Checklist MS FSX incl. PMDG 747-400(F)

**IVAO:**
Member-#: _____________________  
Website-PW: _____________________  
Network-PW: _____________________

**Attention:**
PMDG Options Menu / Various: Ground Air/Power Available should be set to on  
If not: Bring forward APU start (instead of Ext Pwr On)

**Parking Position / Preparation:**
- Load & Fuel (at Configurator) Set  
- Flightplan Create a flightplan (in FSBuild and save at PMDG dir.)  
- FSX Start & load/create 747-flight  
- Dark & Cold Load D&C panel setting  
- Load & Fuel (at FSX) Check (or reset)  
- Parkingbreak Set  
- Dark & Cold (at Configurator) Load  
- IVAP-Connection Activate  
- Dep-Metar Check & note  
- Arr-Metar Check & note  
- Door(s) Open  
- Gangway Enable (if available) (Ctrl + J)

**OVHP only:**
- Battery On  
- Standby Power Auto  
- Bus Tie switches Auto  
- GENerator CONTrol switches On  
- Hydraulic Demand pump switches 1-3 Off  
- Hydraulic Demand pump switch 4 Aux  
- Engine hydraulic pump selectors On  
- Ext Pwr 1 switch On (if available) (needs parking break to be set)  
- Ext Pwr 2 switch On (if available) (needs parking break to be set)  
- Panel lights  
  - CKT BKR OVHD PANEL On (if needed)  
  - GLARESHEILD PANEL/FLOOD On (if needed)  
  - DOME On (if needed)  
- Elec Eng Control switches Norm & saved  
- Utility (power switch) Left On  
- Utility (power switch) Right On  
- Lights  
  - NAV On (mandatory)  
  - LOGO On  
  - WING On  
- Emergency Light Arm

**IRS Alignment (OVHP & FMC):**
- IRS switches (1-3) Off  
- IRS switches (1-3) Nav  
- IRS switches (1-3) Align
○ ➔ FMC:
  ▪ Ident page 1L
  ▪ Pos Init page 6R
  ▪ Copy GPS Position 4R (alternative enter 4-letter airport code & press 2L)
  ▪ Paste to IRS Pos. 5R (alternative copy airport position to IRS; 2R ➔ 4R)

○ IRS switches (1-3)
  • Fuel Pumps Off (CTR, STAB, MAIN 1 and 4, OVRD & MAIN 2 and 3)
  • Fuel X-Feed On (4 switches)
  • Nacelle Anti-Ice Off
  • Wing Anti-Ice Off
  • Window Heat Enable
  • Yaw Dampers On
  • APU switch Start
  ---wait till APU Gens available---
  • APU Gen Switches 1 & 2 On
  • PASSenger TEMPerature Auto
  • FLT DECK (temperature) Auto
  • Trim Air On
  • Upper Recirculation Fan On (Upr Recirc)
  • Lower Recirculation Fan On (Lwr Recirc)
  • Gasper On
  • Pack switches (1-3) Norm
  • ISLN switches L & R Open (“Valve” extinguished)
  • APU Bleed (abv Eng Bleed) On

➔ End OVHP only

• FMC
  - Clear messages ➔ CLR
  - Route Page ➔ RTE
  - Enter company route [read: enter flightplan-name (created in FSBuild)] ➔ 3R
  - Activate ➔ 6R ➔ Exec
  - Performance initialization page ➔ 6R
  - Enter FL / altitude ➔ 1R (max FL for 747 = FL410)
  - Gross Weight auto function ➔ 1L
  - Enter fuel reserve in % ➔ 4L
  - Enter Cost Index (50 to 100) ➔ 5L
  - Thrust Limit page ➔ 6R
  - Modify Thrust settings if needed
  - Takeoff page ➔ 6R
  - Enter flaps setting (standard 20) ➔ 1L
  - Verify V1, VR and V2 ➔ 1R ➔ 2R ➔ 3R (remember V2 speed)
  - Verify takeoff trim settings ➔ 4R (remember trim number)

• IVAP-flightplan Read from FMC & note/enter in IVAP FP
• Speed at flightplan Enter TAS (calculate: KIAS + FL/2) or MACH
• Departure Time Enter (UTC to CET ➔ CET -2 (winter -1))
• EFIS-Mode (MainPanel/MP) MAP
• EFIS-Range (MP) 40nm (or as required)
• GND-Control Set frequency (active ATC or Unicom 122.8)
• IFR-clrc Request (when ATC active)
• FP-correction Correct (if required / requested)
• IFR-clrc-data Note (Squawk, First-Altitude, QNH ➔ Readback)
- Squawk Set
- Altimeter Set to actual atmospheric pressure (B)
- F/D (AP) On
- V2 (AP) Enter V2 speed to IAS/MACH indicator of AP
- LNAV (AP) Arm
- VNAV (AP) Arm
- First Alt (AP) Set
- AP Disengage Bar Up
- Fuel Control Switches (TP) Cutoff (Throttle Panel)
- Trim settings (TP) Check (same as FMC) (NUM1/7 with NUM off)
- Autobreak RTO
- TCAS switch Stby/Test
  ---wait till TCAS test finished---
- TCAS switch TA/RA
- TCAS biasing mode Above
- No Smoking On (or Auto)
- Seat Belts Auto
- FLT DK Door Lock
- TFC button (EFIS) Press (and check potential traffic)
  ---open Overhead panel & EICAS panel---
- Fuel Button (EICAS) Press & check fuel
- Fuel pumps On (all fuel pumps of tanks containing fuel)
  ---wait till fuel pumps rdy (green light)---
- Xfeed Set
  o Tank 2 > Tank 1 Xfeed 1 on
  o Tank 3 > Tank 4 Xfeed 2 on
  o Otherwise Xfeed off

**Engine s/u & Pushback:**
- Gangway disable (strg + j)
- Doors closed
- Engine s/u & Pushback p/b clrc request
- Beacon Light On
- Hydraulic Demand pump switches 1-3 Auto
- Hydraulic Demand pump switch 4 Aux (check)
- Pack 1 On
- Pack 2 & 3 Off
- Engine Bleed Air switches On
- EICAS Open Engines Page
- EICAS Clear EICAS messages (Cacl Btn.)

- Parking break Off
- Pushback Start
- Engine Start Procedure:
  o Autostart:
    - Autostart On
    - Continuous Ignition On
    - Fuel Control Swt. 1 – 4 Run
    - Engine 1 & 4 Start Sel. Pull
      ---wait till Engine 1 & 4 back at idle---
    - Engine 2 & 3 Start Sel. Pull
No Autostart:
  - Autostart Off
  - Continuous Ignition On
  - Engine 1 & 4 Start Sel. Pull
    ---wait till N2% RPM reaches magenta line (14%)---
  - Fuel Control Swt. 1 & 4 Run
    ---wait till Engine 1 & 4 back at idle---
  - Engine 2 & 3 Start Sel. Pull
    ---wait till N2% RPM reaches magenta line (14%)---
  - Fuel Control Swt. 2 & 3 Run

• APU Off
• APU Bleed Air Off
• Packs Norm (all)
• Hydraulic Demand pump switch 4 Auto
• Engine & Wing anti-ice On (under 10°C TAT)
• Main Display Check for warnings

• Taxi Lights On
• Flaps Select (as filled in FMC)
• Pushback Finish

Taxi:
• Taxi-Circ Request
• Taxiways Note (if needed)
• Ground-Guidance Request (if needed)

h/p:
• Hand-off GND to TWR Change frequency
• I/u & t/o clrc Request (rdy for dep h/p xx)
• Landing Lights On
• Strobe Light On
• IVAP-Transponder On
• Postion & hold Taxi & stop on rwy

Ready to Takeoff:
• Parkingbreak Set
• Autothrottle (AP) On
• AP settings Check (FD on, HDG, IAS, LNAV, VNAV)
• Thrust Levers Forward
  ---wait till 70% N1---
• Parkingbreak Release
• TO/GA button Press (the screw over the F/D switch)
• Yoke Press forward till 80kts
• V1 Abort of start not possible anymore
• VR Lift nose up
• V2 Lift-off

Takeoff:
• Trim settings Adjust (when needed)
• Gear Up (at positive climb rate >500ft)
• Autopilot On (1 of 3)
- Flaps: Raise (on schedule, see PFD)
- Landing gear lever: Off position
- Airborne: Publish airborne when on Unicom (no ATC)
- Start time: Note (if needed)
- Hand-off TWR to APP(DEP): Change frequency

**Climb:**
- Landing-/Taxi Lights: Off
  --- to final FL / next FL clrc ---
- AP altitude (& speed): Change (Selected Mode if needed)
- TCAS biasing mode: N
  ---do the following things if required---
- Hand-off APP to CTR: Change frequency
- Engine & Wing anti-ice: On (under 10°C TAT)
- Altimeter: Readjust (above 18000ft)

**Cruise:**
- Radio /ATC contact: Maintain (on UniCom watch TCAS)
- Autopilot / FMC: Check permanently
  o FMC: Check PROGress page for fuel consumption
  ---when center tanks (center/stab) empty---
- Center / stab fuel pump: Off
  ---when inner wing tanks have reached same fuel load as outer wing tanks---
- Xfeed: Off

**Descent & Approach:**
- Descent preparations: Begin 30nm before T/D (Top of Descent)
- Airport-/Meta-Information: Retrieve
- Autobreaks: Set
- FMC:
  o Arrivals page ➔ DEP/ARR
  o Set active rwy (and approach/STAR)
  o Approach Ref page ➔ INIT REF button
  o Copy flap and corresponding Vref setting ➔ 1R or 2R
  o Paste for approach ➔ 4R
  o Note approach speed (see 4R)
  o NAV Radio page ➔ NAV/RAD
  o Note rwy heading (see 4L)
  o Close FMC
- Start of Descent (4 possibilities):
  o VNAV:
    ▪ Alt (AP): Set (before reaching T/D !)
    ▪ VNAV: Will descent automatically at T/D
  o DES NOW:
    ▪ Alt (AP): Set (before reaching T/D !)
    ▪ FMC: ACT ECON CRZ page ➔ VNAV
    ▪ Page 2: Next Page
    ▪ Des Now: 6R
    ▪ Execute: EXEC
  o FL CH:
    ▪ Alt (AP): Set
    ▪ FL CH (AP): On
- Speed (AP)  Set to IAS, set Speed

  o Change Cruise Alt:
    - FMC  ACT ECON CRZ page ➔ VNAV
    - Alt (FMC)  Enter in Scratchpad
    - Cruise Alt (FMC)  Set ➔ 1L
    - Execute  EXEC

- TCAS Biasing mode  Below
- Speedbrakes  Up (when needed/too fast)
- Altimeter  Readjust (under 18000ft)
- Hand-off CTR to APP  Change frequency
- Landing lights  On
- Taxi light  On

Final approach & Landing (Autoland):
- Flaps  Lower (as indicated on PFD) (e.g. 1 passes by set to 5)
- Gear  Down (under 270kt / at flap 20)
- Speedbrake  Arm
  ---stabilize von glideslope---
- ILS captured  Announce (on Unicom state final app)
- LOC (AP)  On (to follow ILS localizer)
- APP (AP)  On (to follow glideslope)
  ---check, when APP pressed, LOC, VNAV off, 3 AP on---
- Hand-off APP to TWR  Change frequency
- Landing circ  Request (or state intention on Unicom)
  ---Touchdown---
- Throttles  Idle
- Thrust reversers  Engage (if needed)
- Thrust reversers  Disengage (at 80kt) (Throttles idle)
- Autopilot (AP)  Dienage
- A/T (AP)  Off
- F/D (AP)  Off
- Runway  Vacate („rwy vacated“)

Final approach & Landing (w/o Autoland):
- Flaps  Lower (as indicated on PFD) (e.g. 1 passes by set to 5)
- Gear  Down (under 270kt / at flap 20)
- Speedbrake  Arm
  ---stabilize von glideslope---
- ILS captured  Announce (on Unicom state final app)
  ---check flaps to ref-degree and gear down---
- Hand-off APP to TWR  Change frequency
- Autopilot (AP)  Disengage (Disengage bar down)
- A/T (AP)  Off
- F/D (AP)  Off
- Trim settings  Adjust (when needed)
- Landing circ  Request (or state intention on Unicom)
  ---Touchdown---
- Throttles  Idle
- Thrust reversers  Engage (if needed)
- Thrust reversers  Disengage (at 80kt) (Throttles idle)
- Runway  Vacate („rwy vacated“)
**Taxi:**
- Transponder                      Stdby
- Hand-off TWR to GND              Change frequency
- Taxiways                        Note and follow (with active ATC)
- (Ground-Guidance)               Request if required
- Flaps                           Set 0
- Speedbrake                      Disengage (if engaged)
- Autobrakes                      Off
- Landing lights                   Off
- Strobe                          Off
- **Landing time**                 Note (if needed)
- APU                             Start

**Parking Position:**
- Parking brake                   Set
- ATC contact                      End (state “on blocks, thx for service, bye”)
- APU Gen 1 & 2                   On
- APU Bleed                       On
- Engine Bleed                    Off
- Engine hydraulic pumps          Off
- Fuel control switches           Cutoff
- Seatbelts                       Off
- Door s                          Open (shift + e)
- Gangway                         Enable (strg + j)
- Beacon lights                   Off

---Aircraft ready for turn-around /next flight---
---Continue if Cold&Dark needed---

- Ground power                    On (if available)
- APU bleed                        Off (if Ground power available)
- APU                             Off (if Ground power available)
- Yaw Dampers                     Off
- Hydraulic Demand switches       Off
- Continuous Ignition             Off
- Autostart                       Off
- IRS systems 1-3                 Off
- Utility L & R                   Off
- Fuel pumps                      Off (all)
- XFeeds                          On (all)
- Window heat                     Off
- Engine & Wing anti-ice          Off
- AFT Cargo HT(heat)              Off
- Trim Air                        Off
- Gasper                          Off
- UPR RECIRCulation fan           Off
- LWR RECIRCulation fan           Off
- Packs 1-3                       Off
- ISLN switches L & R             Off
- GENerator CONTrol switches      Off
• TCAS Stdby
• If still on APU (no Ground power):
  o APU bleed Off
  o APU Gen 1 & 2 Off
  o APU Off
• Ground power Off
• External lights Off (all)
• Internal lights Off (all)
• Bus Tie Switches Off
• Stdby power selector Off
• Battery Off

Checklist for PMDG 747X with Microsoft Flight Simulator.

Created by: Carsten Rau (June2008 / v5)
I used to create: PMDG Manual, Michael Swannick’s B744 Checklist, Jared Smith’s 744 Guide
Only use with: Microsoft Flight Simulator / IVAO (Intl. Virtual Aviation Organization)
Visit:
  http://www.ivao.aero
  http://www.carstenrau.de
  http://www.leveldsim.com - Level-D 767
  http://www.precisionmanuals.com - PMDG 747
  http://www.wilcopub.com - Wilco 737 PIC / Airbus Series 1 & 2
Table Represents M.86 Cruise at Optimum Altitude (or use of Step Climb Procedures)

<table>
<thead>
<tr>
<th>Trip Length</th>
<th>Pressure Altitude (Feet) / True Airspeed (Knots)</th>
<th>Flight Time (Hours:Minutes) and Fuel Burn (Pounds x 1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FL410 / 419</td>
<td>FL390 / 479</td>
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<tr>
<td>8400</td>
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</table>

Adjust: 700lbs/hr  880lbs/hr  1000lbs/hr  860lbs/hr  680lbs/hr  320lbs/hr

Note: The graphic above represents Flight Plan Fuel only.
Upper & Lower graphics available for free at [http://www.precisionmanuals.com](http://www.precisionmanuals.com) (747 manual)

### Maximum & Optimum Cruise Altitudes

<table>
<thead>
<tr>
<th>Altitude</th>
<th>Optimum Wt</th>
<th>Maximum Wt.</th>
<th>Time to Burn Fuel Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL420</td>
<td>470,000lbs</td>
<td>520,000lbs</td>
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**Fuel planning notes:**

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<tr>
<th>Description</th>
<th>Value</th>
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<tr>
<td>Basic Operating Weight (OEW)</td>
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<td>Payload (passengers &amp; cargo)</td>
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<td>Zero Fuel Weight (ZFW)</td>
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<td>Minimum Landing Fuel</td>
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<td>Alternate Fuel (200nm distance)</td>
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<td>Contingency Fuel (holding, taxi, etc.)</td>
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<td>Planned Landing Weight (PLW)</td>
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<td>Flight Plan Fuel (fuel for route)</td>
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<tr>
<td>Planned Takeoff Weight (PTOW)</td>
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</tbody>
</table>

**Formula:**

- Flight Plan Fuel + 60.000 LBS = Total Fuel

**Recommendation:**

- Total fuel = *Enough fuel for route, 1h contingency (holding & taxi), problematic winds, alternate fuel for 200nm and a minimum landing fuel (1h+). Modify alternate value as needed.*
- Load all wing tanks with same amount of fuel; outer tanks full ➔ inner tanks ➔ center tanks.

Recommendation: Print pages 2-1 to 2-16 (Cruise / Fuel) & 3-1 to 3-7 (Landing) from 747 manual.
<table>
<thead>
<tr>
<th>CVSM</th>
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1 Step = 4000 ft

1 Step = 1200 m

1 Step = 2000 m

RVSM: All countries (including the Atlantic Ocean) with the following exceptions:
RVSM (North-South): France, Italy, Portugal, Spain & New Zealand.
RVSM (meter): China, excluding Hong Kong, Macau and Taiwan.
CVSM (meter): Russia, Mongolia, North Korea, Kyrgyzstan, Kazakhstan, and 6,000 m or below in Turkmenistan (where feet is used for FL210 and above).