CHECK FLIGHT CERTIFICATE

Boeing 747-200 (RB211-524 D4 and D4X Engines) **CFS 204 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	-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.
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 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 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

Boeing 747-200 (RB211-524 D4 and D4X Engines) **CFS 204 Issue 1**

Registration	
Flight Date	

INTRODUCTION

This schedule is applicable only to Boeing 747-200 aircraft with RB 211 Engines. It 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 check flights, however, the crew are expected generally to monitor the behaviour of all equipment and report any unserviceable items. In addition to completing all the required tests in this schedule, any characteristics which are considered unsafe or undesirable must be recorded.

MINIMUM CREW

The minimum flight crew shall be increased by one flight 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 Boeing 747 aircraft.

PASSENGERS

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.

CHECK FLIGHT 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.

PRE-FLIGHT PREPARATION

Oxygen shall be available to all persons on board. All Passenger drop out oxygen mask covers should be latched before the flight.

Engines Off		Touchdown	
Wheels Rolling		Take-off	
Block Time		Flight Time	

Operator		
Location		
Captain		
Co-Pilot		
Flight Engineer(s)	(1)	(2)
Observer		
Ramp Weight		kg
C.G. Position	Index =	%MAC
Zero Fuel Weight		kg

Fuel Contents:

No. 1 Reserve	No. 1	No. 2	No. 2 Reserve	Centre	No. 3 Reserve	No. 3	No. 4	No. 4 Reserve

Total Fuel at Start Up:	kg

1. PRE FLIGHT

1.1 Before Main Engine Start, Using A.P.U. Power

Carry out normal Pre-Flight Check, before starting engines.
(The engine start check must not be done).

1.1.1 Flight Deck Placards

Check: Engravings and colour codings for presence, accuracy and legibility: SAT/UNSAT

1.1.2 A.S.I. Limit Speed Hands

Record: Normal V_{MO} selection 375-383 kt at S.L. :

Capt: kt F/O: kt SAT/UNSAT

Reduced V_{MO} selection 341-348 at SL:

Capt: kt F/O: kt SAT/UNSAT

1.1.3 Take-Off Configuration Warning

All A.D.Ps in AUTO

Flaps at 10º

Check stabiliser trim is within a green band.

No 3 throttle advanced, check the warning with:

(a) Speed Brake lever out of detent: SAT/UNSAT

(b) Flaps less than 10º and more than 20º: SAT/UNSAT

Leave Flaps at 20º.

(c) Warning commences with stabiliser outside (-0 /+.025 div) green band when selected to:

(i) APL ND (1.8 to 7.5) SAT/UNSAT
(ii) APL NU (4.5 to 10.0) SAT/UNSAT

(d) Leading edge flaps not fully extended:

Leading edge ALT FLAPS arm switch ARM
Set 1 leading edge directional switch UP
Check horn sounds when green light extinguishes on P4 annunciator
Set 1 leading edge directional switch DOWN
Check horn is silenced when green lights illuminate on P4 annunciator

Repeat on leading edge flap sets 2, 3 and 4.

No.1 Set	No. 2 Set	No.3 Set	No. 4 Set

SAT/UNSAT

ALT FLAPS arm switch and directional switches OFF

Close No. 3 throttle.

1.1.4 Stabiliser Operation

Check: Adequate in-motion noise level: SAT/UNSAT

Trim wheel movement for momentary selections: SAT/UNSAT

1.1.5 Flap Safety Switches

Check: Flaps at 20º
Trailing Edge ALT FLAPS arm switch to ARM and extend flaps to 25º
ALT FLAPS arm switch to OFF

Check: Flaps do not move from 25º: SAT/UNSAT

Select flaps to 25º then to 10º
Flaps at 10º
Trailing Edge arm switch to ARM and retract flaps to 5º
ALT FLAPS arm switch to OFF

Check: Flaps do not move from 5º: SAT/UNSAT

Select flaps to 5º then to 0º

1.1.6 Stick Nudger (If Applicable)

Flaps 0º
Stall Warning to TEST

Check: Control column moves forward (16 lb nominal): SAT/UNSAT
Stall Warning OFF

Check: Control column returns aft: SAT/UNSAT
Switch OFF A.D.Ps

1.1.7 Emergency Intercom (If Applicable)

Check intercom at each crew station with the audio select panel amplifier switch in the FAIL (or AMP 2) position, as applicable:

Capt …….. F/O …….. E/O …….. 1.OBS …….. 2.OBS …….. SAT/UNSAT

1.1.8 EPRL Computer (If Applicable)

With 3 AC packs on, check the T.A.T. E.P.R.L. readout in T.O. mode with 0ºC and 40ºC injected:

Temp ºC	Scheduled EPR (Fig 1)	Comp E.P.R.
0ºC		
40ºC		

(E.P.R. max tolerances +.02 and -.01) SAT/UNSAT

1.2 Start Engines

Complete engine start check list. With engines running check and record:

1.2.1 Ess AC Bus Transfer Facility

At all switch positions.

Check: Normal: 1, 2 and 3: SAT/UNSAT

Return to normal.

NOTE: Pause between making selections.

Establish aircraft electrics.

1.2.2 Engine Ground/Flight Idle Settings

With Flaps 25º set, thrust levers closed,
Check: Ground idle light ON: SAT/UNSAT

Record: Ground idle N_1

No. 1	No. 2	No. 3	No. 4

Trip aural warning C/B P6 M21
Trip landing gear PRIM DIS AND CONT P12 [DC Ess Misc] J32
Trip LG ALT DIS AND CONT P12 [DC Bus 1 Misc] N35

Check: N1's increase by approx 9% to11%

Record: N1 Increments

No. 1	No. 2	No. 3	No.4

SAT/UNSAT

Reset aural warning C/B P6 M21
Reset landing gear PRIM DIS AND CONT P12 [DC Ess Misc] J32
Reset LG ALT DIS AND CONT P12 [DC Bus 1 Misc] N35

Check: N1's return towards original values

No. 1	No. 2	No. 3	No. 4

Check: Ground idle ON after 5 sec: SAT/UNSAT

Select flaps to take-off setting

1.2.3 Stabiliser Trim Brake

With control column fully forward, select NOSE UP trim and check the stabiliser does not run: SAT/UNSAT

With trim still selected, move the control column slowly aft and check that the stabiliser runs at about 2/3rds stick movement to neutral: SAT/UNSAT

With control column fully back and NOSE DOWN trim selected check the stabiliser does not run: SAT/UNSAT

With trim still selected move the control column slowly forward and check that stabiliser runs at approximately 2/3rds stick movement towards neutral: SAT/UNSAT

1.2.4 A.P.U. Shut Down On Fire Handle

Close A.P.U. bleed air switch.

Pull A.P.U. fire handle to shut down A.P.U
Switch to STOP
Reset A.P.U. fire handle SAT/UNSAT

1.3 Taxying Check

Take-off Configuration Warning (With Body Gear Not Centred)

Stabiliser, speed brakes and flaps set for take-off

In a significant turn:

Check: Amber C.W.L. warning light ON when body gear Steering functioning: SAT/UNSAT

Then rapidly open and close No. 3 thrust lever and check warning horn: SAT/UNSAT

2. TAKE-OFF

Carry out a normal full power take-off.
Record: Any unusual characteristics:

SAT/UNSAT

Complete the reduced V_{MO} overspeed warning check before reserve tanks 2 and 3 are empty.

DO NOT use centre tank fuel until after the fuel jettison system check.

3. REDUCED V_{MO} OVERSPEED WARNING — Not Below 8000 ft.

Accelerate and record airspeeds at the warning:

Capt: **……** A.S.I. F/O: **……** A.S.I.
(limits 348-354 kt)

SAT/UNSAT

No. 2 and 3 reserves can now be used.

4. ALTERNATE STATICS — 4,000 ft A.G.L. to FL 70

Gear UP
Flaps 20º
I.A.S. 160 kt.
Record: Altimeter change with alternate static (+ 75 ft nominal) :

Capt: **……** ft F/O: **……** ft

SAT/UNSAT

5. ENGINE ACCELERATION TIMES — 4,000 ft A.G.L. to FL 70

Trip aural warning C/B (P6 M21)
Flaps 25º
I.A.S. 160 kt.
3 AC Packs ON
Gear UP
Record: T.A.T. / E.P.R.L. readout in G.A. mode:

(E.P.R. Max Tolerances +.02/-.01)

TAT	Altitude	Sched. EPR (Fig 1c)	Comp EPR

SAT/UNSAT

On each engine in turn:

Open throttle, mark thrust lever position at G.A. E.P.R.

Record: G.A. N_1

No. 1	No. 2	No. 3	No.4

Idle engine.

Record:

Idle N_1 %				
Idle N_2 %				
Idle N_3 %				

Slam thrust lever to marked position.

Accel time to GA N1-3% Sec. (8 sec max)

SAT/UNSAT

Accelerate and select Flaps UP

Reset aural warning C/B (P6 M21)

6. STALL WARNING CHECKS AND FLAP/GEAR TIMING

FL 150(limits FL 180 to FL 120)

Make the following stall warning checks and record the gear and flap operating times in sequence. For each stall warning check, trim the aircraft initially, power off in a straight steady flight at the appropriate trim speed, 1.3 V_S, then reduce speed smoothly at approximately 1 kt / sec. See Fig 2 for scheduled Trim and Stick Shake speeds.

6.1 Flaps UP Gear UP

Record:

Weight kg	Trim Speed	Elevator Trim Setting	Stick Shake		Nudger (TICK)
			Sched	Actual (-2 /+10kt)	

Comment: ……

Record: Flaps 0º to 1º time : (5 secs) T.E. ……
(10 secs) L.E. …… SAT/UNSAT

Record: Flaps 1º to 5º time : (35 secs) T.E. ……
(10 secs) L.E. …… SAT/UNSAT

Record: Flaps 5º to 10º time : (5 secs) T.E. …… SAT/UNSAT

6.2 Flaps 10º Gear UP

Record:

Weight kg	Trim Speed	Elevator Trim Setting	Stick Shake		Nudger (TICK)
			Sched	Actual (-2/+6kt)	

Comment : ……

6.3 Flaps 30º Gear Down

Record : Gear down time : (18 secs) Gear ……SECS SAT/UNSAT

(22 secs) Doors ……SECS SAT/UNSAT

Record : Flaps 10º to 30º time : (16 secs) ……SECS SAT/UNSAT

Record:

Weight kg	Trim Speed	Elevator Trim Setting	Stick Shake		Nudger (TICK)
			Sched	Actual (- 2 / + 6 kt)	

Comment : ……

6.4 **Flap and Gear Timings**

Flaps 30º to 10º time :	(14 secs)..		……SECS	SAT/UNSAT
Gear UP time :	(16 secs)	Gear	……SECS	SAT/UNSAT
	(20 secs)	Door	……SECS	SAT/UNSAT
Flaps 10º to 5º time :	(14 secs)		……SECS	SAT/UNSAT
Flaps 5º to 1º time :	(35 secs)	T.E.	……SECS	SAT/UNSAT
	(10 secs)	L.E.	……SECS	SAT/UNSAT
Flaps 1º to 0º time :	(5 secs)	T.E.	……SECS	SAT/UNSAT
	(10 secs)	L.E.	……SECS	SAT/UNSAT

Climb to FL 200

Idle No. 1 engine in preparation for shutdown after Fuel Jettison System Checks.

7. **FUEL JETTISON SYSTEM** **Minimum 10,000 ft A.G.L.**

Set Fuel System - All booster pumps ON.
No. 1 cross feed valve OPEN.
Nos 2, 3 and 4 cross feed valves CLOSED.

Switch left jett / ovrd pump ON.
Check: LP light OUT & pressure rise on
No.1 eng. Fuel pressure gauge: Left …… SAT/UNSAT

Right …… SAT/UNSAT

Switch left jett / ovrd pump OFF.
Check: LP light ON & pressure drop on
No.1 eng. Fuel pressure gauge: Left …… SAT/UNSAT

Right …… SAT/UNSAT

Repeat on right jett / ovrd pump

Switch No. 2 outboard jett pump ON.
Check: LP light OUT : SAT/UNSAT

Open right centre wing jett valve.
Check: Pressure rise on No.1 eng. fuel pressure gauge: SAT/UNSAT

Switch No. 2 outboard jett pump OFF.
Check: Pressure drop on No.1 eng. fuel pressure gauge: SAT/UNSAT

Switch No. 2 outboard jett pump ON.
Check: LP light OUT & pressure rise on No.1 eng. fuel pressure gauge: SAT/UNSAT

Close right wing centre wing jett valve.
Check: Pressure drop on No.1 eng. fuel pressure gauge: SAT/UNSAT

Switch No. 2 inboard jett pump OFF.
Switch No. 3 inboard jett pump ON.
Check: LP light OUT. SAT/UNSAT

Open left centre wing jett valve.
Check: Pressure rise on No.1 eng. fuel pressure gauge: SAT/UNSAT

Switch No. 3 inboard jett pump OFF.
Check: Pressure drop on No.1 eng. fuel pressure gauge: SAT/UNSAT

Switch No. 3 outboard jett pump ON.
Check: LP light OUT & pressure rise on No.1 eng. fuel pressure gauge: SAT/UNSAT

Close left centre wing jett valve.
Check: Pressure drop on No.1 eng. fuel pressure gauge: SAT/UNSAT

Open left and right jett nozzle valves.
Observe flow commences: SAT/UNSAT

Close jett nozzle valves.
Check: Flow stops: SAT/UNSAT

Switch No. 3 outboard jett pump OFF.
Open No. 1 and No. 4 trans valves.
Check: Transfer to main tanks 2 and 3. SAT/UNSAT

Close No. 1 and No.4 trans valves.
Centre tank fuel can now be used.

Resume normal fuel management.

8. ENGINE SHUTDOWN / RELIGHT FL 200

8.1 No.1 Engine

After 5 minutes at idle :

Trip No.1 E.D.P. hydraulic supply C/B (P6 M25).
Shut down engine by pulling fire handle.

Check: Fuel flow falls rapidly to zero
(slow fall – motor not closing) : SAT/UNSAT

Engine fuel valve closed (bright / dim) : SAT/UNSAT

Bleed air valve CLOSE – light illuminated : SAT/UNSAT

E.D.P. depressurises : SAT/UNSAT

A.D.P. run light ON : SAT/UNSAT

GEN FIELD trips – light illuminates after delay: SAT/UNSAT

Start lever to CUT-OFF.
Reset fire handle.
Reset No.1 E.D.P. hydraulic supply C/B (P6 M25).

At 160 knots, flaps 20º, with E.G.T below 100ºC and duct pressure of at least 30 psi, relight No.1 engine using starter and GRN START ignition.

Record: Time from fuel ON to EGT rise (90 secs max) : **……** SECS
Satisfactory N_1 acceleration to stabilised idle without excessive E.G.T. SAT/UNSAT

Leave engine at idle for 5 minutes

Check: Electrics, hydraulics, fuel and air conditioning
restored to NORMAL.

Idle No.4 engine

8.2 No.4 Engine

After 5 minutes at idle:

Trip No.4 E.D.P. hydraulic supply C/B (P6 M28)
Shut down engine by pulling fire handle.

Check: Fuel flow falls rapidly to zero (slow fall – motor not closing) : SAT/UNSAT

Engine fuel valve closed (bright /dim) : SAT/UNSAT

Bleed air valve CLOSE – light illuminated : SAT/UNSAT

E.D.P. depressurises : SAT/UNSAT

A.D.P. run light ON : SAT/UNSAT

GEN FIELD trips – light illuminates after delay : SAT/UNSAT

Put start lever to CUT-OFF.
Reset fire handle.
Reset No.4 E.D.P. hydraulic supply C/B (P6 M28).

At 160 knots, flaps 20º, with E.G.T. below 100ºC and duct pressure of at least 30 psi, relight No.4 engine using starter and GRN START ignition.

Record: Time from fuel ON to E.G.T. rise (90 secs max) : SAT/UNSAT

Satisfactory N_1 acceleration to stabilised idle without excessive E.G.T : SAT/UNSAT

Accelerate and retract Flaps to Up

Leave engine at idle for 5 minutes

Check: Electrics, hydraulics, fuel and air conditioning restored to NORMAL:

9. PRESSURISATION AND OXYGEN CHECKS FL 200

Do not exceed FL 200 until satisfactory automatic cabin altitude control is regained.

9.1 First Aid Oxygen (If Applicable)

Fit oxygen mask to convenient P.S.U. Select first aid oxygen switch ON.

Check: F/E panel PASS OXY light ON: SAT/UNSAT
(Masks should not drop out).

Select first aid oxygen switch to RESET

Check: Passenger oxygen light OFF: SAT/UNSAT

Disconnect mask from P.S.U.

9.2 Crew Oxygen Masks And Microphone

Check: Flow and intercom:

Capt **……** F/O **……** E/O **……** 1.OBS **……** 2.OBS **……** SAT/UNSAT

9.3 Cabin Altitude Warning

Select AUTO and set cabin altitude to 10,000 ft at high rate of climb.

Record: Horn and light ON: **……** ft
(Limits 9,300 ft to 10,700 ft)
SAT/UNSAT

9.4 Passenger Oxygen Mask Drop Out

Select MANUAL – adjust outflow valves to give R.O.C. of 2,000 ft p.m.

Record: Drop out altitude: **……** ft
(Limits 12,000 ft to 14,300 ft)
SAT/UNSAT

Check: Pilots oxygen & F/E's passenger oxygen lights ON: SAT/UNSAT

Record: Positions where masks failed to drop:

SAT/UNSAT

Re-pressurise until cabin altitude 13,000 ft.

Select cabin altitude to 7,500 ft 29.92 ins Hg, select MIN rate of change.

Select AUTO and check both outflow valves go fully closed
(soften this effect by switching OFF 2 A/C Packs): SAT/UNSAT

9.5 Cabin Altitude Auto Arrest

Record auto arrest identified by cabin R.O.C. cycling 500–800 ft p.m.
and altitude fluctuating 50 to 100 ft : ..... ft
(Limits 10,000 ft to 11,000 ft)
SAT/UNSAT

Re-select fast rate of descent, the cycling should stop.
When control of cabin regained, select 300 ft p.m. R.O.D. and cabin altitude to sea level.

10. AIRCRAFT TRIM, CONTROLS AND TRIMMERS

In a normal climb at 320 Knots. (To FL 300)

Check: Accurate trim about all axes:

Aileron trim (± 0.75 div.) .....Div SAT/UNSAT

Rudder trim (± 0.50 div.) .....Div SAT/UNSAT

Check:

	Break Out	Backlash	Centring	Weight	Response
Ailerons					
Elevators					
Rudder					

SAT/UNSAT

Check: Trimmers for normal operation

Aileron Trim: SAT/UNSAT

Rudder Trim SAT/UNSAT

Check: For normal operation

Speed brakes: SAT/UNSAT

Flight detent lock: SAT/UNSAT

11. HIGH LEVEL FUNCTIONING FL 300

Establish a representative cruise.

11.1 Instrument Readings

A.S.I. limit speed hand at FL 300.

Record: Capt : ..... kt F/O : ..... kt
(Scheduled : 336 to 344 kt at FL. 300) SAT/UNSAT

11.2 Pressurisation And Air Conditioning

11.2.1 Equipment Cooling Alternate Blower

Switch to alternate blower for 15 minutes
Check: NO AIRFLOW light remains OUT : SAT/UNSAT

11.2.2 Maximum Differential

At FL 300 check normal control of Max. Diff.
Select AUTO and check maximum diff 8.5 p.s.i : SAT/UNSAT

11.2.3 Cabin Leak Rate

Diff. press. 8 p.s.i.
GALLEY / LAV fan to ON.
All AC packs OFF

Record: Leak rate over 1 minute (Max 750 ft p.m.) : **.....** ft/min
SAT/UNSAT

All AC Packs On

11.2.4 AC Packs In Manual

Check manual control of each Pack in turn:

No. 1	No. 2	No. 3

SAT/UNSAT

11.2.5 Equipment Cooling Valve In Smoke Mode

With Diff. pressure 7 p.s.i. or more select pressurisation to MANUAL
Ensure cabin rate of change is ZERO then select SMOKE

Record: Cabin rate of climb (500-600 ft p.m.) : **.....** ft/min SAT/UNSAT
Re-select to NORMAL

Check: Cabin rate descends and stabilizes

11.2.6 Safety Valves

Select MAN
Close both outflow valves to achieve a cabin rate of descent of 1,000 to 1,500 ft p.m.

Record: Safety valves opening at (9.1 to 9.8 p.s.i.) by PRESS RELIEF light ON:

.....p.s.i. SAT/UNSAT

NOTE: Only one safety valve may open.

DO NOT EXCEED 9.8 P.S.I. IN ANY CIRCUMSTANCES

Adjust back to 8.5 p.s.i. in MAN, then re-select to AUTO.

11.2.7 Manual Selection Of Passenger Oxygen

When cabin altitude below 10,000 ft reset system and restow at least four masks.
Select PASS OXY switch ON.

Check: Restowed masks drop out and PASS OXY lights re-illuminate: SAT/UNSAT
Reset oxygen system.

12. ENGINE RELIGHTING FL 280

12.1 No. 3 Engine

Idle engine for 5 minutes.

Trip No. 3 E.D.P. hydraulic supply C/B (P6 M27)
Shut down engine by pulling fire handle.

Check: Fuel flow falls rapidly to zero (slow fall – motor not closing) : SAT/UNSAT

Engine fuel valve closes (bright / dim) : SAT/UNSAT

Bleed air valve CLOSE – light illuminates : SAT/UNSAT

E.D.P. depressurises : SAT/UNSAT

A.D.P. run light ON : SAT/UNSAT

GEN FIELD trips – illuminates after delay : SAT/UNSAT

Start lever to CUT-OFF.
Reset fire handle.
Reset No.3 E.D.P. hydraulic supply C/B (P6 M27).

At 250 kt with E.G.T. below 100ºC make a windmill relight
Selecting STANDBY IGNITION.

Record: Time from fuel ON to E.G.T. rise (90 secs max) : **.....**SECS

SAT/UNSAT

Satisfactory N_1 acceleration to stabilised idle, without excessive E.G.T. : SAT/UNSAT

Leave engine at idle for 5 minutes

Check: Electrics, hydraulics, fuel and air conditioning restored to NORMAL :

12.2 No. 2 Engine

Idle engine for 5 minutes

Trip No.2 E.D.P. hydraulic supply C/B (P6 M26).
Shut down engine by pulling fire handle.

Check:	Fuel flow falls rapidly to zero (slow fall – motor not closing):	SAT/UNSAT
	Engine fuel valve closes (bright / dim):	SAT/UNSAT
	Bleed air valve CLOSE – light illuminates:	SAT/UNSAT
	E.D.P. depressurises:	SAT/UNSAT
	A.D.P. run light ON:	SAT/UNSAT
	GEN FIELD trips – illuminates after delay:	SAT/UNSAT

Start lever to CUT-OFF.
Reset fire handle.
Reset No.2 E.D.P. hydraulic supply C/B (P6 M26).

At 250 kt with E.G.T. below 100ºC make a windmill relight using STANDBY IGNITION.

Record:	Time from fuel ON to E.G.T. rise (90 secs max) :	**……**SECS
		SAT/UNSAT
	Satisfactory N_1 acceleration to stabilised idle, without excessive E.G.T. :	SAT/UNSAT

Leave engine at idle for 5 minutes

Check: Electrics, hydraulics, fuel and air conditioning restored to NORMAL :

Select STANDBY IGNITION 'OFF'

13. HIGH MACH WARNING — FL300 to FL250

At FL 300, using Max Continuous thrust, accelerate in a shallow dive to a maximum of 0.92 MMR. (Minimum recovery altitude FL 250)

Record: High speed warning:

	Altitude	A.S.I.	MACH
Capt	Ft	kt	MMR
F / O	Ft	kt	MMR

(0.905 to 0.920 M)

SAT/UNSAT

14. HIGH SPEED WARNING — FL 195 to FL 150

Starting at FL 195 and using Max Continuous thrust, accelerate in a shallow dive to 410 kt max to a minimum altitude of FL 150.

Record: High speed warning:

	Altitude	I.A.S.
Capt	Ft	kt
F / O	Ft	kt

(At FL 180 limit is 396 to 403 kt I.A.S.)

SAT/UNSAT

Check: Primary flying controls over small angles for weight and response:

Elevators: Weight: ..... Response: ..... SAT/UNSAT

Ailerons: Weight: ..... Response: ..... SAT/UNSAT

Rudder: Weight: ..... Response: ..... SAT/UNSAT

Speed Brakes:

Check: Functioning at the maximum speed achieved: SAT/UNSAT

15. GEAR AND FLAP ALTERNATE OPERATION FL 100

15.1 Leading Edge Flaps Group A (Sets 2 and 4)

Speed 250 kt.
Select ARM on ALT selector panel.
Select 2 and 4 directional switches to DOWN.

Record: Extension time (100 secs max) ..... SECS SAT/UNSAT

Set T.E. Flaps to 1º on normal selector.

15.2 Leading Edge Flaps Group B (Sets 1 and 3)

Speed 230 kt.
Select 1 and 3 selector switches to DOWN.

Record: Extension time (95 secs maximum) : .....SECS SAT/UNSAT

Set T.E. Flaps to 5º on normal selector.
Return all LE directional switches to OFF.
Close ARM SWITCH GUARD.

15.3 Trailing Edge Flaps 5º To 10º

Speed 250 kt.
Select ARM on ALT selector.
Select DOWN on directional switches.

Record: Time from 5º to 10º (32 secs max) I / B .....SECS SAT/UNSAT

(36 secs max) O / B .....SECS SAT/UNSAT

Set T.E. Flaps to 10º on normal selector:
Restore T.E. Flaps ALT switches to OFF.
Close ARM SWITCH GUARD.

15.4 Gear Free Fall Flap 5º

Speed 230 kt.
Main gear selector to OFF.
Select EXT for 5-10 secs then ARM on ALT GEAR EXT switches in turn.
Record: Extension times from selection of EXT:

Wing (40 Secs)	Body (30 Secs)	Nose (60 Secs)	Body (30 Secs)	Wing (40 Secs)

SAT/UNSAT

Main Gear selector to DOWN.
After a minimum of 90 secs select ALT switch to OFF.

15.5 Gear Retraction

Set No.1 and 4 E.D.Ps to DEPRESSURISE.
Select gear UP.
Record: Retraction time: Legs **.....** SECS
(20 secs maximum)

Doors **.....** SECS
(25 secs maximum)

Set No. 1 and 4 E.D.Ps to normal

Retract flaps as required

16. LANDING

Carry out a normal landing using full reverse thrust to 60kt then 60% N_1 to low speed
Record:

Any unusual characteristics:	
Landing weight:	kgs

17. GROUND CHECKS

17.1 Reserve Brakes

Select SEC SYS 1 and confirm satisfactory brake operation
And low pressure light OUT. SAT/UNSAT

Re-select primary system No.4.
No.4 E.D.P. to DEPRESSURISE.
No.4 A.D.P. to OFF.
Check: Brake source L.P. Light ON: SAT/UNSAT
Select RESERVE BRAKE OPEN.
Select source L.P. light OUT.
RESERVE BRAKE OPEN light ON.

Check: Brake operation. SAT/UNSAT

Restore to NORMAL.
No.4 A.D.P. to AUTO.
No.4 E.D.P. to NORMAL.

17.2 I.D.G. Disconnect

Disconnect any one I.D.G. No. **.....** SAT/UNSAT

17.3 Safety Valve(s) Outlet Door(s)

Check: At least one door OPEN: SAT/UNSAT

Figure 1a

TAKE-OFF EPR -D4

OAT ºC	Pressure Altitude ft				
	-1000	0	1000	2000	3000
0	1.646	1.656	1.667	1.678	1.689
+40	1.600	1.599	1.598	1.597	1.596

Figure 1b

TAKE-OFF EPR -D4X

OAT ºC	Pressure Altitude ft				
	-1000	0	1000	2000	3000
0	1.658	1.669	1.680	1.691	1.702
+40	1.613	1.612	1.611	1.610	1.609

Figure 1c

GO-AROUND EPR -D4 and -D4X

TAT º C	Pressure Altitude ft					
	3000	4000	5000	6000	6500	7000
+10 and below	1.672	1.683	1.695	1.704	1.709	1.714
15	1.672	1.683	1.695	1.704	1.709	1.714
20	1.672	1.683	1.695	1.704	1.708	1.706
25	1.672	1.683	1.682	1.678	1.676	1.674

Figure 2

TRIM AND STICK SHAKE SPEEDS

Weight 1000kg	Flaps Up		Flaps 10 Gear Up		Flaps 30 Gear Down	
	Trim	Stick Shake	Trim	Stick Shake	Trim	Stick Shake
260	224	193	164	140	147	120
255	222	191	162	138	146	119
250	220	189	160	137	144	117
245	218	187	158	135	143	116
240	216	185	156	134	141	115
235	214	183	154	132	140	114
230	211	181	153	130	138	113
225	209	179	151	129	137	112
220	207	177	149	127	135	110
215	204	175	147	126	134	109
210	202	172	145	124	132	108
205	199	170	143	123	130	107
200	197	168	141	120	129	106
Tol		-2/+10		-2/+6		-2/+6