CHECK FLIGHT CERTIFICATE

AIRBUS A340-311, -313 **CFM -5C2, -5C4 Engines**	**CFS 294 Issue 1**	Registration:

Date:	Crew:	Observer:

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	-80	-120	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.

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

AIRBUS A340-311, -313 with CFM -5C2, -5C4 Engines **CFS 294 issue 1**

Operator/Maintenance Organisation	
Pressure Altitude	Temperature

INTRODUCTION

This schedule is applicable only to Airbus A340-311, -313 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 these test flights, however, the crew are expected generally to monitor the behaviour of all equipment and to report any unserviceable items. In addition to completing all the required tests in the schedule, any characteristics which are considered unsafe or undesirable must be recorded.

MINIMUM CREW

The minimum flight crew shall be increased by one observer to record the results of the tests. The pilot conducting the tests shall be specifically approved by the CAA(SRG) for carrying out Check Flights on Airbus A340 aircraft.

PASSENGERS

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.

OXYGEN

Oxygen shall be available to all persons on board. All Passenger Service Unit oxygen mask covers should be latched before flight.

TEST SCHEDULE

The pilot conducting the tests must be familiar with the contents of this schedule before flight. All members of the required minimum crew must be provided with copies of the schedule for use in flight.

The data contained in this schedule is correct at the time of writing, but might not be in agreement with subsequent Flight Manual amendments; in cases of conflict, the Flight Manual is overriding, and CAA (SRG) Flight Department must be informed. The altitude conditions in the schedule must be observed to ensure adequate safety and validity of the test results. The tests should, if possible, be carried out in the sequence as written.

LOADING

Load the aircraft to a ramp weight between 180,000 Kg to 186,000 Kg and a CG which will remain within Flight Manual Limitations at all times.

Record:

Zero Fuel Weight	Kg
Ramp Weight	Kg
Ramp CG	% MAC

PRE-FLIGHT INFORMATION

Record: - Total airframe hours

Except where otherwise indicated, the flight techniques are those associated with normal operation of the aircraft. Fuel symmetry must be maintained, particularly when aircraft handling is being assessed.

1. BEFORE ENGINE START

1.1 Flight Deck Markings and Placards

Check for presence, accuracy and legibility of all flight deck markings and placards. Record any deficiencies. SAT/UNSAT

1.2 Flight Controls

NOTE: Expect transient drops in hydraulic pressure during these checks

YELLOW ELEC PUMP	ON	(3000 ± 200 psi)
GREEN ELEC PUMP	Normal Flight	
BLUE ELEC PUMP	Normal Flight	

Check : All B and G hydraulics supply indications go amber.

- Spoilers 1-2-3-5 go amber.

Operate the flight controls in each axis to full stroke.

Check:
- The L/R outboard AIL follow the commanded inputs.
- The associated roll spoilers 4 and 6 deflect symbols appear.
- The R ELEV and the RUD follow the commanded inputs.
- (The L ELEV indication is random from neutral to full down).

SAT/UNSAT

BLUE ELEC PUMP	ON (3000 ± 200 psi)
YELLOW ELEC PUMP	Normal Flight

Check:
- All the B hydraulic supply indications go green.
- The spoilers 2 and 3 go green.
- All the Y hydraulic supply indications go amber.
- The spoilers 4 and 6 go amber.

Operate the flight controls in each axis to full stroke.

Check:
- The L/R inboard AIL follow the commanded inputs.
- The associated roll spoilers 2 and 3 deflect symbols appear.
- The L ELEV and the RUD follow the commanded inputs.
  (The R ELEV indication is random from neutral to full down).

SAT/UNSAT

GREEN ELEC PUMP ON
BLUE ELEC PUMP Normal Flight

- All the G hydraulic supply indications go green.
- Spoilers 1 and 5 go green.
- All the B hydraulic supply indications go amber.
- The spoilers 2 and 3 go amber.

Operate the flight controls in each axis to full stroke.

- The L/R inboard/outboard AIL follow the commanded inputs.
- The associated roll spoiler 5 deflect symbols appear.
- The L/R ELEV and the RUD follow the commanded inputs.

SAT/UNSAT

BLUE ELEC PUMP ON
YELLOW ELEC PUMP ON

1.3 Take-off Configuration Warning

FLAPS A take-off setting
RUD TRIM Neutral
SPEED BRAKE Retracted
PITCH TRIM Mid Green Band
ECP RCL Press for 3 secs.
ECAM MEMO-DOOR

Check TOCW operates for each of the following configurations in turn.
(Press NWS Disconnect button during rudder trim check)

Flaps	0	SAT/UNSAT
Flaps	FULL	SAT/UNSAT
RUD TRIM	Above 4.2° (or 3.6° MOD 42983)	SAT/UNSAT
SPEED BRAKE	FULL	SAT/UNSAT
PITCH TRIM	Above 7.3° NU ± 0.2	SAT/UNSAT
	Below 1° NU ± 0.2	SAT/UNSAT

Reset configuration as required.

2. AFTER ENGINE START

2.1 Hydraulic Power

ECAM HYD

Record Manifold Pressure
(3000 ± 200 psi)

B	
Y	

SAT/UNSAT

ENG 1 PUMP OFF

Record Manifold Pressures
(3000 ± 200 psi) SAT/UNSAT

ENG 4 PUMP OFF

Check:

- Indicated pressure goes amber at about 1450 psi SAT/UNSAT
- Residual pressure does not exceed 200 psi SAT/UNSAT

ENG 1 PUMP Normal Flight

Record Manifold Pressure
(3000 ± 200 psi) SAT/UNSAT

ENG 4 PUMP Normal Flight
ENG 2 PUMP OFF

Check:

Indicated pressure goes amber at about 1450 psi SAT/UNSAT
Residual pressure does not exceed 200 psi SAT/UNSAT

ENG 2 PUMP Normal Flight
ENG 3 PUMP OFF

Check:

Indicated pressure goes amber at about 1450 psi SAT/UNSAT
Residual pressure does not exceed 200 psi SAT/UNSAT

ENG 3 PUMP Normal Flight

LEAVE APU RUNNING

2.2 **Brakes**

At taxi speed below 10 kt on a straight clear taxy way.

A/SKID + NWS OFF

Apply symmetric L/R brake pressure, not above 1000 psi.

Check:

Aircraft braking without chatter from left and right seats SAT/UNSAT

A/SKID + NWS ON

3. **TAKE-OFF**

Carry out normal TOGA take-off. (Bump Ratings need not be used).
Record any unusual behaviour.

SAT/UNSAT

Select pressurisation landing elevation to 8000 ft.

4. **PERFORMANCE AND ENGINE RELIGHTING**

4.1 **Second Segment Climb** **Start Altitude not above FL70**

Idle No. 4 engine for 5 minutes before shutting it down.
Carry out a second segment climb on a constant heading clear of cloud and turbulence, recording data for 5 minutes. Recording shall not commence until the aircraft is stabilised at the test conditions with the ß target command satisfied and the rudder force trimmed out as far as possible.

Configuration	Slat/Flap	Configuration 2	
	Gear	UP	
	No.1, 2, 3 Engines	TOGA	
	No. 4 Engine	Windmilling	
	Air Conditioning/Pressurisation	APU Bleed	ON
		2 packs ON, Flow	LO
		Cross Bleed valve	OPEN
		Cargo Cooling (If applicable)	OFF
	Captain's Altimeter	1013Hp	

V2 for Weight (1.23 V_{s1g}) (Table 1) [kt]

Record: Scheduled TOGA N_1 and ECAM TOGA N_1 when TOGA is first selected (Table 2A or 2B). (Max. difference ± 0.5% N_1)

Altitude FT	SAT °C	IAS - KTS	ECAM TOGA N_1	Sched TOGA N_1

SAT/UNSAT

SECOND SEGMENT CLIMB

START WEIGHT | Kg

TIME MINS	ALTITUDE - FT.	IAS - KTS	SAT °C	ECAM/N1%
0				
0.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				
5.0				

RUDDER TRIM

ENGINE DATA AT 3 MINUTES

	1	2	3
N1%			
EGT °C			
N2%			
FUEL FLOW Kg/hr			

FINISH WEIGHT | Kg

MEAN WEIGHT | Kg

4.2 **Restart No. 4 Engine**

Conf. 2
Speed 150 kt
Restart No.4 engine. Record:

Altitude ft	W/M N_1 %	W/M N_2 %	Time to EGT Rise sec.	Max. EGT °C	Time to stable N_1 sec.

SAT/UNSAT

APU Bleed OFF
APU Shut down
Idle No. 4 engine for 5 minutes before advancing thrust lever.

4.3 **Engine Out En-route Climb** **Starting Altitude FL180 to FL150**

Idle No.1 engine for 5 minutes before shutting it down.

Carry out an engine out en-route climb for 5 minutes, on a constant heading, clear of cloud and significant turbulence. Recording shall not commence until the aircraft is stabilised at the test conditions with the rudder force trimmed out.

Configuration	Conf.	Clean
	Gear	UP
	No.1 Engine	Windmilling
	No.2, 3, 4 Engines	MCT
	Air Conditioning/Pressurisation	2 packs ON, Flow LO
		Cross Bleed valve OPEN
		Cargo Cooling OFF (If Applicable)
	Airframe/Engine Anti-icing	OFF
	Captains Altimeter	1013 Hp

En-route climb speed for weight (1.35 V_{S1g}) (Table 1) | kt |

EN-ROUTE CLIMB

START WEIGHT Kg

TIME MINS	ALTITUDE - FT.	IAS - KTS	SAT °C	ECAM/N1%
0				
0.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				
5.0				

RUDDER TRIM

ENGINE DATA AT 3 MINUTES

	2	3	4
N1%			
EGT °C			
N2%			
FUEL FLOW Kg/hr			

FINISH WEIGHT Kg

MEAN WEIGHT Kg

4.4 **Restart No. 1 Engine** **Below 28000 ft**

Conf. CLEAN
Relight the No. 1 engine at Green Dot Speed
Record:

Altitude ft	W/M N_1 %	W/M N_2 %	Time to EGT Rise sec.	Max. EGT °C	Time to stable N_1 sec.

SAT/UNSAT

Idle No. 1 Engine for 5 minutes before advancing the thrust lever.

5. **PRESSURISATION** **Not Above FL200**

5.1 **Oxygen Masks**

Check all flight deck oxygen masks for satisfactory flow and microphone operation. SAT/UNSAT

5.2 **Cabin Depressurisation** **20,000 ft**

Note: The CAB ALT figures are valid if the CABIN PRESS MODE SEL is at AUTO.

PACK 1-2 OFF

CAB ALT ADV appears [ ] SAT/UNSAT
Above 8800 ft

CAB ALT when MW and ECAM 'AIR' appears [ ] SAT/UNSAT
9550 ± 350 ft

Check:

CAB ALT goes red SAT/UNSAT

Clear ECAM to MEMO-CRUISE

CAB ALT when ECAM MEMO cabin signs appears. [ ] SAT/UNSAT
11300 ± 500 ft

CLR ECAM to MEMO-CRUISE
EXTRACT OVRD
Cancel associated ECAM warning

CAB ALT when PAX SYS ON illuminates	[ ] + 0 / 14000 - 500 ft	SAT/UNSAT

PACK 1-2	Normal Flight
EXTRACT	Normal Flight

CAB ALT goes green at/below 9550 ft and the CAB ALT ADV appears	SAT/UNSAT
CAB ALT ADV disappears at/or below 8600 ft.	SAT/UNSAT
OXYGEN TMR RESET	ON
PAX SYS ON extinguishes	SAT/UNSAT

Record: Positions of PSUs which have failed to drop.

[ ]

Ldg Elevation	AUTO

5.3 **<u>Excessive Pressure Relief</u>** **FL350**

MAN PRESS	ON
MAN V/S CTL	DN

Record:

Delta P when ECAM SAFETY valve opens	8.8 ± 0.4 psi	SAT/UNSAT

CAUTION : DO NOT EXCEED 9.2 psi

Check:

Delta P goes amber at/or above 8.9 psi	SAT/UNSAT

Regain normal Delta P and restore the CABIN PRESS system to normal flight.

Check:

Delta P goes green when at/or below 8.8 psi.	SAT/UNSAT

6. **APU RELIGHT** **FL350**

Trim Tank Isolation Valve OPEN (AUTO)
0.80 M
APU START

Record: SAT, TAT	°C	°C
Time from 'Start ON' to 'AVAIL'		sec
Peak EGT		°C

When APU is stable.

Record:

N [ ] % (101 ± 1%)

EGT [ ] °C (450°C Max)

SAT/UNSAT

APU Shut down

7. **HIGH MACH** **FL350 to FL300**

AP OFF

In an approximately 5° ND descent with moderate thrust accelerate to overspeed warning.

Record MN at Warning (0.866 minimum).

PFD 1	PFD 2

SAT/UNSAT

Maintain Full Forward Stick.

As soon as high speed protection is detected, check for nose up tendency on relaxing push force. SAT/UNSAT

DO NOT EXCEED 0.90 M

At 0.87 M: Speed Brake FULL

Check normal behaviour (no excessive buffet or roll). SAT/UNSAT

Speed Brake RET.

Check all panels retract in less than 10 seconds. SAT/UNSAT

8. **NO.2 ENGINE RESTART** **28000 ft**

Idle No. 2 Engine for 5 minutes before shutting it down.

At 280 kt, Restart No. 2 engine.
Record:

Altitude ft	W/M N_1 %	W/M N_2 %	Time to EGT Rise sec.	Max. EGT °C	Time to stable N_1 sec.

SAT/UNSAT

Idle No. 2 Engine for 5 minutes before advancing the thrust lever.

9. **HIGH IAS** **Below FL250**

AP OFF

In an approximately 5° ND descent with moderate thrust, accelerate to overspeed warning.

Record IAS at Warning (330 - 340 kt).

PFD 1	PFD 2

SAT/UNSAT

Maintain Full Forward Stick.

As soon as high speed protection is detected, check for nose up tendency on releasing full forward stick. SAT/UNSAT

DO NOT EXCEED V_{MO} + 15 kt

At 330-340 kt Speed Brake FULL

Check normal behaviour: SAT/UNSAT
(no excessive buffet or roll).

Speed Brake RET.

Check all panels retract in less than 10 seconds. SAT/UNSAT

10. LOW SPEED PROTECTION – NORMAL LAW FL135 ± 2000ft

These tests are to be carried out clear of cloud and turbulence with normal control laws and protection functions operating.

In each required configuration the aircraft should be decelerated smoothly with idle thrust at around 1 knot/second until full back stick is achieved. No attempt should be made to maintain constant altitude; clearance should be obtained to operate in an altitude block of about 5000 ft. Once the operation of the alpha floor has been noted, it should be inhibited and the steady idle thrust deceleration resumed. Scheduled speeds are given in Table 3.
The tests must be discontinued in the event of:

- airspeed reducing to V_{MIN} -5 knots; or
- operation of aural stall warning; or
- abnormal aircraft behaviour.

10.1 Clean Configuration

Record:

Aircraft wt	Kg
CG	%

Stabilise at Green Dot speed (Table 3) with power for level flight.

Record:

Green Dot Speed		Vls	
Scheduled	Indicated	Scheduled	Indicated

SAT/UNSAT

Power Flt. Idle

Decelerate from V_{MIN} + 30 kt until a stable full back stick speed is achieved.

Record:

	Scheduled kt	Achieved kt
V alpha PROT	±5	
V alpha Floor	-	
V alpha MAX	±5	

SAT/UNSAT

10.2 Slats Alpha Lock

Accelerate to V_{LS}
Flaps 1

Decelerate to 148 kt or below (use moderate power). Adjust angle of attack to approximately 9° NU.

Flaps 0

Check:	No slat Retraction	SAT/UNSAT
	A-LOCK pulsing message appears	SAT/UNSAT

Accelerate and select conf. clean.

10.3 Conf. 1 + F Gear Up

Record:	Aircraft Wt.	Kg
	CG	%

Decelerate from V_{LS}, with power at Flight Idle until a stable full back stick speed is achieved. Record:

	Scheduled kt	Achieved kt
V alpha Floor	-	
V alpha MAX	±5	

SAT/UNSAT

10.4 Conf. FULL Gear Down

Record:	Aircraft Wt.	Kg
	CG	%

Stabilise at V_{LS}, power for level flight.
After about 30 seconds, Record:

	Scheduled kt	Achieved kt
V_{LS}	±3	

SAT/UNSAT

Power Flight Idle

Decelerate until a stable full back stick speed is achieved. Record:

	Scheduled kt	Achieved kt
V alpha PROT	±5	
V alpha Floor	-	
V alpha MAX	±5	

11. STALL WARNING

Recommended FL150
Limits 10000ft AGL to FL180

The following tests are to be carried out clear of any cloud and turbulence. Decelerations are to be performed at idle thrust (inhibit alpha floor) at around 1 knot/second until the onset of aural stall warning. Scheduled stall warning speeds (V_{SW}) are given in Figure 4. The tests must be discontinued in the event of:-

- airspeed reducing to V_{SW} -5 knots; or
- abnormal aircraft behaviour.

ATC	TXPR 1
ADR 3	OFF
After 10 Sec:	
ADR 2	OFF

CAUTION: ALTERNATE CONTROL LAWS IN OPERATION. PROTECTION FUNCTIONS LOST

Set F/O EFIS DMC to '1'

11.1 Configuration 3, Gear Down

Commence a deceleration from not less than V_{SW} + 15 knots.

Aircraft Weight	Kg
CG	%

	Scheduled kt	Achieved kt
Vsw		

Any abnormal behaviour SAT/UNSAT

11.2 Conf. 1 + F, Gear Up

Commence a deceleration from not less than V_{SW} + 15 knots.

Aircraft Weight	Kg
CG	%

	Scheduled kt	Achieved kt
Vsw		

Any abnormal behaviour SAT/UNSAT

ADR 3, 2 ON

Reset F/O EFIS DMC to 'Normal'
Accelerate and set Conf Clean, GU

12. **FUEL JETTISON** **As convenient**

Select on MCDU 1 or 2 the FUEL PRED function key and enter the required final GW through the MCDU JETGW option line key.

ECAM page	FUEL	
JETTISON ARM	ON	
Check:	ON light illuminates.	SAT/UNSAT
JETTISON ACTIVE	ON	
Check :	ON and OPEN lights illuminate.	SAT/UNSAT
	L/R jettison valves synoptics appear.	SAT/UNSAT
	Verify from the cabin that the L/R outlets dump fuel.	SAT/UNSAT
	FOB decreases by approx. 1000 Kg/min	SAT/UNSAT

Before reaching the inserted JETGW value.

JETTISON ACTIVE	Normal Flight	
Check:	ON and OPEN lights extinguish	SAT/UNSAT
	L/R JETTISON values synoptic disappear.	SAT/UNSAT
JETTISON ARM	Normal Flight	
Check:	ON light extinguishes	SAT/UNSAT
JETTISON ARM and ACTIVE	ON	

When at the JETGW value

	OPEN light extinguishes	SAT/UNSAT
JETTISON ARM and ACTIVE	Normal Flight	
	ON lights extinguish	SAT/UNSAT
	L/R JETTISON valves synoptic disappear	SAT/UNSAT

Verify from the cabin that the L/R JETTISON outlets clear dumped fuel residuals.

13. **LANDING GEAR GRAVITY EXTENSION**

At or below 200 kt.

LDG GEAR GRVTY EXTENSION command bar. Release Gear.

Record: Gear Extension Time [ ] SAT/UNSAT
25 Sec. Max.

Check: CTR body gear does not extend. SAT/UNSAT
CTR body gear doors do not open. SAT/UNSAT

LDG GEAR DOWN

LDG GEAR GRVTY command bar RESET

Record: Landing gear doors close [ ] SAT/UNSAT
10 Sec. Max.

LDG GEAR UP
LDG GEAR GRVTY EXTENSION OFF

14 **ENGINE ACCELERATIONS** **Below FL100**

Conditions:
- Conf. FULL, Gear Down
- Airspeed VLS
- Air Conditioning/Pressurisation ON
- All anti-ice off

On each engine in turn, close the thrust lever and allow the engine to stabilise at idle. Record the idle N1 and N2. Rapidly open the thrust lever to the TOGA position and record the acceleration time to go-around N_1.

SAT [°C] Altitude [ft]

Scheduled TOGA N_1 (Table 2) [%] ECAM TOGA N_1 [%]

Engine	No.1	No.2	No.3	No.4
Idle N1 %				
Idle N2 %				
Acceleration Time Sec.				

(Limit acceleration time 8 seconds max.)

SAT/UNSAT

15. **RAT EXTENSION** **FL100**

Confirm Gear UP

ENG 1 and 4 PUMPS OFF
RAT MAN ON Press for a few seconds

The RAT OUT MEMO indication appears SAT/UNSAT

The GREEN Pressure is available SAT/UNSAT

Slow the Aircraf to 160 kt:
Record:

GREEN Collector Pressure (2800 ± 100 psi) SAT/UNSAT

RAT RPM (Approx 5400 rpm) SAT/UNSAT

16. **LANDING**

Carry out a normal landing.

Note any unusual characteristics.

SAT/UNSAT

17. **POST-FLIGHT ACTIONS**

17.1 Complete the statement of defects and sign the Flight Test Certificate and state whether or not the aeroplane needs to be re-flown.

17.2 Plot the results of the performance climbs and compare the measured rates of climb with the gross data scheduled in Flight Manual.

17.3 Pass the completed Flight Test report to the Regional Manager of the CAA Regional Office.

TABLE 1

CLIMB SPEEDS

Aircraft Weight Kg	***Conf. 2 GU*** $V_2 = 1.23\ V_{S1G}$ ***kt.***	***Conf Clean GU*** $V_{E/R} = 1.35\ V_{S1G}$ ***kt.***		
		Altitude ft		
		10000	**15000**	**20000**
190000	141	213	222	230
185000	139	210	217	226
180000	137	208	213	222
175000	135	205	209	218
170000	133	202	205	214
165000	131	199	201	210
160000	129	196	198	205
155000	127	192	194	200
150000	125	189	190	195

TABLE 2A

M = 0.225
Bleed and Air Cond: ON
A/F and Eng A/Ice: OFF

TOGA -5C2 Rating

CFM56-5C2 ENGINE MANAGEMENT - GO AROUND M = .225

CFM56-5C2
GO AROUND
N1
AIR CONDITIONING ON
MACH=.225

N1 CORRECTIONS FOR AIR BLEED	OAT < ISA + 15 (°C)	OAT ≥ ISA + 15 (°C)
AIR CONDITIONING OFF	1.0	1.0
NACELLE ANTI-ICE ON	0.0	-1.8
NACELLE ANTI-ICE AND WING ANTI-ICE ON	0.0	-2.5

OAT (C)	PRESSURE ALTITUDE (FT) -2000.	-1000.	0.	1000.	2000.	3000.	4000.	5000.	6000.	7000.
-54.0	79.1	80.1	81.1	81.6	82.1	82.6	83.1	83.5	84.1	84.7
-50.0	79.8	80.8	81.8	82.3	82.8	83.3	83.8	84.3	84.9	85.4
-46.0	80.5	81.5	82.5	83.0	83.5	84.0	84.5	85.0	85.6	86.2
-42.0	81.1	82.2	83.2	83.7	84.1	84.7	85.2	85.7	86.3	86.9
-38.0	81.8	82.8	83.8	84.3	84.8	85.3	85.8	86.3	86.9	87.5
-34.0	82.4	83.5	84.5	85.0	85.5	86.0	86.5	87.0	87.6	88.2
-30.0	83.1	84.1	85.1	85.6	86.1	86.7	87.2	87.7	88.3	88.9
-26.0	83.7	84.8	85.8	86.3	86.8	87.3	87.8	88.3	89.0	89.6
-22.0	84.3	85.4	86.4	87.0	87.5	88.0	88.5	89.0	89.5	90.2
-18.0	85.0	86.1	87.1	87.6	88.1	88.7	89.2	89.7	90.3	90.9
-14.0	85.6	86.7	87.7	88.3	88.8	89.3	89.8	90.3	91.0	91.6
-10.0	86.2	87.3	88.4	88.9	89.4	89.9	90.4	91.0	91.6	92.2
-6.0	86.8	87.9	89.0	89.5	90.0	90.5	91.1	91.6	92.2	92.8
-2.0	87.4	88.5	89.6	90.1	90.6	91.2	91.7	92.2	92.9	93.5
2.0	88.0	89.1	90.2	90.7	91.2	91.8	92.3	92.8	93.5	94.1
6.0	88.6	89.7	90.8	91.4	91.9	92.4	93.0	93.5	94.1	94.7
10.0	89.2	90.4	91.4	92.0	92.5	93.0	93.6	94.1	94.8	95.4
14.0	89.8	91.0	92.0	92.6	93.1	93.7	94.2	94.7	95.4	96.0
18.0	90.4	91.5	92.6	93.2	93.7	94.3	94.8	95.3	96.0	95.9
22.0	91.0	92.1	93.2	93.8	94.3	94.8	95.4	95.3	95.3	95.2
26.0	91.6	92.7	93.8	94.3	94.9	94.8	94.8	94.7	94.6	94.6
30.0	92.1	93.3	94.4	94.3	94.3	94.2	94.1	94.0	93.9	93.8
34.0	92.7	93.2	93.6	93.6	93.6	93.5	93.4	93.3	93.0	92.4
38.0	91.9	92.4	92.7	92.8	93.0	92.9	92.6	92.0	91.4	90.7
42.0	91.1	91.6	91.8	91.9	92.1	91.7	91.1	90.4	89.7	
46.0	90.2	90.4	90.6	90.8	90.7	90.2	89.5			
50.0	89.1	89.4	89.7	89.6	89.3	OAT <ISA + 15 (C)				
54.0	88.2	88.5	88.7				OAT ≥ISA + 15 (C)			

TABLE 2B

TOGA –5C4 Rating

CFM56-5C4 ENGINE MANAGEMENT - GO AROUND M = .225

CFM56-5C4 GO AROUND N1 AIR CONDITIONING ON MACH=.225	N1 CORRECTIONS FOR AIR BLEED	OAT < ISA + 15 (C)	OAT ≥ ISA + 15 (C)
	AIR CONDITIONING OFF	1.000	1.000
	NACELLE ANTI-ICE ON	0.000	-1.800
	NACELLE ANTI-ICE AND WING ANTI-ICE ON	0.000	-2.500

OAT (C)	PRESSURE ALTITUDE (FT)									
	-2000.	-1000.	0.	1000.	2000.	3000.	4000.	5000.	6000.	7000.
-54.0	82.0	83.2	84.3	85.2	86.0	86.8	87.5	88.2	89.2	90.2
-50.0	82.7	83.9	85.0	85.9	86.7	87.5	88.2	89.0	89.9	90.9
-46.0	83.4	84.6	85.8	86.6	87.5	88.2	89.0	89.7	90.7	91.7
-42.0	84.1	85.3	86.5	87.3	88.2	88.9	89.7	90.4	91.4	92.4
-38.0	84.8	86.0	87.1	88.0	88.8	89.6	90.4	91.1	92.0	93.0
-34.0	85.4	86.6	87.8	88.7	89.5	90.3	91.0	91.8	92.7	93.7
-30.0	86.1	87.3	88.5	89.3	90.2	91.0	91.7	92.4	93.4	94.4
-26.0	86.8	88.0	89.2	90.0	90.9	91.7	92.4	93.1	94.1	95.1
-22.0	87.4	88.6	89.8	90.7	91.6	92.3	93.1	93.8	94.8	95.8
-18.0	88.1	89.3	90.5	91.4	92.2	93.0	93.8	94.5	95.5	96.5
-14.0	88.7	90.0	91.2	92.0	92.9	93.7	94.4	95.2	96.1	97.1
-10.0	89.3	90.6	91.8	92.7	93.5	94.3	95.1	95.8	96.8	97.8
-6.0	90.0	91.2	92.4	93.3	94.2	95.0	95.7	96.4	97.4	98.4
-2.0	90.6	91.8	93.1	93.9	94.8	95.6	96.4	97.1	98.1	99.0
2.0	91.2	92.5	93.7	94.6	95.5	96.2	97.0	97.7	98.7	99.7
6.0	91.8	93.1	94.3	95.2	96.1	96.9	97.6	98.4	99.4	100.3
10.0	92.4	93.7	95.0	95.9	96.7	97.5	98.3	99.0	100.0	101.0
14.0	93.1	94.3	95.6	96.5	97.4	98.1	98.9	99.6	100.6	101.6
18.0	93.6	94.9	96.2	97.1	98.0	98.8	99.5	100.3	101.2	*101.2*
22.0	94.2	95.5	96.8	97.7	98.6	99.4	100.1	*100.0*	*100.0*	*99.8*
26.0	94.8	96.1	97.4	98.3	99.2	*99.1*	*99.0*	*98.9*	*98.7*	*98.6*
30.0	95.4	96.7	*98.0*	*98.0*	*97.9*	*97.9*	*97.8*	*97.5*	*97.5*	*97.3*
34.0	*96.0*	*96.5*	*96.9*	*96.9*	*96.9*	*96.9*	*96.8*	*96.6*	*96.4*	*95.7*
38.0	*95.1*	*95.5*	*95.9*	*96.0*	*96.2*	*96.1*	*95.8*	*95.3*	*94.7*	*94.0*
42.0	*94.3*	*94.7*	*94.9*	*95.2*	*95.3*	*94.9*	*94.4*	*93.8*	*93.1*	
46.0	*93.4*	*93.7*	*93.9*	*94.1*	*94.0*					
50.0	*92.4*	*92.7*	*93.0*	*92.9*	*92.6*					
54.0	*91.5*	*91.8*	*92.0*							

OAT < ISA + 15 (C)

OAT ≥ ISA + 15 (C)

TABLE 3

V_{LS}, $V_{AUTO\ TRIM\ STOP}$, $V_{ALPHA\ MAX}$, for 30% CG

CG Correction to V_{LS}, $V_{AUTO\ TRIM\ STOP}$ and $V_{ALPHA\ MAX}$ Speeds:
For each 5% fwd (aft) of 30%, add (subtract) 1 kt

Conf. Clean GU

Aircraft Weight Kg	***Green Dot (± 5 kt.)***	***V_{LS} (± 4 kt.)***	***$V_{AUTO\ TRIM\ STOP}$ (± 5 kt.)***	***$V_{ALPHA\ MAX}$ (± 5 kt.)***
190	224	200	184	168
185	221	196	181	165
180	218	192	177	162
175	216	189	174	159
170	213	185	171	156
165	210	181	167	153
160	207	178	164	151

Conf. 1 + F GU

Aircraft Weight Kg.	***$V_{ALPHA\ MAX}$ (± 5 kt.)***
190	127
185	125
180	123
175	122
170	120
165	118
160	116

Conf. Full GD

Aircraft Weight Kg	***V_{LS} (± 3 kt.)***	***$V_{AUTO\ TRIM\ STOP}$ (± 5 kt.)***	***$V_{ALPHA\ MAX}$ (± 5 kt.)***
190	138	126	115
185	136	125	113
180	134	123	111
175	132	121	110
170	130	120	108
165	128	118	106
160	126	116	105

TABLE 4

Stall Warning Speeds

Aircraft Weight Kg	V_{SW} kt.	
	Conf. 3	Conf. 1+F, GU
190	124	125
185	122	123
180	121	121
175	119	119
170	117	118
165	115	116
160	114	114