

[NAPULEVOLA FLIGHT OPERATIONS DEPARTMENT]

BOEING 777-200LR
NORMAL OPERATING PROCEDURES (NOP)

[*edition 1.0*]

1. INTRODUCTION

The purpose of this document is to establish standard operating procedures for the NapuleVola B777 fleet. Pilots are kindly requested to adhere to the procedures described in this document when flying a B777 with NapuleVola registration.

What this document is about:

- a) A guide on how to operate the aircraft from a cold and dark situation to shutdown according to NPV standards and operational limitations;
- b) a way to promote standardization among NPV B777 pilots;
- c) a way to improve your knowledge on the PMDG B777.

What this document is **not**:

- a) A guide on "*how to fly an aircraft*" (e.g.: how to perform a takeoff/landing or intercept a radial);
- b) A guide on abnormal procedures, decision making and flight management (with few exceptions);
- c) A guide about flight planning;
- d) A guide on how to connect to IVAO/VATSIM networks.
- e) A guide on the aircraft systems;
- f) A guide on special operations like Low Visibility (AWOPS), ETOPS, RVSM and NAT operations (discussed separately).

This NOPs are designed to be followed by pilots with different skills levels. For this purpose the procedures are divided into:

BASIC

ADVANCED

REALISTIC

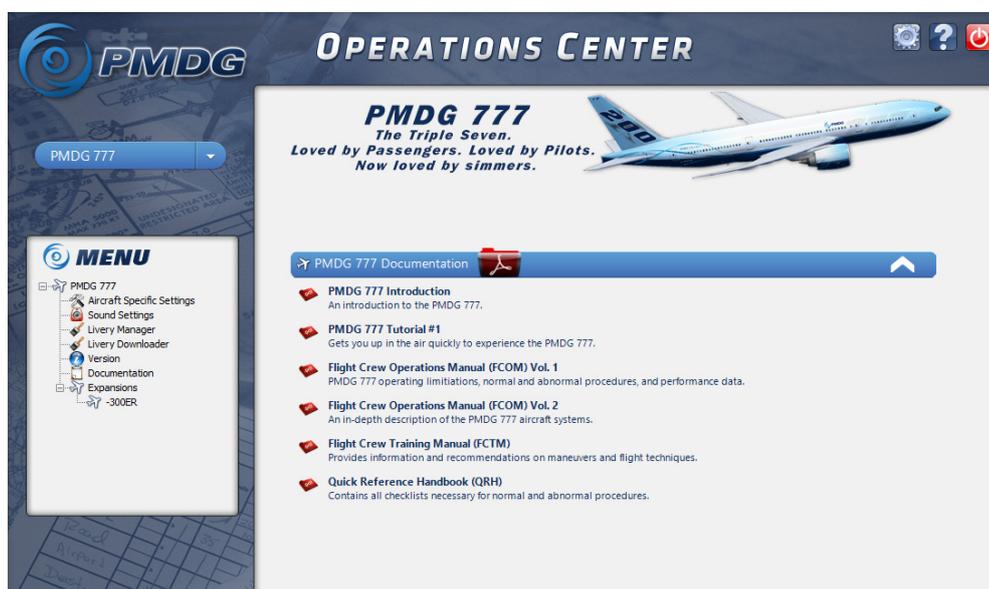
Please feel free to follow the level of difficulty you feel more comfortable with. However please keep in mind that this is not a "flight simulator first flight guide". **We assume you already have some GENERAL AVIATION KNOWLEDGE and FLIGHT SIMULATOR BASIC FLYING SKILLS.**

2. SUPPORT DOCUMENTATION

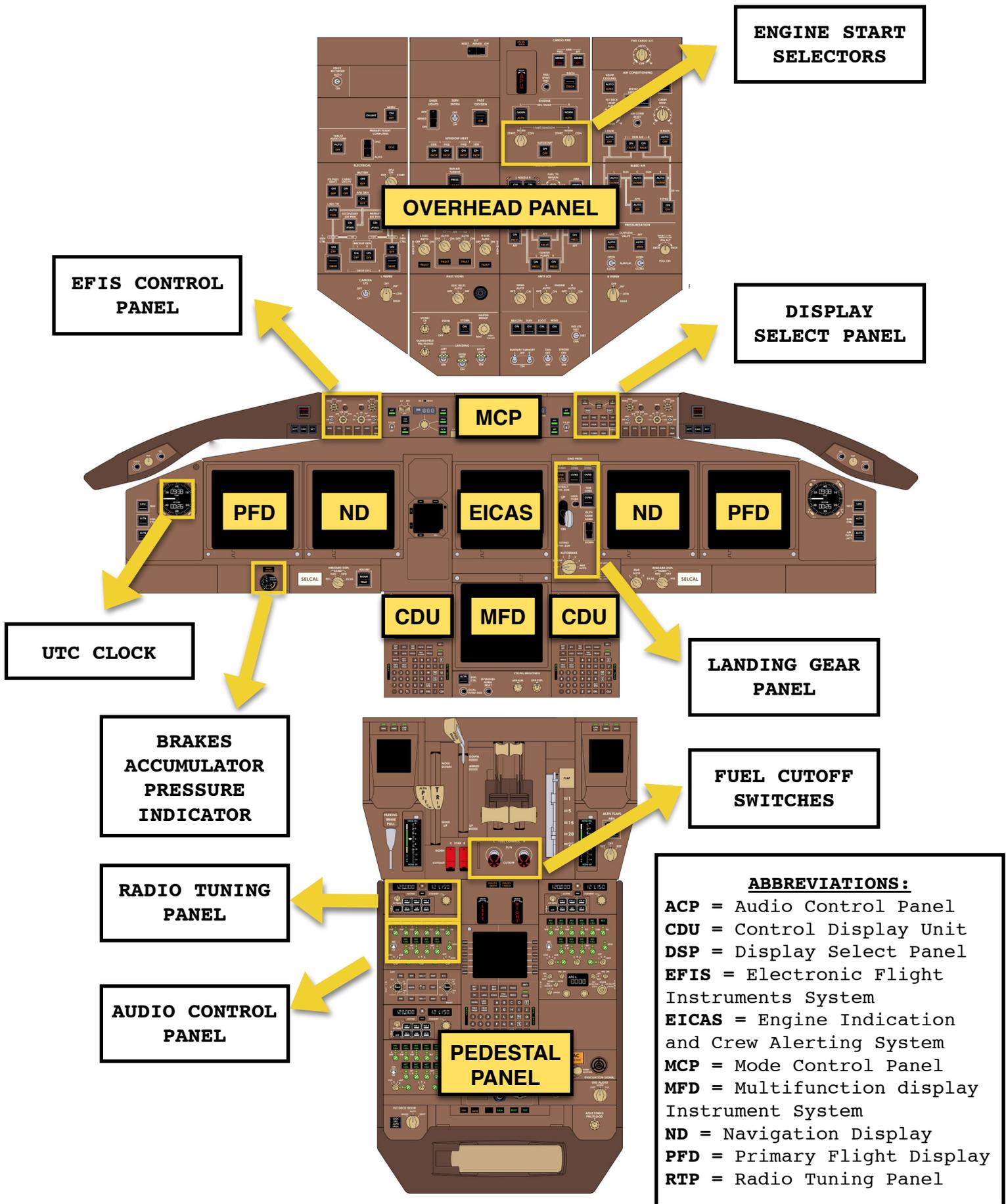
Together with this NOPs please refer to the PMDG official documentation. Mentions are made to the *PMDG Flight Crew Operations Manual (FCOM)*, the *Quick Reference Handbook (QRH)* and the *Flight Crew Training Manual (FCTM)*. **Example: (FCOM SP 6.2)** means FCOM page number: SP 6.2.

This guide also assumes that the B777 is configured as explained in the "NPV B777 configuration guide" (available on www.napulevola.it).

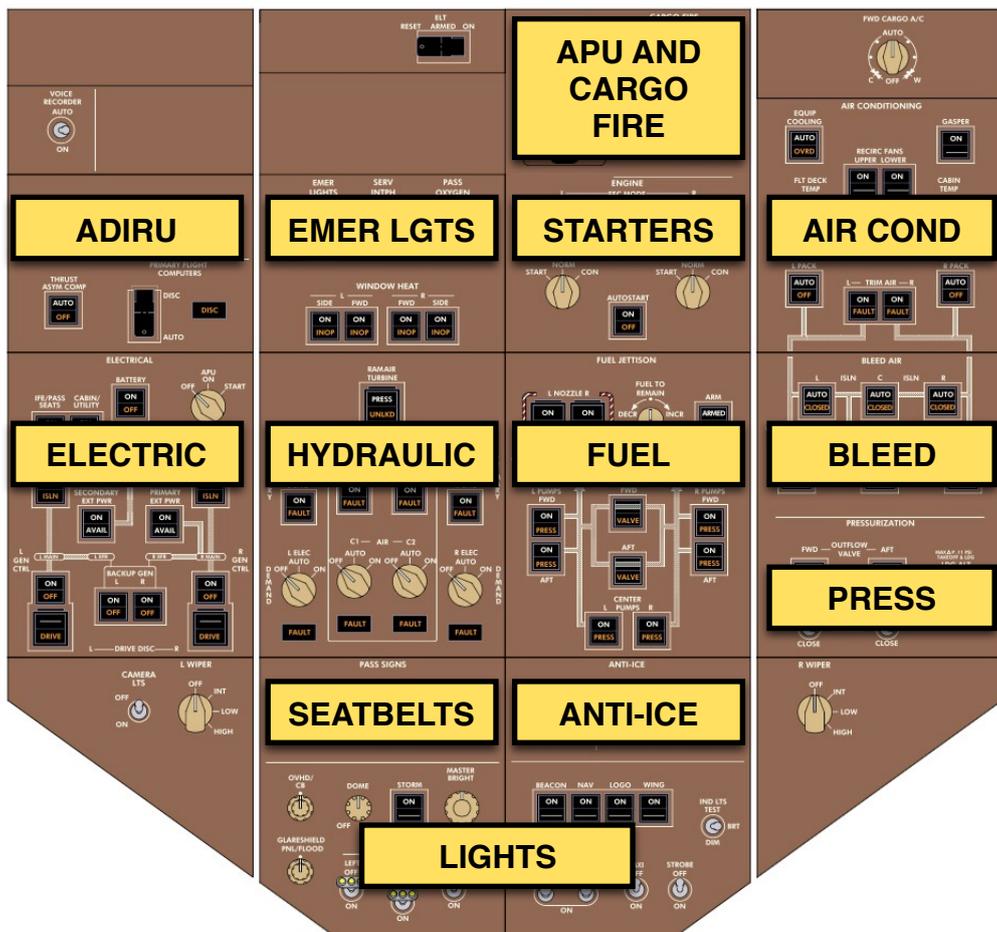
PMDG manuals can be found under the "Documentation" section of the PMDG Operations Center, or alternatively, in the <FS>\PMDG\PMDG77X\Flight Manuals\ folder.



3. B777 GENERAL PANEL LAYOUT

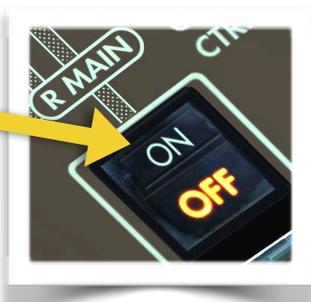


Overhead panel systems overview:



General pushbutton philosophy:

THE WHITE "ON" LABEL INDICATES THE PUSHBUTTON POSITION NOT THE SYSTEM STATUS!



THE AMBER LIGHT INDICATES THE CURRENT SYSTEM STATUS!

PLEASE REFER TO PMDG FCOM FOR THE AIRCRAFT SYSTEMS LAYOUT AND OPERATIONS.

4. TO START

This guide assumes a **COLD AND DARK COCKPIT** as PMDG default. Please also check in the aircraft settings that the **AUTOMATED PREFLIGHT REQUESTS** option is set to **NO**. You can change this setting using the PMDG operations Center software -> Aircraft Specific Settings.

Procedures will be discussed following an example flight from **Venezia (LIPZ)** to **Roma Fiumicino (LIRF)**.

The flight plan used in this example has been generated with FlightSimSoft.com PFPX software. NapuleVola pilots may use a flight planning software of their choice.

PFPX MASTER "PAPER" FLIGHT PLAN (LIPZ TO LIRF)

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NAPULEVOLA FLIGHT PLAN - IFR NPV1208 I-NVCS LIPZ-LIRF
-----
ALL WEIGHTS IN KILOGRAMS (KG)                                STD 03JAN/1050Z
-----
OFP 1 - PREPARED 03JAN/1150Z BY ANDREA BARBARANO

NPV1208                I-NVCS/B777-2LR GE                ROUTE:                (MANUAL)

DEP: LIPZ/VCE 04R      ELEV    7 FT      COST INDEX: 100      TTL G/C DIST:    221 NM
ARR: LIRF/FCO 16R      ELEV   13 FT      INIT ALT:  FL190     TTL F/P DIST:    247 NM
                                FUEL BIAS: 100.0%   TTL AIR DIST:    237 NM
                                                               AVG WIND CMP: TL015 KT

ALT: LIPE/BLQ 12      ELEV   123 FT      213 NM
-----
CONFIG      DOW  PAX  CARGO  TOTAL  ULOAD LIM      ZFW      TOW      LDW
STANDARD 156146                25854  27106 ZFW      MAX 209106  347452  223167
                                PLN 182000  195154  190004
                                ACT .....  .....  .....

          FUEL    CORR    ENDUR
TRIP          5150  .....  00:41
CONT 5%         486  .....  00:05
ALTN LIPE       4672  .....  00:43
FINAL RESV      2846  .....  00:30
MIN T/O        13154  .....  01:59
EXTRA           0     .....  00:00
TAXI           260     .....  00:10
RELEASE        13414  .....  02:09

                                CAPTAINS SIGNATURE (....)

                                I ACCEPT THIS OFP AND I AM FAMILIAR
                                WITH THE PLANNED ROUTE AND AERODROMES

FUEL TANK CAP 145512 KG / MAX EXTRA FUEL 33163 KG LIM BY LDW
TRIP CORR FOR 2000 KG TOW INCR: +19 KG / 2000 KG TOW DECR: -19 KG
2000 FT LOWER: -30 KG / EET 00:40 CLB: 250/310/84 DES: 84/320/250

LIPZ/VCE  STD 10:50  ETD 10:50  ACT OFBL .....  EST T/O 11:00  ACT T/O .....
LIRF/FCO  STA 11:50  ETA 11:46  ACT ONBL .....  EST LDG 11:41  ACT LDG .....
                                TTL BLCK .....  TTL FLT .....

ATC ROUTE: N0435F190 CHI7V CHI L612 BELOV UT128      NIKMA UT369 RITEB
RITE4A

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5. AICRAFT ELECTRICAL POWER UP

BASIC

BATTERY SWITCH..... ON
APU GENERATOR SWITCH..... ON
APU SELECTOR..... ON, THEN START (1 SEC)

NOTE: THE POWER-UP SEQUENCE WILL TAKE FEW MINUTES TO COMPLETE.

REALISTIC

PERFORM INSTEAD OF THE BASIC STEPS

Perform the **ELECTRICAL POWER UP CHECKLIST** in the PMDG FCOM SUPPLEMENTARY PROCEDURES (**FCOM Page Number: SP 6.2**)

6. PRELIMINARY PREFLIGHT PROCEDURE

BASIC

ADIRU SWITCH..... ON
If the ADIRU switch is found in the ON position select it OFF for 30 seconds and then back ON.
Verify that the ON BAT light is extinguished.
Verify that the ADIRU OFF light is extinguished.
EMERGENCY LIGHTS SWITCH..... GUARD CLOSED
PARKING BRAKE..... SET ON

ADVANCED

PERFORM THE BASIC STEPS FIRST

NOTE: WAIT FOR THE ALL DISPLAYS AND SYSTEMS TO POWER-UP

STATUS DISPLAY..... CHECK 

Press the STAT button on the Display Select Panel to open the status page on the lower MFD.

Verify that only the expected messages are shown (usually only TCAS and some CONFIG WARNING SYS messages during the power-up sequence).

*Check hydraulic quantity: Confirm **RF** not displayed*

SECONDARY ENG INDICATIONS... DISPLAY 

Press the ENG button on the Display Select Panel to open the secondary engine indications page on the lower MFD.

*Check engine oil quantity: Confirm **LO** not displayed*

PERFORM THE BASIC AND ADVANCED STEPS FIRST

BRAKES ACCUMULATOR PRESS..... CHECK

◆ **IF** BRAKE ACCUMULATOR PRESS BELOW..... 1000 PSI



◆ HDY R ELECTRIC DEMAND PUMP..... AUTO

WARNING: CHECK THE AIRCRAFT TO BE CLEAR OF GROUND PERSONNEL BEFORE PRESSURIZING THE HYDRAULIC SYSTEM

◆ BRAKES ACCUMULATOR PRESS..... CHECK ABOVE 1000 PSI

◆ HDY R ELECTRIC DEMAND PUMP..... OFF

7. AIRCRAFT FUEL AND WEIGHT INITIALIZATION

STEPS TO INITIALIZE PMDG AIRCRAFT FUEL AND WEIGHT

CDU MENU KEY..... PRESS

Press the MENU key button on the Captain/First Officer CDU

FS ACTIONS>..... SELECT

<FUEL..... SELECT

RAMP FUEL QTY..... INSERT

Insert ramp fuel required according to your master Flight Plan.

In our LIPZ - LIRF example flight the block fuel will be 13414, rounded up to 13500. If the required fuel is unknown use PMDG default LONG/MED or SHORT RANGE fuel plan.

	FUEL	CORR	ENDUR
TRIP	5150	.....	00:41
CON			5
ALT			3
PFPX FLIGHT PLAN			
FINAL RESV	2846	.....	00:30
MIN T/O	13154	.....	01:59
EXTRA	0	.....	00:00
TAXI	260	.....	00:10
RELEASE	13414	.....	02:09

<RETURN..... SELECT
<PAYLOAD..... SELECT
ZFW..... INSERT

Insert the ZFW as indicated on you master "paper" flight plan or the NapuleVola flight loadsheet.

In our LIPZ - LIRF example flight the the ZFW is 182.0. If the ZFW is unknown use the PMDG SET RANDOM> load setting.

	ZFW	TOW	LDW
MAX	209106	347452	223167
PLN	182000	195154	190004
ACT	.....	.....	.....

PFPX FLIGHT PLAN

REALISTIC

PERFORM THE BASIC STEPS FIRST

In addition to the RAMP FUEL take in account the APU FUEL CONSUMPTION during the ground time. Increase the total fuel by 300 KG per hour of APU usage.

8. CDU PREPARATION - IDENT PAGE

BASIC

OBTAIN THE LATEST ATIS OR WEATHER INFORMATION

CDU MENU KEY..... PRESS
<FMC..... SELECT

In the IDENT page verify Aircraft model/engine and ACTIVE navigation database expiring date.

9. CDU PREPARATION - POS INIT PAGE

BASIC

POS INIT>..... SELECT

POS INIT PAGE 1/3:

REF AIRPORT..... INSRT DEPARTURE AIRPORT ICAO
GPS POS..... SELECT TO COPY IN SCRATCHPAD
SET INTERTIAL POS..... ENTER GPS POSITION

These coordinates are used to align the ADIRU to your present geographical position. It is the start point of your navigation.

PERFORM INSTEAD OF THE BASIC STEPS

POS INIT>..... SELECT

POS INIT PAGE 1/3:

REF AIRPORT..... INSRT DEPARTURE AIRPORT ICAO
 GATE POSITION..... INSERT IF AVAILABLE
 COORDINATES..... CHECK AGAINST AIRPORT CHART
 FMC UTC CLOCK..... CHECK FOR ACCURACY

Below the GATE position you will see an UTC TIME. This is the internal FMC clock. Check the correct time UTC time is shown and compare it to the clock on the side of your PFD.

SET INERTIAL POS..... ENTER MOST ACCURATE POS

Compare the AIRPORT/GATE/GPS coordinates with your airport charts and use the most accurate position. This coordinates are used to align the ADIRU Inertial Navigation System.

LIPZ - LIRF example flight:

INS COORDINATES		
DATES	STAND No.	COORDINATES
012 20.8	326	N45 30.3 E012 20.5
012 20.7	327	N45 30.3 E012 20.8
012 20.6	328 thru 330	N45 30.2 E012 20.5
012 20.6	431, 432	N45 30.1 E012 20.5
012 20.6	433	N45 30.1 E012 20.4

AIRPORT CHART

Current gate coordinates as per airport chart. In our example flight: gate 328

Check AIRPORT / GATE / GPS coordinates against airport chart coordinates and use the most accurate one to align the ADIRU (usually GPS or GATE)



WHEN DEPARTING FROM A NON WGS84-COMPLIANT NATION

*For flights originating from the People's Republic of China or any other non WGS84-compliant nation, do not align the ADIRU using the GPS POS, use gate or airport coordinates instead. Refer also to the **PMDG FCOM SUPPLEMENTARY PROCEDURES (FCOM SP 11.7)***

10. CDU PREPARATION - ROUTE LOADING

BASIC

ROUTE>..... SELECT

RTE X PAGE 1/2:

ORIGN..... INSERT DEPARTURE ICAO

DEST..... INSERT DESTINATION ICAO

FLT NO..... INSERT WITH FULL CALLSIGN

NEXT PAGE KEY..... PRESS

RTE PAGE 2/X:

FLIGHT PLAN ROUTE..... MANUALLY INSERT

ACTIVATE>..... SELECT

EXEC KEY (ILLUMINATED)..... PRESS

ADVANCED

Flight plan route can be uplinked via an external software or loaded through a company route file. However this procedure is not discussed in this document.

REALISTIC

PERFORM IN ADDITION TO THE BASIC/ADVANCED STEPS

Before activating RTE 1 check the route against the Flight Plan.

ATC ROUTE: N0435F190 CHI7V CHI L612 BELOV UT128
RITE4A

NIKMA UT369 RITEB

PFPX FLIGHT PLAN



**COMPARE THE MASTER
FLIGHT PLAN ROUTE
WITH THE ROUTE
INSERTED IN THE FMC**

DEP ARR KEY..... PRESS

*Insert the departure runway and departure procedure. Insert also the expected arrival runway/procedure at destination (for better FMC fuel prediction computation). You can access the **DEP ARR INDEX** page anytime using the DEP ARR key button on the CDU and then the <INDEX prompt.*

<ORIGIN> DEPARTURES PAGE:

- DEPARTURE RUNWAY..... SELECT
- SID..... SELECT IF ANY
- TRANSITION..... SELECT IF ANY
- EXEC KEY (ILLUMINATED)..... PRESS
- DEP ARR KEY..... PRESS

DEP ARR INDEX PAGE:

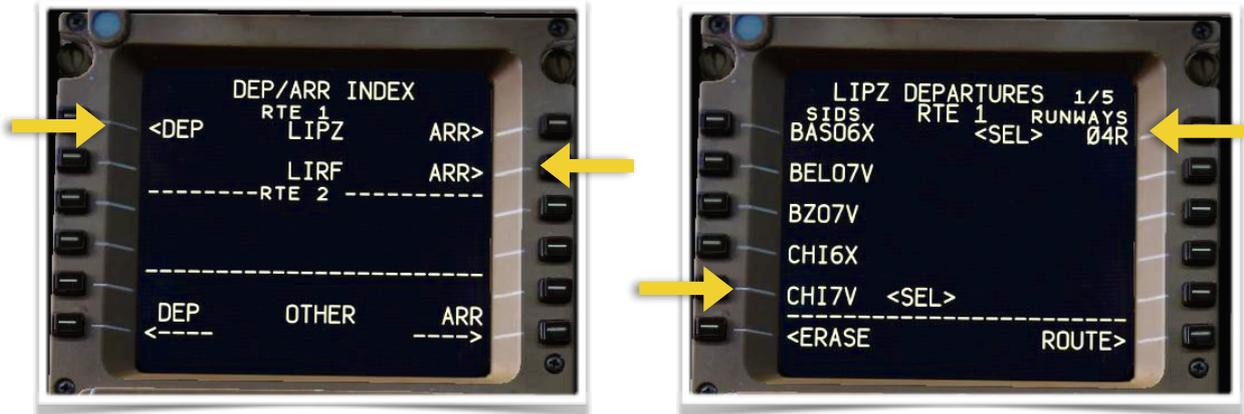
DEST ARR>..... SELECT

The arrival runway/procedure may be updated later during cruise.

<DESTINATION> ARRIVALS PAGE:

- ARRIVAL RUNWAY..... SELECT
- STAR..... SELECT IF ANY
- TRANSITION..... SELECT IF ANY
- EXEC KEY (ILLUMINATED)..... PRESS

In our LIPZ - LIRF example flight:



REALISTIC

PERFORM THE BASIC STEPS FIRST

PROG KEY..... PRESS

PROG PAGE 1/4:

TOTAL DISTANCE TO DEST..... CHECK AGAINST FLT PLAN DIST

If the route is correctly loaded into the FMC the total distance to destination will match the one indicated in the "paper" master Flight Plan. Small differences between the two figures are normal (up to about 50 NM). However significant discrepancies should be investigated.

In our LIPZ - LIRF example flight:



PFPX FLIGHT PLAN	
TTL G/C DIST:	221 NM
TTL F/P DIST:	247 NM
TTL AIR DIST:	237 NM

↓

COMPARE THE MASTER FLIGHT PLAN TOTAL DISTANCE WITH THE ONE INDICATED IN THE FMC

11. CDU PREPARATION - LEGS PAGE

BASIC

LEGS KEY..... PRESS

LEGS PAGE 1/X:

Check the route against the departure SID chart (if any). Verify altitude and speed constraints for departure. Resolve any ROUTE DISCONTINUITY unless required. Check also the destination airport approach procedure for gross errors, this will increase the accuracy of the FMC fuel calculations.

ADVANCED

PERFORM THE BASIC STEPS FIRST

Analyze the departure to plan a strategy for climb thrust setting and Flaps retraction schedule. Estimate turns radius and identify possible threats. Example: if a turn more than 90 degrees is expected shortly after takeoff consider retracting the Flaps after the turn.

12. CDU PREPARATION - FIX PAGE

ADVANCED

FIX KEY..... PRESS

FIX INFO PAGE 1/4:

Use the *FIX INFO* page as required to insert waypoints, range rings and radials for reference. Example: reference for the *SID, Engine Out procedure* or *Minimum Sector Altitudes*.

The use of the *FIX PAGE* goes beyond the scope of this document and will be discussed in separate document.

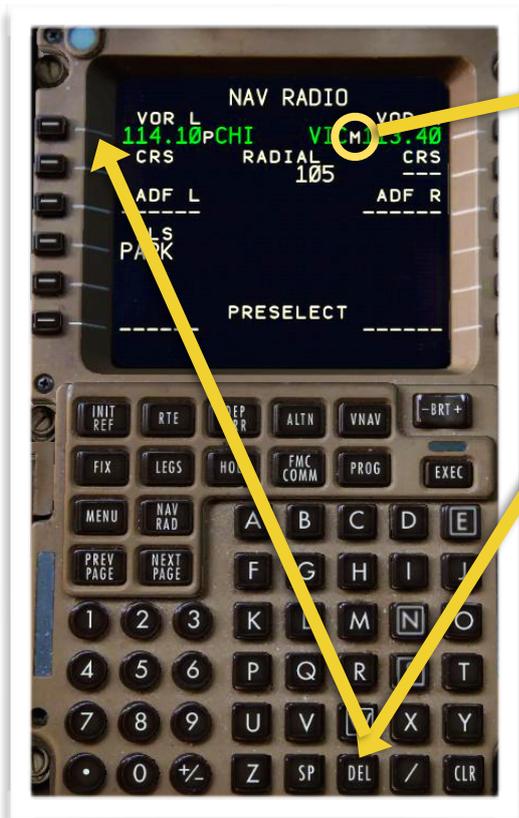
13. CDU PREPARATION - NAV RADIO PAGE

BASIC

NAV RAD KEY..... PRESS

NAV RADIO PAGE:

Check *VOR L / VOR R* in automatic mode. Check *ILS* in PARK mode or use the *DELETE* key to reset the *VOR/ILS* mode. Insert any required *ADF* frequency.



- **M** INDICATES MANUAL MODE
- **A**, **R** OR **P** INDICATE AUTOMATIC MODE

IF THE VORS ARE IN MANUAL MODE OR ILS NOT IN PARK MODE SELECT THE DELETE KEY AND DELETE THE VOR/ILS TO SWITCH BACK TO AUTOMATIC MODE.

ADVANCED

MANUALLY INSERT ADDITIONAL REQUIRED VORS, ADFS AND RADIALS.

DURING LOW VISIBILITY OPERATIONS CONSIDER SELECTING THE TAKEOFF RUNWAY LOC FREQUENCY FOR REFERENCE.

14. CDU PREPARATION - INIT REF

BASIC

INIT REF KEY..... PRESS

PERF INIT PAGE:

DO NOT USE THE PERF INIT REQUEST FUNCTION

CRZ ALT..... INSERT (FLxxx)

Insert the first cruising level. In our example FL190.

COST INDEX..... INSERT

Insert flight plan cost index. If unknown insert 100.

MIN FUEL TEMP..... CHECK -37C

CRZ CG..... CHECK 14.0% (777-200/F ONLY)

RESERVES..... INSERT

The reserve fuel is the fuel required to reach the destination alternate aerodrome plus the final reserve fuel (30 min). This is known as the MDF (Minimum Diversion Fuel).

The MDF and general fuel management will be discussed in details in a separate document.

If the reserve fuel is unknown enter 10.0 as default. This will ensure around 1:15 hours of endurance at destination.

In our LIPZ - LIRF example flight:

PFPX FLIGHT PLAN

TRIP	5150	.....	00:41
CONT 5%	486	.....	00:05
ALTN LIPE	4672	.....	00:43
FINAL RESV	2846	.....	00:30
MIN T/O	13154	.....	01:59
EXTRA	0	.....	00:00
TAXI	260	.....	00:10
RELEASE	13414	.....	02:09

ALTERNATE FUEL:	4672 KG
FINAL RESERVE:	2846 KG
TOTAL RESERVE:	7518 KG
<hr/>	
ROUNDED FIGURE:	7600 KG



THRUST LIM>..... SELECT

THRUST LIM PAGE:

TAKEOFF>..... SELECT

TAKEOFF REF PAGE 1/2:

NEXT PAGE KEY..... PRESS

TAKEOFF REF PAGE 2/2:

EO ACCEL HT..... INSERT

*Insert the One Engine Out acceleration height. If unknown insert **1500 FT.***

ACCEL HT..... INSERT

*Insert the all engine acceleration height. If unknown insert **1500 FT. CONSIDER NOISE ABATEMENT PROCEDURES.** In our example flight LIPZ - LIRF will be 3000 FT due noise abatement procedure.*

THR REDUCTION..... INSERT

*Insert the thrust reduction height. If unknown insert **800 FT. CONSIDER NOISE ABATEMENT PROCEDURES** In our example flight LIPZ - LIRF will be 1500 FT due noise abatement procedure.*

REF OAT..... INSERT

Insert the outside air temperature as stated in the ATIS/METAR.

REALISTIC

PERFORM THE BASIC STEPS FIRST

WIND..... LEAVE BLANK

RWY WIND..... INSERT (+/-XX KT)

*Insert the headwind or tailwind wind component if known and significant. Format: (+/-XX). Plus sign or no sign is taken as tailwind. Example: 5 KT of tailwind enter as **+05** or just 5.*

SLOPE/COND..... INSERT

*Insert runway slope if present. Format (D/UX.X %). 'D' sign is taken as a downslope, 'U' or no sign as an upslope. Example: **U0.3** will insert an upslope of 0.3%. Range value from 0 through 2.0. Check airport charts for slope info. Leave blank if unknown.*

Insert runway contamination condition. Format (D/W/S). 'D' is taken as runway DRI, 'W' as WET, 'S' as WET with skid resistant runway. Example /W will assume a wet runway for performance computation.

Check ATIS/METAR for runway contamination info. Leave blank if unknown.

IF AN INTERSECTION TAKEOFF IS REQUIRED

Accomplish the following steps if an intersection takeoff is desired or required. An intersection takeoff is a departure not using the full runway length.

PREV PAGE KEY..... PRESS

TAKEOFF REF PAGE 1/2:

RWY/POS..... INSERT

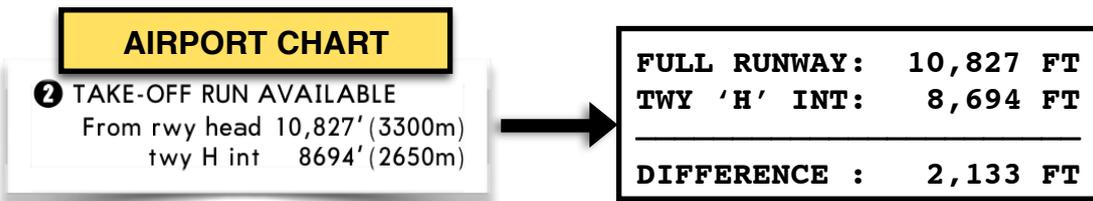
Enter takeoff shift in METERS or FEET as programmed in your FMC.
Format (feet): /0100-9900. Example: /0300 means takeoff runway 300 FT shorter.

Format (meters): /0100-3000. Example: /0300 means takeoff runway 300 M shorter.

Practical example (in feet) using LIPZ runway 22L:

Planning a takeoff from runway 22L 'H' intersection instead of full length.

Refer to the airport chart first for intersections information:



The runway is 2133 FT shorter from taxiway 'H'. Insert /2300 in the RWY/POS field. The same calculation can be done using meters.

15. CDU PREPARATION - VNAV CLIMB PAGE

VNAV KEY..... PRESS

(VNAV) 250KT CLB PAGE 1/3:

TRANS ALT..... INSERT

Insert the transition altitude as stated in the airports charts.

SPD TRANS..... AS REQUIRED

Default value is 250 KT below 10,000 FT

16. CDU PREPARATION - RTE 2

REALISTIC

PERFORM IN ADDITION TO THE BASIC STEPS

You may use FMC ROUTE 2 to plan for a different RUNWAY/SID or to insert the Engine Out SID. RTE 2 may be activated when needed.

RTE KEY..... PRESS

ACT RTE 1 PAGE 1/X:

IF ROUTE 2 IS REQUIRED:

- ◆ <RTE 2..... SELECT
- ◆ *Program Route 2 as required. Activate RTE2 ONLY when needed.*

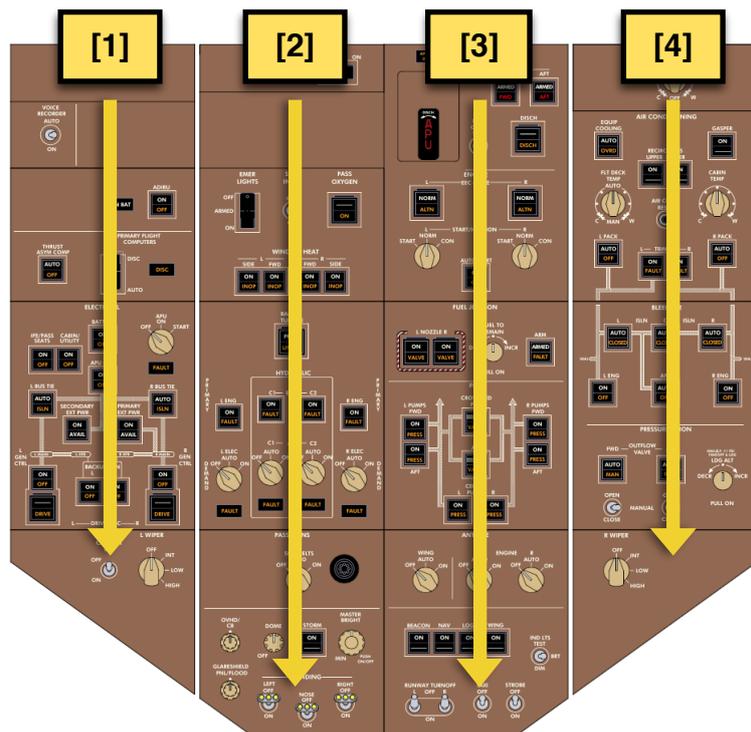
IF ROUTE 2 IS NOT REQUIRED:

- ◆ RTE COPY>..... SELECT
- ◆ *Route 1 will be copied into Route 2 as a backup.*

The preliminary CDU preparation is now completed with the exception of: ZFW, WINDS and TAKEOFF PERFORMANCE.

17. PREFLIGHT PROCEDURE - OVERHEAD PANEL

Overhead panel general workflow is divided in 4 columns.



FIRST COLUMN:

ADIRU..... CHECK ON
 THRUST ASYM COMP..... AUTO
 IFE/PASS SEATS..... ON
 CABIN UTILITY..... ON
 BATTERY..... CHECK ON
 APU GEN..... CHECK ON
 L/R BUS TIES..... BOTH AUTO
 PRIMARY/SECONDARY EXT PWR.. AS REQUIRED/OFF
 ALL GENERATORS..... ON

Check all OFF lights illuminated.

DRIVE DISC..... GUARD CLOSED/OFF

Do not push the IDGs drive disconnect pushbuttons!

L WIPER..... OFF

SECOND COLUMN:

GND PROX RUNWAY OVRD..... OFF
 EMERG LIGHTS..... CHECK GUARD CLOSED
 SERV INTPH..... OFF
 PASS OXYGEN..... GUARD CLOSED/OFF

Do not push the PASS OXYGEN pushbutton!

WINDOWS HEAT..... ALL ON

RAM AIR TURBINE..... GUARD CLOSED/OFF

Do not push the RAM AIR TURBINE pushbutton!

L/R ENG HYDRAULIC PUMPS..... BOTH ON

C1/C2 ELEC HYDRAULIC PUMPS BOTH OFF

L/C1/C2/R HYD DEMAND PUMPS ALL OFF

To summarize: set all hydraulic pumps off except L and R ENG pump

PASS SIGNS..... ON

Switch the PASS SIGNS to ON when refueling is completed.

COCKPIT LIGHTS..... AS REQUIRED

LANDING LIGHTS..... OFF

THIRD COLUMN:

APU FIRE HANDLE..... IN

Do not pull the APU FIRE HANDLE!

CARGO FIRE PANEL..... ALL OFF/ LIGHTS OFF

L/R ENGINE EEC MODE..... BOTH NORM/GUARD CLOSED

STARTERS ROTARY SWITCHES..... NORM

AUTOSTART..... ON

Switch OFF if a manual start is required (not covered by NOPs).

FUEL JETTISON PANEL..... ALL OFF/ LIGHTS OFF

FUEL PUMPS..... ALL OFF

Check all the PRESS lights illuminated. L FWD PUMP PRESS light may be extinguished if the APU is running.

FWD/AFT FUEL CROSSFEED..... BOTH OFF

ANTI-ICE ROTARY SWITCHES..... ALL AUTO

BEACON LIGHT..... OFF

NAV LIGHT..... ON

LOGO LIGHT..... AS REQUIRED

Switch ON during nighttime or when the visibility is below 5000 M

WING LIGHT..... OFF

RUNWAY TURNOFF LIGHTS..... BOTH OFF

TAXI LIGHTS..... OFF

STROBE LIGHT..... OFF

IND LTS..... AS REQUIRED

Switch to BRT during daytime and to DIM during nighttime.

FOURTH COLUMN:

EQUIP COOLING..... AUTO

GASPER..... ON

UPPER/LOWER RECIRC FANS..... BOTH ON

Leave off if an external air conditioning unit is being used (not covered by this NOPs).

FLT DECK TEMP..... AS REQUIRED

CABIN TEMP..... SET TO 13 O'CLOCK POSITION

13 O'Clock position is equal to about 24C. Select the AIR synoptic page on the Display Select Panel for more accurate setting.

L/R PACKS..... BOTH AUTO

Leave the packs off if an external air conditioning unit is being used (not covered by this NOPs).

L/R TRIM AIR VALVES..... BOTH ON

L/C/R BLEED ISLN..... ALL AUTO

L/R ENG BLEED AIR..... BOTH ON

APU BLEED AIR..... AUTO

FWD/AFT OUTFLOW VALVES..... BOTH AUTO

R WIPER..... OFF

18. PREFLIGHT PROCEDURE - EFIS PANEL / MCP PANEL

BASIC

EFIS PANEL..... SET AS REQUIRED

SET CURRENT QNH, ND mode on **MAP**, range on **10 NM**, **PRESS THE TFC BUTTON**, **VOR/ADF** switches as needed and select **ARPT** button.

FLIGHT DIRECTORS..... BOTH ON

Both Captain and First Officer FLIGHT DIRECTOR SWITCHES must be ON if the Flight Director will be used for takeoff.

A/T ARM SWITCHES..... BOTH ARM

*Leave both switches on ARM for the whole flight (unless otherwise instructed by a non-normal checklist). In normal operation to **DO NOT** disconnect the AUTOTHROTTLE using the A/T ARM SWITCHES, instead use the buttons on the side of each throttle.*

A/P DISENGAGE BAR..... UP

*During normal operation **DO NOT** disconnect the autopilot using this bar unless autopilot response is unsatisfactory. For normal disconnection use the A/P disconnect button on the control yoke.*

HDG SELECTOR..... SET RUNWAY HEADING

Set the BANK LIMIT selector to AUTO unless otherwise required.

ALTITUDE SELECTOR..... SET INITIAL ALTITUDE

19. PREFLIGHT PROCEDURE - OXYGEN MASK TEST

REALISTIC

STATUS PAGE..... SELECT

Select the status page on the Display Select Panel. The page will be displayed on the MFD.

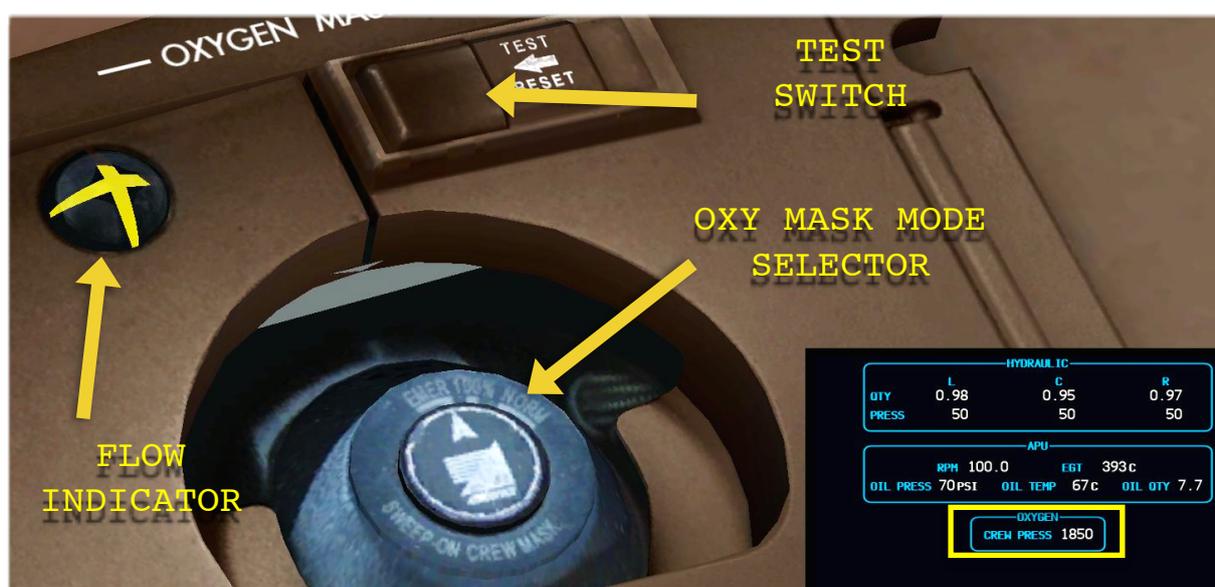
OXYGEN MASK SELECTOR..... SELECT EMER

Turn the the oxygen mask selector to emergency mode.

OXYGEN MASK TEST SWITCH..... PRESS AND HOLD FOR 5 SEC

Observe oxygen flow through the flow indicator. Check oxygen pressure on the status page for any significant drop (more than 50 psi). Listen to the oxygen flow through the loudspeaker.

OXYGEN MASK SELECTOR..... SELECT 100%



20. PREFLIGHT PROCEDURE – CENTER PANEL

BASIC

INSTRUMENT SOURCE PANEL..... ALL OFF [1]

NAV, DSPL CTRL, AIR DATA/ATT pushbuttons to be OFF.

CLOCK..... CHECK CORRECT UTC TIME

FLIGHT INSTRUMENTS..... CHECK

*Verify flight instruments indications are correct. Altimeters should be within 75 ft from airport/gate elevation. Check FMA and AFDS annunciations to be -BLANK-, **TOGA**, **TOGA** and **FLT DIR**. Check **NO VSPD** flag on PFD and **TCAS OFF** flag on ND displayed. (If no **TCAS OFF** is displayed reselect **TFC** on the EFIS control panel). Check PFD, ND and ISDF heading against standby heading indicator.*

INBOARD DISPLAY SELECTOR..... MFD [2]

HDG REF..... NORM

ISFD..... SET [3]

In the standby altimeter set the local QNH. Verify the standby flight instrument indications are correct. Verify no flags or messages are shown.



21. PREFLIGHT PROCEDURE - DETAILED FLT INSTR CHECK

ADVANCED

FLIGHT MODE ANNUNCIATOR (FMA)
A/T MODE ROLL PITCH

AUTOPILOT FLIGHT DIRECTOR SYSTEM status (AFDS)



CHECK ALTIMETERS TO BE WITHIN 75FT AIRPORT ELEVATION

CHECK NO VSPD TO BE THE ONLY FLAG ON THE PFD

CHECK HEADING AGAINST STANDBY HEADING INDICATOR



22. PREFLIGHT PROCEDURE – LANDING GEAR PANEL

BASIC

GND PROX SWITCHES..... ALL OFF [1]

Check *FLAP OVRD*, *GEAR OVRD*, *TERR OVRD* pushbuttons to be off and guarded.

LANDING GEAR LEVER..... DOWN

ALT GEAR..... GUARDED

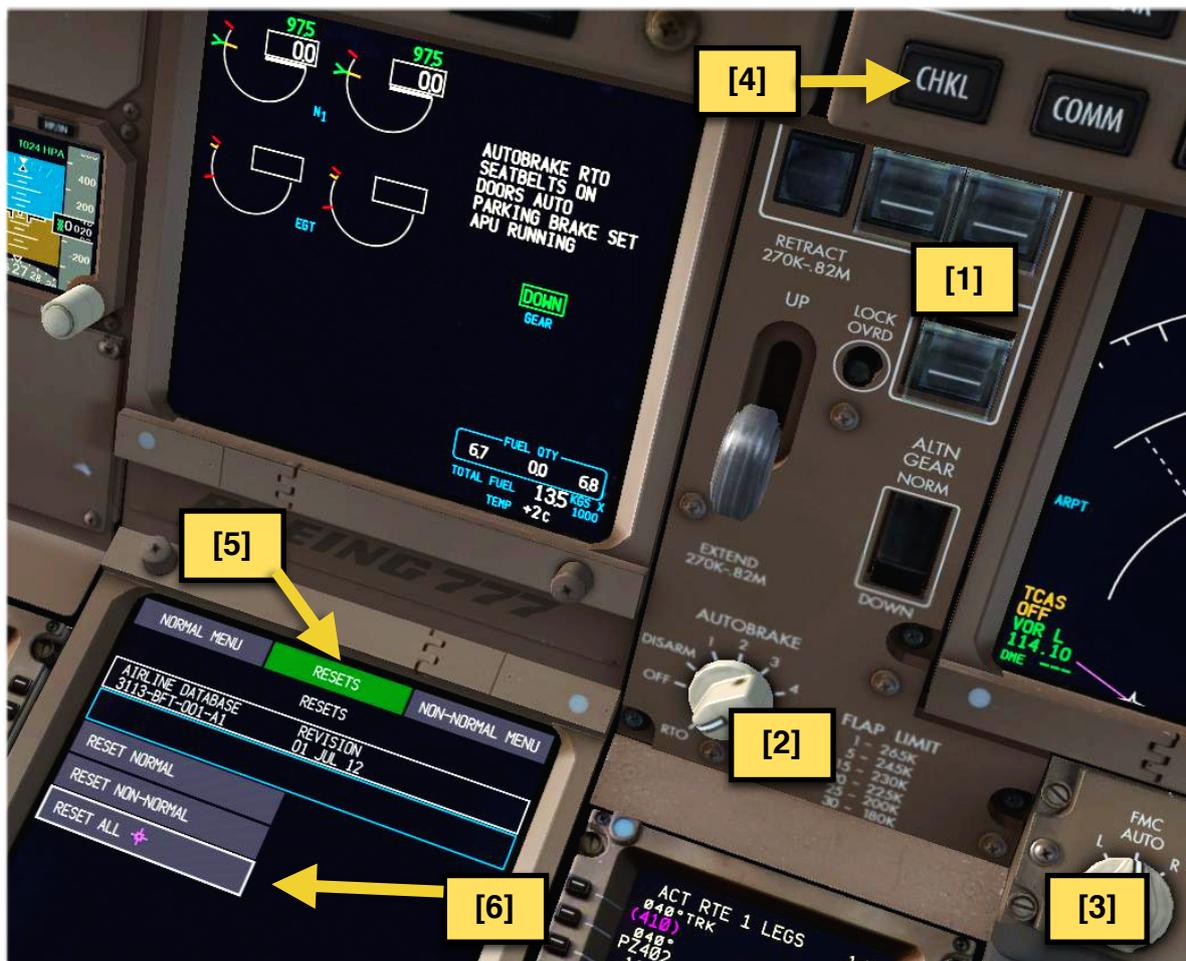
Do not operate the ALT GEAR switch!

AUTOBRAKE..... SET RTO [2]

FMC SELECTOR..... AUTO [3]

ELECTRONIC CHECKLIST..... RESET ALL

Press the *CHKL* button [4] to open the electronic checklist on the lower MFD, select *RESETS* [5] from the upper menu and then *RESET ALL* [6]. Press again the *CHKL* button to blank the MFD.

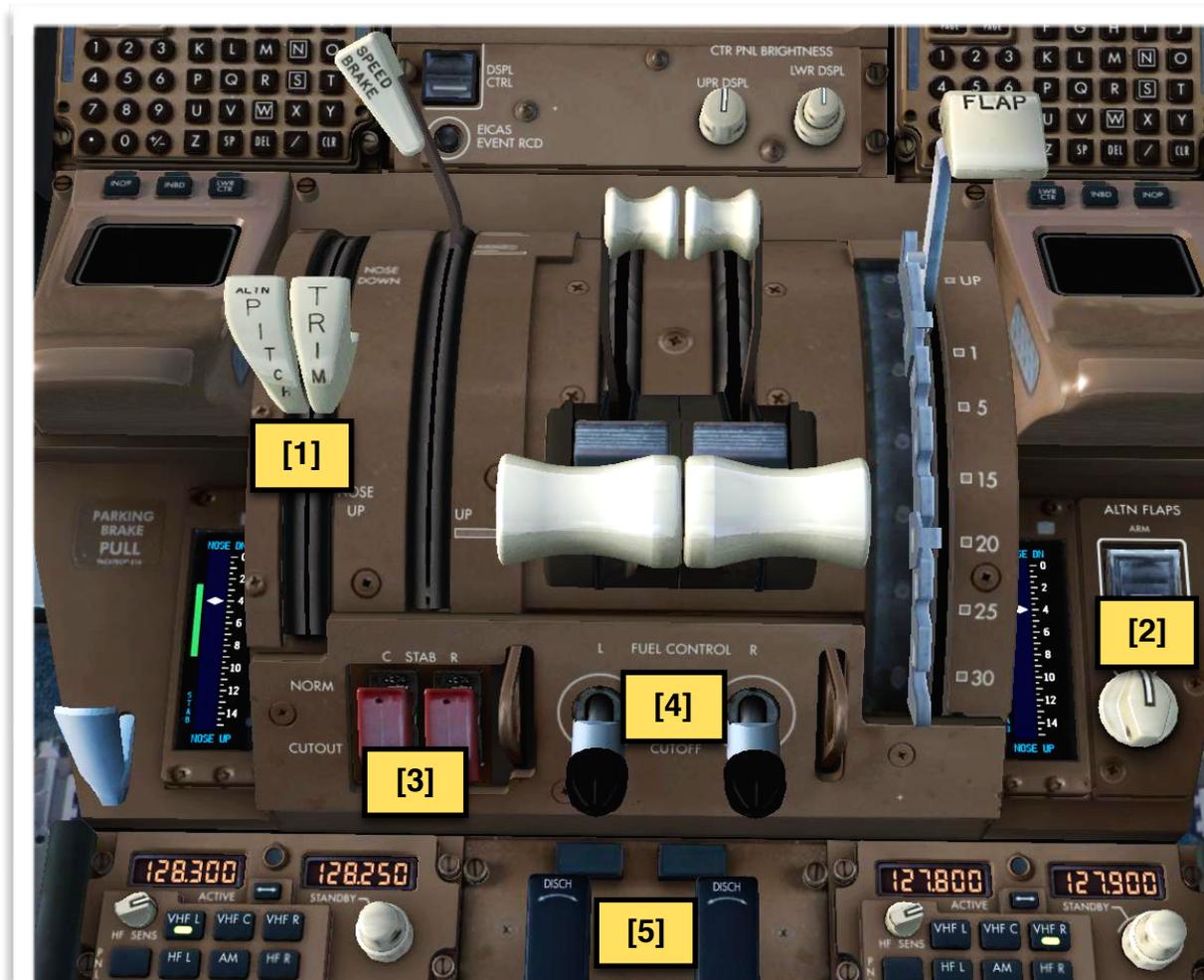


23. PREFLIGHT PROCEDURE – CENTER CONSOLE

BASIC

ALTERNATE PITCH TRIM..... NEUTRAL [1]
SPEEDBRAKE LEVER..... DOWN
THRUST LEVERS..... IDLE / REVERSES STOWED
FLAP LEVER..... UP
ALTERNATE FLAPS..... OFF / GUARD CLOSED [2]
ALTERNATE FLAPS SELECTOR..... OFF [2]
STABILIZER CUTOUT SWITCHES GUARD CLOSED [3]
Do not operate the stabilizer cutout switches!
L/R FUEL CONTROL SWITCHES... BOTH CUTOFF [4]
L/R ENGINE FIRE HANDLES..... BOTH IN [5]

Do not pull the ENG FIRE HANDLES!



24. PREFLIGHT PROCEDURE - PEDESTAL

BASIC

L/R RADIO TUNING PANEL..... SET [1]
TRANSPONDER..... SET STBY / 2000 [5]
Set code 2000 unless otherwise instructed by ATC.

ADVANCED

PERFORM INSTEAD OF THE BASIC STEPS

L/R RADIO TUNING PANEL..... SET [1]
*Use the Left Radio Tuning Panel to control VHF L.
Use the Right Radio Tuning Panel to control VHF R.*

*ON **VHF L ACTIVE** FREQUENCY: Set current ATC frequency (usually delivery or ground control).*

*ON **VHF L STANDBY** FREQUENCY: Set next expected ATC frequency (usually ground or tower).*

*ON **VHF R ACTIVE** FREQUENCY: Set the guard frequency (121.50).*

*ON **VHF R STANDBY** FREQUENCY: Set as required (example: ATIS)*

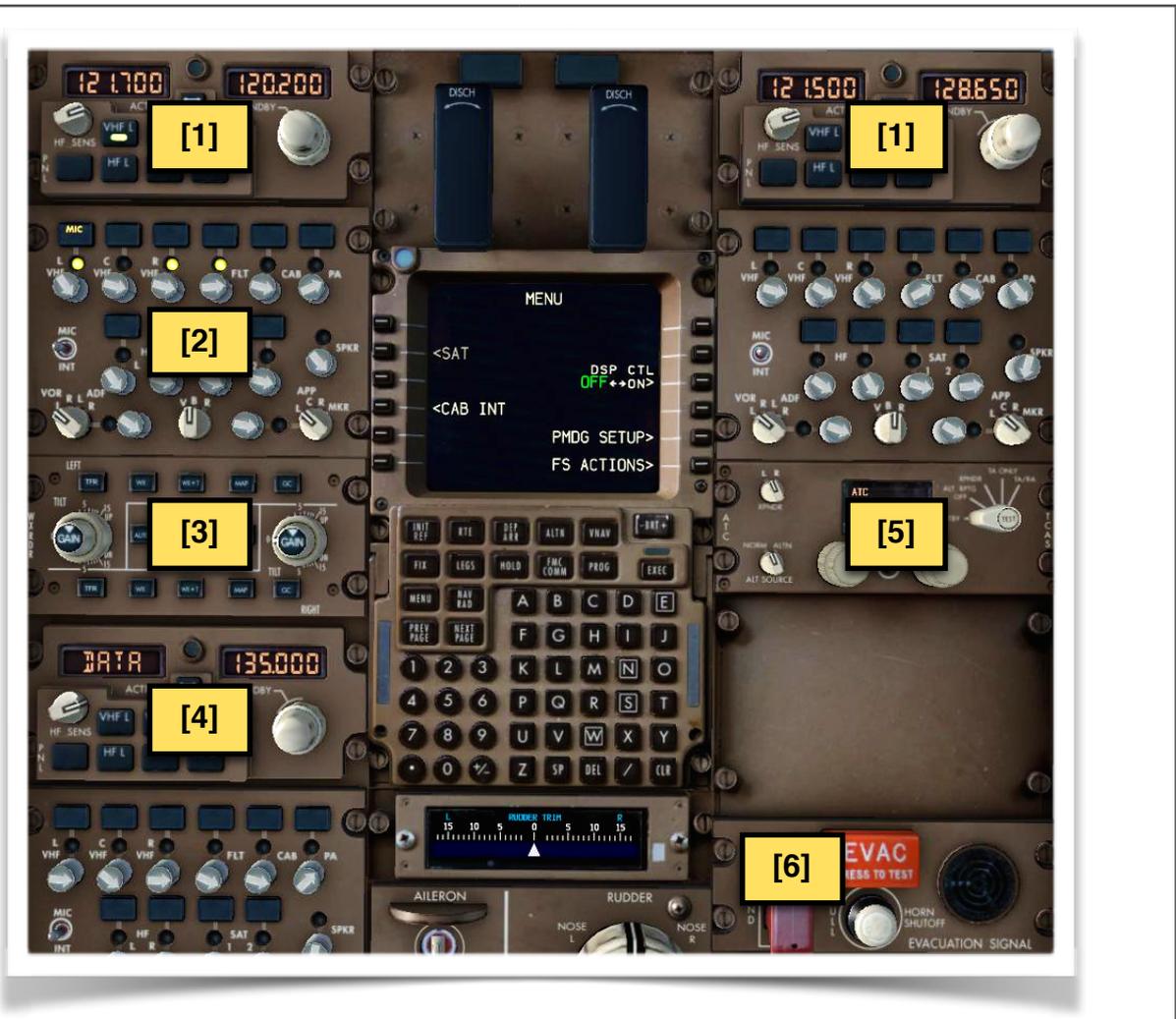
AUDIO CONTROL PANEL..... SET AS REQUIRED [2]
Most common setting is VHF L/R plus FLT intercom volume open. MIC selected on VHF L.

WEATHER RADAR PANEL..... SET AS REQUIRED [3]
*Pilots using HiFi Active Sky Next application may enjoy a functioning weather radar during the flight. The use of the weather radar is not discussed in this document. However NapuleVola default settings for departure are **AUTO** function ON, **GAIN NEUTRAL** and **WX + T** selected.*

CENTER RADIO TUNING PANEL... SET [4]
Set VHF C on DATA.

TRANSPONDER..... SET STBY [5]
*Set code 2000 unless otherwise instructed by ATC. Verify **L XPNDR** selected and **ALT SOURCE** on **NORM**.*

EVACUATION COMMAND SWITCH... GUARD CLOSED [6]
Do not operate the evacuation command switch!



25. PREFLIGHT PROCEDURE – CHECKLIST AND CLEARENCE

BASIC

PREFLIGHT CHECKLIST..... PERFORM

*Press the CHKL button and perform the PREFLIGHT CHECKLIST. Press again the CHKL button to blank the MFD. The use of the electronic checklist is explained in the **PMDG FCOM VOL 2 (FCOM 10.50.1)***

ADVANCED

PERFORM THE BASIC STEPS FIRST

ATC CLEARENCE..... OBTAIN

*When flying on IVAO/VATSIM this is a good time to obtain the ATC departure clearance. **Note:** You are not ready for pushback yet.*

*When the clearance is copied:
 Verify departure instructions against FMC route / MCP settings.
 Verify the initial altitude.
 Set/verify the transponder code.*

26. PREFLIGHT PROCEDURE – DEPARTURE BRIEFING

ADVANCED

PERFORM IN ADDITION TO THE BASIC STEPS

DEPARTURE BRIEFING..... PERFORM

The departure briefing goes beyond the scope of this document and will be discussed separately. However the key elements of the departure briefing are:

- a) **AIRCRAFT STATUS** (Any defects, open MEL / landing capability).
- b) **WEATHER** (Visibility, wind, ceiling, precipitations, significant clouds formation, runway condition, windshear).
- c) **NOTAMS**
- d) **TAXI ROUTE TO DEPARTURE RUNWAY**
- e) **DEPARTURE ROUTE** (SID if any, SID constrains, turns, flap retraction schedule). Crosscheck with charts.
- f) **TRANSITION ALTITUDE**
- g) **TERRAIN AND OBSTACLES** (Airport elevation, minimums altitudes, terrain layout, significant obstacles, climb strategies, minimum climb gradients required)
- h) **ANY OTHER THREATS OR SIGNIFICANT ITEM**

Keep the briefing short and include only the significant items.

REALISTIC

PERFORM IN ADDITION TO THE ADVANCED STEPS

EMERGENCY BRIEFING..... PERFORM

The emergency briefing goes beyond the scope of this document and will be discussed separately. However the key elements of the emergency briefing are:

- a) **REJECTED TAKEOFF AND EVACUATION PROCEDURE**
- b) **ENGINE FAILURE ON TAKEOFF/CLIMB OUT** (pilots using FlightSimSoft.com TOPCAT software can review the Engine Out SID [EOSID] now.)
- c) **ENGINE FIRE OR ANY OTHER INEXTINGUISHABLE FIRE**
- d) **EMERGENCY RETURN STRATEGY** (review return strategy to departure aerodrome or takeoff alternate, note the longest runway and best approach procedure including visual approach, review overweight landing checklist if applicable, review fuel dumping procedure if applicable).

Keep the briefing short and include only the significant items.

27. PREFLIGHT PROCEDURE - PERFORMANCE CALCULATION

BASIC

Note: Takeoff performance calculation goes beyond the scope of this document. Please refer to PMDG official documentation. For our example flight LIPZ-LIRF we will use the following settings:

**THRUST: D-T02, ASSUMED TEMP: 45C, CLIMB THRUST: CLB 2, FLAPS 5,
V1: 130, VR: 134, V2: 141**

INIT REF KEY..... PRESS

PERF INIT PAGE:

ZFW..... INSERT

Insert the final ZFW. Press the key adjacent to the ZFW and it will automatically appear in the scratchpad. In our example flight LIPZ - LIRF: 182.0

THRUST LIM>..... SELECT

THRUST LIM PAGE:

TAKEOFF THRUST..... SELECT

ASSUMED TEMPERATURE..... INSERT

CLIMB THRUST..... SELECT

TAKEOFF>..... SELECT

TAKEOFF REF PAGE 1/2:

FLAPS..... INSERT

CG..... INSERT

Insert the takeoff CG. Press the key adjacent to the CG and it will automatically appear in the scratchpad. Note down the TRIM setting.

V1/VR/V2 SPEEDS..... INSERT

Reference speeds will appear in lower case numbers. Select each key adjacent to the speeds to confirm each speed. Numbers will change to upper case.



PRESS TO CONFIRM

MCP SPEED SELECTOR..... SET V2 SPEED [1]

Set the V2 on the MCP speed selector (IAS).

VNAV..... ARM [2]

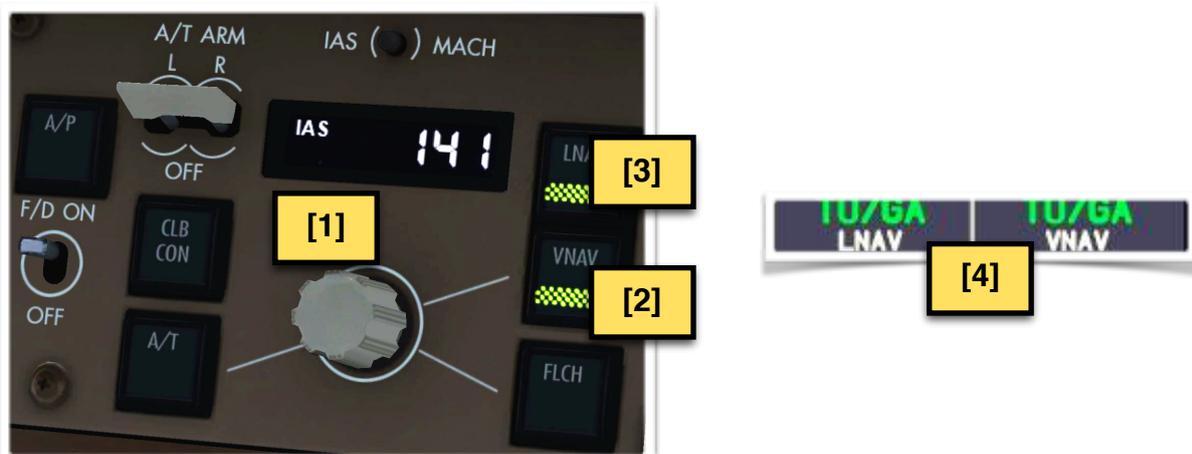
Arm VNAV for takeoff. Takeoffs without VNAV are not discussed in this document.

LNAV..... ARM / AS REQUIRED [3]

Arm LNAV anytime you have a valid SID loaded in the FMC. For radar or heading departure do not arm LNAV.

FMA..... CHECK [4]

Confirm VNAV and LNAV armed on the FMA (LNAV, VNAV in white).



REALISTIC

PERFORM THE BASIC STEPS FIRST

This procedure may require an additional external software for loading the winds (example: HiFi Active Sky Next).

LEGS KEY..... PRESS

ACT RTE 1 LEGS PAGE 1/X:

RTE DATA>..... SELECT

WIND DATA REQUEST>..... SELECT

WIND DATA LOAD>..... SELECT

Verify WIND DATA UPLINK READY message on the scratchpad. Select LOAD> to load the winds.

EXEC KEY (ILLUMINATED)..... PRESS

Wait for the EXEC to illuminate and press it.

FMC COMM KEY..... PRESS

FMC COMM PAGE:

<DES FORECAST..... SELECT

DES FORECAST PAGE:

<LOAD..... SELECT

Wait for the DES FORECAST UPLINK READY message to appear in the scratchpad. Select <LOAD to load the winds.

PROG KEY..... PRESS

PROG PAGE 1/4:

TIME TO DESTINATION..... CHECK

FUEL AT DESTINATION..... CHECK

Check estimated enroute time and estimated fuel at destination against the "paper" flight plan figures. Any major discrepancy should be investigated.

In our LIPZ - LIRF example flight:

PFPX FLIGHT PLAN

RITE4A	LIRF/16R	198	13	21	8.0 /	5.4	04	00:41
	FIUMICINO				0 N4148.9	01213.6/.....	

FMC ESTIMATED ARRIVAL TIME AT LIRF

CURRENT UTC TIME



FMC TRIP TIME CHECK:

SUBTRACT ARRIVAL TIME TO CURRENT UTC TIME

1019Z - 0936Z = 00:43'

The flight plan generated with PFPX is estimating an arrival fuel of 8.0kg and a trip time of 41 minutes. The FMC shows a discrepancy of +400kg and 2 minutes from the flight plan. This is a minor discrepancy and the accuracy of the FMC route is verified

28. BEFORE START PROCEDURE

BASIC

PERFORM THIS STEPS WHEN READY FOR PUSHBACK/START

ALL DOORS..... CHECK CLOSED / SLIDES ARMED

Close all the external pax doors and arm the slides. Close all the cargo doors. To operate the doors use the CDU. Press the MENU key then select FS ACTIONS> and then <DOORS.

HDY R ELEC DEMAND PUMP..... AUTO [1]

WARNING: CHECK THE AIRCRAFT TO BE CLEAR OF GROUND PERSONNEL BEFORE PRESSURIZING THE HYDRAULIC SYSTEM

Pressurize the Right Hydraulic system first. **WAIT FOR THE FAULT LIGHT TO EXTINGUISH** before pressuring other pumps.

HDY C1 ELEC PUMP..... ON [2]

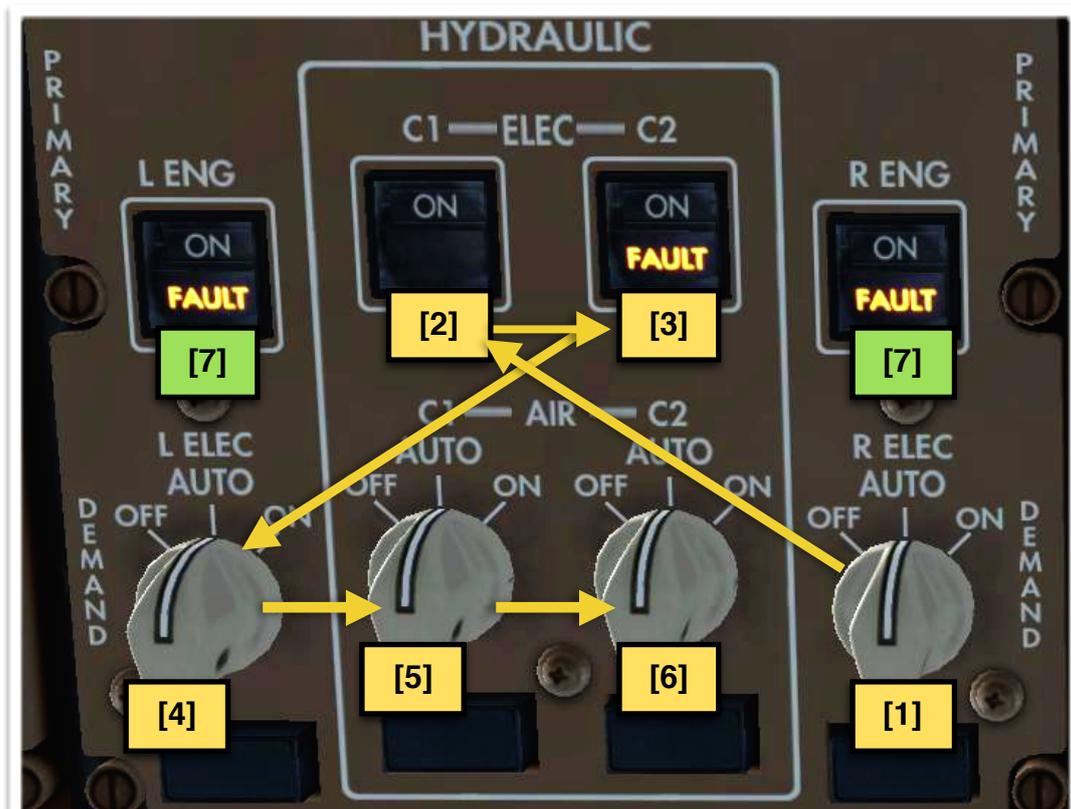
HDY C2 ELEC PUMP..... ON [3]

HDY L ELEC DEMAND PUMP..... AUTO [4]

HDY C1 AIR DEMAND PUMP..... AUTO [5]

HDY C2 AIR DEMAND PUMP..... AUTO [6]

L/R ENG PRIMARY PUMPS..... CHECK ON [7]



L FWD FUEL PUMP..... ON
 L AFT FUEL PUMP..... ON
 R FWD FUEL PUMP..... ON
 R AFT FUEL PUMP..... ON
 L / R FUEL CENTER PUMPS..... AS REQUIRED

Select L/R CENTER PUMPS if there is MORE THAN 4800 KG of fuel in the center tank. In our LIPZ - LIRF example flight center pumps will remain off.

CANCEL/RECALL SWITCH..... PUSH

On the Display Select Panel push the CANCEL/RECALL button and read the messages on the EICAS display.

If the cockpit preparation was done correctly the following messages will show:

- ENG SHUTDOWN
- TCAS OFF
- DOORS AUTO
- PARKING BRAKE SET
- AUTOBRAKE RTO
- SEATBELTS ON
- APU RUNNING

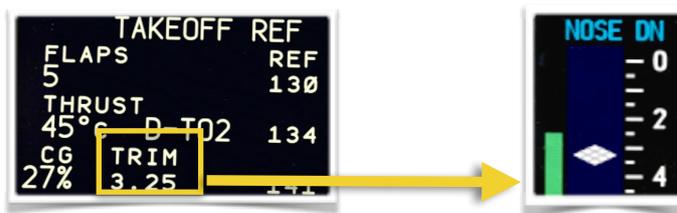


CANCEL/RECALL SWITCH..... PUSH

Push again to cancel the messages. Only the white messages must be shown.

TRIM..... SET

Set the elevator trim to the value shown in the TAKEOFF REF page. Verify that the trim is in the green band. Check also Aileron and Rudder trim to be 0.



TRANSPONDER..... SET XPNDR

BASIC

BEACON LIGHT..... ON

BEFORE START CHECKLIST..... PERFORM

When the checklist is completed you will be ready for pushback (if required) and engine start.

ADVANCED

IF FLYING ONLINE FOLLOW THIS STEPS INSTEAD OF BASIC

BEFORE START CHECKLIST..... PERFORM

Complete the checklist up to the BEACON. Leave the checklist open.

ATC PUSHBACK/START CLRNC..... OBTAIN

Request ATC clearance to commence pushback (if required) and engine start.

BEACON LIGHT..... ON

BEFORE START CHECKLIST..... COMPLETED

29. ENGINE START PROCEDURE**BASIC**

DURING PUSHBACK OR WHEN CLEAR OF GROUND EQUIPMENTS

SECONDARY ENG INDICATIONS... DISPLAY



R ENG START SELECTOR..... START

Start the RIGHT engine first. This will initiate the autostart sequence. Manual engine start is not discussed in this document.

R FUEL CONTROL SWITCH..... RUN

WAIT UNTIL THE ENGINE STABILIZE

**THE ENGINE IS STABLE WHEN THE
RED EGT START LIMIT LINE
DISAPPEAR**



Monitor OIL PRESSURE and OIL TEMPERATURE. All other parameters are monitored by the autostart system. When R engine is stable:

L ENG START SELECTOR..... START

L FUEL CONTROL SWITCH..... RUN

Use the same sequence as per right engine.

PERFORM IN ADDITION TO THE BASIC STEPS

Refer to PMDG FCOM for details on the autostart system and start sequence/limitations. (FCOM Page Number: 7.20.10)

During start, before selecting the **FUEL CUTOFF SWITCH** to **RUN** , on the secondary engine display, check the appropriate duct pressure is above 25 psi and oil pressure is at least at 2 psi.

If during start the EICAS message: **[] ENG AUTOSTART L,R** is shown select the appropriate **FUEL CUTOFF SWITCH** to **CUTOFF** and perform the checklist using the CHKL button.

If during start the OIL PRESSURE or OIL TEMPERATURE indications become red or amber select the appropriate **FUEL CUTOFF SWITCH** to **CUTOFF**. Push the CHKL button, select NON-NORMAL MENU, ENGINES-APU, RPM-START-STARTER and perform the **ABORTED ENGINE START L,R** checklist.

30. AFTER START PROCEDURE

WHEN BOTH ENGINES STABILIZE

APU SELECTOR..... OFF

ENGINE ANTI-ICE..... AS REQUIRED

Set the both ENGINE ANTI-ICE to ON when OAT is below -10C **AND** there is visible moisture in the air (mist, fog) or the visibility is below 1600 meters.

FLAPS..... SET FOR TAKEOFF

FLIGHT CONTROLS..... CHECK

Make slow and deliberate inputs, one direction at time.

NOTE: To avoid false FLIGHT CONTROLS warnings on the EICAS display, check the Flight Controls SLOWLY (more than approximately 6 seconds).

Move the control wheel and the control column to full travel in both directions and verify: Freedom of movement and that the controls return to center.

BEFORE CHECKING THE RUDDER WAIT FOR COMPLETION OF PUSHBACK AND CLEAR OF GROUND PERSONNEL.

CANCEL/RECALL SWITCH..... PUSH

Verify only **TCAS OFF** message is shown. Push again to clear.

BEFORE TAXI CHECKLIST..... PERFORM

31. TAXING-OUT

BASIC

TAXI LIGHT..... ON

RUNWAY TURN-OFF LIGHTS..... ON

DO NOT EXCEED 30% N1. Normal taxi speed is 20 KT, maximum is 30 KT on straight routes and 10 KT during turns. In low visibility or when the taxiway are covered with snow or slush do not exceed 10 KT.

CABIN READY REPORT..... RECEIVE



Wait for the Cabin Crew CABIN READY report as you approach the runway. The CABIN REPORT will appear on the EICAS display with a single chime sound. (Not available on the B777 Freighter version)

TERR OR WXR..... SELECT

Select **TERR** on ND for terrain awareness. Pilots using HiFi Active Sky Next may select the weather radar (**WXR**) on ND.

BEFORE TAKEOFF CHECKLIST..... PERFORM

REALISTIC

PERFORM THE BASIC STEPS FIRST

TAKEOFF REVIEW..... PERFORM

The takeoff review is mini-briefing done just before takeoff. The takeoff review shall include the following five items:

- Read modes for departure on the FMA
- Read initial altitude from the PFD
- Read the departure runway from ND or CDU
- Read flap setting from EICAS
- Read heading or track from MCP

Any abnormality or discrepancy shall be investigated.

LIPZ - LIRF example:

"TOGA, TOGA, LNAV, VANV armed. Climbing 6000ft on runway 04R with flap 5, heading 040."

WHEN CLEARED TO ENTER THE RUNWAY

STROBE LIGHT..... ON
 TRANSPONDER..... TA/RA
 LANDING LIGHTS..... ON

Turn the landing lights ON after receiving the takeoff clearance.

32. TAKEOFFWHEN CLEARED FOR TAKEOFF

*Verify brakes are released. Engines oil temperature must be above the bottom of the temperature scale. Wait at least **3 MINUTES** after engines start before taking-off. Consider starting the CHRONOMETER before setting the thrust.*

THRUST LEVERS..... SET TO 55% N1

Wait for the engines to fully stabilize.

TOGA BUTTON..... PUSH [1]



[1]



The TOGA buttons are located just in front of the thrust levers. There is also a "ghost button" that replicates the TOGA function just below the Captain's Flight Director switch (with the shape of a screw). However it is highly recommended to assign a key or a button on your joystick to quickly use this function.

The FMA will show "THR REF"

THR REF

*Verify that the correct takeoff thrust is set. **Keep your hands on the thrust levers until reaching V1.***

80 KTS..... CHECK **HOLD**

Takeoff thrust should be set by 80 KT. Check current engines N1 against target N1. FMA will show "HOLD".

AT VR..... ROTATE

Rotate toward 15 degrees pitch attitude (around 10 degrees in case of engine failure). Do not follow flight director command during rotation. Rotation rate should be around **2 to 2.5 degrees per second** (example: pass 10 degrees pitch after 5" sec liftoff) For the B777-200LR the tail strike pitch attitude is around **12.1 degrees**.

After liftoff pitch to maintain V2+15 KT to V2+25 KT. When rotation is completed follow flight director commands if available. Avoid large pitch inputs. Autopilot is available above 200 FT Radio Altitude provided the aircraft is properly trimmed and flight directors bars are centered.

LANDING GEAR..... UP

Verify positive rate of climb before selecting the gear up.

ROLL MODE..... SET **THR REF** **LNAV** **VNAV SPD**

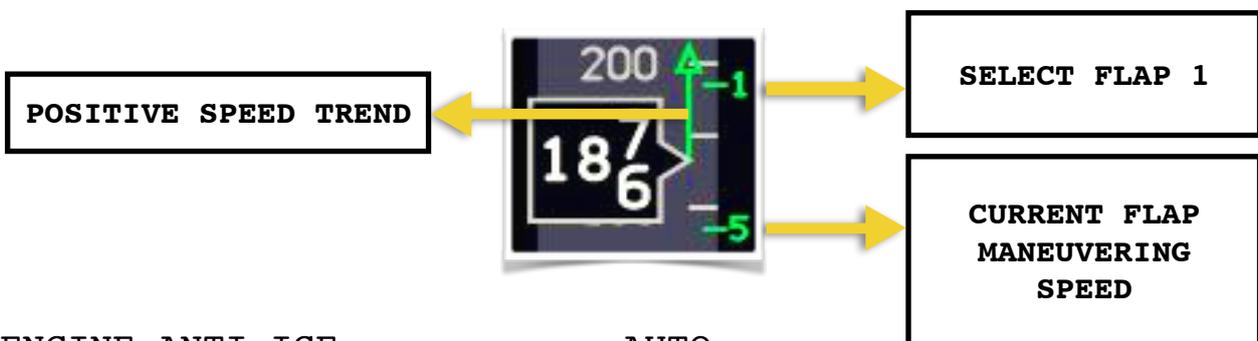
Set or verify the Roll mode at **400 FT AGL**. If **LNAV** was armed verify that **LNAV** automatically engages. Verify that **THR REF** and **VNAV SPD** automatically engage.

CLIMB THRUST..... CONFIRM OR SET

Verify Climb thrust is automatically set at thrust reduction altitude. Otherwise push the "CLB/CON" button on the MCP to manually set the Climb thrust.

FLAPS..... RETRACT ON SCHEDULE

Passing the acceleration height allow the speed to increase and retract the flaps on schedule. A positive increase in speed is required prior to retracting the flaps



ENGINE ANTI-ICE..... AUTO

Set the engine anti-ice back to AUTO if previously selected on.

AFTER TAKEOFF CHECKLIST..... PERFORM

33. CLIMB

BASIC

DURING CLIMB MAINTAIN AT LEAST 15 KTS ABOVE MINIMUM MANEUVERING SPEED.

PASSING TRANSITION ALT..... SET STD

Passing the transition altitude set all 3 altimeters to STD. Crosscheck their indications. Investigate major discrepancy.



PASSING 10,000 FT/FL100..... LIGHTS OFF

*Set the **LANDING LIGHTS, RUNWAY TURNOFF LIGHTS, TAXI LIGHT** and **LOGO LIGHT** to **OFF**. Keep **BEACON, NAV** and **STROBE** ON.*

CENTER FUEL PUMPS..... AS REQUIRED

*If **FUEL IN CENTER** message is shown in the EICAS display set both **CENTER FUEL PUMPS** switches to ON. During cruise if the **FUEL LOW CENTER** is shown set both **CENTER FUEL PUMPS** switches to OFF.*

SEATBELT SIGNS..... OFF / AS REQUIRED

34. CRUISE

BASIC

REACHING THE CRUISING ALTITUDE

CRUISE CHECKS/BRIEFING..... PERFORM WHEN REQUIRED

Cruise checks and briefing will be explained in a separate document.

FUEL/TIME CHECKS..... PERFORM EVERY 30' MIN

Fuel and time checks will be explained in a separate document.

ALTIMETERS..... CROSSCHECK

Check the altimeters reading on the two PDF and ISFD every cruise step climb or descend.

STEPS CLIMB/DESCEND..... PERFORM WHEN REQUIRED

Cruise step climb will be explained in a separate document.

35. APPROACH PREPARATION - FIRST STEPS

BASIC

OBTAIN LATEST ARRIVAL ATIS/WEATHER INFORMATION

APPROACH MINIMUMS..... SET

Set the BARO or RADIO minima as reported on the approach chart. BARO is used for ILS CAT I approaches and NPA (Non Precision Approaches). RADIO minimums are used for CAT II/III approaches.

In our LIPZ - LIRF example flight we will use BARO 220 FT as minima for the ILS Z RWY 16R:



EFIS CONTROL PANEL..... SET AS REQUIRED

Select TERR or WXR as required. Preselect arrival QNH (will show in white). Turn the FPV ON if a NPA or manual approach is expected to be flown.



AUTOBRAKE..... SET

Consider runway length, expected taxi route, landing weight and performance. Refer to **PMDG QUICK REFERENCE HANDBOOK (QRH PI-QRH. 61.1)** for landing distance calculation. If not restricted by performance select autobrake 3 for best passengers comfort.

CANCEL/RECALL SWITCH..... PUSH

Verify only expected messages are shown (usually none).

36. APPROACH PREPARATION - FMC SETUP - LEGS PAGE

BASIC

OBTAIN LATEST ARRIVAL ATIS/WEATHER INFORMATION

DEP ARR KEY..... PRESS

DEP ARR PAGE X:

<INDEX..... SELECT

DEST ARR>..... SELECT

<DESTINATION> ARRIVALS PAGE:

APPROACH RWY/PROCEDURE..... SELECT

In our LIPZ - LIRF example flight we will use ILSZ16R

STAR (IF ANY)..... SELECT

In our LIPZ - LIRF example flight we will use RITE4A

TRANSITION (IF ANY)..... SELECT

In our LIPZ - LIRF example flight we will use CMP transition.

EXEC KEY (ILLUMINATED)..... PRESS

LEGS KEY..... PRESS

ACT RTE X PAGE 1/X:

ARRIVAL ROUTE..... CHECK / MODIFY

Check the arrival route against the approach charts. Modify the route to match your expectation and/or expected ATC clearance. Check/modify speed and altitude constraints to build a more realistic descent path. Check the missed approach path.

In our LIPZ - LIRF example flight:



INSERT A MORE REALISTIC SPEED OVER CI16R

DELETE THE HOLDING OVER CMP



37. APPROACH PREPARATION - FMC SETUP - VNAV PAGE

BASIC

VNAV KEY..... PRESS

VNAV ACT ECON CRZ PAGE 2/3:

NEXT PAGE KEY..... PRESS

VNAV ECON DES PAGE 3/3:

VNAV DES PAGE..... MODIFY AS REQUIRED

Modify descent speed/mach transition speeds if required.

FORECAST>..... SELECT

DESCENT FORECAST PAGE:

TRANSITION LVL..... INSERT

Modify the transition level as specified on the chart or by ATC.

TAI/ON ALT..... AS REQUIRED

If moderate or severe ice is expected during descent insert the altitude at which TOTAL ANTI-ICE is expected to be used.

<FORECAST REQUEST..... SELECT

For long haul flights request an update on the descend winds before descent. Select <LOAD to load the forecast descend winds.

38. APPROACH PREPARATION - FMC SETUP - NAV RADIO

BASIC

NAV RAD KEY..... PRESS

NAV RADIO PAGE:

RADIO NAV..... SET AS REQUIRED

Insert required VOR L/R ADF L/R identifier or frequency if required. In most cases leave it in automatic mode.

If an ILS approach will be performed check LOC frequency/final course against the approach chart.



ILS CHART	
LOC	Final
FRR	Apch Crs
109.75	161°

39. APPROACH PREPARATION - FMC SETUP - FIX PAGE

ADVANCED

FIX KEY..... PRESS

FIX INFO PAGE 1/4:

Use the FIX INFO page as required to insert waypoints, range rings and radials for reference.

The use of the FIX PAGE goes beyond the scope of this document and will be discussed in separate document.

40. APPROACH PREPARATION - FMC SETUP - APPROACH REF

BASIC

PROG KEY..... PRESS

PROGRESS PAGE 1/4:

Note down the estimated arrival fuel at destination.

INIT REF KEY..... PRESS

APPROACH REF PAGE 1/1:

<INDEX..... SELECT

INIT/REF INDEX PAGE:

<PERF..... SELECT

PERF INIT PAGE:

Note down the ZFW.

INIT REF KEY..... PRESS

APPROACH REF PAGE 1/1:

GROSS WT..... INSERT EXPTD LANDING WEIGHT

Add the estimated arrival fuel plus the ZFW to obtain the estimated landing weight.

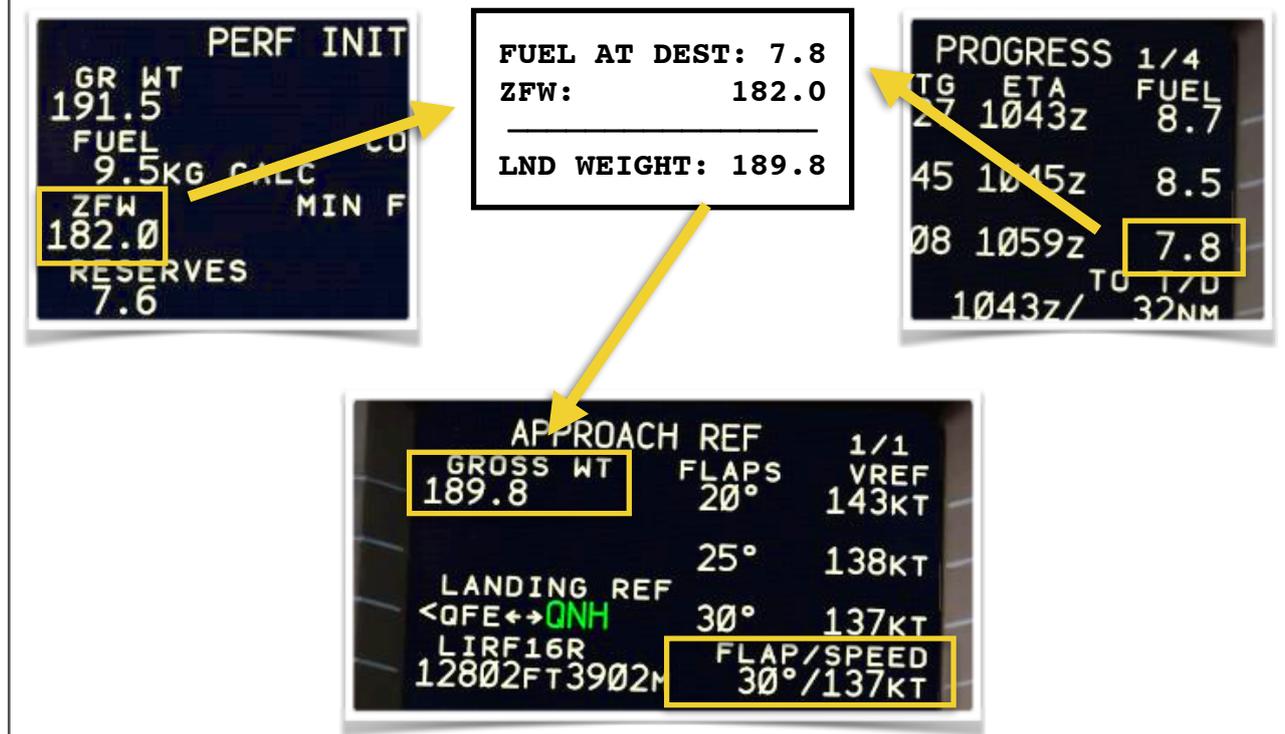
LANDING RUNWAY..... CHECK

On short flights check that the correct airport/runway is shown.

LANDING VREF SPEED..... INSERT

Select desired Flaps setting VREF speed (usually Flaps 30). If Flaps 30 and Flaps 25 VREF speeds are the same consider using Flaps 25 for landing (if not restricted by landing distance).

In our LIPZ - LIRF example flight:



41. APPROACH PREPARATION - FMC SETUP - RTE 2

REALISTIC

PERFORM IN ADDITION TO THE BASIC STEPS

You may use FMC ROUTE 2 to plan for a different RUNWAY, STAR or APPROACH procedure. RTE 2 may be activated anytime when needed.

RTE KEY..... PRESS

ACT RTE 1 PAGE 1/X:

IF ROUTE 2 IS REQUIRED:

◆ <RTE 2..... SELECT

◆ Program Route 2 as required. Activate RTE2 ONLY when needed.

IF ROUTE 2 IS NOT REQUIRED:

◆ RTE COPY>..... SELECT

◆ Route 1 will be copied into Route 2 as a backup.

42. APPROACH PREPARATION - APPROACH BRIEFING

ADVANCED

PERFORM IN ADDITION TO THE BASIC STEPS

ARRIVAL BRIEFING..... PERFORM

The arrival briefing goes beyond the scope of this document and will be discussed separately. However the key elements of the departure briefing are:

- a) **AIRCRAFT STATUS** (Any defects, open MEL / landing capability).
- b) **WEATHER** (Visibility, wind, ceiling, precipitations, significant clouds formation, runway condition, windshear).
- c) **NOTAMS**
- d) **DESCENT PROFILE/SPEED SCHEDULE**
- e) **TRANSITION LEVEL**
- f) **ARRIVAL ROUTE** (STAR if any, STAR constrains, turning radius). Crosscheck with charts.
- g) **APPROACH PROCEDURE** (Type of approach, minimums, visibility and ceiling required, approach lights system, PAPI/VASI configuration, airport characteristics and elevation).
- h) **MISSED APPROACH PROCEDURE** (go-around procedure, constraints, required climb gradients)
- i) **FUEL REMAINING AT DESTINATION** (holding and diversion strategies).
- j) **TERRAIN AND OBSTACLES** (Minimums altitudes, terrain layout)
- k) **LANDING PERFORMANCE** (landing weight, approach configuration and speed, landing distance required, autobrake/manual brake and use of reverse thrust).
- l) **TAXI ROUTE TO PARKING STAND**
- m) **ANY OTHER THREATS OR SIGNIFICANT ITEM**

Keep the briefing short and include only the significant items.

43. APPROACH PREPARATION - MARKER VOLUME

BASIC

MARKER VOLUME..... AS REQUIRED

Consider opening the markers volume on the Audio Control Panel if the approach as one or more approach markers.



44. BEFORE DESCENT

BASIC

SEATBELT SIGNS..... ON
 DESCENT CHECKLIST..... PERFORM

45. DESCENT

BASIC

PASSING FL100/10,000 FT..... LIGHTS ON
 Set the **LANDING LIGHTS, RUNWAY TURNOFF LIGHTS, TAXI LIGHT and LOGO LIGHT** to ON

REALISTIC

PERFORM IN ADDITION TO THE BASIC STEPS

Note: When using VNAV consider opening the speed window below 10,000 FT to prevent the speed going below the actual minimum configuration speed (or use FLCH instead). This is due to the possibility of sequencing a waypoint that has an associated speed which is below the minimum actual configuration speed.

46. APPROACH PROCEDURE - INITIAL

BASIC

PASSING TRANSION LEVEL..... SET QNH
 Passing the transition level set all 3 altimeters to local QNH. Crosscheck their indications for major discrepancy.
 APPROACH CHECKLIST..... PERFORM
 CABIN READY REPORT..... RECEIVE

FLAPS EXTENTION SCHEDULE

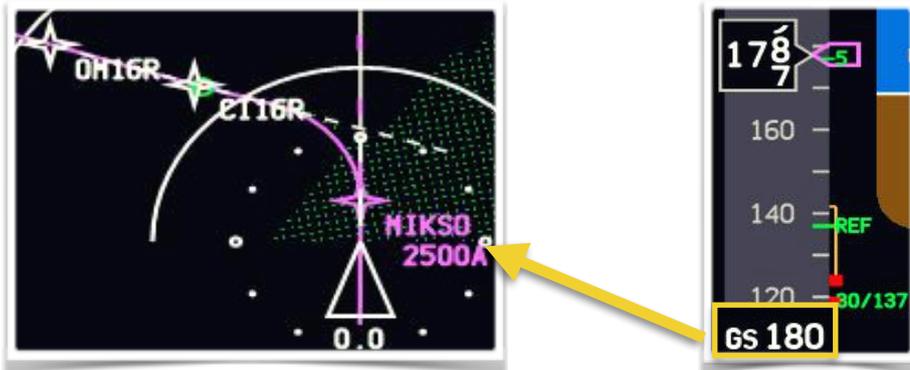
Current Flap Position	Next Flap setting	Command Speed for Selected Flaps	Max speed for extension
UP	1	"1"	265 KT
1	5	"5"	245 KT
5	20	"20"	225 KT
20	25 or 30	VREF25 or VREF30 + 5 kts (+ wind)	180 KT

Note: Flap 15 may be used as a normal flap setting if needed

47. APPROACH PROCEDURE - FROM BASE TO FINAL

BASIC

Before turning on final make sure you have an appropriate speed to avoid overshooting the final approach track. For turns of 45 degrees or more usually **180 KTS GROUND SPEED** and **Flaps 5** (or Flaps 15 if needed) are good targets to aim for. Always check groundspeed (not IAS) to estimate turns radius.



48. APPROACH PROCEDURE - GENERIC ILS PROCEDURE

BASIC

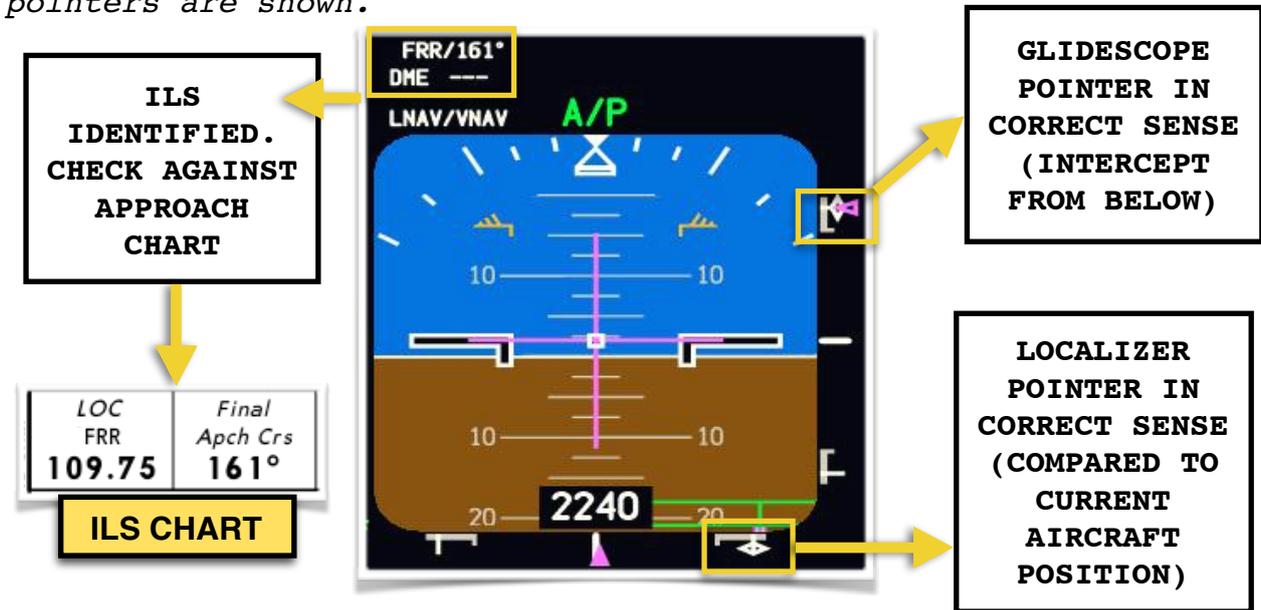
FLAPS..... EXTEND ON SCHEDULE

Start with **Flaps 5** (or Flaps 15). Reduce speed on schedule.

APPROACH MODE..... ARM



Before arming the approach mode verify that the ILS is tuned, identified and in the correct sense. Verify that the LOC and G/S pointers are shown.



RADIO ALTIMETER..... CHECK ALIVE



At 2500 ft AGL check the radio altimeter alive.

LOCALIZER..... CHECK ALIVE/CAPTURE

Check localizer alive and automatic localizer capture. If automatic capture doesn't occur use HDG/TRK SEL or disconnect the autopilot to manually intercept.



GLIDESLOPE..... CHECK ALIVE

LANDING GEAR..... DOWN

Wait for the glideslope pointer to start moving.

FLAPS..... FLAPS 20

Reduce speed on schedule.



SPEEDBRAKES..... ARM



GLIDESLOPE..... CHECK CAPTURE

MISSED APPROACH ALTITUDE..... SET

After glideslope capture set the missed approach altitude in the MCP altitude selector.

FLAPS..... FLAPS 30 OR FLAPS 25

Select your final flap configuration not later than 1500 ft above airport elevation.

SPEED..... SET VREF + 5 KT (+ WIND ADD)

If the autothrottle is used always add 5 KT margin to your VREF. If landing in gusty or high wind conditions (headwind) use VREF + 10 KT. For a detailed explanation of wind additives refer to PMDG FLIGHT CREW TRAINING MANUAL (FCTM 1.11).

A quick way to add 5 KT to the VREF is to set the magenta speed bug just above the green -REF mark (they should "touch").



LANDING CHECKLIST..... PERFORM

Landing checklist should be completed before 1000 FT AGL.

AT OUTER MARKER..... CHECK ALTITUDE

When passing the outer marker (or equivalent position) check the barometric altitude against the published crossing altitude on the approach chart. Any major discrepancy should be investigated or a missed approach should be performed.



AT 1000 FT AGL..... CHECK STABLE ON APPROACH

At 1000 FT ABOVE AIRPORT ELEVATION the aircraft should be stable on final approach. NapuleVola stabilized approach criteria are the following:

- **GLIDESLOPE:** max 1 dot deviation
- **LOCALIZER:** max 1 dot deviation
- **SPEED:** target approach speed with max -5/+10 KT deviation
- **VERTICAL SPEED:** max 1000 FT/MIN VS
- **CHECKLIST:** landing checklist completed by 1000 FT AGL

If any of these criteria are not met at 1000 FT AGL a missed approach must be performed!

APPROACHING MINIMUMS..... CHECK VISUAL FOR REFERENCE

AT MINIMUMS..... "CONTINUE" OR "GO-AROUND"

Verify runway or approach light system in-sight. If no visual reference at minimums perform a missed approach.

AUTOPILOT..... DISCONNECT

Perform a manual landing. Autopilot may be disconnected at any time during the approach. It is however a good practice to wait until visual reference acquired and landing clearance obtained. This document doesn't cover autolands. Please keep in mind that performing an autoland on a CAT I runway and/or without adequate approach preparation may result in a sever accident.

ADVANCED

PERFORM IN ADDITION TO THE BASIC STEPS

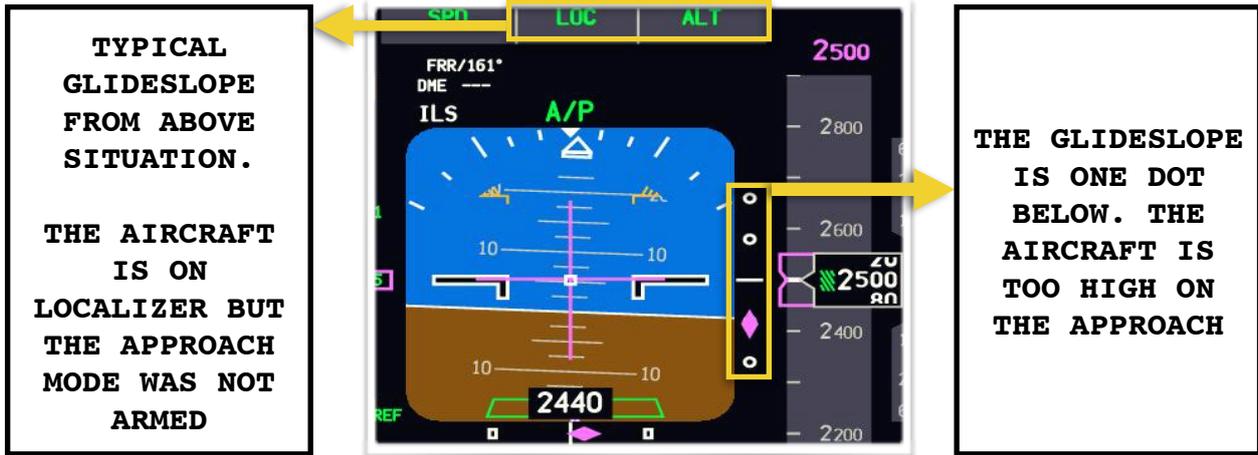
After selecting final flaps (Flaps 30 or 25) maintain 160 KT IAS until the Outer Marker or 5 NM to touchdown. This will help ATC to properly sequence aircrafts on final approach. If there is a significant tailwind reduce speed to VFREF+5 earlier.

49. APPROACH PROCEDURE - GLIDESLOPE FROM ABOVE

REALISTIC

IF A GLIDESLOPE INTERCEPT FROM ABOVE IS REQUIRED

Sometimes a GLIDESLOPE interception from above may be required. This can occur for different reasons like: forgetting to ARM the APP mode, late ATC clearance, navigation/flying errors or approach temperatures well above ISA. To perform this procedure the aircraft **MUST** be first established on the LOCALIZER.



APPROACH MODE..... ARM

MCP ALTITUDE..... SET 1000 FT ABOVE GROUND

Example: if the airport elevation is 13 FT round it up to the next hundred and set 1100 FT in the altitude window.

VERTICAL SPEED MODE..... SELECT

*Do not exceed 2000 FT/MIN vertical speed until 2000 FT AGL.
From 2000 FT AGL to 1000 FT AGL do not exceed 1500 FT/MIN VS.*

CONFIGURATION..... GEAR DOWN / FLAPS 20

Set Gear Down/Flaps 20 (if not already set) to create as much drag as possible. Use speedbrakes if required (with caution).

AT GLIDESLOPE CAPTURE..... SET GO-AROUND ALTITUDE

AT OUTER MARKER..... CHECK ALTITUDE

*Intercepting the glideslope from above may result in capturing a **FALSE GLIDESLOPE**. When passing the Outer Marker (or equivalent position) check the barometric altitude against the published crossing altitude on the approach chart.*

WARNING: IF THE GLIDESLOPE IS NOT CAPTURED BY 1000FT AGL OR ALT MODE ENGAGES AT ANYTIME, EXECUTE A GO-AROUND. ALWAYS MEET THE SABILISED APPROACH CRITERIA.

50. APPROACH PROCEDURE – GENERIC VOR/NDB APP (VNAV)

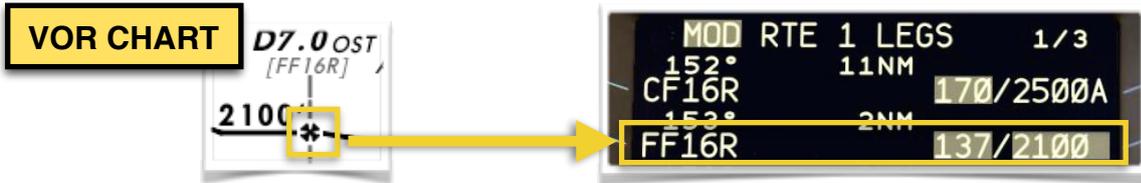
ADVANCED

ONLY VOR APPROACH USING LNAV/VNAV ARE DISCUSSED

APPROACH PREPARATION..... PERFORM

Follow the same approach preparation flow discussed in paragraph 35 to 43 with the following addition:

- **Identify the FAF** (Final Approach Fix) on the approach chart. The FAF is usually depict with a Maltese cross. In the LEGS page add your VREF as a speed constraint on the FAF waypoint.



- In the **FIX** page insert the FAF waypoint with a 2 NM range ring.



- **Set the NAV RADIO PAGE** as required. Consider manually selecting the approach VOR and radial for RAW data reference. Make sure the approach VOR is correctly identified on the ND display.



- Set in the **PROG PAGE 4/4** the VERT RNP to 125



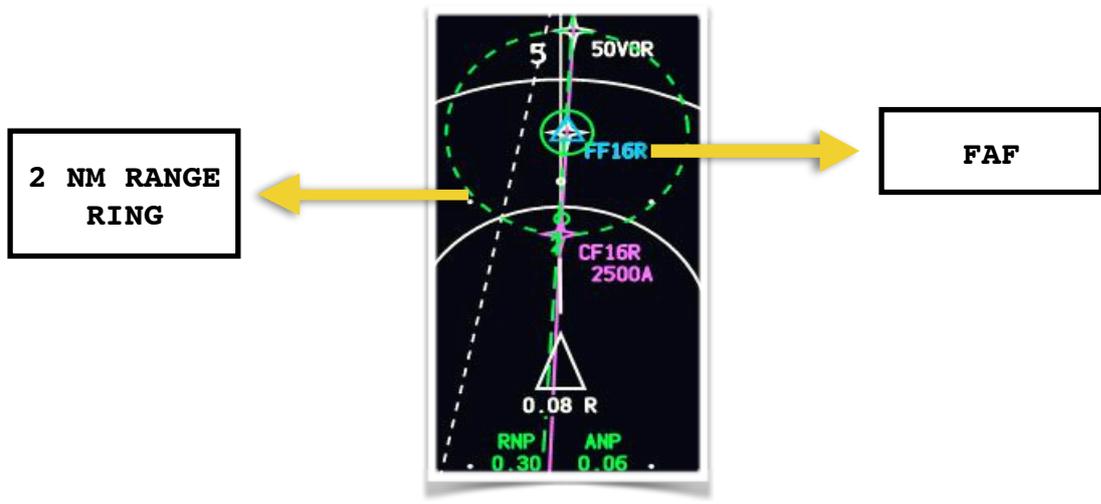
FLAPS..... EXTEND ON SCHEDULE

Start with **Flaps 5** (or Flaps 15). Reduce speed on schedule.

LNAV..... ARM/ENGAGE

Intercept the final approach track at least with **FLAPS 5 AND AT NO MORE THAN 5 NM FROM THE FAF.**

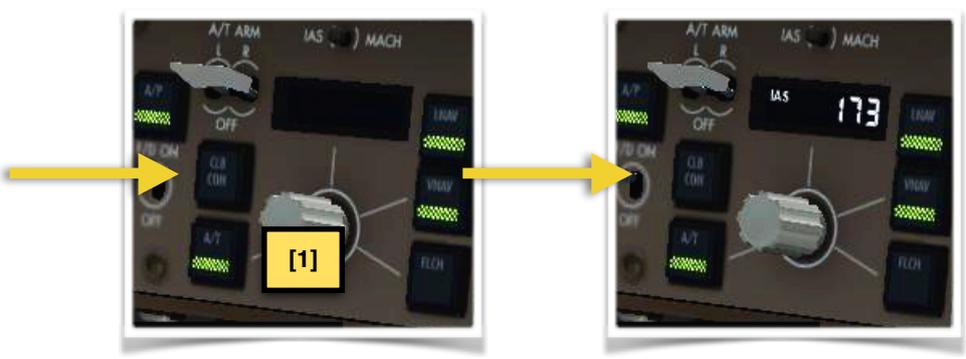
If done correctly the approach on the ND should look like similar to the one shown in this picture (LIRF VOR16R APP):



VNAV..... ARM/ENGAGE

ARM VNAV IF NOT ALREADY ENGAGED

Every time the VNAV engages the MCP speed windows CLOSES to return speed control to the FMC. If this is your case push again the **SPEED SELECTOR** [1] to re-open the window and re-set an appropriate speed.



VNAV PTH..... CHECK

VNAV PTH

Check VNAV PTH engaged on the FMA. If you get VNAV ALT instead **PUSH** again the altitude selector to get VNAV PTH. If the autopilot remains in VNAV ALT it will not descend after the FAF for final approach.

AT 2 NM BEFORE THE FAF..... GEAR DOWN / FLAPS 20

At 2 NM before the FAF set Gear Down and Flaps 20, reduce speed on schedule. The 2 NM ring range on the ND is a reference to don't forget this step.

SPEEDBRAKES..... ARM

MCP ALTITUDE..... RESET TO APPROACH MINIMA

When on VNAV PATH set the MCP altitude selector on **AUTO** and then set the published approach minima. If the MPC altitude is not reseted the aircraft will NOT descend.



FLAPS..... FLAPS 30 OR FLAPS 25

Select your final flap configuration **BEFORE REACHING THE FAF.**

SPEED..... SET VREF + 5 KT (+ WIND ADD)

If the autothrottle is used always add 5 KT margin to your VREF. For a detailed explanation of wind additives refer to **PMDG FLIGHT CREW TRAINING MANUAL (FCTM 1.11).**

LANDING CHECKLIST..... PERFORM

Landing checklist should be completed before the FAF.

PASSING THE FAF..... MONITOR APPROACH PROFILE

The aircraft will descend on the final approach path. If the aircraft doesn't descend as expected revert to conventional VOR APP procedure with V/S-FPA MCP modes (not discussed in this NOPs)

MISSED APPROACH ALTITUDE..... SET

When established on final descend and 300 FT below missed approach altitude, set the missed approach altitude.

AT 1000 FT AGL..... CHECK STABLE ON APPROACH

At 1000 FT ABOVE AIRPORT ELEVATION the aircraft should be stable on final approach. NapuleVola stabilized approach criteria are the following:

- **VERTICAL PROFILE:** more than +/-200 FT deviation
- **RADIAL INBOUND:** max 1/2 scale deviation or +/-5 degrees (NDB)
- **SPEED:** target approach speed with max -5/+10 KT deviation
- **VERTICAL SPEED:** max 1000 FT/MIN VS
- **CHECKLIST:** landing checklist completed by 1000 FT AGL

If any of these criteria are not met at 1000 FT AGL a missed approach must be performed!

APPROACHING MINIMUMS..... CHECK FOR VISUAL REFERENCE

AT MINIMUMS..... "CONTINUE" OR "GO-AROUND"

Verify runway or approach light system in-sight. If no visual reference at minimums perform a missed approach.

AUTOPILOT..... DISCONNECT

Perform a manual landing. Autopilot may be disconnected at any time during the approach. It is however a good practice to wait until visual reference acquired and landing clearance obtained. Autoland are not possible following NPA approaches.

HDG/TRK SELECT..... SELECT RUNWAY HEADING

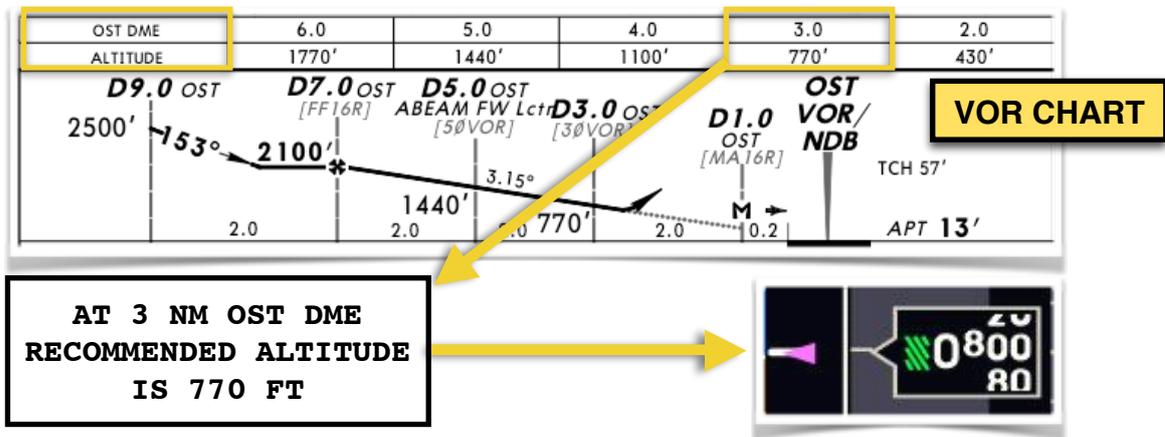
FLIGHT DIRECTOR..... OFF

Flight director guidance during NPA approaches is limited and may be unreliable. Switch the Flight Director off and continue visually. Follow the PAPI/VASI if available. At any time the approach becomes unstable perform a go-around.



PERFORM IN ADDITION TO THE ADVANCED STEPS

Monitor the descend profile against the published altitudes on the approach chart. Any major discrepancy should be investigated or a go-around should be performed.



51. APPROACH PROCEDURE - GO-AROUND PROCEDURE

IF A G/A IS REQUIRED (FLIGHT DIRECTOR AVAILABLE)

Simultaneously:

"GO AROUND - FLAPS 20"..... ANNOUNCE

TOGA BUTTON..... PUSH

A single TOGA button push will command a 2000 FT/MIN climb, a second push will command a full go-around thrust climb.

If flying manually rotate the aircraft towards **15 degrees** pitch attitude (10 degrees with an engine failure). Very thrust increases to the commanded limit. Focus on flying the airplane.

FMA..... CHECK

Verify appropriate modes engage:



FLAPS..... RETRACT TO 20

POSITIVE RATE..... CHECK

Check the aircraft is climbing as expected.

LANDING GEAR..... UP

FLIGHT DIRECTORS SWITCHES... CHECK ON

Flight director bars will automatically display on the PFD when the TOGA button is pushed. However make sure the switches are in the ON position, especially after a non-precision approach.

AT 400 FT AGL..... VERIFY ROLL MODE

Verify LNAV automatically engages or select another roll mode (HDG/TRK SEL). Track the missed approach route.

MISSED APPROACH ALTITUDE..... VERIFY CAPTURE

FLAPS..... RETRACT ON SCHEDULE

Flaps retraction altitude will be the first missed approach altitude. Check positive speed trend and retract the Flaps accordingly.

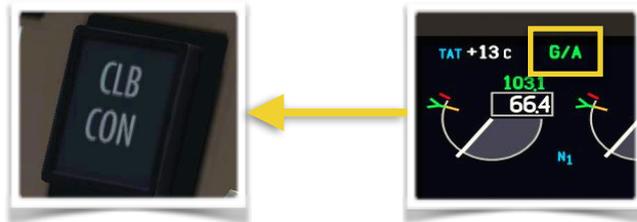
AFTER TAKEOFF CHECKLIST..... PERFORM

ADVANCED

PERFORM IN ADDITION TO THE BASIC STEPS

CLB THRUST..... VERIFY / SET

After Flaps retraction verify Climb thrust is set. If the thrust limit is still G/A push the CLB/CON button on the MCP.



52. APPROACH PROCEDURE - REJECTED LANDING

REALISTIC

IF GO-AROUND INITIATED AFTER TOUCHDOWN

- **MANUALLY ADVANCE THE THRUST LEVERS TO GO-AROUND THRUST.**
(TOGA button is inhibited. Autothrust is not available. Autobrake disarm. Speedbrake lever stows. CONFIG FLAPS warning will occur.)
- **MAINTAIN FLAP CONFIGURATION**
- **AT VREF ROTATE NORMALLY**
- **ONCE AIRBORNE PRESS THE TOGA BUTTON AND PERFORM A NORMAL GA**

NOTE: IF REVERSE THRUST IS SELECTED AT ANYTIME AFTER TOUCHDOWN A GO-AROUND CANNOT BE PERFORMED AND THE AIRCRAFT MUST BE STOPPED.

53. LANDING ROLL

BASIC

UPPON MAIN WHEEL TOUCHDOWN

SPEEDBRAKE LEVER..... CHECK DOWN

Check the speedbrakes are extended. If not select full reverse thrust and manually extend the speedbrakes.

REVERSE THRUST..... IDLE REVERSE / AS REQUIRED

Always use IDLE REVERSE thrust, full reverse thrust is available when the REVERSE indication becomes green on the EICAS display.

REVERSERS GREEN..... CHECK



AUTOBRAKE OPERATIONS..... CHECK / MANUAL BRAKING

If the autobrake disconnects brake manually to vacate as convenient. Autobrake disconnection is indicated by an amber EICAS advisory.

AUTOBRAKE

AT 60 KT..... STOW REVERSERS / MANUAL BRK

If there is enough runway remaining to stop the aircraft select the reverse thrust to idle and then slowly stow the reversers. Disconnect the autobrake approaching taxi speed. Vacating the runway do not exceed 10 KT or 20 KT on an high speed taxiway.

54. AFTER LANDING

BASIC

AFTER VACATING THE RUNWAY

SPEEDBRAKE LEVER..... UP

Retract the speedbrakes.

APU SELECTOR..... ON, THEN START (1 SEC)

ENGINE ANTI-ICE..... AS REQUIRED

LANDING LIGHTS..... OFF

STROBE LIGHT..... OFF

TERR/WXR..... OFF

Select the Terrain or Weather Radar OFF on the ND.

AUTOBRAKE SELECTOR..... SET TO OFF

FLAPS..... UP

Retract the Flaps.

TRANSPONDER..... XPNDR

Select the TCAS OFF.

REALISTIC

DELAYED APU START

APU SELECTOR..... ON

Switch the selector to ON but delay the APU start till approaching the parking position. This will save fuel and APU maintenance costs.

55. APPROACHING PARKING POSITION

BASIC

JUST BEFORE TURNING INTO THE PARKING POSITION

RUNWAY TURNOFF LIGHTS..... OFF

TAXI LIGHT..... OFF

Check marshaller in-sight or visual docking system in operation.

56. SHUTDOWN

BASIC

WHEN THE AIRCRAFT IS FULLY PARKED

PARKING BRAKES..... ON

APU..... CHECK RUNNING

Check APU RUNNING EICAS indication, start the APU or connect an external ground power source.

**PARKING BRAKE SET
APU RUNNING**

L/R FUEL CONTROL SWITCHES... BOTH CUTOFF

Wait minimum **3 MINUTES** after landing before shutdown the engines.

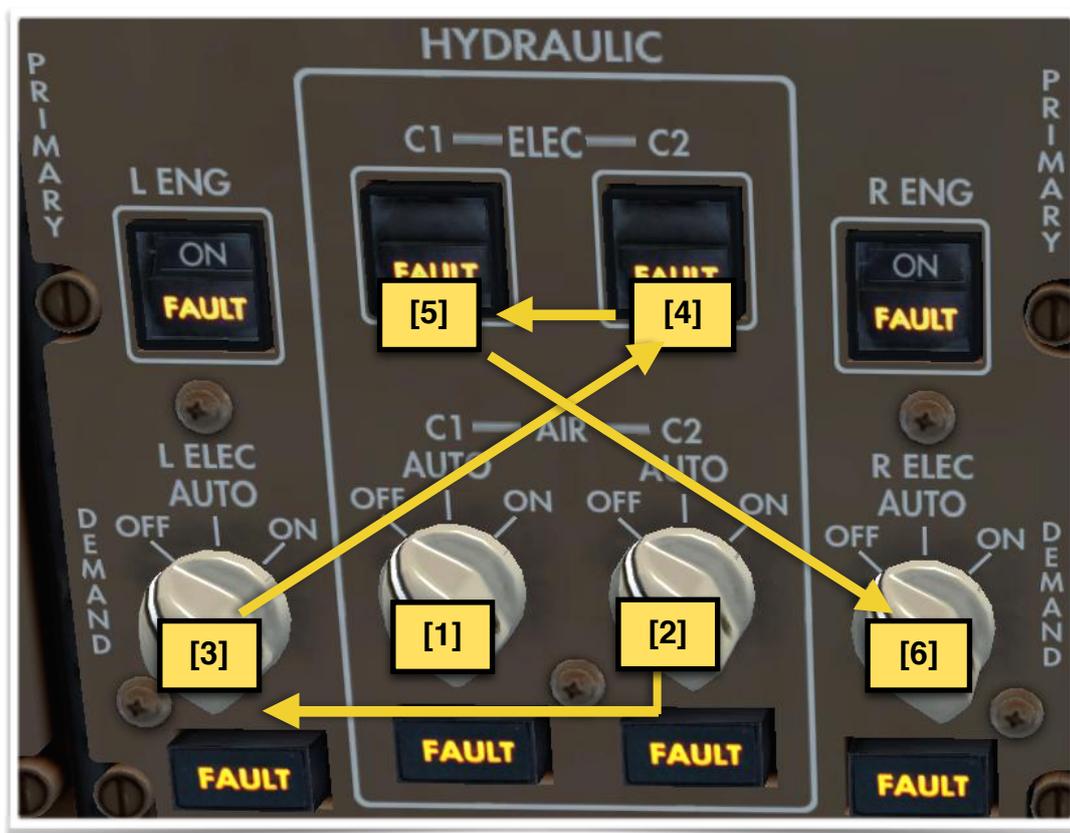
HDY C1/C2 AIR DEMAND PUMP... OFF

HDY L ELEC DEMAND PUMP..... OFF

HDY C2/C1 ELEC PUMP..... OFF

HDY R ELEC DEMAND PUMP..... OFF

Depressurize the right system last to prevent fluid transfer between systems.



FUEL PUMPS..... ALL OFF

FLIGHT DIRECTOR SWITCHES..... BOTH OFF

TFC BUTTON..... PUSH

Press the TFC button on the EFIS Control Panel.

TRANSPONDER..... SET CODE 2000 AND STANDBY

BEACON LIGHT..... OFF

SHUTDOWN CHECKLIST..... PERFORM

57. SECURING THE AIRCRAFT

BASIC

BEFORE LEAVING THE AIRCRAFT

You may now DISARM and OPEN the doors.

ADIRU..... OFF

EMERG LIGHTS SWITCH..... OFF

Wait for the all the passengers to disembark before disarming the Emergency Lights.

L/R PACKS..... BOTH OFF

SECURE CHECKLIST..... PERFORM

REALISTIC

PERFORM IN ADDITION TO THE BASIC STEPS

Perform the **ELECTRICAL POWER DOWN CHECKLIST** in the PMDG FCOM SUPPLEMENTARY PROCEDURES (**FCOM SP 6.1**)



57. ENROLL NOW!

More technical documents will be available on www.napulevola.it. Some of them will be available only to NapuleVola pilots. NapuleVola Virtual Airline is **FREE** and **OPEN** to anyone with **ANY** level of experience. All the sceneries, aircrafts and documents will **ALWAYS** be available for free.

If you are not one of our pilot yet, register today and start flying with us!

59. CONTACTS

We encourage people to give us a feedback or report errors on all the technical publication. Also if you have any question of any kind (even stupid ones!) don't hesitate to contact us.

The preferred way to get in touch with us is to use our on-line forum on www.napulevola.it. Questions regarding B777 fleet and operation can be addressed also to b777@napulevola.it.

Happy Landings :-)
Andrea Barbarano, NPV1208