AP 101B-0201-14A

VC 10

C Mk. 1

FLIGHT REFERENCE CARDS

Prepared by Ministry of Technology in collaboration with
RAF Handling Squadron

BY COMMAND OF THE DEFENCE COUNCIL

NOTES TO USERS

1. These Cards are complementary to VC 10 C Mk. 1 Pilot's Notes (Flying) (AP 101B-0201-15B) and reference to the drills on these cards is made throughout the Notes.

2. Words in large capital letters used in the drills indicate the actual marking on the controls concerned.

3. All drills which are intended to be used on a "challenge and response" basis have a central column stating which crew member is responsible for a particular check. The following abbreviations are used :

P	... 1st pilot	E	... Air engineer
C	... Co-pilot	G	... Ground crew
N	... Navigator	Q	... Air Quartermaster

4. One set of cards is issued with each copy of Pilot's Notes (Flying) (AP 101B-0201-15B) and further copies are available on demand.

5. The cards will be amended separately from the Pilot's Notes (Flying) and amendments will consist of the re-issue of a number of cards. This Card 1 will be re-issued with each Amendment and will include the Amendment number and date of issue. It will also include a list of all the effective cards with their latest AL numbers.

6. Comments and suggestions should be forwarded to Officer Commanding RAF Handling Squadron, Boscombe Down, Wilts.

LIST OF EFFECTIVE CARDS

Card No.	*Issued by*	*Date of Issue*	*Card No.*	*Issued by*	*Date of Issue*
1	AL 1	May 68	23	AL 1	May 68
2	AL 1	May 68	24	Initial issue	Aug. 67
3	Initial issue	Aug. 67	25	Initial issue	Aug. 67
4	AL 1	May 68	26	AL 1	May 68
5	AL 1	May 68	27	AL 1	May 68
6	AL 1	May 68	28	Initial issue	Aug. 67
7	AL 1	May 68	29	Initial issue	Aug. 67
8	AL 1	May 68	30	Initial issue	Aug. 67
9	AL 1	May 68	31	AL 1	May 68
10	AL 1	May 68	31A	AL 1	May 68
11	AL 1	May 68	32	AL 1	May 68
12	AL 1	May 68	33	Initial issue	Aug. 67
13	AL 1	May 68	34	Initial issue	Aug. 67
14	Initial issue	Aug. 67	35	Initial issue	Aug. 67
15	AL 1	May 68	36	Initial issue	Aug. 67
16	AL 1	May 68	37	Initial issue	Aug. 67
17	AL 1	May 68	38	Initial issue	Aug. 67
17A	AL 1	May 68	39	Initial issue	Aug. 67
18	AL 1	May 68	40	AL 1	May 68
19	Initial issue	Aug. 67	41	AL 1	May 68
20	AL 1	May 68	42	Initial issue	Aug. 67
21	AL 1	May 68	43	Initial issue	Aug. 67
22	AL 1	May 68	44	Initial issue	Aug. 67

INITIAL CHECK—ENGINEER

1.	Ground/Flight switch .	GROUND
2.	Undercarriage lever .	DOWN; Red knob vertical. Standby NORMAL
3.	Fire control handles .	Check
4.	Aux. hyd. pump . .	OFF
5.	Pressure head heaters .	Off
6.	Windscreen heat . .	LOW
7.	Elrat lever . . .	Forward and locked
8.	Stall warning dump lever	Forward and locked
9.	CB's and fuses . .	All closed and checked
10.	Jettison panel . .	Cover closed
11.	Booster-pumps . .	OFF
12.	BTB MI's . . .	Cross-line
13.	Galley load switches .	OFF
14.	Batteries . . .	Check and leave ON (MI's in line)
15.	DC fail lights . .	On
16.	Bus-bar fail lights .	On
17.	SSB switch . . .	MANUAL SPLIT
18.	Ground power/APU .	Check and establish
19.	GPB	CLOSE; MI in line
20.	PCU's (5) . . .	Trip (warning lights on)
21.	SSB switch . . .	AUTO
22.	PCU's (6) . . .	Trip (warning lights on). Master light on
23.	TRU's	Check and select NORM.
24.	Battery switches . .	OFF (ON if APU running)
25.	Tailplane angle . .	Note Zero on - 0
26.	Undercarriage indicator	Check DOWN Lock

(continued)

Initial check—Engineer (*continued*)

27.	Brakes . . .	Select normal system. Parking brake on, pressures 1,900 PSI, lights on
28.	Engine fire-warning system . . .	Check
29.	Panel EA . .	Check
30.	Warning lights test supply switch . .	ON
31.	Flight deck emergency equipment . . .	Check
32.	Spare fuses and bulbs .	Check

During a QTR, only the starred items in the **External Check—Engineer, Internal Check—Engineer** and the **Flight Deck Check—Co-pilot** need be carried out. Additional checks may be necessary in the case of unserviceabilities or following the use of emergency equipment during the previous flight. All checks must be carried out if the crew is changed.

EXTERNAL CHECK—ENGINEER

Front fuselage (left)

* 1.	UPVV	Clear
* 2.	Rear passenger door .	Condition
* 3.	Static vent plate (2 hole)	Plugs removed; condition
* 4.	Freight door hydraulic panel . . .	Secure
* 5.	Static vent plate (2 and 7 hole) . . .	Plugs removed; condition
* 6.	Twin pressure heads .	Covers off ; condition
* 7.	Ferranti probes . .	Condition
* 8.	External APU panel .	Secure
* 9.	Battery vent . .	Check
*10.	Forward pass. door .	Condition
*11.	Nose landing lamp .	Condition

External check—Engineer (*continued*)

*12.	Dump valve	Closed
*13.	Radio cooling and discharge valve	Condition
*14.	OAT probe	Condition
*15.	Hot rod	Condition
*16.	Pressure head	Cover off ; condition
*17.	Turn-off lamp	Condition
*18.	Temperature probes	Condition
*19.	Ice detector	Condition
*20.	Nose access panel	Secure
*21.	Radome	Secure ; condition
*22.	Flight refuelling probe (if fitted)	Condition

Front fuselage (right)

* 1.	Temperature probes	Condition
* 2.	Turn-off lamp	Condition
* 3.	Pressure head	Cover off ; condition
* 4.	Oxygen panel	Check contents Panel secure
* 5.	Toilet servicing panel	Secure
* 6.	Nosewheel assembly and doors	Lock removed ; condition and extension
* 7.	Battery vent	Check
* 8.	Equipment bay access door	Secure
* 9.	Ferranti probes	Condition
*10.	Twin pressure heads	Covers off ; condition
*11.	Forward freight bay door	Secure ; condition
*12.	Beacon	Condition
*13.	Forward water outlet	Check
*14.	Collin's aerial	Condition
*15.	Static vent plate (2 and 7 hole)	Plugs removed ; condition

External check—Engineer (*continued*)

*16.	Static vent plate (2 hole)	Plugs removed ; condition
*17.	Water drain plug . .	Locked
*18.	Water servicing panel .	Secure
*19.	Elrat door . . .	Secure ; lock removed
*20.	Spare fire extinguisher stowage door . .	Secure

Right wing

* 1.	Refrigerator intake .	Clear
* 2.	Slats	Condition
* 3.	Landing lamp . .	Condition
* 4.	Navigation light . .	Condition
* 5.	Fuel vent ram air intake	Clear
* 6.	Ailerons/PCU's . .	Condition ; leaks
* 7.	Fuel jettison pipe .	Condition ; leaks
* 8.	Access and inspection panels	Secure
* 9.	Flaps	Condition
*10.	Ice inspection lights .	Condition
*11.	Refuelling access panel	Secure
*12.	Fuel level indicators .	Secure
*13.	Booster-pumps . .	Check for leaks
*14.	Undercarriage assembly and doors . .	Check for leaks ; condition and extension ; lock removed
*15.	Chocks . . .	In position

Rear fuselage

* 1.	Hyd. brake accumulator panel . . .	Secure
* 2.	Collin's aerial . .	Condition
* 3.	Rear waste water outlet	Condition
* 4.	Toilet servicing panels (left and right) . .	Secure
* 5.	Hyd. servicing panel .	Secure
* 6.	Aft freight door . .	Secure

External check—Engineer (*continued*)

Engines Nos. 3 and 4

* 1.	All intakes . . .	Blanks and guards removed
* 2.	Fire extinguishers .	Discs intact and door closed
* 3.	Cowling and panels .	Secure
* 4.	Rupture disc . .	Check (RH side only)

Tail

* 1.	Elevator and rudder PCU's	Check for leaks; condition
* 2.	TPI	Condition and position
* 3.	Aft static vents (3 hole)	Clear
* 4.	Tail nav. light . .	Condition
* 5.	Rear freight door .	Secure
* 6.	APU	Check intakes clear. No leaks
* 7.	APU extinguisher indicator	Disc intact
*	**Engines Nos. 1 and 2** . .	Check as for Nos. 3 and 4 engines
*	**Left wing**	Check as for right wing

Before entering aircraft check :

* 1.	Ground fire extinguisher . . .	In position
* 2.	Surrounding area .	Clear
* 3.	Ground starting crew .	Brief

INTERNAL CHECK—ENGINEER

Flight deck

* 1.	Ground/Flight switch .	FLIGHT
* 2.	Jettison master MI's .	SHUT
* 3.	Min. fuel system temp.	Check
* 4.	Fuel gauges . .	Check
* 5.	Fin tank low-level light	Check
* 6.	Fin isolate valve . .	As required
* 7.	Fin/centre tank transfer	Check as required

Internal check—Engineer (*continued*)

* 8.	Probe drain . .	SHUT
* 9.	Flight refuel valves .	SHUT
*10.	Fuel transfer system .	Check valves and leave SHUT. Check pumps and leave OFF
*11.	LP cocks . . .	OPEN
*12.	HP cocks . . .	SHUT
*13.	Booster-pumps . .	Check and leave OFF
*14.	Fuel temp. gauges .	Check
*15.	Flowmeters . .	Set
16.	Reverse lights . .	Check
17.	Top temp. control .	NORMAL
18.	Oil low-pressure lights	On
19.	Engine instruments .	Check
20.	Feel system motors .	ISOLATE. Check overheat lights. Failure lights on
21.	Tail trim overrun lights	Check ; out
22.	CSD disconnect switches	NORMAL, guarded
23.	CSD low oil pressure warning lights . .	On
24.	Generator temp. gauges	Check
25.	GCR switches . .	NORMAL
26.	GCB MI's . . .	Cross-line
27.	Generator failure lights	On
28.	BTB MI's . . .	In-line
29.	Galley load switches .	As required
30.	HP stop valve switches .	NORMAL
31.	Reducing valve switches . . .	NORMAL
32.	O/heat and duct failure lights	Check ; out
33.	Duct temp. gauges .	Ambient all selections

(*continued*)

Internal check—Engineer (*continued*)

34.	Ice detector light . .	Out
35.	Airframe anti-icing switches . . .	SHUT (MI's cross-line)
36.	Engine anti-icing switches . . .	OFF (press. gauges zero)
37.	Compressor oil temp. lights	Out
*38.	Temperature control switches . . .	Check and leave OFF. Check valve positions
39.	Compressor slides .	Minimum flow
40.	Compressor NRV lights	On
41.	Mod. isolate / choke override switches .	NORM
42.	Spill valve switches .	SPILL
43.	Cabin NRV lights . .	On
44.	O/heat lights and switches . . .	Check and leave NORM
45.	UPVV	OPEN. UPVV and radio cooling valve MI's in line
46.	Louvre fan . . .	Check and set as required
47.	Recirc. fans . . .	Check ; leave NORM
48.	Frig. failure lights .	Check
49.	Frig. master switches .	ISOL
50.	Flight deck flow . .	Set 50%
*51.	Mass-flow switches .	Set DEC; lights on
*52.	Discharge valve switches . . .	NORM. Indicators shut
*53.	Humidifiers . .	OFF
*54.	Thrust augmenters .	SHUT (MI's cross-line)
55.	Smoke detectors . .	Check and RESET

(*continued*)

Internal check—Engineer (*continued*)

*56.	Cabin pressure gauges	Check and set
*57.	Dump valve . .	SHUT and locked
*58.	Hyd. systems contents gauges . . .	Check
59.	Hyd. fluid temperature	Check
60.	Hyd. inlet pressure lights	On
61.	Hyd. shut off cocks .	OPEN (MI's in-line)
62.	Hyd. delivery press. lights	On
63.	Hyd. pumps . .	ON
64.	Ferry link . . .	NORMAL (MI cross-line)
*65.	Slat MI's . . .	In line and blank
*66.	Flap MI's . . .	In line and blank
*67.	Flap isolation switches	NORMAL
*68.	Flap isolation lights .	Check
*69.	Steering switch . .	NORMAL (MI cross-line)
*70.	Oxygen . . .	ON. Check contents, heating light out
*71.	Water contents . .	Check
*72.	Ground crew jack boxes	ON
*73.	Emergency lights .	Check and leave OFF

Aft cabin

74.	Periscopes . . .	Stowed
75.	Emergency equipment	Check
76.	U/C visual indicators .	Green
77.	Rear ice inspection panel switches . .	Check and leave OFF
78.	Tail navigation light C/O switch . . .	UPPER
*79.	Hydraulic bay . .	Check

(continued) Pre flight & QTR

Internal check—Engineer (*continued*)

Forward cabin

80.	Emergency equipment	Check
*81.	Freight door . .	Closed

Equipment bay

*82.	U/C free-fall levers .	Normal and locked
*83.	Pressure controller .	Flap secured
*84.	Spare fuses . . .	Check
*85.	Fuses and CB's . .	Check and closed
*86.	Batteries . . .	Both secure and checked
*87.	Radio equipment .	Secure
*88.	Bay standby lights selector switch . .	NORMAL

FLIGHT DECK CHECK—CO-PILOT

* 1.	Radio supplies and PA switches . . .	On, check lights
2.	Control column gaiter cover	Removed and stowed
* 3.	Vertical gyro c/o and supply switches . .	Check and set NORMAL
4.	Goggles . . .	Stowed
5.	Windscreen wipers .	PARK
6.	Pressure head / probe heaters and lights .	Check and leave OFF
* 7.	Cabin signs . . .	ON
* 8.	Navigation lights . .	As required
9.	Windscreen heat . .	HIGH; check lights and ammeters. Reselect LOW
10.	Windscreen fan . .	Check and leave OFF
11.	Mach/IAS horns . .	Check
*12.	Flap and slat levers .	Connected and UP
*13.	Aileron / spoiler disconnect lever . .	NORMAL and locked

Flight deck check—Co-pilot *(continued)*

*14.	Compasses	Check and synchronise; lights out; MAG selected
*15.	RMI's	Check
*16.	Turn-and-slip indicators	Flags clear
*17.	E2B compass	Check
*18.	Clocks	Check
*19.	Standby altimeter	Set QNH
*20.	TOCW horn	Check
*21.	Auto-pilot master switches	ON
*22.	Radio	Select and check
*23.	Flight system	Check
*24.	Altimeters	Check and set
*25.	LOC / VOR change-over switches	Both NORMAL
*26.	Warning lights	Check
27.	Static and pitot switches	NORMAL and guarded
28.	Hot rod	Check and leave OFF
29.	Aileron and rudder trims	Check and set
*30.	Control runs and struts	Check
*31.	Galley switches	OFF
*32.	PCU and feel units	On, lights out
*33.	Standby yaw damper	ON
34.	Aileron upset	Check (AUW above 290,000 lb.)
*35.	Auto-pilots	Check
*36.	Yaw dampers	No. 1 and No. 2 on; tested, then off
*37.	Standby yaw damper	Tested; OFF
*38.	PCU's	Off ; isolate lights on
39.	Stall warning system	Check
*40.	Feel units	Off ; isolate lights on
*41.	Spoiler isolate switches	NORMAL
42.	Auto-throttles	Check and leave OFF
*43.	Auxiliary hyd. pump	OFF

CAPTAIN'S CHECK

1.	Pre-flight check .	All	Completed. All locks, covers and plugs on board
2.	Documentation .	All	Checked
3.	Fuel contents gauges . . .	E	Check fuel load
4.	Standby horizon .	P	Checked
5.	Pressurisation .	E	Set as required
6.	Oxygen . . .	All	ON; Checked; 100% OXYGEN selected
7.	Windows . .	P/C	Closed
8.	Intercomm. switch .	P	Check and leave at DITCH

" Captain's check complete "

STARTING CHECK
(using external air)

1.	Brakes . . .	P	Parking brake on; pressure 1,900 PSI. Normal system selected, lights on
2.	Start-up clearance .	C	Obtained
3.	Captain's briefing .	—	Completed
4.	Beacons . .	C	ON
5.	Batteries . .	E	ON
6.	Frig. master switches . . .	E	ISOL
7.	UPVV . . .	E	SHUT (MI's checked)
8.	Booster-pumps .	E	ON; pressures checked
9.	Throttles . .	P/E	Closed
10.	Engine analyser .	E	ON
11.	Door wng. lights .	E	Out
12.	AQM's report . .	Q	Completed, including anti-G locks
13.	Ground crew check	E/G	Clear for starting
14.	Start master switch	E	LP START
15.	Start engines . .	E	Starting
16.	Engines . . .	E	All running. HP cocks to RUN
17.	Tail trim . .	P/C	Both systems checked, set for take off
18.	Start master switch	E	All OFF
19.	Ground crew check	P/G	All ground equipment removed. All hatches closed

" Starting check complete "

STARTING CHECK
(using the APU)

1.	Brakes	P	Parking brake on; pressures 1,900 PSI. Normal system selected, lights on
2.	Start-up clearance	C	Obtained
3.	Captain's briefing	—	Completed
4.	Beacons	C	ON
5.	Batteries	E	ON
6.	Frig. master switches	E	ISOL
7.	UPVV	E	SHUT (MI's checked)
8.	APU	E	Running
9.	APU air control valve	E	START
10.	Booster-pumps	E	ON; pressures checked
11.	Throttles	P/E	Closed
12.	Engine analyser	E	ON
13.	Door wng. lights	E	Out
14.	AQM's report	Q	Completed, including anti-G locks
15.	Ground crew check	E/G	Clear for starting
16.	Start master switch	E	LP START
17.	Start engines	E	Starting
18.	Engines	E	All running. HP cocks to RUN
19.	Tail trim	P/C	Both systems checked, set for take-off
20.	Start master switch	E	All OFF
21.	APU	E	Close down
22.	Ground crew check	P/G	All ground equipment removed. All hatches closed

"Starting check complete"

AFTER-START CHECK

1.	Electrical supplies .	E	Normal
2.	Ground bus light .	E	Out
3.	Speed brakes . .	P	Checked and zero
4.	Engine anti-icing .	E	Checked
5.	Power control units	E	All on; lights out
6.	Feel unit switches .	E	No. 1 or No. 2 on; light out
7.	Controls . .	P	Checked
8.	Feel unit switches .	E	Both on ; lights out
9.	Hydraulics . .	E	Checked
10.	Sextant heater .	N	ON
11.	Search radar . .	P/N	STANDBY
12.	Standby brakes .	P/E	Selected and checked
13.	HP cocks, Elrat and stall dump levers .	E	All forward
14.	Taxy clearance .	C	Obtained
15.	Ground crew check	P/G	Chocks removed and clear to taxy
16.	Ground crew jack boxes . . .	E	OFF
17.	Flight data recorder	N	ON

"After-start check complete"

TAXY CHECK

1.	Brakes	P	Check standby system Check normal system
2.	Speed brakes	P	Zero
3.	Rudder and aileron trims	C	Set for take-off
4.	TPI	P	Set for take-off
5.	Yaw dampers	C	Nos. 1 and 2 on. Standby OFF
6.	Flight instruments	C	Checked; mode selector OFF
7.	Reverse thrust	P/E	Checked and lights out
8.	Radio	C	Selected
9.	IFF	C	As required
10.	Flaps and slats	C/E	Select and check at TAKE-OFF
11.	Aileron upset	C	A or B selected to ARM
12.	Generators	E	Paired; SSB MANUAL SPLIT
13.	Batteries	E	ON and checked
14.	TRU switches	E	Both NORM
15.	Booster-pumps	E	ON; pressures checked
16.	APU master start switch	E	OFF (at least 5 mins. after APU closed down)
17.	TO information	P/N/E	Noted
18.	AQM's report	Q	Ready for take-off
19.	Engineer's taxy check	E	Complete

"Taxy check complete"

Taxy and take-off

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TAXY CHECK—ENGINEER

1.	UPVV	Checked and SHUT; MI cross-line
2.	Radio cooling valve .	Checked shut; MI cross-line
3.	Air conditioning and pressurisation . .	Checked and set
4.	Emergency lights .	ARM
5.	Water pumps . .	Check one ON
6.	Toilet water heaters .	ON
7.	Fuel transfer system .	Checked as required

TAKE-OFF CHECK

1.	Windscreen heat .	C	HIGH; ammeters checked
2.	Pressure head heaters . . .	C/E	ON; ammeters checked
3.	UPVV/RRCV . .	E	SHUT; MI's cross-line
4.	Spill valves . .	E	Right valve SPILL; left valve NORM
5.	Flight deck flow .	E	DEC
6.	Anti-icing . .	P/E	As required
7.	Igniters . . .	P/E	As required
8.	Galley switches .	E	OFF
9.	Flag mast . .	N	Lowered
10.	Seats and harnesses	All	Secure
11.	Controls . .	P	Check full and free movement. Lights out
12.	Stall dump lever .	E	DUMP; SYSTEM FAIL light on
13.	HP stop valves .	E	All SHUT; MI's cross-line

"Take-off check complete"

AFTER TAKE-OFF CHECK

1.	Undercarriage .	C	UP. Lights out. Stand-by brake pressure zero, lights out
2.	Igniters . .	E	OFF
3.	Stall dump lever .	E	Reset NORMAL; SYSTEM FAIL light out
4.	Engineer's after take-off check .	E	Checking
5.	Landing lamps .	P	Retracted and OFF
6.	Aileron upset . .	C	NORM (below 290,000 lb.)
7.	Flaps and slats .	C/E	UP; indicating UP
8.	Altimeters . .	All	Set as required
9.	Cabin signs . .	C	As required
10.	Engineer's after TO check . . .	E	Complete

"After take-off check complete"

Taxy and take-off (*continued*)

AFTER TAKE-OFF CHECK—ENGINEER

1.	Galley switches . .	ON
2.	SSB switch . . .	AUTO
3.	Spill valves . . .	NORM in turn
4.	Temperature control .	As required
5.	Pressurisation . .	Set as required
6.	Probe ammeters . .	Checked
7.	Fuel transfer . .	Select as required

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CLIMB CHECK—ENGINEER

1.	Fuel transfer . .	As required
2.	LP-RPM . . .	Adjust (above 20,000 feet) to maintain limiting LP-RPM
3.	Flight deck flow . .	As required
4.	Buffet boundary speed	Noted
5.	Aileron upset . .	NORM (above 24,000 feet)

CHECK BEFORE LEAVING FLIGHT DECK—ENGINEER

1.	Fuel	Direct feed, tank to engine. All booster-pumps ON
2.	Fuel transfer . .	Off
3.	SSB switch . . .	MANUAL SPLIT
4.	Temp. control . .	Stable condition and OFF
5.	Hydraulic pumps .	ON
6.	Engine anti-icing . .	As required
7.	Engineer's seat . .	Facing forward and fully back

DESCENT CHECK

1.	PA announcement	P	Stated
2.	Altimeters	All	Checked and set (transition level checked)
3.	Compass true/magnetic switch	C	Checked, MAGNETIC
4.	Approach briefing	P	Stated
5.	Cabin alt. and barometric datum	E	QFE, zero feet (QNH, A/F altitude)
6.	Fin tank fuel	E	Checked
7.	Engineer's descent check	E	Complete

" Descent check complete "

DESCENT CHECK—ENGINEER

1.	Thrust augmenters	SHUT
2.	Humidifier	OFF
3.	Hydraulic pumps	All ON
4.	HP stop valves	As required

FIELD-APPROACH CHECK

1.	Speed brakes	P	Zero
2.	Flaps and slats	C/E	Select and check at TAKE-OFF
3.	Cabin signs	C	ON
4.	Flight deck equipment	All	Stowed
5.	Engineer's field approach check	E	Complete
6.	Threshold speed	All	Checked and indexed
7.	Seat harnesses	All	Secure

" Field-approach check complete "

FIELD-APPROACH CHECK—ENGINEER

1. Landing information . Noted
2. Fuel panel . . . Checked
3. Galley switches . . OFF
4. SSB switch . . . MANUAL SPLIT
5. Circuit breakers . . Closed
6. Emergency lights . ARM
7. Altimeter . . . QFE set

LANDING CHECK

1.	Altimeters . .	All	Set and checked
2.	Landing brief .	P	As required
3.	Search radar . .	P/N	STANDBY
4.	Undercarriage .	C	DOWN ; three greens and door lights out
5.	Nosewheel steering	P/C/E	Central (MI's in line)
6.	Brakes . . .	P/E	Normal system selected. Parking brake off. Pressure checked, lights out
7.	Flaps/slats . .	C/E	As required; indicating
8.	Landing lamps .	P	As required
9.	Igniters . . .	P/E	As required
10.	AQM's report . .	Q	Ready for landing
11.	Engineer's landing check . . .	E	Complete
12.	Stall dump lever .	E	DUMP. SYSTEM FAIL light on (Landing flap or 1,000 feet)

"Landing check complete"

LANDING CHECK—ENGINEER

1. Altimeter . . . Checked
2. Hydraulic systems . Contents and pressure checked
3. Steering MI . . . In-line

At approximately 1,500 feet

4. Right spill valve . . SPILL
5. Flight deck flow . . Full DECREASE
6. HP stop valves . . All SHUT (MI's cross-line)

AFTER-LANDING CHECK

1.	Airframe anti-icing	E	SHUT
2.	Aileron upset	C	NORMAL
3.	Speed brakes	C	Zero
4.	Flaps/slats	C/E	Select UP
5.	Pressure head heaters	C	OFF
6.	Windscreen heat	C	LOW
7.	IFF	C	OFF
8.	Landing/taxy lamps	P	As required
9.	Search radar	P/N	OFF
10.	Auto-pilot master switches	C	Off
11.	Auto-throttles	C	Off
12.	Yaw dampers	C	Off
13.	TPI	P	Zero
14.	Engine fire-warning overheat and smoke detector systems	C/E	Checked
15.	Flaps/slats	C/E	UP
16.	Power control units, feel units and spoilers	E	Isolate, appropriate lights on
17.	Flight data recorder	N	OFF
18.	Stall dump lever	E	Reset NORMAL
19.	Engineer's after-landing check		Complete

"After-landing check complete"

Descent and landing (*continued*)

AFTER-LANDING CHECK—ENGINEER

1.	Igniters	OFF
2.	Mass-flow switches	Full decrease
3.	Transfer cross-feed	SHUT
4.	Transfer system	Off
5.	Booster-pumps	Check, leave off
6.	SSB switch	AUTO
7.	Toilet water heater and pumps	As required
8.	Engine analyser	OFF
9.	Ground crew jack box switch	ON

After-landing check—Engineer (*continued*)

10.	Frig. master switches .	As required
11.	Recirc. fans . . .	As required
12.	Spill valves . . .	SPILL
13.	UPVV	OPEN
14.	Engine anti-icing .	All OFF
15.	Louvre fans . . .	As required
16.	Temp. control switches	OFF
17.	Fin tank isolation valve	SHUT
18.	HP stop valves . .	NORMAL ; MI's in-line
19.	Reducing valves . .	Checked

SHUT-DOWN CHECK

1.	Parking brake .	P	On
2.	Engines . . .	P/E	As required
3.	External power/APU	E	Checked, established
4.	Mass-flow switches	E	OFF
5.	Frig. master switches . . .	E	ISOL.
6.	Recirc. fans . .	E	OFF
7.	Louvre fan . .	E	OFF
8.	UPVV . . .	E	OPEN
9.	Beacons . . .	C	Off
10.	Taxy/turn-off lamps . . .	P	Off
11.	Navigation lights .	E	As required (OFF)
12.	Emergency lights .	E	OFF
13.	Cabin signs . .	C	Off
14.	Nav. equipment .	N	Off
15.	Radios . . .	C	All off
16.	Grd./flight switch	E	GROUND
17.	Panel R switches .	N	OFF
18.	Batteries . .	E	OFF
19.	Brakes	P	Off when chocks in position
20.	Oxygen . . .	E	OFF

" Shut-down check complete "

APU

STARTING CHECK

Carry out items 1 to 17 of the INITIAL CHECK, then:

1.	No. 1 TRU . . .	ISOLATE. MI cross-line
2.	No. 1 and 2 batteries .	ON; check voltages
3.	Booster-pumps . .	All OFF
4.	LP cocks . . .	No. 2 OPEN
5.	Wing and tail anti-icing	OFF. Wing MI's cross-line
6.	Frig. master switches .	ISOLATE
7.	APU fire system . .	Light tested and off
8.	APU bottle indicator .	Clear
9.	APU air control switch .	OFF. Test warning light
10.	APU start master switch	ON
11.	Fin tank grd. isol. MI .	SHUT
12.	APU shut down switch .	NORMAL
13.	Start APU . . .	Press start button; check integral warning light on (8-15 seconds) and LP fuel MI OPEN
14.	APU run MI . . .	RUN
15.	No. 1 TRU . . .	On. MI in-line
16.	APU generator . .	TRIP GPB CLOSE APU gen. switch Check volts/frequency CLOSE GPB
17.	APU air control switch .	START (when ready to start engines); check duct pressure; light on

Continue from item 18 of the INITIAL CHECK

APU start

APU start (*continued*)

CLOSING DOWN CHECK

1.	GPB	TRIP
2.	APU generator switch .	TRIP; check volts/frequency decrease
3.	APU air control switch .	OFF; light out
4.	APU shut-down switch .	SHUT DOWN; RUN MI cross-hatch when RPM below governed speed; LP fuel MI SHUT
5.	APU start master switch	OFF (after 5 mins.); fin tank isolation MI OPEN

BATTERY START

Carry out the normal EXTERNAL CHECK—ENGINEER and the checks in the forward cabin, aft cabin and equipment bay, contained in the normal INTERNAL CHECK—ENGINEER, then continue as follows :

Flight deck

Fire control handles	Check
Auxiliary hydraulic pump switch	OFF
Undercarriage lever	DOWN, red knob vertical Standby NORMAL
Elrat lever	Forward and locked
All CB's and fuses	Closed
Ground/flight switch	GROUND
Jettison panel	Cover closed
BTB MI's	Cross-line
Batteries	Check and leave ON (MI's in-line)
DC failure lights	On
Undercarriage indicators	Check
Tailplane angle	Note
Warning lights test supply switch	ON
Radio	I/C ON
Jettison master MI's	SHUT
LP cocks	OPEN
HP cocks	SHUT
Flowmeters	Set
Reverse lights	Check
Top temp. controls	NORMAL
Oil low pressure lights	On
Engine instruments	Check

Battery start (*continued*)

Feel system motors	ISOLATE. Check overheat lights. Failure lights on
Tail trim overrun lights	Check. Out
CSD disconnect switches	NORMAL, guarded
CSD low oil pressure warning lights	On
GCR switches	NORMAL
GCB MI's	Cross-line
Generator failure lights	On
BTB indicators	In-line
SSB switch	MANUAL SPLIT
Galley switches	OFF
Spill valves	Full SPILL
Mass flow switches	Set DEC, lights out
HP stop valve switches	NORMAL
Reducing valve switches	NORMAL
Airframe anti-icing switches	OFF
Engine anti-icing switches	OFF
System B hydraulic contents gauge	Check
Hyd. fluid temperature	Check
Hyd. shut-off cocks	Check and leave OPEN (MI's in-line)
Hydraulic pumps	ON
Spare fuses and bulbs	Check
Oxygen panel	Check; heating light out
Ground crew jack boxes	ON
Emergency equipment	Check
Emergency lights	Check and leave OFF

STARTING CHECK

Pre-flight check	E	Completed
Ground/flight switch	E	FLIGHT
Locks and covers	E	Checked, aboard
Documentation	All	Checked
Oxygen	All	Checked, 100% OXYGEN selected. Goggles checked
Fuel panel	E	Cross-feed and inter-engine valves SHUT
Cabin pressurisation	E	Set as required
Brakes	P/E	On, pressure checked, normal system selected
TOCW horn	C	Checked
Windows	P	Closed
Ground crew check	E/G	Clear for starting. Air supply on (no indication)
Beacons	C	ON
Throttles	E	Closed
Frig. master switches	E	ISOLATE
Door warning lights	E	Out
Start master switch	E	LP START
Start engines	E	Start No. 3 engine; bring No. 3 generator on line; check PCU's off; select SSB to AUTO; check fire warning. Start No. 2 engine
No. 2 generator	E	On line
Panel EA	E	Checked
Control runs and struts	C	Checked
PCU and feel units	P	ON, lights out
Stall warnings	P/E	Checked

Battery start *(continued)*

AFTER STARTING NOS. 3 AND 2 ENGINES—ENGINEER'S CHECK

TRU's	Check. NORMAL
Fuel transfer system	Check
Booster-pumps	ON, check pressure
O/heat and duct failure lights	Check
Duct temperature gauges	Ambient all selections
Compressor slides	Minimum flow
Compressor NRV lights	Two on
Mod. Isolate/Choke O/ride switches	NORM
Cabin NRV lights	ON
Overheat warning lights	Check. Switches NORM
UPVV	SHUT
Louvre fan	Check and set as required
Recirc. fans	NORM
Frig. fail lights	Check and leave OFF
Flight deck flow	As required
Temp. control switches	Check and leave OFF. Check valve positions
Mass flow switches	Set DEC, lights on
Discharge valve switches	NORMAL, indicators shut
Humidifier	OFF
Thrust augmenters	Shut (MI's cross-line)
Radio fans	Check alternate fan on, light out
Smoke detectors	Check and RESET
Cabin pressure gauges	Check and set as required
Dump valve	SHUT and locked
Hyd. delivery press w/lts.	Two on
Ferry link	NORMAL (MI cross-line)
Slat MI's	In-line and blank
Flap MI's	In-line and blank
Flap isolate switches	NORMAL

Engineer's check after starting Nos. 3 and 2 engines (*continued*)

Flap isolate lights	Check
Steering	MI in-line Emergency MI cross-line
Available brake pressure	Check
Water contents and pumps	Check. One ON
Toilet water heaters	ON
Engine analyser	ON
Flight data recorder	ON (Nav.)

AFTER STARTING NOS. 3 AND 2 ENGINES—PILOTS' CHECK

Radio supplies and PA switches	On, check lights
Vertical gyro c/o and supply switches	Check and set NORMAL
Pressure head heaters	Check and leave OFF
Cabin signs	ON
Navigation lights	As required
Windscreen wipers	PARK
Windscreen fan	Check and leave OFF
Windscreen heat	LOW, check lights
Radio	ON and checked
Mach/IAS warning horn	Check
Search radar	Check and leave ON
Auto-pilot master switches	ON
Aileron and rudder trims	Check
Aileron/spoiler disconnect lever	Normal and locked
Speed brakes	Check; zero
Flap/slat lever	Connected and UP
Compasses	Check and synchronise, lights out. At MAG
Hot rod	Check, OFF
Flight director	Checked, OFF
Search radar	On STANDBY (P/N)
LOC/VOR c/o switch	NORMAL

Battery start (*continued*)

Pilots' check after starting Nos. 3 and 2 engines (*continued*)

Clocks		Check
Altimeters		Check, set as required
Warning lights		Check
Static and pitot switches		NORMAL, guarded
Standby yaw damper		Tested. OFF
Yaw dampers		Nos. 1 and 2 ON. Tested
Tail trim		Check both systems. Set for take-off
Auto-pilots		Check
Spoiler isolate switches		NORMAL
Standby horizon and altimeter		Check
Turn-and-slip		Check
Aileron upset		Check. NORMAL

STARTING NOS. 4 AND 1 ENGINES CHECK

Power control and feel units	P/E	On. Lights out
All CB's and fuses	E	Closed
Fuel gauges	P/E	Contents checked
Start engines 4 and 1	E	Starting 4 and 1. All engines running. HP cocks to RUN
Starter master switch	E	ALL OFF
Captain's briefing	—	Completed

"Starting check complete"

Continue with the normal AFTER START CHECK

FREIGHT DOOR—OPENING (Post-Mod. 253)

Power operation

1. Remove section of hat rack aft of door.
2. Press in freight door arming button (panel EA); integral light on; button remains in.
3. Move positive lock lever to the up (disengage) position; CABIN FREIGHT and POSITIVE LOCK lights on.
4. Hold the door operating switch to DOOR OPEN until the door is in position. If it does not open, check the external manual selector is at NORMAL.
5. Push protective cover over door sill and fit safety-belt, if required.
6. Pull out freight door arming button; integral light out.
7. Fit jury strut if door is in half-open (horizontal) position.

Hand pump operation

1. Remove section of hat rack aft of door.
2. Move positive lock lever to up (disengage) position.
3. Pull and move the external manual selector to OPEN. DOOR OPEN light on.
4. Operate hand pump until door is in desired position.
5. Push protective cover over door sill.
6. Fit jury strut if door is in half-open position.

Freight door (Post-Mod. 253)

Emergency operation

1. Remove section of hat rack aft of door.
2. Move positive lock lever to up (disengage) position.
3. Pull and move the external manual selector to OPEN.
4. Remove external screw plug.
5. Insert and turn emergency release screw to release hooks and shoot bolts.
6. Push door open.
7. Push protective cover over door sill.
8. Fit jury strut if door is in half-open position.
9. Remove the emergency screw release and replace the external screw plug.

FREIGHT DOOR CLOSING (Post-Mod. 253)

Power operation

1. Check external manual selector is at normal.
2. Remove strut and safety-belt.
3. Press in freight door arming button (panel EA); integral light on; button remains in.
4. Raise protective cover clear of door sill.
5. Hold door operating switch to DOOR CLOSE until 5 seconds after door closed.
6. Move positive lock lever to down (engage) position; POSITIVE LOCK and CABIN FREIGHT lights out.
7. If the CABIN FREIGHT light does not go out, press test buttons and check amber lights come on and go out when buttons are released; a light remaining on indicates that the associated hook lock/shoot bolt is not engaged.
8. Pull out freight door arm. button; integral light out.
9. Stow jury strut and sill protective cover.
10. Replace section of hat rack.

Hand pump operation

1. Raise protective cover clear of door sill.
2. Remove jury strut.
3. Pull and move the external manual selector to CLOSE.
4. Operate hand pump to close door.
5. Move the positive lock lever to down (engage) position.
6. Move the external manual selector to NORMAL.
7. If the CABIN FREIGHT light does not go out, press test buttons and check amber lights come on and go out when the buttons are released; a light remaining on indicates that the associated hook lock/shoot bolt is not engaged.
8. Check door warning lights out on starting panel.
9. Replace section of hat rack.

Considerations

1. There is no emergency closing facility.
2. A malfunction is indicated by either the POSITIVE LOCK light or the CABIN FREIGHT door light being on, or one or more door test button lights remaining on after testing. The drill to be followed, should this occur in flight, is on Card 31.

FREIGHT DOOR—OPENING (Pre-Mod. 253)

Power operation

1. Remove section of hat rack aft of door.
2. Press in freight door arming button (panel EA); integral and ARMED lights on; button remains in.
3. Move positive lock lever to the up (disengage) position. CABIN freight door warning light on.
4. Hold the door operating switch to DOOR OPEN until the door is in position. If it does not open, check the external manual selector is at NORMAL.
5. Push protective cover over door sill and fit safety-belt, if required.
6. Pull out freight door arming button; integral and ARMED lights out.
7. Fit jury strut if door is in half-open (horizontal) position.

Hand pump operation

1. Remove section of hat rack aft of door.
2. Move positive lock lever to up (disengage) position.
3. Pull and move the external manual selector to OPEN. DOOR OPEN light on.
4. Operate hand pump until door is in desired position.
5. Push protective cover over door sill.
6. Fit jury strut if door is in half-open position.

Emergency operation

1. Remove section of hat rack aft of door.
2. Move positive lock lever to up (disengage) position.
3. Pull and move the external manual selector to OPEN.
4. Remove external screw plug.
5. Insert and turn emergency release screw to release hooks and shoot bolts.
6. Push door open.
7. Push protective cover over door sill.
8. Fit jury strut if door is in half-open position.
9. Remove the emergency screw release and replace the external screw plug.

FREIGHT DOOR—CLOSING (Pre-Mod. 253)

Power operation

1. Check external manual selector is at NORMAL.
2. Remove jury strut and safety-belt.
3. Press in freight door arming button (panel EA); integral and ARMED lights on; button remains in.
4. Raise protective cover clear of door sill.
5. Hold door operating switch to DOOR CLOSE until 5 seconds after door closed.
6. Press test buttons and check green light comes on indicating that the hook locks and shoot bolts are engaged.
7. Select positive lock lever to down (engage) position.
8. Check door warning lights out on starting panel.
9. Pull out freight door arming button; integral and ARMED lights out.
10. Stow jury strut and sill protective cover.
11. Replace section of hat rack.

Hand pump operation

1. Raise protective cover clear of door sill.
2. Remove jury strut.
3. Pull and move external manual selector to CLOSE.
4. Operate hand pump to close door.
5. Move positive lock lever to down (engage) position.
6. Move external manual selector to NORMAL.
7. Press test buttons and check green light comes on indicating that the hook locks and shoot bolts are engaged.
8. Check door warning lights out on starting panel.
9. Replace section of hat rack.

Considerations

1. There is no emergency closing facility.
2. If, at any time, a malfunction is indicated when the door test buttons are operated or, if electrical power is off when the door is closed using the hand pump, carry out the following checks:
   (*a*) Ensure hooks are engaged after removing their individual cover plates.
   (*b*) Ensure shoot bolts are engaged by checking the linkages of the top bolts.
   (*c*) Ensure positive locks are engaged after removing the cover plates in outboard floor panel of doorway

TRAINING CIRCUIT CHECKS

These checks are to be used when carrying out successive circuits and landings at the same airfield after the first circuit or landing has been carried out. If normal departure checks have been carried out, then the normal descent and field approach checks must be carried out before joining the circuit.

TAXY CHECK

LOC/VOR C/O switch .	C	NORMAL
Speed brakes . .	P	Zero
Trims	C	Set for take-off
Take-off speeds . .	C	Noted
Yaw dampers . .	C	Nos. 1 and 2 ON. Standby off
Power control and feel units . . .	E	On, lights out
Aileron/spoiler disconnect	C	NORMAL, locked
Generators . . .	E	Paired; SSB MANUAL SPLIT
Batteries . . .	E	ON
TRU's	E	Both ON
Booster-pumps . .	E	All on, pressure checked
Flaps/slats . . .	P/E	Set for take-off
Aileron upset . .	P	One system ARM

"Taxy check complete"

TAKE-OFF CHECK

Pressure head heaters	C/E	ON. Ammeters checked
Windscreen heat . .	C	HIGH
Anti-icing . . .	P/E	As required
Igniters . . .	P/E	As required
Seats and harnesses	All	Secure
Controls . . .	P	Check full and free movement
Stall dump lever . .	E	DUMP
HP stop valves . .	E	All SHUT; MI's cross-line

"Take-off check complete"

AFTER TAKE-OFF CHECK

Undercarriage . .	P	UP, if required
Landing lamps . .	P	Retracted
Stall dump lever . .	E	As required

"After take-off check complete"

LANDING CHECK

Speed brakes . .	P	Zero
Flaps and slats . .	P/E	Select and check at TAKE-OFF
Threshold speed . .	C/E	Checked and indexed
Landing briefing . .	P	Complete
Altimeters . . .	C	As required
Undercarriage . .	P	DOWN; check 3 greens and door lights out
Nosewheel steering .	P/C/E	Central (MI's in-line)
Brakes . . .	P/E	Normal system selected; pressures checked, lights out
Aileron upset . .	P	One system to ARM
Flight director mode selector . . .	P	OFF

Landing check (*continued*)

Landing lamps . .	P	As required
Igniters	P/E	As required
Engineer's landing check	E	Complete
Stall dump lever . .	E	DUMP

"Landing check complete"

LANDING CHECK—ENGINEER

Landing information . .	Noted
Fuel panel . . .	Checked
Galley switches . . .	OFF
SSB switch	MANUAL SPLIT
Circuit breakers . . .	Closed
Altimeter	Checked and set
Hydraulic systems . .	Contents and pressures Checked
Steering MI	In-line
Right spill valve . .	SPILL
Flight deck flow . . .	Minimum
HP stop valves . . .	All SHUT (below 1,500 ft.); MI's cross-line

AFTER LANDING CHECK

Flaps and slats . .	C/E	TAKE-OFF
Speed brakes . .	P	Zero
Pressure head heaters .	C	OFF
Windscreen heat . .	C	LOW
Landing/taxy lights .	P	As required
Tail trim . . .	P	Reset
HP stop valves . .	E	All NORMAL if refrigerators required

"After landing check complete"

Carry out the normal after landing check after the final landing.

Flight refuel

Flight refuel

FLIGHT REFUELLING CHECKS

Before contact check

1.	Stall dump lever . .	DUMP
2.	Right spill valve . .	SPILL
3.	Fuel transfer . .	All off
4.	Fin tank pre-set load needle . . .	Set to required contents
5.	Centre tank pre-set load needle . . .	Set to zero
6.	Flight refuel valves .	OPEN
7.	Transfer cross-feed .	OPEN
8.	Probe drain . .	SHUT

Immediately before contact check

Igniters . . . On

During contact

Monitor contents of individual tanks and, if necessary, refuel tanks selectively to keep within CG and wing symmetry limits.

After breaking contact check

1.	Igniters . . .	Off immediately
2.	Stall dump lever . .	Reset NORMAL
3.	Right spill valve . .	Reset
4.	Probe drain . . .	OPEN, then SHUT after 5 minutes

AIR QUARTERMASTER'S CHECKS

EXTERNAL CHECKS

1. Lower freight holds (loaded) . . . Check
   (a) Baggage/freight correctly loaded.
   (b) Nets fitted according to diagram.
   (c) If lashing used, sufficient used and lashed correctly.

2. Lower freight hold doors . . . . Check
   (a) Condition of doors.
   (b) Remove door sill and close door, ensuring thumb catch in correct position.

INTERNAL CHECKS

Aft fuselage

1. Water system (engineer's panel) . Check
   (a) Sufficient water for detail.
   (b) Water pumps (2) for serviceability, leave one ON.
   (c) Check hot water taps.
   (d) Switch ON toilet water heaters.

2. Aft toilets . . . Check
   (a) Main isolation cock OPEN.
   (b) Switch ON extractor fan; check fan running.
   (c) Heater drain cocks, check all SHUT.
   (d) Wash basin supply cocks, check OPEN.
   (e) Depress wash basin taps and check for flow.
   (f) Wash basins, mirror and surrounds for cleanliness.
   (g) Floors, toilets and surrounds for cleanliness.

3. AQM's panel switches . Check
   (a) All interior lighting serviceable. If in Pax role leave LASHING LAMP switch in DOWN position.

AQM checks

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Internal checks (*continued*)

(b) Operate ICE INSPECTION; TAIL CHANGE-OVER and NAV LIGHTS whilst No. 2 AQM checks lights visually.

(c) I/C system with flight deck and forward galley.

(d) P/A system (switch on at navigator's station) in both high and low volume settings.

(e) Galley services call button (audible response only).

4. Aft emergency equipment . . . . Check fitted

(a) Periscopes (2 off) fitted and secure.

(b) Fire extinguishers (3 off) fitted and secure.

(c) Portable oxygen bottles (3 off) fitted, plus masks with therapeutic connections.

(d) Axe fitted and secure.

(e) First-aid kits, 3 MEDIUM, 1 DAILY fitted and secure.

(f) Life rafts (3 MS26, 1 MS9) plus packs are fitted and secure.

(g) Life raft radio fitted and secure.

(h) Escape chute secure.

5. Rear galley . . . Check

(a) All galley equipment, working surfaces and floors for cleanliness.

(b) Operate hot meal container switches, hot water urns and hot cups.

(c) Switch ON extractor fans (2 off).

(d) Operate hot water urn charging cocks and galley sink supply cocks, checking for free flow.

NOTE: To carry out checks (b), (c) and (d) in 5 above, ensure galley power supply switches at Engineer's panel are ON.

(e) Operate all galley lighting.

(f) Ensure galley service door closed and anti-G lock in position. Check white marks on door frame and door correspond.

Mid fuselage

1. Seats . . . . Check operation
   (a) Seat backs for free and full movement to fully reclining position and all intermediate stops to upright position using the operation button.
   (b) Seat belt for cleanliness and serviceability, leave neatly folded.
   (c) Ensure ashtray fitted and empty.
   (d) Ensure life jacket fitted for each seat.
   (e) Meal tray fitted in each seat back. Ensure clean and serviceable.
   (f) Ensure sick bag in each seat pocket.
   (g) Seat for security ensuring leg pip-pins and locking levers in position.
   (h) Seat for tears, general condition and cleanliness.
2. Passenger facility units Operate facilities
   (a) Check call chimes; Orange light in button and AQM's panel; green light in roof plus audible chime. Press button to reset.
   (b) Operate pax personal reading lights (3 off).
   (c) Open louvre air supply cock (only if louvre fan ON).
3. Undercarriage locks . Check green
   (a) Mechanical indicators (2 off) read SAFE on green disc. Change to red when undercarriage up.
4. Escape windows (4) . Check secure
5. Main passenger door . Check
   (a) Door entrance light.
   (b) Axe fitted and secure to fuselage wall aft of door.
   (c) Checks, when door closed, as galley service door.
   (d) Escape chute secure.
6. Freight door . . Check (Card 17/17A (FRC))

AQM checks (*continued*)

CB

Forward cabin

1. Forward galley (if fitted) . . . . Check as for rear galley
2. Door lighting . . Check
   (a) Door entrance lighting for serviceability.
   (b) Service call (audible response only).
   (c) I/C with flight deck and rear AQM station.
   (d) Doors for anti-G locks in position and white lines correspond (when closed).
3. Emergency equipment Check
   (a) Portable oxygen bottles (3 off) fitted, plus masks and therapeutic connections.
   (b) Fire extinguishers (3 off) fitted and secure.
   (c) Axe fitted and secure.
   (d) First-aid kits fitted and secure.
   (e) Life rafts (3 MS26) plus packs are stowed and secure.
   (f) Life raft radio fitted and secure.
   (g) Child flotation cots fitted and secure.
   (h) Extra life raft packs fitted.
   (j) Escape chutes secure.
4. Toilets . . . Checks as for rear toilets

FLIGHT DATA

V_R and V_2 SPEEDS

Weight (*lb.* × 1,000)	V_R (*knots*)	V_2 (ISA S/L) (*knots*)	*Weight* (*lb.* × 1,000)	V_R (*knots*)	V_2 (ISA S/L) (*knots*)
323	155	163	250	133	147
320	153	162	245	132	147
315	152	162	240	130	145
310	151	160	235	128	144
305	149	159	230	127	143
300	147	157	225	125	142
295	146	156	220	124	142
290	145	156	215	122	141
285	143	154	210	121	140
280	142	154	205	120	139
275	140	153	200	118	139
270	138	152	195	117	138
265	137	150	190	115	137
260	136	149	185	114	137
255	135	148	180	112	136

THRESHOLD SPEEDS

Weight (*lb.* × 1,000)	*Target threshold K* (4 & 3 *engines*)	*Max. threshold K* (4 & 3 *engines*)	*Target threshold K* (2 *engines*)	*Flaps 20° Slats out K* (4 & 3 *engines*)	*Flaps 35° Slats out K* (4 & 3 *engines*)	*Slats in Flaps out K* (4 & 3 *engines*)	*Flaps in Slats out K* (4 & 3 *engines*)	*Slatless Flapless K* (4 & 3 *engines*)
290	147	162	152	157	150	167	167	192
285	146	161	151	156	149	166	166	191
280	144	159	149	154	147	164	164	189
275	143	158	148	153	146	163	163	188
270	142	157	147	152	145	162	162	187
265	141	156	146	151	144	161	161	186
260	139	154	144	149	142	159	159	184
255	138	153	143	148	141	158	158	183
250	136	151	141	146	139	156	156	181
245	135	150	140	145	138	155	155	180
240	133	148	138	143	136	153	153	178
235	132	147	137	142	135	152	152	177
230	130	145	135	140	133	150	150	175
225	129	144	134	139	132	149	149	174
220	127	142	132	137	130	147	147	172
215	126	141	131	136	129	146	146	171
210	124	139	129	134	127	144	144	169
205	123	138	128	133	126	143	143	168
200	121	136	126	131	124	141	141	166
195	120	135	125	130	123	140	140	165
190	118	133	123	128	121	—	—	163
185	117	132	122	127	120	—	—	162
180	115	130	120	125	118	—	—	160

NOTE 1: *Subtract* 4 knots when using alternative static source.
NOTE 2: *Add* 1 knot per 4,000 feet altitude above sea level.
NOTE 3: *Add* ½ of head wind } up to a max. of 15 knots (i.e. the max. threshold speed).
NOTE 4: *Add* ⅓ of wind shear } No increment to be added to the maximum threshold speed.

MINIMUM ACCEPTABLE P7 PRESSURE—INS HG ABS AT FULL THROTTLE

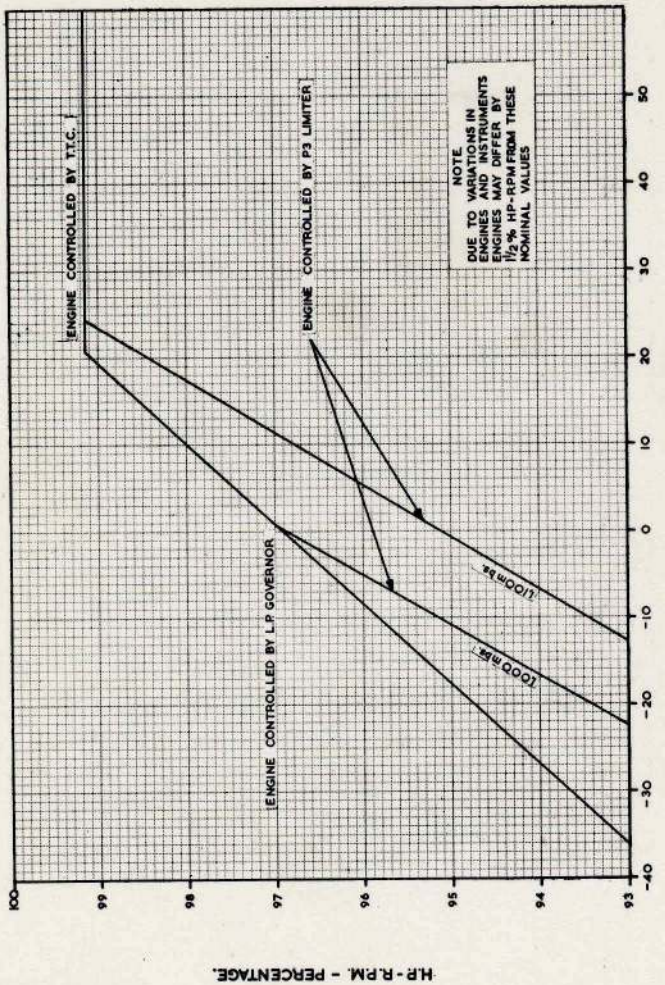
Ambient Pressure MB	*Ambient temperature* °C									*Ambient Pressure* MB
	−40	−30	−20	−10	0	10	20	30	40	
1,100	—	76·1	76·0	76·0	75·8	75·7	75·6	75·4	71·4	1,100
1,070	—	75·1	75·1	75·0	74·9	74·8	74·7	73·5	69·4	1,070
1,040	—	74·1	74·0	73·9	73·8	73·8	73·7	71·4	67·4	1,040
1,010	—	73·1	73·0	72·9	72·8	**72·7**	71·8	69·3	65·4	1,010
980	—	72·2	72·1	72·0	**71·9**	**71·0**	69·8	67·3	63·5	980
950	71·2	71·1	70·9	**70·9**	**70·0**	**68·8**	67·6	65·1	61·5	950
920	70·1	70·0	**69·9**	**68·9**	**67·7**	**66·6**	65·5	62·9	59·4	920
890	69·0	**68·8**	**67·9**	**66·7**	**65·5**	**64·4**	63·3	60·9	57·4	890
860	**67·7**	**66·8**	**65·6**	**64·4**	**63·3**	**62·3**	61·2	58·8	—	860
830	**65·7**	**64·5**	**63·2**	**62·2**	**61·1**	**60·1**	59·1	56·7	—	830
800	**63·3**	**62·1**	**60·9**	**59·9**	**58·9**	**57·9**	56·9	54·6	—	800
770	**60·9**	**59·8**	**58·6**	**57·6**	**56·7**	**55·7**	54·8	52·4	—	770
750	**59·4**	**58·2**	**57·1**	**56·1**	**55·2**	**54·2**	53·3	51·1	—	750

Anti-icing has no effect on the above P7 pressures except in the area shown in heavy type, where the following amounts should be subtracted :

Aircraft anti-icing −0·7 INS HG Engine anti-icing −0·7 INS HG Aircraft and engine anti-icing −1·4 INS HG

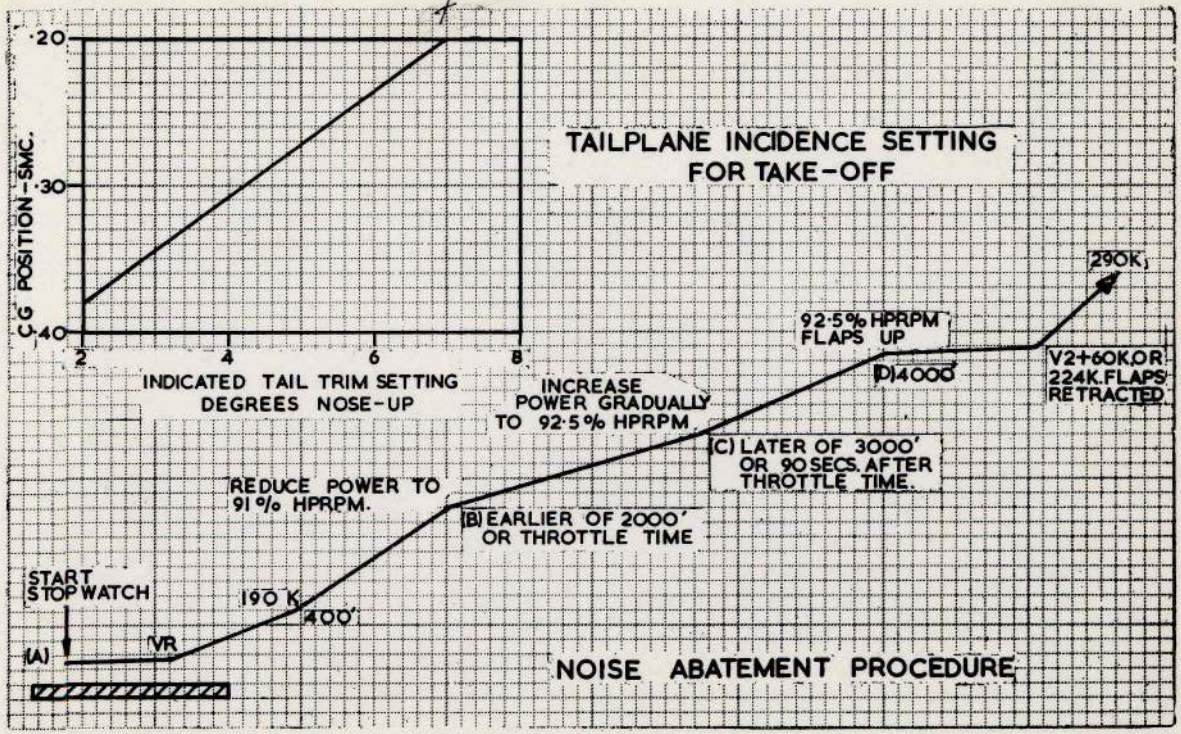
NOTE: Anti-icing is not necessary above 10°C.

NOMINAL HP-RPM



Flight data (*continued*)

TAILPLANE INCIDENCE SETTING FOR TAKE-OFF—NOISE ABATEMENT PROCEDURE



RESTRICTED

TRIM FUEL TABLE

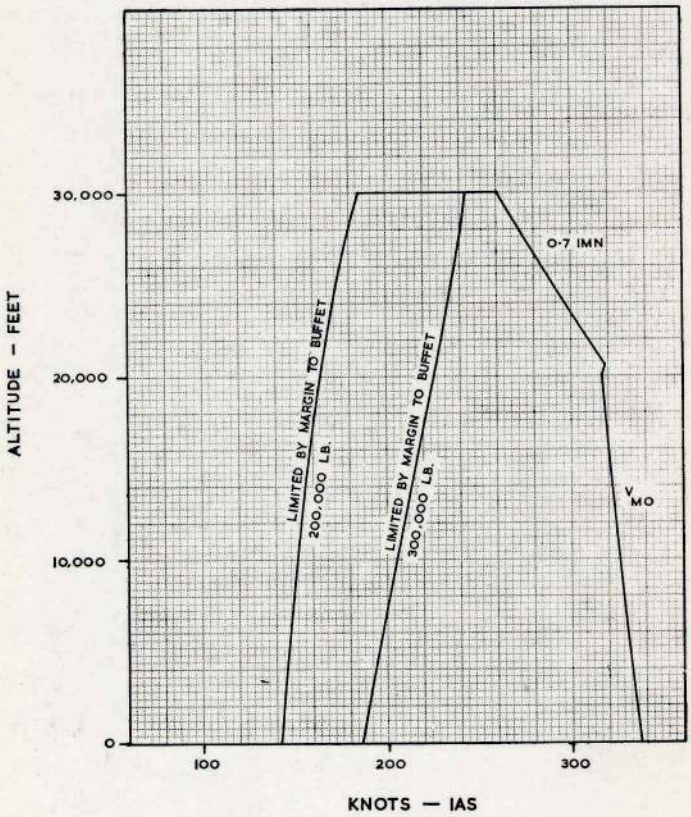
Zero fuel weight index	*Zero fuel weight* × 1,000 *lb.*									
	155 *to* 160	160 *to* 165	165 *to* 170	170 *to* 175	175 *to* 180	180 *to* 185	185 *to* 190	190 *to* 195	195 *to* 200	200 *to* 205
−45	11,000	11,000	11,000	11,000	11,000	11,000	11,000	10,800	10,800	10,800
−40	11,000	11,000	11,000	11,000	11,000	10 600	10,200	9,800	9,800	9,800
−35	10,400	10,400	10,600	10,600	10,200	9,800	9,400	9,000	9,000	9,000
−30	9,400	9,600	9,600	9,800	9,400	9,000	8 600	8,000	8.000	8,000
−25	8,600	8,600	8,800	8,800	8,400	8,000	7,600	7,200	7,000	7,200
−20	7,600	7,800	7,800	8,000	7,600	7,200	6,800	6,400	6,200	6,200
−15	6,600	6,800	7,000	7,000	6,800	6,400	6,000	5,600	5,400	5,400
−10	5,800	5,800	6,000	6,000	6,000	5,400	5,000	4,600	4,400	4,400
−5	4,800	5,000	5,000	5,200	5,000	4,600	4,200	3,800	3,600	3,600
0	4,000	4,000	4,200	4,200	4,200	3,800	3,400	3,000	2,600	2,600
+5	3,000	3,200	3,200	3,400	3,400	3,000	2,600	2,200	1,600	1,600
+10	2,200	2,200	2,400	2,400	2,600	2,200	1,600	1,400	800	800
+15	1,200	1,400	1,400	1,600	1,600	1,200	800	0	0	0
+20	0	0	600	600	800	0	0	0	0	0
+25	0	0	0	0	0	0	0	0	0	0
+30	0	0	0	0	0	0	0	0	0	0

NOTE 1: The fuel trim figure shown is the fuel *to be retained* in the fin for trim purposes, e.g. Zfw = 160,000 lb.; Zfw index = −20; in flight 7,800 lb. fuel must be retained in the fin tank (increased to or reduced to) to achieve the desired trim.

NOTE 2: The fuel trim values in the table must not be exceeded.

NOTE 3: For intermediate index values, use the column nearest to the index value required.

RELIGHT ENVELOPE



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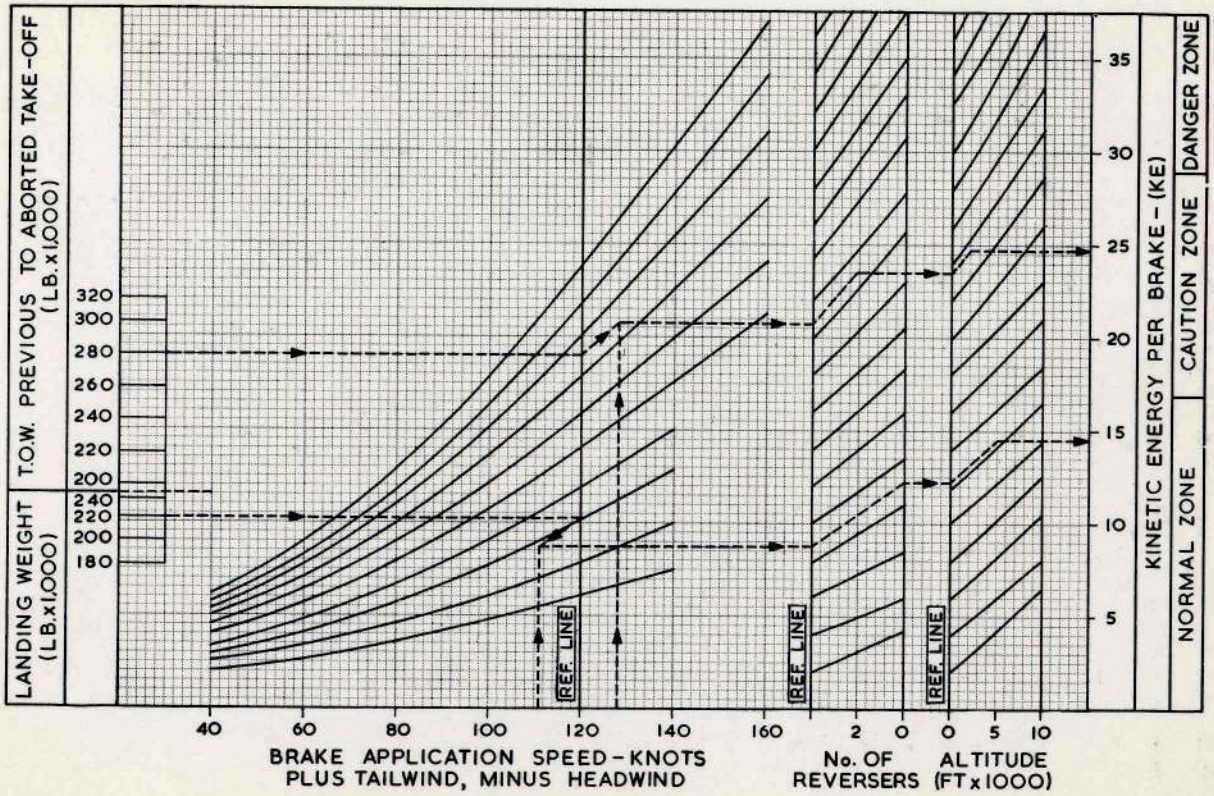
BRAKE COOLING TIMES

For corrections and zone instructions see Card 27



CORRECTIONS

The figure extracted from the KE scale on the graph is subject to the following corrections:

1. For every 20°C ambient temperature below ISA + 20°C, subtract 1·0 KE.
2. **After landing only,** when constant full maxaret braking is used on a dry runway, add 2·0 KE.
3. **After aborted take-off only** add 5·0 KE to allow for residual KE in brakes when leaving chocks.

The zone within which the corrected KE figure falls and the necessary instructions to be observed are as follows:

DANGER ZONE—(Above 29 KE)

1. Clear runway as soon as possible. Alert fire services.
2. Use minimum necessary footbrake pressure. Tyres will probably deflate.
3. Parking brake not to be used unless essential.
4. Shut down engines not required.
5. If tyres remain inflated, they must be approached with caution from front or rear.
6. Unless a brake/wheel assembly is in flames, allow brakes to cool without applying extinguishant.
7. If a brake/wheel assembly is on fire, apply dry powder extinguishant—and retire from vicinity for at least 15 minutes.
8. Allow a cooling period of 2-3 hours, unless cooling air is used. Wheels and tyres must be changed.

CAUTION ZONE—(17-29 KE)

1. Park the aircraft but do not apply parking brake.
2. Do not approach wheel assembly for at least 30 minutes.
3. Before take-off, check the brake/wheel assembly for damage and apply brake pressure to check for brake seal leaks.
4. Operate the brakes and check that pressures are maintained.
5. Allow brake cooling time of 5 minutes for each 1·0 KE in excess of 5·0 KE.

NORMAL ZONE—(Below 17·0 KE)

1. Allow brake cooling time of 5 minutes for each 1·0 KE in excess of 5·0 KE.
2. Below 5·0 KE—no brake cooling time necessary.
3. No special instructions.

ALTERNATIVE STATIC SOURCE CORRECTIONS

When using alternative static source:

To fly at M	*Fly at M*				
	FL 400	FL 350	FL 300	FL 250	FL 200
0·80	0·745	0·746	0·746	0·747	0·748
0·81	0·753	0·754	0·754	0·755	0·756
0·82	0·761	0·761	0·762	0·763	0·764
0·83	0·769	0·770	0·771	0·772	0·773
0·84	0·777	0·778	0·779	0·780	0·781
0·85	0·785	0·786	0·787	0·788	0·789
0·86	0·792	0·794	0·795	0·796	0·796

To fly at FL	*Fly at feet—using precision altimeter*					
	220 K	240 K	260 K	280 K	300 K	320 K
FL 400	39,000	38,700	38,100	—	—	—
FL 350	34,200	34,100	33,850	33,500	—	—
FL 300	29,350	29,300	29,200	29,000	28,750	28,350
FL 250	24,500	24,400	24,350	24,250	24,100	23,900
FL 200	19,600	19,500	19,450	19,400	19,250	19,150

To fly at K	*Fly at K*				
	FL 400	FL 350	FL 300	FL 250	FL 200
220	208	210	210	210	210
240	227	229	229	229	229
260	245	247	248	249	249
280	—	265	268	268	268
300	—	—	286	287	287
320	—	—	304	305	306

All figures are indicated values