

Procedure Boeing 747-200 Classic

	PF	PM	engineer
COCKPIT PREPARATION			
Battery			ON
If use GPU			
Call GPU			CALL
EXT PWR 1 and EXT PWR 2			CLOSE
Recirculation FANS n°1			ON
If not use GPU start APU			
APU			ON
APU when the APU door is open			START
APU check if there is a frequency			Check
APU GENERATOR			CLOSE
APU BLEED AIR			OPEN
If use GPU			
EXT PWR 1 and EXT PWR 2			OPEN
Recirculation FANS n°1			ON
STANDBY POWER			NORMAL
Overhead			
NAV LIGHTS		ON	
NO SMOKING		ON	
RADIO MASTER		ON	
ALIGN INS	ALIGN	Check	Check
WINDOWS HEAT		ON	
STALL WARNING		TEST	
OVER ROTATION		TEST	
STALL WARNING		TEST	
EMERGENCY LIGHTS		ARM	
SEATBELT (If the refueling is finished)		ON	
BODY GEAR-STEERING	ARM		
ANTI-SKID	ON		
GEAR	DOWN		
PARK BRAKE	Check		
ENGINE START LEVERS	CUTOFF		
COM ATC		SET	
SPEED BUG	SET	Check	
QNH	SET	SET	
RADAR		STBY	
RADAR GAIN		AUTO	
XPDR		STBY	
TRANSPONDER CODE		SET	
THROTTLE TEST TAKEOFF	PUSH		
THROTTLE	IDLE		
engineer panel:			
ESS AC BUS			NORM
GALLEY POWER			ON

TAKEOFF Weight			SET
CROSSFEED 1&4			OPEN
CROSSFEED 2&3			CLOSE
RESERVE VALVES			CLOSE
FUEL USED			RESET
pressurization panel :			
QNH			SET
SELECT MODE			AUTO
FL CRUISE + 1000ft			SET
hydraulic panel :			
OIL QUANTITY			TEST
NORMAL BRAKE SOURCE			PRIM SYS4
Jettison panel:			
ALL OFF			Check
INS >> NAV MODE	Check	Check	Check
SPEED BUG V2+10	SET	Check	
HDG BUG runway axis	SET	Check	
NAVIGATION MODE	HDG	Check	
ALTITUDE	SET	Check	
COURSE	SET	SET	
SWITCH RADIO/INS	RADIO	RADIO	
EPR MODE			EPR
EPRL MODE			GA
Before the passengers get on board			
If use GPU			
if APU not started, start APU see at beginning			SET
EXT PWR 1 and EXT PWR 2			OFF
Disconnect GPU			DISCONNECT
Air conditioning panel :			
ISOLATION VALVES			OPEN
PACKS open a valve			OPEN
Fuel panel :			
PUMPS			ON
pressurization panel			
BLEED AIR VALVES			OPEN
PACK 1&3			CLOSE
PACK 2			OPEN
hydraulic panel :			
ELEC PUMP HYD SYS 4			ON
When ready START ENGINE			
GALLEY POWER			OFF
BEACON		ON	

CALL BEFORE START CHECKLIST

START ENGINE			
START VALVE		ARM	
for each engine			
GROUND START 1 or 2	ON		
ANNOUNCE 20% N2			ANNOUNCE
ENGINE STAR LEVERS	IDLE		
ALL ENGINE START			
START VALVE		OFF	
AFTER START			
electrical panel :			
GEN			CLOSE
SPLIT SYSTEM			CLOSE
APU BLEED			CLOSE
GALLEY POWER			ON
ALL PACKS			OPEN
hydraulic panel :			
AIR PUMP			AUTO
FLIGHT DIRECTOR	ON	ON	
PITCH	SET		
FLAPS		SET	
FLIGHT CONTROL	SET	SET	
EPRL MODE			TOD
ANTI ICE	SET	CHECK	

CALL AFTER START CHECKLIST

TAXI			
APU			OFF
FUEL HEAT			OFF
ALL engineer panel : control not abnormal			CHECK
AFT GARGO HEAT			NORM
XPDR			TA
TAXI & LOGO LIGHTS			ON
PARKING BRAKE	OFF		
TRIM		SET	
PROBE HEATER		ON	
RADAR		ON	
AUTOBRAKE	OFF		

CALL BEFORE TAXI CHECKLIST

BEFORE TAKEOFF			
STROBE		ON	
XPDR		TA/RA	
ENGINE IGNITION		FLT START	
PACKS			CLOSE
FUEL PANEL CONFIGURE			SET
When lined up			
BODY GEAR STEERING	DISARM		
LANDING LIGHTS		ON	

CALL BEFORE TAKEOFF CHECKLIST

TAKEOFF			
THROTTLE >> EPR 1.1	SET		
AUTO THROTTLE		ON	
At 80 kts ANNOUNCE "80 kts"		ANNOUNCE	
Verify and announce "THRESHLD OK"		ANNOUNCE	
V1		ANNOUNCE	
Vr ROTATE		ANNOUNCE	
V/S >= 500ft/M "GEAR UP"	ANNOUNCE	SET	
maintain V2+10	SET	Check	
When altitude > 1200 Ft >> "AP ON"	ANNOUNCE	ON	
Procedure for the flap/speed table		SET	
When Flaps 5 :			
EPRL			CLB
When Flaps 0 :			
GEAR		OFF	
ENGINE IGNITION		OFF	
PACKS one by one (wait 30 seconds between)			OPEN
FUEL HEAT			AUTO
Alt < 10000 ft			
CLIMB SPEED 250 kts	SET	Check	

CALL AFTER TAKEOFF CHECKLIST below the line

Alt > 10000 ft			
pressurization panel			Check
SEATBELT		OFF	
LANDING LIGHTS		OFF	
CLIMB SPEED OPTIMAL	SET	Check	
CALL AFTER TAKEOFF CHECKLIST above the line			
Approach FL Cruise			
Reduce V/S	Check	SET	
SPEED MACH Established :			
EPR			MACH
EPRL			CRZ
Cruise			
FAN Supp			ON
Recirculation FANS n°2, 3, 4			ON
PACKS Configuration			SET
STEP CLIMB			
EPR			EPR
EPRL			CLB
Target Altitude	SET	Check	
ALT SET		ON	
MACH OLD		ON	
When new FL established :			
EPRL			CRZ
Fuel management			
refer to the table/chart			SET

PREPARE DESCENT AND APPROACH			
BRIEFING DESCENT/APPROACH/FINAL	SET	SET	SET
TOD calculate	APROUVE	SET	
NAV 1 and NAV2	SET	SET	
AUTOBRAKE	SET		
RADIOALTIMETER >> MINIMA	SET		
ANTI ICE as required	CHECK	SET	

START DESCENT			
With IAS MODE			
EPR			SPEED
Target altitude	CHECK	SET	
ALT SEL		ON	
AUTO THROTTLE		OFF	
THROTTLE	IDLE		
IAS MODE		ACTIVATE	
At 10000 ft			
REDUCE SPEED at 250 ks			
Control the speed with the THROTTLE	SET		
At target altitude			
EPR			SPEED
AUTO THROTTLE		ON	
AUTO THROTTLE SPEED	SET		
With V/S MODE			
Target altitude		SET	
ALT SEL		ON	
AUTO THROTTLE SPEED	SET		
V/S MODE		ACTIVATE	
V/S		ADJUST	
At 10000 ft :			
AUTO THROTTLE SPEED		250	
V/S		ADJUST	
CALL DESCENT/APPROACH CHECKLIST below the line			
Alt < 10000 ft			
SEATBELT		ON	
NO SMOKING		ON	
LANDING LIGHTS		ON	
Radar 4 at 6 ° DOWN		SET	
FUEL HEAT			OFF
EPRL			GA
ENGINE IGNITION		ON	
SPEED BUG	SET	CHECK	
SPOILER		ARM	

CALL DESCENT/APPROACH CHECKLIST above the line

Fuel management			
refer to the table/chart			SET

APPROACH			
RADIO ALTIMERS	DA	DA	
When approach FINAL :			
REDUCE SPEED to that of FLAPS 5	SET	CHECK	
FLAP 5		SET	
At IAF :			
REDUCE SPEED to that of FLAPS 10	SET		
FLAPS 10		SET	
Established :			
REDUCE SPEED to that of FLAPS 20			
FLAPS 20		SET	
GEAR		DOWN	
REDUCE SPEED to that of FLAPS 25			
FLAPS 25		SET	
REDUCE SPEED to that of FLAPS 30			
FLAPS 30		SET	
At 1000 ft AGL			
SPEEDBRAKE ARM	CHECK	CHECK	
FLAPS 25/30	CHECK	CHECK	
GEAR DOWN GREEN LIGHTS	CHECK	CHECK	
Missed Approach Altitude	CHECK	SET	
At 1000 ft AGL			
CALL LANDING CHECKLIST			

MISSED APPROACH			
TRHOTTLE	MAX		
CABRER	ACTION		
EPR			EPR
FLAPS 10		SET	
When V/S > 500 ft/m			
GEAR		UP	
Reduce the rate of CLIMB	SET		
SPEED to that of FLAPS 5	SET		
FLAPS 5		SET	
EPRL			CLB
SPEED 250 kts	SET	Check	

ROLLOUT			
SPEEDBREAK		CHECK	
REVERSE	ON		
At 60 kkt			
REVERSE	OFF		
AUTOBRAKE >> DISARM		CHECK	
When ready to leave the runway :			
BODY GEAR STEERING	ARM		

PARKING			
AUTOBRAKE	OFF		
ENGINE IGNITION		OFF	
RADAR		STBY	
STROBE		OFF	
SPOILER		OFF	
FLAPS		UP	
OUTFLOW VALVES			OPEN
MODE SELECT			MAN
AFT CARGO HEAT			OFF
APU			START

CALL AFTER LANDING CHECKLIST

AT PARKING			
TAXI LIGHTS		OFF	
Fuel panel ALL PUMPS			OFF
hydraulic panel : AIR PUMP 1,2,3			OFF
Air conditioning : BLEED VALVES 2,3,4			CLOSE
ENGINE 2,3,4			STOP
electrical panel APU GEN			CLOSE
hydraulic panel AIR PUMP 4			OFF
Air conditioning : BLEED VALVES 1			CLOSE
ENGINE 1			STOP
APU BLEED			OPEN
BEACON		OFF	
CHOCK	SET		
PARKING BRAKE	OFF		
TRIM >> 7 units	SET		
PROBE		OFF	
WINDOW HEAT		OFF	
PACKS 1,3 or 2,3			OPEN
hydraulic panel :			
ENG PUMPS >> NORMAL			CHECK
AIR PUMPS >> OFF			CHECK

CALL SECURE COCKPIT CHECKLIST below the line

CLOSE FLIGHT			
EMERGENCY LIGHTS		OFF	
RADAR		OFF	
RADIO MASTER		OFF	
INS		OFF	
APU BLEED			CLOSE
PACKS			CLOSE
APU			STOP
ALL LIGHTS >> OFF	SET	SET	SET
STANDBY POWER			OFF
BATTERY			OFF

CALL SECURE COCKPIT CHECKLIST above the line

Fuel heating condition

When fuel heat has to be applied:

- Fuel Heat Switches of engines requiring fuel heat ON

Check: . ICING lights illuminate.
 . Engine fuel temperatures increase.

After 1 min. (or 2 min.) as required:

- Fuel Heat Switches OFF

Check: . ICING lights extinguish.
 . Engine fuel temperatures decrease.

During prolonged taxiing repeat procedure after 30 min.

During Flight

At regular intervals check NO 1 MAIN and all ENG fuel temperatures, leave ENG 1 or ENG 4 selected.

When any engine fuel temperature approaches 5°C:

- Fuel Heat Switches AUTO

If any ICING light illuminates, fuel heat is applied automatically to all engines.

Check: . All ICING lights on.
 . All engine fuel temperatures increase.

After 1 min:

- . All ICING lights extinguish.
- . All engine fuel temperature decrease.

When fuel heat has to be applied:

- Fuel Heat Switches of engines not requiring fuel heat OFF

Cruising configuration packs

Configuration	Number of M-class passengers			
	from - to	from - to	from - to	from - to
13 pallets	0 - 65	66 - full		
7 pallets	0 - 110	111 - 160	161 - full	
all passenger	0 - 170	171 - 260	261 - 300	301 - full
	1/2-0-1/2	1/2-1/2-1/2	1/2-1-1/2	1-1/2-1

Fuel management

Pour compléter le mémo ci-dessus et permettre de vérifier l'ensemble du panneau carburant, les tableaux ci dessous représentent l'état du panneau carburant aux différentes phases du vol.

Si quantité reservoir central supérieure à 4500 kg							
Engine Start // Take Off							
	Reserve1	1	2	Central	3	4	Reserve 4
Pompes		ON	ON	ON	ON	ON	
Vannes	CLOSE	OPEN	CLOSE		CLOSE	OPEN	CLOSE
Climb / Cruize							
Pompes		OFF	ON	ON	ON	OFF	
Vannes	CLOSE	OPEN	OPEN		OPEN	OPEN	CLOSE
Quand réservoir central < 1400 kg et/ou voyant de basse pression s'allument							
Pompes		OFF	ON	OFF	ON	OFF	
Vannes	CLOSE	OPEN	OPEN		OPEN	OPEN	CLOSE
Quand quantité 2 = 3 = 1+réservoir = 4+réservoir							
Pompes		ON	ON	OFF	ON	ON	
Vannes	CLOSE	OPEN pour maintenir la pression dans le transfert	CLOSE		CLOSE	CLOSE	CLOSE
Lorsque la quantité des réservoirs 1 et 4 =< 2300 kg							
Vannes	OPEN						OPEN

Si quantité reservoir central inférieure à 4500 kg							
Engine Start // Take Off							
	Reserve1	1	2	Central	3	4	Reserve 4
Pompes		ON	ON	OFF	ON	ON	
Vannes	CLOSE	OPEN	CLOSE		CLOSE	OPEN	CLOSE
Climb / Cruize et réservoir central > 1400kg							
Pompes		OFF	ON	OPEN	ON	OFF	
Vannes	CLOSE	OPEN	OPEN		OPEN	OPEN	CLOSE
Quand réservoir central < 1400 kg et/ou voyant de basse pression s'allument							
Pompes		OFF	ON	OFF	ON	OFF	
Vannes	CLOSE	OPEN	OPEN		OPEN	OPEN	CLOSE
Quand quantité 2 = 3 = 1+réservoir = 4+réservoir							
Pompes		ON	ON	OFF	ON	ON	
Vannes	CLOSE	OPEN pour maintenir la pression dans le transfert	CLOSE		CLOSE	CLOSE	CLOSE
Lorsque la quantité des réservoirs 1 et 4 =< 2300 kg							
Vannes	OPEN						OPEN