| Configuration: | Flaps | UP |
| | Gear | UP |
| | Power | 100% torque |
| | BLEED VALVE | ON |
| | Anti ice/de-ice (except PITOT/STALL HTRs) | OFF |
| | INERTial SEParator | OFF |
| | Climb Speed | 130 KIAS |
| | Altimeter set to 1013mb | |

Start-up Weight kg/lb
 Fuel used at start of climb kg/lb
 Aircraft Weight at start of climb kg/lb

| TIME | ALTIMETER | ASI P1 | IOAT | TORQUE |
|------|-----------|--------|------|--------|
| 0 | | | | |
| 0.5 | | | | |
| 1.0 | | | | |
| 1.5 | | | | |
| 2.0 | | | | |
| 2.5 | | | | |
| 3.0 | | | | |

If a second ASI is fitted:

ASI readings at any one moment L KIAS R KIAS

TRIM POSITIONS

| | |
|----------|----------------------|
| Elevator | <input type="text"/> |
| Rudder | <input type="text"/> |
| Aileron | <input type="text"/> |

ENGINE DATA

When stable, record:

| | | | |
|----------|----------------------|--------------------|----------------------|
| Torque % | <input type="text"/> | Oil Temperature °C | <input type="text"/> |
| Np RPM | <input type="text"/> | Oil Pressure psi | <input type="text"/> |
| ITT °C | <input type="text"/> | | |
| Ng % | <input type="text"/> | | |

Start-up Weight kg/lb
 Fuel used at end of climb kg/lb
 Aircraft Weight at end of climb kg/lb
 Average Aircraft Weight during climb kg/lb

10. DE-ICE As convenient

Check operation of:

- At less than 200 KIAS, select INERT SEP and confirm torque and ITT change over 1 minute SAT/UNSAT
- AIRFRAME DE ICE boots SAT/UNSAT
- L WINDSHEILD heat SAT/UNSAT
- R WINDSHEILD heat SAT/UNSAT

11. YAW DAMPER As convenient

- Check that the yaw damper can be overridden SAT/UNSAT
- Check yaw damper operation SAT/UNSAT

12. CRUISE AND HIGH IAS At and Below FL150

Confirm the aircraft does not turn with the slip ball centred and wings level SAT/UNSAT

With 100 % torque and INERT SEP deselected, determine the maximum level flight speed at FL150

| | |
|-------|-------|
| SPEED | KNOTS |
|-------|-------|

(approx 200 knots)

Select the emergency static source and record:

| | |
|---------------------|------|
| P1 Airspeed change | Kts |
| P1 Altimeter change | Feet |

Clear of turbulence, accelerate to not more than 276 KIAS. Record airspeed when audio warning sounds.

| | |
|---------------|-------|
| WARNING SPEED | KNOTS |
|---------------|-------|

(approx 266 KIAS)

Control checks using small movements of rudder and aileron SAT/UNSAT

13. STALLING AND FLAP/GEAR TIMINGS

FL30 to FL100

With flap and gear up, idle power, carry out a stall from a 1.5 V_S trim speed, decelerating at 1 knot/second. Scheduled trim and stall speeds are given in Table 1 and 2. Stall warning should occur 5-15 knots above the stall. Repeat in the other configurations.

TABLE 1

| Flap/Gear Weight (lb)/(kg) | UP/UP | | TO/DN | | LDG/DN | |
|-------------------------------|-------|-------|-------|-------|--------|-------|
| | Trim | Stall | Trim | Stall | Trim | Stall |
| 6600 / 3000 | 113 | 75 | 107 | 71 | 91 | 61 |
| 6400 / 2900 | 111 | 74 | 105 | 70 | 91 | 61 |
| 6200 / 2810 | 111 | 74 | 104 | 69 | 90 | 60 |
| 6000 / 2720 | 110 | 73 | 104 | 69 | 89 | 59 |
| 5800 / 2630 | 108 | 72 | 102 | 68 | 87 | 58 |
| 5600 / 2540 | 107 | 71 | 99 | 66 | 86 | 57 |
| 5400 / 2450 | 104 | 69 | 98 | 65 | 84 | 56 |
| 5200 / 2360 | 102 | 68 | 96 | 64 | 83 | 55 |
| 5000 / 2270 | 99 | 66 | 95 | 63 | 81 | 54 |
| 4800 / 2180 | 98 | 65 | 93 | 62 | 80 | 53 |
| 4600 / 2090 | 95 | 63 | 90 | 60 | 77 | 51 |

(limits: stall speed +3/-5 Knots)

Configuration:

| | |
|---|------|
| Flaps | UP |
| Gear | UP |
| Power | Idle |
| BLEED VALVE | ON |
| Anti ice/de-ice (except PITOT/STALL HTRs) | OFF |
| INERTial SEParator | OFF |
| Yaw damper | OFF |

Record:

| | |
|-----------------|--|
| Aircraft weight | |
|-----------------|--|

13.1 Flaps Up/ Gear Up Stall

| | | | |
|-----------------|------------------------|---|-------|
| Trim speed | knots | Trim setting | |
| | | Achieved warning | knots |
| Scheduled stall | knots | Achieved stall | knots |
| | (limit: Min diff 4kts) | Stall to Warning Achieved Difference | knots |

Time gear to DOWN around 125 KIAS (approx 14 secs)

| |
|------|
| secs |
|------|

Time flaps from UP to TO around 125 KIAS (approx 8 secs)

| |
|------|
| secs |
|------|

13.2 Flaps TO/ Gear Down Stall

| | | | |
|-----------------|------------------------|---|-------|
| Trim speed | knots | Trim setting | |
| | | Achieved warning | knots |
| Scheduled stall | knots | Achieved stall | knots |
| | (limit: Min diff 4kts) | Stall to Warning Achieved Difference | knots |

Time flaps from TO to LDG around 115 KIAS (approx 13 secs)

| |
|------|
| secs |
|------|

13.3 Flaps LDG/ Gear Down Stall

| | | | |
|-----------------|------------------------|---|-------|
| Trim speed | knots | Trim setting | |
| | | Achieved warning | knots |
| Scheduled stall | knots | Achieved stall | knots |
| | (limit: Min diff 4kts) | Stall to Warning Achieved Difference | knots |

Time flaps from LDG to UP around 115 KIAS

(approx 18 secs)

| |
|------|
| secs |
|------|

Time gear to UP around 125 KIAS

(approx 12 secs)

| |
|------|
| secs |
|------|

14. GEAR INDICATION AND WARNING

As convenient

Confirm all lights illuminate when TEST 1 or 2 are selected

TEST 1

SAT/UNSAT

TEST 2

SAT/UNSAT

With the gear and flaps up and at idle

Confirm gear aural warning sounds

SAT/UNSAT

Slowly move the power lever up from idle

Torque when audio warning off

%

around 1%

At a power setting such that the gear warning is not sounding, set full flaps

Confirm aural warning

SAT/UNSAT

Retract the flaps.

15. EMERGENCY GEAR EXTENSION

With speed less than 125 KIAS and at any convenient altitude

Pull the LDG GR Circuit Breaker

Open floor hatch and fully pull the hydraulic by-pass selector

Normal Landing Gear handle to down

Manually pump as necessary to achieve three greens (approx 65 cycles)

Confirm three greens

SAT/UNSAT

Push back the hydraulic by-pass selector

Reset the LDG GR Circuit Breaker

Wait for one minute, then Normal Landing Gear handle to UP

Restow the manual handle and floor hatch

16. NORMAL LANDING

If weather conditions permit, use a high level of reverse thrust during the landing deceleration

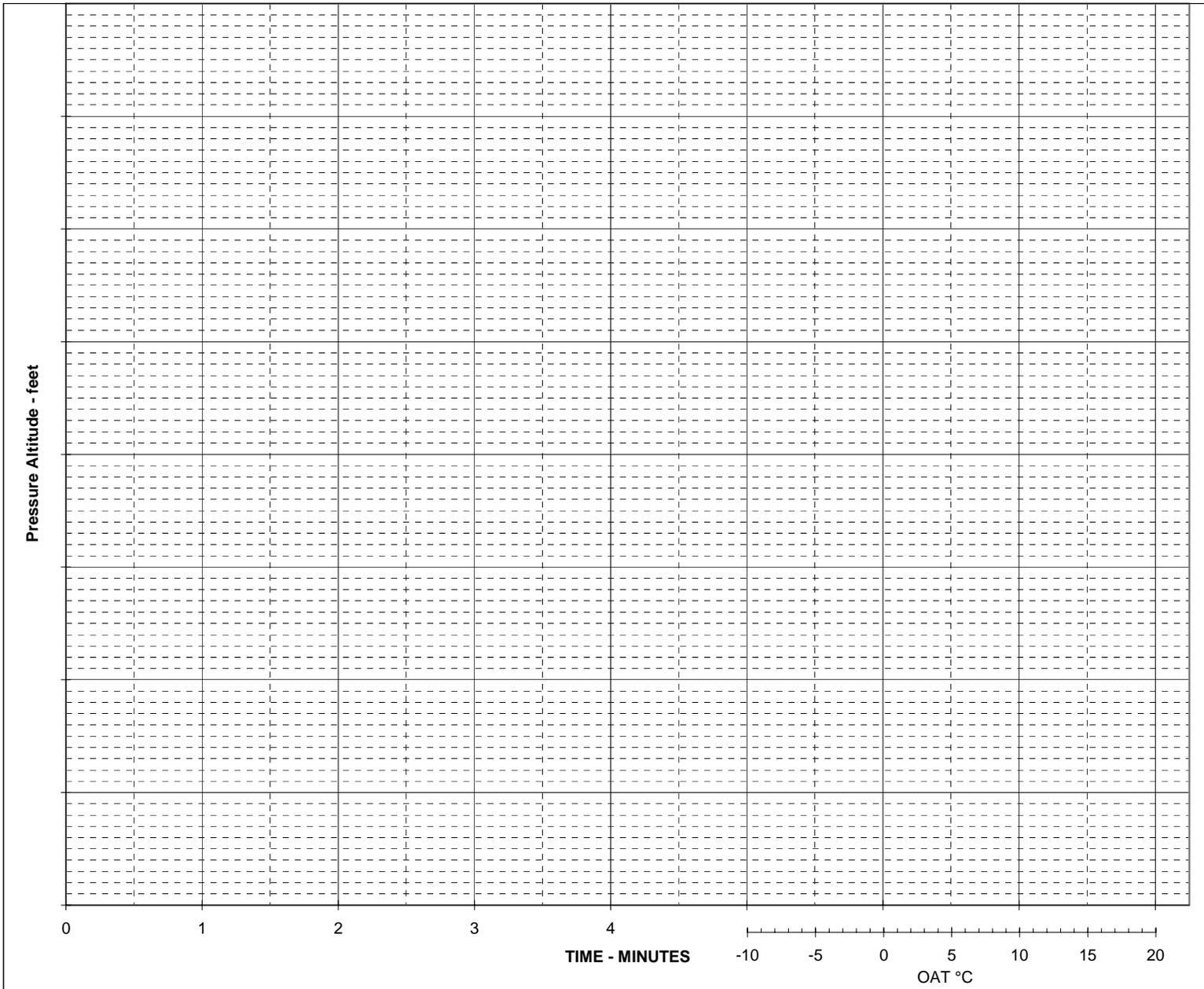
Reverse power

SAT/UNSAT

PART - 3 POST FLIGHT ACTIONS

Plot the results of the performance climb and compare the measured rates of climb with the gross data scheduled in the Flight Manual. Results worse than the allowable tolerance should be investigated before the flight test is signed off as being successfully completed.

Complete the statement of defects and sign the Check Flight Certificate.



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

| | |
|-------------|-------------|
| Mean Weight | _____ Kg/lb |
|-------------|-------------|

| | |
|---------------|------------|
| Mean Altitude | _____ feet |
|---------------|------------|

| | |
|----------|----------|
| Mean OAT | _____ °C |
|----------|----------|

| | |
|----------------------|--------------|
| SCHEDULED ROC | |
| Basic | _____ ft/min |
| Correction | _____ ft/min |
| Correction | _____ ft/min |
| Final SROC | _____ ft/min |

| | |
|--------------|--------------|
| Observed ROC | _____ ft/min |
|--------------|--------------|

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