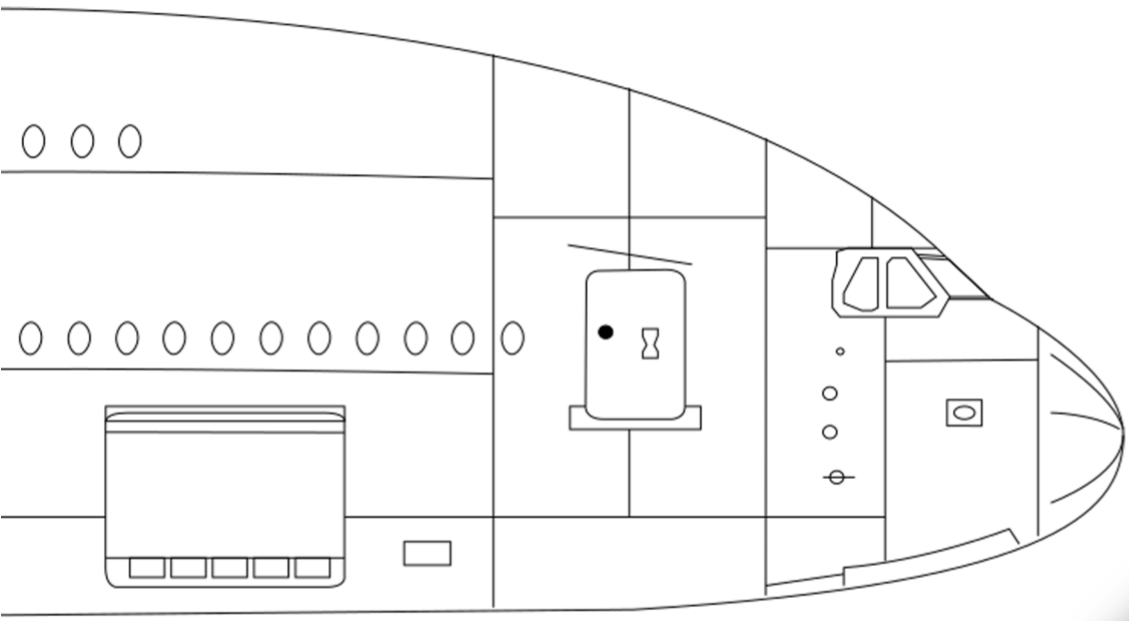
flybywire

FBW A380X

STANDARD OPERATING PROCEDURES



VERSION 1.0

Table of Content

PRELIMINARY COCKPIT PREPARATION

FOR SIMULATION PURPOSES

Initial Power Up

Engines

ENGINE MASTER SWITCHES 1, 2, 3, 4.....**OFF**
*Verify that the engine master switches on the pedestal are in the **OFF** position.*

ENGINE STARTER.....**NORM**
*Verify that the engine starter on the overhead panel is set to the **NORM** position.*

Wipers

BOTH WIPERS.....**OFF**
*Verify the wiper switches on the overhead panels are in the **OFF** position.*

Batteries

ALL BATTERIES (BATTERY 1, ESSENTIAL BATTERY, BATTERY 2, AUXILIARY POWER UNIT BATTERY).....**ON**
*Verify that the **OFF** lights extinguish when the battery buttons are pressed.*

External power

- **If the AVAIL lights illuminate on the overhead panel:**

EXTERNAL POWER (2, 3, 1, 4).....**ON**
*Press the external power unit button to use the external power. Then, the **AVAIL** lights on the overhead panel should extinguish.*

Note: *The external power units should be activated in the following order: 2 - 3 - 1 - 4. This particular order will result in a shorter start time of the display units.*

Please acknowledge that the aircraft needs at least two external power units to power the whole electrical network.
In case of high electrical demand, such as APU start or door activity, the pilot should consider using a third and a fourth external power unit or reduce the electrical load by switching the:

- *CABIN FANS to **OFF***
  *Press the CABIN FANS button on the overhead panel. The **OFF** light should illuminate.*
- *COOLING to **OFF***
  *Press the COOLG button on the overhead panel. The **OFF** light should illuminate.*

Note : *The pilot should set the CAB FANS and the COOLG to **ON** as soon as possible. When the Auxiliary Power Unit is available, no reduction of electrical load is necessary.*

Cockpit lighting

COCKPIT LIGHTS.....**AS REQUIRED**
*On the overhead panel, set the STANDBY COMPASS as required and set the ANN light to **BRIGHT** or **DIM** as required. On the pedestal, set the Pedestal Flood Light knob, the Ambient Light knob, and Integ Light knob as required. Finally adjust the brightness of the Display Units: Primary Flight Display, Navigation Display, Multi-Function Display, Engine Warning Display, and System Display.*

Initial Onboard Information System Power Up

Laptops startup

CAPTAIN & FIRST OFFICER LAPTOPS.....**ON**

*To turn on the laptops, slide the **ON/OFF** switch located near the OIS to the right position, then hold it for 2 seconds (Takes around 5 minutes for the laptops to start).*

BACKUP LAPTOP.....**ON**

It is the same procedure as the captain's and first officer's laptops - The backup laptop is located in the First Officers lateral console and is needed to run the automatic data loading operations.

Keyboard and Cursor Control Unit (KCCU)

CURSOR CONTROL DEVICE AND KEYBOARDs 1 AND 2.....**ON**

This is situated on the keyboard and cursor control unit (KCCU) panel on the pedestal.

Onboard Information System Applications Initialization

ONBOARD INFORMATION TERMINAL.....**ON**

Turn the OIT knob in order to start the Onboard Information Terminal, then adjust its brightness as required.

ONBOARD INFORMATION TERMINAL SIDE.....**NSS AVNCS**

This will initialize the network server systems avionics. This permits to send flight data to the onboard information system.

LOGIN AS PILOT.....**PERFORM**

We recommend to log in as soon as possible as the connection to the NSS AVNCS connection time might take few minutes. We also recommend to launch the flight operations applications.

ONBOARD INFORMATION TERMINAL SIDE.....**FLT OPS**

This application will enable to perform flight performance calculations.

LOGIN AS PILOT.....**PERFORM**

NAV CHARTS.....**START**

You will be able to access NavBlue Chart+ here or Navigraph's charts.

OPS LIBRARY.....**START**

Company communications initialization

OIT SIDE.....**NSS AVNCS**

INITIAL DATA.....**SEND**

Send a request to the airline ground station via the INIT Data button. When the request is delivered, your request will appear on the sent items.

Note : *Send Initialization after checking the input data and display data.*

Note : *Check Uplink message : CAT Recency, Full Thrust Recency And Statement Of Work Index Range.*

Note : *Statement Of Work Index Range is included for a month only if it is changed.*

FLT OPS application status

OIT SIDE.....**FLT OPS**

Aircraft Status Verification

Previous ECAM alerts

RCL.....**PRESS**

Press the RCL pushbutton situated on the ECAM Control panel for at least 3 seconds to recall all ECAM alerts that were cleared or cancelled previously.

CLEARED or CANCELLED ALERTS.....**CHECK**

Verify all alerts and make sure they are resolved before taking off.

Logbook verification

OIT SIDE.....**NSS AVNCS**

MEL/CDL ITEMS.....**CHECK and NOTE CDL**

To check the Minimum Equipment List/Configuration Deviation List items verify the ECAM recall notes and the maintenance release status. Then, enter the pre-flight parameters.

Minimum Equipment List (MEL)/Configuration Deviation List (CDL) items check

OIT SIDE.....**FLT OPS**

MEL/CDL ITEMS.....**CHECK DISPATCH CONDITIONS**

To check the minimum equipment list/configuration deviation list, access the Minimum Equipment List and Configuration Deviation List items via the Logbook status panel of OPS Library. Next, verify that all MEL items are automatically actived in performance applications. Finally check that Configuration Deviation List items are automatically activated in performance applications without missing parts.

Aircraft acceptance

OIT SIDE.....**NSS AVNCS**

AIRCRAFT ACCEPTANCE.....**PERFORM**

Verify that the VHF3 Data mode is active and then, in the flight acceptance report, sign the acceptance.

Note: The aircraft acceptance can be signed later but has to be before the end of the Cockpit Preparation.

Fire tests and APU startup

Radio management panels (RMP) startup

RMP 1 and 2.....**ON**

Switch on both the radio management panels (RMP), situated on the pedestal.

STANDBY RADIO NAVIGATION.....**OFF**

COMMUNICATION FREQUENCIES.....**TUNE**

We recommend the following ways to ensure the optimal use of the communication :

- *VHF selected for the active Air Traffic Control communications and emergency frequencies.*
- *VHF 2 for the Automatic Terminal Information Service (ATIS)*
- *VHF 3 for the ACARS*

Note: The speaker volume must be adjusted for monitoring throughout the flight.

INT RECEPTION.....**RELEASE/ADJUST**

Press and release the Interphone Reception knob to the out position. This enables communication with the ground crew.

Auxiliary Power Unit and Engine fire test

Note: The pilots should perform the fire tests when the auxiliary power unit is available.

APU FIRE.....**CHECK IN and GUARDED**

Locate the APU fire pushbutton on the upper overhead panel, then make sure the guard is on.

APU AGENT.....**OFF**

ENGINE 1(2)(3)(4) FIRE.....**CHECK IN and GUARDED**

ENGINE 1(2)(3)(4) AGENT 1 and 2.....**OFF**

FIRE TEST.....**PRESS**

The pilots maintains the TEST pushbutton pressed throughout the test.

TEST RESULT:

Verify that the fire detection systems and extinguishing systems are functional by checking the following items: a constant repetitive chime sound, the master warning light flashes on the glareshield, the ECAM displays the engine fire alert messages (ENG 1(2)(3)(4) FIRE, APU FIRE, MLG BAY FIRE), All engine fire pushbutton and the auxiliary power unit fire pushbutton displays in red, the squib light of the engine and apu agent pushbuttons are illuminated, the disch light of the engine and auxiliary power unit agent pushbuttom illuminates and all fire lights on the engine master panel illuminates.

Auxiliary Power Unit start

APU MASTER SWITCH.....**ON**

APU START.....**ON**

Ensure that the APU flap is fully open by looking on the auxiliary power unit page on the system display.

Electrical supply

EXTERNAL POWER.....**AS REQUIRED**

*We recommend to keep the external power units to **ON** to reduce the APU load in hot weather conditions.*

Flight Plan Preparation

Flight Management System / Onboard Information System FLT OPS system

The pilot initializes the onboard information system entering the following information: departure and arrival airport (FROM/TO) and flight number. Please note, the onboard information system can be initialized automatically from the flight management system. This also enables the automatic initialization of the FLT OPS application (Performance and navigation charts), the aeronautcal operation control (AOC), and the logbook.

- **If the company flight plan is received via ACARS:**

  AIRCRAFT STATUS.....**CHECK**
  In the DATA/STATUS page of the flight management system, verify the engine type, the aircraft type, the active database validity period, the pilot stored elements. Take close attention to the waypoint, navaids, route, and runway. Verify if they are following the flight plan.

  RECEIVED COMPANY FLIGHT PLAN.....**INSERT**
  Please note, the company flight plan will be automatically load in the flight management system. If for any reasons the pilot want to locate the company flight plan to a secondary flight plan of the flight management, they must ensure that the previous secondary flight plan is deleted.

  FLIGHT NUMBER and DEPARTURE/ARRIVAL.....**CHECK**
  Verify the flight number and the departure and destination airport on the active initialization page on the flight management system.

  OIT SIDE.....**FLT OPS**

  FLT OPS STS.....**SELECT**

  FLT OPS STS.....**CHECK UPDATED**
  Verify that the flight management system correctly updated the FLT OPS application by verifying flight number and the departure and arrival airports.

- **If the company flight plan is not received via ACARS:**

  OIT SLIDE.....**FLT OPS**

  FLT OPS STS.....**SELECT**

  FLIGHT NUMBER and DEPARTURE/ARRIVAL.....**INSERT**
  Insert the flight number and the departure airport and arrival airport in the FLT OPS application.

  FLT OPS STS page.....**CHECK UPDATED**
  Verify that the flight management system correctly updated the FLT OPS application by verifying flight number and the departure and arrival airports.

Preliminary takeoff performance determination

We recommend to consider the environmental conditions as well as the aircraft condition when computing the performance data.

T.O PERF.....**START**
Initialize the T.O performance application on the onboard information system.

AIRFIELD DATA.....**OBTAIN**
Use the airfield date to compute the preliminary takeoff performance.

- **If dispatch under MEL or CDL and in accordance with the logbook:**

  MINIMUM EQUIPMENT LIST ITEMS……**CHECK ACTIVATED**
  In the corresponding performance application, check the minimum equipment list items.

  CONFIGURATION DEVIATION LIST ITEMS……**CHECK ACTIVATED and COMPLETE**
  In the corresponding performance application, verify the configuration deviation list items.

  ONBOARD INFORMATION SYSTEM PRELIMINARY TAKEOFF PERF.....**COMPUTE and CROSSCHECK**
  Verify in the takeoff performance application the estimated departure conditions like the runway selection and the runway characteristics. We recommend to take into account any NOTAM emitted to the airport. Then, insert the outside conditions, the minimum equipmeent list/configuration deviation list items, and the aircraft configuration in the appropriate panels. Verify the takeoff weight and then launch the computation and review the result.

COCKPIT PREPARATION

FOR SIMULATION PURPOSES

Overhead Panel

White lights

- **When scanning the overhead panel:**

ALL WHITE LIGHTS.....**OFF**

*We recommend to turn **OFF** all white lights for all systems, starting at the bottom to the top, from the left to the right side of the overhead panel.*

*Note: - This procedure may be based on operator policy. During cockpit preparation, the GND CONNECTION and the REMOTE C/B CTL on the maintenance and maintenance electrical panel respectively can be kept **ON** as long as maintenance personnel are on site using the portable maintenance access terminal (PMAT) for maintenance purposes.*

- While scanning the overhead panel during this procedure, check that the only amber lights are the GEN FAULT lights.

Recorder

RCDR GND CTL.....**ON**

We recommend turning on the recorder ground control to help investigators in case an accident happened after departure.

EVAC

CAPT/CAPT & PURS.....**CAPTAIN**

We recommend setting the CAPT/CAPT & PURS on the captain slide. However, this may be different based on company policy.

Probe & window heat

PROBE & WINDOW HEAT.....**AUTO**

*The probe and window heat should only be set to **ON** in cold weather conditions.*

Air Data Inertial Reference System (ADIRS)

ALL IR MODE.....**NAV**

We recommend to align the inertial references as soon as possible. The initialization may take some time. We also recommend to complete a full alignment if this is the first flight of the day, the flight crew has changed, the GPS is not available to all segment in the flights, or that the pilot expects long segments with low NAVAID coverage. We recommend to perform a fast alignment for all other flight conditions.

Note: We recommend ensuring that at least one inertial reference system remains operative when a refuel operation is in progress.

Emergency Locator Transmittor (ELT)

ELT.....**ARMED**

Reset panel

RESET BUTTONS (Left side).....**CHECK**

Verify that all reset buttons are pushed, and none are in the outward position.

Exterior lighting

STROBE.....**AUTO**

BEACON.....**OFF**

NAV.....**ON**

*When turning the navigation light to **ON**, the navigation and obstruction lights illuminate.*

REMAINING EXTERIOR LIGHTS.....**AS REQUIRED**

Passenger signs

SEAT BELTS.....**ON**

*We recommed to set the seat belts sign to **ON** once the refueling process is completed.*

NO SMOKING.....**AUTO**

EMER EXIT Light.....**ARM**

Engine starter

ENGINE START.....**NORM**

Air conditioning

APU BLEED.....**ON**

We do not recommend to use the auxiliary power unit bleed system if a high pressure ground air unit is connected to the aircraft. This can be checked on the bleed page of the system display. If there is pressure in the bleed air system, the high pressure ground air unit is connected.

XBLEED.....**AUTO**

AIR FLOW.....**NORM**

The bleed system works with the flight management system. If there is no number of passenger entered in the flight management system, the airflow will be automatically set the air flow like when the value entered is the maximum number of passenger. If the number of passenger is entered, the airflow will automatically adjust to that number.

CKPT.....**AS REQUIRED**

We recommend setting the temperature to approximately 21.5° C.

CABIN.....**PURS SEL**

Please note that the cabin temperature can only be controlled from the flight attendant panel.

Electrical systems

ELEC DC SD PAGE.....**DISPLAY**

ALL BATTERY (BATTERY 1, ESSENTIAL BATTERY, BATTERY 2, and APU BATTERY).....**OFF then ON**

*Verify that after resetting all the batteries to **ON**, the current charge of each battery is below 60 A. It should also decrease.*

Fuel system

TRIM TK FEED.....**AUTO**

Maintenancepanel

ALL LIGHTS.....**OFF**

Verify that all lights are off. If a light is still on, press the associated pushbutton to turn off the light.

Cargo air conditioning

CARGO AIR COND selectors.....**AS REQUIRED**

Radio management panel (RMP) 3

RADIO MANAGEMENT PANEL 3.....**ON**

STBY RAD NAV key.....**OFF**

Cockpit voice recorder (CVR)

CVR TEST.....**PRESS**

Press and release the pushbutton. The test will fail if the ECAM alert message "RECORDER CVR FAULT" appears 5 seconds after the press of the pushbutton.

Reset panel

RESET BUTTONS (Right side).....**CHECK**

Verify that all the reset buttons are in the pushed position.

Main Instrument Panel

Switching

SWITCHING selectors.....**NORM**

*Verify that the attitude heading selector, the air data selector and the flight management system selector are set to the **NORM** position.*

Integrated Standby Instrument System (ISIS)

INTEGRATED STANDBY INSTRUMENT SYSTEM.....**CHECK**

We recommend to adjust the brightness, then verify the airspeed, the barometric settings, the altitude readings, the attitude indications and the heading.

Landing gear gravity system

L/G GRVTY.....**OFF**

Clock

CLOCK.....**CHECK and SET AS NECESSARY**

Verify the time. Ensure the time is correct. Reset the elapsed time and chronometer.

Anti-Skid

A-SKID.....**ON**

Pedestal

Parking brake

PARKING BRAKE.....**ON**

We do not recommend setting the parking brake if the brakes are hot and the chocks are in place. This will improve the brake cooling. Verify that the brake pressure descends to zero on the triple pressure indicator.

Body accumulators pressure

BODY ACCUMULATORS PRESSURE.....**CHECK/REINFLATE**

Verify for normal indication, by ensuring the body accumulators pressure is in the green band. If needed, press the ACCU REINFLATE pushbutton to reinflate the brake accumulators.

Engines settings

THRUST LEVERS.....**IDLE**

THRUST REVERSER LEVERS.....**STOWED**

ENGINE MASTER 1, 2, 3 AND 4.....**OFF**

Cockpit door lock

COCKPIT DOOR SWITCH.....**NORM**

Air Traffic Control Communication

- **On the MFD ATC COM/MSG RECORD page:**

  MESSAGE RECORD.....**ERASE ALL**
  We recommend erasing all CPDLC messages of a previous flight. This will avoid confusion in the message history.

.

- **On the MFD ATC COM/CONNECT/CONNECTION STATUS page:**
  - **If ADS services are expected:**

    ADS.....**CHECK ARMED**

Air Traffic Control Clearance

ATC CLEARANCE.....**OBTAIN**
We recommend obtaining the air traffic control clearance at this moment.

NAVIGATION CHARTS CLIPBOARD.....**PREPARE**
With the air traffic control clearance, prepare the appropriate charts.

MultiFunction Display Surveillance

SURV DEFAULT SETTINGS.....**SELECT**
*Verify on the multi function display surveillance control page that the transponder is set to **AUTO**, the squawk code is the same, the TCAS is set to **TA/RA** and **Norm**, all TAWS modes are **ON**, and the weather radar is set to **AUTO**, the elevation/tilt to **AUTO**, Mode set to **WX**, TURB set to **AUTO**, GAIN set to **AUTO**, WX ON VD set to **ON** and PRED W/S to **AUTO**)*

Flight Management System Initialization

Flight plan

FLIGHT PLAN INITIALIZATION.....**COMPLETE, AS REQUIRED**
We recommend to enter the entirety of the flight number as filed in the ICAO flight plan. The cost index will vary depending on company policy.

Winds predictions

WINDS.....**ENTER AS APPROPRIATE**
We recommend to use the forcased wind from the computerized flight plan.

Inertial Reference System

– **If the GPS is available:**

IRS 1, 2, and 3.....**CHECK NAV or ALIGN**

Verify that the IRS are aligned or in alignment in the POSITION/IRS page of the flight management system.

- **If the GPS is not available, or is failed:**

IRS 1, 2, and 3.....**ALIGN**

*Set the IRS to the **ALIGN** position.*

Departure selection

DEPARTURE.....**SELECT/CHECK**

Verify that the departure is selected. Ensure the correct runway, SID, and TRANS in the departure page of the flight management system.

Navaids

NAVAIDS.....**CHECK**

Verify the VOR, ILS, and ADF tuned by the flight management system on the FMS POSITION/NAVAIDS page.

NAVAID DESELECTION.....**AS REQUIRED**

Verify the NOTAMS to acknowledge any navaids that are unavailable. Deselect them in the FMS POSITION/NAVAIDS page.

Fuel and payload

ZFW/ZFWCG.....**INSERT**

If the data is not available yet, the pilot can insert the expected values to enable performance predictions and the optimal fuel distribution.

BLOCK FUEL.....**INSERT**

CAUTION	*Some speeds are displayed on the primary flight display are based on the ZFW and ZFWCG. If expected values are entered, the captain has the responsibility to insert the actual values.*

The fuel will be automatically redistributed. If the refuel is not completed, pilot can enter expected values for prediction. However, it's the captain's responsibility to insert the actual values whenever the captain get the data.

RTE RSV/FINAL.....**CHECK/INSERT AS APPROPRIATE**

MIN FUEL AT DEST.....**CHECK/INSERT AS APPROPRIATE**

Verify that the minimum fuel at destination respects any regulations.

Takeoff performance

PRELIMINARY TAKEOFF PERF DATA.....**INSERT**
Insert the takeoff performance data on the takeoff panel situated in the active performance page of the flight management system.

V1, VR and V2.....**INSERT**

TOGA/FLEX/DERATED.....**SELECT/INSERT**

FLAPS.....**SELECT**

ANTI-ICE.....**INSERT**

THRUST REDUCTION/ACCELERATION ALTITUDE.....**SET or CHECK**

NOISE PROCEDURE.....**ACKNOWLEDGE**

TRANS ALTITUDE.....**AS APPROPRIATE**

EO ACCEL ALTITUDE.....**SET or CHECK**

Climb performance

DERATED CLIMB.....**INSERT AS APPROPRIATE**
Select the appropriate derated climb in the climb page of the active performance page of the flight management system.

Speed preselection

On the climb and cruise panel of the active performance page of the flight management system:

PRESEL SPEEDS.....**AS REQUIRED**

Active flight plan verification

COMPUTERIZED FLIGHT PLAN.....**ACCESS**
We recommend the use of the computerized flight plan from the electronic flight folder as reference fro the route and fuel predictions.

ACTIVE FLIGHT PLAN.....**CHECK and COMPLETE AS APPROPRIATE**
First, perform a verification to the waypoints, routes, departure, arrival, and vertical climb speed limit or constraint. Then, modify the active flight plan if appropriate. Verify the total distance calculated by the flight plan, and ensure that it is similar to the computerized flight plan.

Secondary flight plan

SECONDARY FLIGHT PLANS.....**AS APPROPRIATE**
We recommend the use of secondary flight plans. Secondary flight plan should be used to anticipate a runway change, an immediate return, or an emergency landing to the nearest airport. However, the pilot must ensure that any past secondary flight plans are deleted.

Route summary

ROUTE SUMMARY.....**VERIFIED**

Verify the route summary in the route page of the data section from the flight management system.

Flight Management System

FMS INITIALIZATION.....**CROSSCHECK**

We recommend verifying the information, such as the airfield data, the status of the IRS alignment, the fuel and payload data, the takeoff performance, and the flight plan.

Navigation charts clipboard

NAV CHARTS CLIPBOARD.....**IMPORT**

Both pilots insert the navigation charts to the clipboard.

Glareshield

Cockpit lighting

INTEGRAL LIGHTS.....**AS REQUIRED**

Loudspeaker

LOUDSPEAKER.....**SET**

We recommend setting the loudspeaker knob to the 1 o'clock position.

Barometric reference

BAROMETRIC REFERENCE.....**SET**

We recommend to set the appropriate QNH to the electronic flight instrument control panel and on the Integrated standby instrument system. Then, verify that the differences between captain primary flight display and the first officer primary flight display is no more or less 20 feet and that the integrated standby instrument system and the primary flight display has no more than 30 feet of differences.

Note: *The pilot may notice a difference of 0.01 inHg between the QNH value for the primary flight displays and the integrated standby instrument system. However, this does not impact the altitude computation.*

Electronic Flight Instrument System Control Panel

NAVIGATION DISPLAY MODE AND RANGE.....**AS REQUIRED**

We recommend setting the ARC mode on the navigation display if the departure is the around the same direction as the runway heading. However, we recommend to set the NAV mode if the change of direction is above 70°. This will display the area behind the aircraft. We also recommend to set the minimum range to display the first waypoint.

WEATHER RADAR.....**OFF**

We recommend to ensure that there is no maintenance personnel around the aircraft within 20 feet of the aircraft, and that the aircraft is not facing a metallic obstacle within 20 feet of the aircraft. The weather radar will automatically start to emit when the first engine is started and the weather radar is selected to display weather information.

OTHER EFIS OPTIONS.....**AS REQUIRED**

The other electronic flight instrument systems options can be selected at the pilot's discretion.

Auto Flight System Control Panel

FLIGHT DIRECTOR.....**ON**

NORTH REF.....**MAG**

We recommend to ensure that the "TRUE" message does not appear on the primary flight display or on the HDG/TRK display.

SPD/MACH, HDG / TRK, V/S / FPA windows.....**DASHED**

ALT window.....**INITIAL EXPECTED CLEARANCE ALTITUDE**

Insert the initial clearance altitude on the auto fligth system control panel.

AUTO FLIGHT SYSTEM CONTROL PANEL.....**CROSSCHECK**

Lateral Consoles

Oxygen mask test

It is mandatory to test the oxygen masks. To do it, simply verify that the oxygen mask blinker turns yellow, and that you can hear a flow of oxygen via the loudspeaker.

- **On the RMP:**

  INT/RAD.....**INT**

- **On the mask stewage box:**

  OXYGEN MASK TEST.....**PERFORM**

- **On the DOOR SD page:**

  REGUL PR LO indication.....**CHECK NOT DISPLAYED**

  This ensures that there is no failure in the oxygen supply system.

Sliding windows

SLIDING WINDOWS.....**CLOSED/LOCKED**

Verify that the green part of the unlock pushbutton is visible. This is situated on the control handle.

Takeoff Briefing

TAKEOFF BRIEFING.....**PERFORM**

The takeoff briefing should contain information over the planned course for normal and abnormal operations during the takeoff. It should also outline any other operational risks.

BEFORE PUSHBACK OR START

FOR SIMULATION PURPOSES

Loadsheet Verification

Loadsheet

FINAL LOADSHEET.....**CHECK**
Verify the data in the loadsheet is accurate.

FUEL ON BOARD.....**CHECK**
Verify the fuel on board (FOB) on the system display. Ensure that it corresponds to the flight plan and to the loadsheet.

ZFW/ZFWCG.....**CHECK/REVISE**
We recommend comparing the ZFW/ZFWCG of the loadsheet with the entered values in the active fuel and payload page of the flight management system.

ZFW/ZFWCG.....**CROSSCHECK**
The pilot verify on both flight management system the values of the ZGW/ZFWCG.

LOADSHEET TOCG AND ECAM GWCG.....**CROSSCHECK**
Verify in the loadsheet the takeoff center of gravity versus the ECAM gross weight center of gravity. If the difference between the values is higher than 1%, verify that the values are correctly inserted. It might be a consequence of an abnormal fuel redistribution, as well as erronuous data inserted.

ECAM GWCG.....**CHECK WITHIN OPERATIONAL LIMITS**
Verify the gross weight center of gravity as displayed on the system display is within the operational limits of the aircraft. To verify the operational limits, use the onboard information system loadsheet application.

If the ECAM CGWG is within

- **If within the operational limits:**

  THS FPR_ in FMS ACTIVE/PERF page.....**INSERT T.O CG (in %)**
  Insert the takeoff center of gravity indicated on the loadsheet.

  THS FOR_ in FMS ACTIVE/PERF page.....**CROSSCHECK**

  FINAL LOADSHEET.....**SIGN and EXPORT**

- **If the ECAM GWCG is not within the operational limits:**

  AUTO GND XFR.....**ON**
  The ground transfer will automatically acttivate to obtain the ground center of gravity target in accordance of the ZFW / ZFWCG values inserted in the flight management system. We recommend waiting the automatic ground transfer (AGT) until the ECAM message "FUEL AUTO GND XFR COMPLETED" appears. However, if limited by time, you can manually stop the automatic ground transfer, if the ECAM center of gravity is within operational limits.

  Note: *The Loadsheet application shows the amount of fuel that should be transferred to be within the operational limits.*

  Note: *We do not recommend to launch the automatic ground transfer when the aircraft is moving.*

  AUTO GND XFR.....**MONITOR**

  THS FOR _ .....**INSERT T.O CG (in %)**
  We recommend using the takeoff center of gravity as indicated in the loadsheet to insert the takeoff center of gravity in the active performance page of the flight management system.

  THS FOR _ in FMS ACTIVE/PERF page.....**CROSSCHECK**

  FINAL LOADSHEET.....**SIGN and EXPORT**

Takeoff data

OIS FINAL TAKEOFF PERFORMANCE.....**CONFIRM or RECOMPUTE**
Verify the preliminary takeoff data, and ensure it is still valid. If the condition changed, recompute the data.

FMS TAKEOFF DATA.....**CHECK/REVISE, AS REQUIRED**
Verify the takeoff data inserted in the active performance page of the flight management system.

REVISED FMS TAKEOFF DATA.....**CROSSCHECK**
Verify the takeoff speeds, flexible temperature, and takeoff configuration.

- **In accordance with airlines policy or if required by operational regulation:**

  FINAL TAKEOFF PERFORMANCE.....**STORE IN CURRECT ELECTRONIC FLIGHT FOLDER**

Seating position

SEATS, SEAT BELTS, HARNESSES, RUDDER PEDALS, ARMRESTS.....**ADJUST**
The pilot eyes should be in line with the red and white ball.

Head up display

HEAD UP DISPLAY.....**DEPLOY**

HEAD UP DISPLAY knob.....**ADJUST**
We recommend to adjust the brightness to the pilot's discretion.

DISPLAY MODE.....**AS REQUIRED**
We recommend setting the declutter mode. We do not recommend setting the crosswind mode on the ground.

Multi function display

Multi Function Display.....**IN TAKEOFF CONFIGURATION**
The pilot in command should have the takeoff panel of the active performance page of the flight management system, while the pilot monitoring should have the active flight plan page.

External power

EXTERNAL POWER.....**CHECK AVAILABLE**
We recommend pushing the external power pushbutton to show the AVAIL light before requesting the disconnection.

EXTERNAL POWER DISCONNECTION.....**REQUEST**

Low pressure ground cart

LOW PRESSURE GROUND CARTS.....**CHECK DISCONNECTED**
We recommend to disconnect the low pressure ground carts before engine start to avoid any faulty triggers.

Before start checklist down to the line

BEFORE START CHECKLIST down to the line.....**COMPLETE**
The checklist can be found in the document "FBW A380X Checklists"

When Cleared for Start

At pushback or start up clearance

PUSHBACK/START UP CLEARANCE.....**OBTAIN**
When the air traffic control gives you clearance, transmit the message to the ground crew.

Video camera

TAXI VIDEO.....**AS REQUIRED**
We recommend setting the TAXI video on the primary flight display or on the system display.

Windows and doors

WINDOWS AND DOORS.....**CHECK CLOSED**
Verify on the DOOR system display that the doors are locked. Verify also that the windows are closed.

SLIDES.....**CHECK ARMED**

Exterior lights

BEACON.....**ON**
*Set the beacon light to **ON** when cleared for pushback.*

Thrust levers settings

THRUST LEVERS.....**IDLE**
Ensure that the thrust levers are at the idle position. If the lever is beyond the idle detent, it can damage the engine at start-up.

Parking brake and nosewheel steering

- **If pushback is not required:**
  PARK BRAKE.....**ON**
  Verify that the pressure is above 3 500 PSI on the triple pressure indicator.
- **If pushback is required:**
  PARK BRAKE.....**OFF**
  N/W STEER DISC MEMO.....**CHECK DISPLAYED**

CAUTION	*In the case of the ECAM not displaying the ECAM message "N/W STEER DISC" memo, but the ground crew confirms that the tow pin is in the towing position, do not proceed to the pushback*

Follow the instructions of the ground crew. Set the parking brake when needed.

Before start checklist below the line

BEFORE START CHECKLIST below the line.....**COMPLETE**

ENGINE START

FOR SIMULATION PURPOSES

Engine Start

ENGINE START selector.....**IGN START**

*The engine page on the system display should appear. We recommend to wait 10 seconds before setting the engine masters lever to the **ON** position. This waiting time ensure a series of test conducted to the engines in order to detect a fault.*

- **If no "ENG 2(3) REVERSER FAULT ECAM" ECAM alert appears:**

START ENGINES 1 and 2.....**ANNOUNCE**

Note: Any engines can be started first, at the pilot's discretion.

ENGINE MASTER 1, then 2.....**ON**

*We recommend to set the engine master levers to the **ON** position when all amber crosses and messages disappears on the engine parameters of the engine warning display and on the engine page of the system displays.*

Note: We recommend to monitor the engine parameters. However, callouts are not mandatory.

Note: The engine vibrates at the start. The tolerance of excess for the N2 vibrations are 5 units over the limit. However, this is only tolerated on a short amount of time and only during the start sequence. This is due to thermal stabilization of the engine.

Note: The full authority direct engines control (or FADEC) will automatically crank the engine for 20 seconds when the N2 level reaches 20 %

- **When the engine reaches idle (I.e. AVAIL appears on the engine warning display):**

ENGINE IDLE PARAMETERS.....**CHECK NORMAL**

*Verify that at international standard atmosphere at sea level, with the bleed set to **OFF**, that the throttle is approximately **3%**, the exhaust gas temperature is around **455°C**, the N1 parameter is approximately **20 %**, the N2 parameter is approximately **66%** and the fuel flow is around **1 400lbs/hr** or **635 kg/hr**.*

START ENGINES 3 and 4.....**ANNOUNCE**

Announce the remaining engine to starts, depending on the first engines to start.

ENGINE MASTER 3 then 4.....**ON**

We recommend to apply the same procedure indicated for the engine 1 and 2.

– **If ENG 2(3) REVERSER FAULT ECAM alert appears:**

ENGING START selector.....**NORM**

By setting the engine start selector to NORM, it will reset the electrical power of the full autority direct engine controls (or FADEC) system.

- **When XX appears on ENG parameters:**

  ENG START selector.....**IGN START**

  This action should reset the thrust reverser failure message. If the message reappears, the aircraft will require maintenance work.

- **If ENG 2(3) REVERSER FAULT ECAM alert no longer appears after 10 s :**

  ENGINES 1 and 2.....**START**

  We recommend to apply the same procedure as indicated for the engine start sequence.

  ENGINES 3 and 4.....**START**

  We recommend to apply the same procedure as indicated for the engine start sequence.

AFTER START

FOR SIMULATION PURPOSES

After Start

Engine start selector

ENGINE START selector.....**NORM**

*We recommend setting the engine start selector to **NORM** after the end of the engine start sequence. This prevent the engine to remain in continuous ignition on ground. Meanwhile, the wheel page on the system display will automatically replace the engine page of the system display.*

Note: We recommend to wait 3 minutes before taking off to prevent thermal shock.

Bleed system

AUXILIARY POWER UNIT BLEED.....**OFF**

The auxiliary power unit bleed valves close. All engine bleed valves automatically open.

Engine Anti-Ice system

ALL ENGINE ANTI-ICE.....**AS REQUIRED**

*We recommend to set the engine anti-ice to **ON** when icing conditions are expected, standing water/slush/ice/snow is on the taxiway or on the runway when the outside air temperature is less than 10°C.*

The pilot must perform the ice shedding procedure. So, engine run-up must be performed at least every 30 minutes of the taxi time, and before taking off. To make an engine runup, set the parking brake to ON, then increase the thrust to 60% of N1 on two symmetric engines. Then, proceed to the last two engines.

CAUTION	*If the aircraft start to move, abord the engine run-up procedure. Then, when the aircraft is stationary, redo the procedure, but only one engine at the time.*

Auxiliary Power Unit

APU MASTER SWITCH.....**OFF**

*If the auxiliary power unit is no longer required, turn it **OFF**.*

Ground spoilers

GROUND SPOILERS.....**ARM**

Pull the ground spoilers lever to the outward position to arm the ground spoilers.

Rudder trim

RUDDER TRIM.....**ZERO**

Ensure that the rudder trim is at zero. If it is not the case, press the RESET button on the rudder trim panel.

Flaps

FLAPS.....**SET**

We recommend to set the flaps to takeoff position. Verify the position on the slats/flap display on the primary flight display. If taxiing in icing condition, delay the flaps extension until the runway holding point. This prevents contamination in the mechanism.

Pitch trim

PITCH TRIM.....**CHECK**
Verify that the pitch trim is set to the takeoff trim position. It is displayed on the primary flight display.

ECAM STATUS

ECAM STATUS.....**CHECK**
Verify that there is no status reminder in the engine warning display. If a status reminder is siplayed, press the STS button on the ECAM control panel to display the STATUS page.

Ground crew

CLEAR TO DISCONNECT.....**ANNOUNCE**
When the clearance to disconnect is given, the ground crew should remove the chocks, remove the tow pin, disconnect the interphone and make a hand signal on one side of the aircraft.

"N/W STEER DISC" ECAM message

N/W STEER DISC MEMO.....**CHECK NOT DISPLAYED**

Flight controls verification

FLIGHT CONTROLS.....**CHECK**
We recommend to perform the fligth control verification when the flaps are set to the takeoff configuration. To perform the test, the captain remain silent, while the first officer announces call-outs. We recommend to start with the pitch, then roll, then yaw. The captain must ensure to maintain the sidestick to the position to give enough time to the control to reach the full position. The first officer monitors the flight control page of the system display and announces "FULL UP", "FULL DOWN", "NEUTRAL", "FULL LEFT", "FULL RIGHT", "NEUTRAL". For the rudder, the captain must press the PEDAL DISC pushbutton to disconnect the nosewheel steering, then apply the left and right position of the rudder.

After start checklist

AFTER START CHECKLIST.....**COMPLETE**
The checklist can be found in the document "FBW A380X Checklists"

TAXI

FOR SIMULATION PURPOSES

TAXI

*To acknowledge a ramp coordinator signal, turn the turnoff lights **ON** then **OFF**.*

Air Traffic Control Clearance

TAXI CLEARANCE.....**OBTAIN**

External and taxi aid camera system (ETACS)

TAXI.....**AS REQUIRED**
This is situated on the electronic flight instrument system control panel.

Airport navigation

We recommend to always have direct external visuals to taxi around an airport.

NAVIGAT DISPLAY RANGE selector.....**ZOOM, AS APPROPRIATE**
At the pilot's discretion, zoom as necessary to activate the onbard airport navigation system (OANS). Then, at the pilot's discretion, select either ARC, ROSE, or PLAN mode. If the message "DATABASE CYCLE NOT VALID" appears on the status panel, swap the active and second database.

Exterior lights

NOSE LIGHTS.....**TAXI**
*We recommend to set the nose light switch to the **ON** position.*

RWY TURN OFF & CAMERA.....**AS REQUIRED**

Parking brake

PARKING BRAKE.....**OFF**
Verify that there is no pressure indicated on the triple pressure indicator.

Thrust Levers

THRUST LEVERS.....**AS REQUIRED**
The aircraft doesn't need too much power to move. Not more than 10% of the engine thrust is needed at heavy weight in an uphill taxi slope. Excessive thrust can damage airport signalisation. If need of higher thrust, we recommend to add the thrust on the outer engines to prevent ingestion of foreign object debris. Please note that when the engine anti-ice is on, the ground idle thrust is higher. Please note that if the aircraft was parked for more than 6 hours in a high temperature conditions, the pilot may feel a square wheel effect.

Brakes

BRAKES.....**CHECK**

CAUTION	*The first brake application when the aircraft was parked in a wet condition for an extended period may affect effectiveness.*

We recommend to verify the brakes by pressing smoothly the brake pedals and release. We recommend to have a taxi speed between 10 to 20 knots in a straight line. The maximum taxi speed is 30 knots. If the speed is exceeded, brake until it reaches 10 knots, than let the aircraft accelerate again. We recommend to be between 8 and 10 knots in a sharp turn.

Nosewheel steering

NOSEWHEEL STEERING.....**AS REQUIRED**

We recommend smooth and progressive input. Please note that the maximum steering angle is 70°.

Air traffic control clearance

ATC CLEARANCE.....**CONFIRM**

Takeoff data

Update the takeoff data if the runway has been changed.

TAKEOFF DATA COMPUTATION

- **If multiple runway selection was used:**

  T.O PERF.....**ACCESS**

  SELECTED RUNWAY AND INPUT DATA.....**CHECK**

  Verify that the new runway was one of the selected runway and that the runway conditions are still accurate.

  TAKEOFF DATA.....**CHECK**

  Verify the takeoff data of the runway selected for takeoff.

- **If takeoff conditions have changed:**

  T.O PERFORMANCE.....**ACCESS**

  NEW RUNWAY/NEW CONDITIONS.....**SELECT/ENTER**

  TAKEOFF PERFORMANCE.....**COMPUTE**

  We recommend to relaunch the computation to have the latest accurate data.

  TAKEOFF PERFORMANCE RESULTS.....**CROSSCHECK**

  Verify that the results are the same for the captain and the first officer.

IN THE FMS ACTIVE/PERF PAGE

- **In the case of ATC clearance or takeoff change:**

TAKEOFF PERFORMANCE DATA.....**UPDATE**
We recommend to update the flight management system according to the takeoff performance computation. Verify that the takeoff panel of the active performance page of the flight management system, as well as the active flight plan page of the flight management system is still valid. However, if the pilot created a secondary flight plan which anticipated a runway change, activate the secondary flight plan.

V1, VR AND V2.....**UPDATE**
Update the speed and ensure that those are around the expected speed.

FLEX TAKEOFF TEMPERATURE.....**UPDATE**

FLAPS.....**UPDATE**

FLIGHT MANAGEMENT SYSTEM UPDATES.....**CROSSCHECK**
Verify both flight management system and ensure that the data are corresponding.

FLAPS LEVER.....**AS APPROPRIATE**
Set the flaps lever to the new takeoff position.

Auto Flight System/Flight instrument

- **If runway change or different air traffic control clearance:**

FLIGHT PLAN (SID, TRANS).....**REVISE or CHECK**
Verify that the air traffic control clearance correspond to the flight plan inserted in the flight management system.

INITIAL CLIMB SPEED AND SPEED LIMIT.....**REVISE or CHECK**
Verify the speed panel of the active vertical revision page of the flight management system to ensure the initial climb speend and speed limit, associated with the waypoints.

CLEARED ALTITUDE.....**SET**
Set the cleared altitude on the auto flight system control panel. Then verify on the primary flight display and confirm the first cleared altitude.

HEADING.....**PRESET, AS REQUIRED**
Preset the heading if the air traffic control require a radar vector departure. However, please note that the RWY TRK mode maintains the aircraft on the runway heading until the heading mode engage.

FLIGHT DIRECTOR.....**CHECK SELECTED ON**

PRIMARY FLIGHT DISPLAY / NAVIGATION DISPLAY.....**CHECK**
Verify the indications in the displays, and ensure they are corresponding with the departure.

Multi Funciton Display.....**IN TAKEOFF CONFIGURATION**
We recommend setting the active performance page takeoff panel on the pilot in command side, and put the active flight plan page on the pilot monitoring side.

Takeoff briefing

TAKEOFF BRIEFING.....**CONFIRM**
This briefing is the same as the briefing at the gate. However, new clearance and new conditions need to be added if necessary.

Autobrake

RTO.....**ARM**

When selecting the RTO autobrake mode, the RTO ARM light illuminates, the BRK RTO message appears on the flight mode annunciator. The RTO autobrake mode is a braking system in case of a rejected takeoff. If the speed is above 72 knots, the RTO brake will apply maximum braking if the engine thrust levers are set to idle. Below that speed, it won't activate.

Air Traffic Control

ATC CODE.....**CONFIRM/SET**

Final verification

TO CONFIG.....**TEST**

By pressing the TO CONFIG pushbutton situated on the ECAM control panel, the system will verify the aircraft conditions and ensure it is ready for takeoff. The engine warning display will display the message "T.O CONFIG NORMAL" if everything is in order.

T.O MEMO.....**NO BLUE LINE**

Verify that there is no blue line in the takeoff message section.

CABIN.....**READY**

Verify on the engine warning display the display of the message "CABIN READY" or obtain the report from the chief flight attendant "Cabin ready for takeoff".

Before takeoff checklist down to the line

BEFORE TAKEOFF CHECKLIST down to the line.....**COMPLETE**

The checklist can be found in the document "FBW A380X Checklist"

BEFORE TAKEOFF

FOR SIMULATION PURPOSES

Before Takeoff

Takeoff or line-up clearance

TAKEOFF OR LINE UP CLEARANCE.....**OBTAIN**

Cabin crew

CABIN CREW.....**ADVISE**

*We recommend to make a takeoff signal to the cabin around **3 minutes** before the estimated takeoff time.*

Packs

PACKS 1 and 2.....**AS REQUIRED**

*We recommend to set the packs to **OFF**, or to set the APU BLEED to **ON** in order to improve engine performance for takeoff, and reduce the exhaust gas temperature. We do not recomment to use the APU BLEED if the wing anti-ice is used.*

Exterior lights

EXTERIOR LIGHTS.....**SET**

*We recommend to set the RWY TURN OFF & CAMERA **ON**, the Landing light to **ON**, and the nose light to **T.O**.*

ETACS

- **If the ETACS was used during the taxi:**

  TAXI.....**OFF**

  The taxi button is situated on the electronic flight instrument system control panel.

Electronic Flight Instrument System Control Panel

NAVIGATION DISPLAY RANGE.....**AS REQUIRED**

We recommend setting the minimum range to the first waypoint after departure.

ELECTRONIC FLIGHT INSTRUMENT SYSTEM CONTROL PANEL OPTIONS.....**AS REQUIRED**

We recommend setting the weather radar on the pilot in command side, and the terrain radar on the pilot monitoring side.

TRAF.....**ON**

Before entering the runway

APPROACH PATH.....**CHECK CLEAR OF TRAFFIC**

STROBE.....**ON**

*We recommend to set the strobe light to **ON** when crossing or entering a runway.*

TAKEOFF RUNWAY.....**CONFIRM**

Confirm the correct runway by observing runway markings, runway lights, an ILS signal, and the runway symbol on the navigation display.

Sliding table

SLIDING TABLE.....**STOWED**

TCAS

TA.....**TA ONLY or TA/RA**

*We recommend the use of **TA/RA** for normal situations. If it is inappropriate, such as converging runways or parallel runways, the use of TA ONLY mode is recommended.*

Before takeoff checklist below the line

BEFORE TAKEOFF CHECKLIST below the line.....**COMPLETE**

The checklist can be found in the document "FBW A380X Checklist".

TAKEOFF

FOR SIMULATION PURPOSES

Takeoff

Thrust settings

We recommend performing rolling takeoff.

TAKEOFF.....**ANNOUNCE**
THROTTLE.....**25 %**
We recommend to first apply 25% of thrust. For standing takeoff, apply the brakes. For rolling takeoff, release the brakes.

- **If the crosswind is at, or below 23 kt, and there is no tailwind:**

  BRAKES.....**RELEASE**
  If performing rolling takeoff, ignore this.

  THRUST LEVERS.....**FLX or TOGA**
  Note: The engine system display page will replace the wheel system page on the ECAM display.

- **If the crosswind is above 23 kt, and/or in the case of tailwind:**

  BRAKES.....**RELEASE**
  If performing rolling takeoff, ignore this.

  THRUST LEVERS.....**50 %**

- **At 20 kt ground speed:**

  THRUST LEVERS.....**FLX or TOGA**

CHRONOMETER.....**START**
DIRECTIONAL CONTROL.....**USE RUDDER**
PRIMARY FLIGHT DISPLAY / NAVIGATION DISPLAY.....**SCAN**
Verify the flight mode annunciator on the primary flight display the display of the message "MAN FLX" or "MAN TOGA".

Note: The lateral mode isn't displayed until the aircraft lifts off, unless an ILS is tuned with the associated departure runway.

Note: *If the message "GPS PRIMARY LOST" appears, verify on the navigation display the flight management system the position (As exemple, on the runway centerline).*

TAKEOFF THRUST.....**CHECK**
Verify the thrust of each engine. It should reach the thrust rating before reaching 80 knots. It is indicated by a blue dot.

Before reaching 80 knots

THRUST SET.....**ANNOUNCE**
PRIMARY FLIGHT DISPLAY and ENGINE indications.....**SCAN**
Verify the airspeed and the throttle setting throughout the takeoff. Reject the takeoff if any sign of parameter indicates an abnormal situation.

At 100 knots

ONE HUNDRED KNOTS.....**ANNOUNCE**
We recommend rejecting the takeoff under 100 knots. However, rejecting takeoff above 100 knots is a more serious case.

At V1 speed

V1.....**MONITOR or ANNOUNCE**

At VR speed

ROTATION.....**ORDER**

ROTATION.....**PERFORM**

If the pilot uses the head up display, at VR speed, initiate the rotation to bring the inverted T toward the horizon line. When lifting off, fly as indicated on the velocity vector and follow the SRS using the flight path director. If the pilot does not use the head up display, the pilot will then rotate toward a pitch attitude of 12,5°, or 10° if an engine is failed. After the liftoff, we recommend to follow the SRS pitch command bar. Please note, if the NAV mode is armed, it will automatically engaged at 30 feet. If not armed, the RWY TRK engages automatically at 50 feet.

When positive climb

POSITIVE CLIMB.....**ANNOUNCE**

The pilot monitoring must announce "positive climb" only when the vertical speed value is positive and the radio altitude has increased.

LANDING GEAR UP.....**ORDER**

LANDING GEAR.....**UP**

AUTOPILOT.....**AS REQUIRED**

We recommend to engage either autopilot 1 or autopilot 2 above 100 feet above ground level.

At the thrust reduction altitude

THRUST LEVERS.....**CL**

Note: The cruise system display page will replace the engine system display page when the aircraft reaches 1 500 feet, or when reaching the thrust reduction altitude.

Above the acceleration altitude

- **At F speed:**

  Note: *For takeoffs in CONFIG 1+F, F speed does not appear.*

  FLAPS 1.....**ORDER**

  FLAPS 1.....**SET**

- **At S speed:**

  FLAPS ZERO.....**ORDER**

  FLAPS ZERO.....**SET**

  EXTERIOR LIGHTS.....**SET**

  We recommend to turn OFF the nose light and the runway turn off & camera

  GROUND SPOILERS.....**DISARM**

AFTER TAKEOFF

FOR SIMULATION PURPOSES

After Takeoff

Auxiliary Power Unit

- **If the auxiliary power unit was used to supply the air conditioning:**

AUXILIARY POWER UNIT BLEED.....**OFF**

AUXILIARY POWER UNIT MASTER SWITCH.....**OFF**

TCAS

- **If the takeoff was performed with TA ONLY mode:**

TA Mode.....**TA/RA**

Anti-Ice protection

ANTI-ICE.....**AS REQUIRED**

*We recommend setting the engine anti-ice to **ON** when icing conditions are expected with a total air temperate is at or below 10°C.*

Sliding table

SLIDING TABLE.....**AS NECESSARY**

After takeoff/climb checklist down to the line

AFTER TAKEOFF/CLIMB CHECKLIST down to the line.....**COMPLETE**

The checklist can be found on the document “FBW A380X Checklist”.

CLIMB

FOR SIMULATION PURPOSES

Climb

Initial climb

Cruise Flight Level.....**SET AS REQUIRED**

CLIMB SPEED MODIFICATIONS.....**AS REQUIRED**

At the air traffic control request or operational conditions, speed change must be done by selecting a new speed in the auto flight system control panel and pull the button. The new speed target will then be activated. When pushed, it will return to the managed speed profile.

Note: *If required the use of the best speed and best rate of climb for long term situation, the speed must be between the green dot speed and the econ speed. When flying at high altitude, an acceleration can take some time.*

Note: *The airspeed can be below the green dot at high altitude, depending on the mach speed selected or computed by the flight management system.*

After takeoff/climb checklist below the line

AFTER TAKEOFF/CLIMB CHECKLIST below the line.....**COMPLETE**

The checklist can be found in the document "FBW A380X Checklist"

Anti-Ice protection

ANTI-ICE pb-sw.....**AS REQUIRED**

*We recommend to set to **ON** the engine anti-ice when the aircraft encounters icing conditions, unless the static air temperature is below -40°C.*

At 10 000 feet

LANDING LIGHT.....**OFF**

SEAT BELTS SIGNS.....**AS REQUIRED**

*We recommend to keep the seat belts signs to **ON** until the cruise phase, unless stated otherwise by the airline policy.*

Electronic Flight Instrument System OPTIONS.....**AS REQUIRED**

ECAM MEMO.....**REVIEW**

- **On pilot in command request or approved by the pilot in command:**

  NAVAIDS.....**CLEAR**

  The pilot can clear the tuned NAVAIDS in the TUNED FOR DISPLAY panel of the POSITION/NAVAIDS page.

OPTIMAL/MAXIMUM ALTITUDE.....**CHECK**

Pilot should verify the optimal and maximal altitude capability of the aircraft in the flight management system cruise page.

At the transition altitude

BAROMETRIC REFERENCE.....**SET STANDARD/CROSSCHECK**

When the aircraft reaches the transition altitude, the barometric setting will automatically flash on the primary flight display. We recommend to set STD on the electronic flight instrument system control panel and on the integrated standby instrument system.

CRUISE

FOR SIMULATION PURPOSES

Cruise

Cruising altitude

ALT CRZ on flight mode annunciator.....**CHECK**

Verify that the aircraft is cruising on the cruise flight level inserted on the CRZ panel of the flight management system of the active performance page. This will ensure that the aircraft flies at the targeted cruise speed so fuel consumptions is optimized. This will also benefit to a soft autothrottle mode, as well have more accurate predictions.

Note: *The pilot will need to change the cruise altitude on the flight management system active performance page is the selected auto flight system control panel altitude is below the flight management system cruise flight level.*

ECAM

ECAM MEMO.....**REVIEW**

Monitor the engine warning display for any ECAM messages. Review them if they appear.

SD PAGES.....**REVIEW**

We recommend to review the system display pages. Pay close attention on the engine oil pressure.

Note: *In cruise, due to variation of temperature, the oil quantity can decrease rapidly. This happens particularly at the start of the flight.*

We recommend to monitor the bleed system page and the electrical system display page.

Flight progress

FLIGHT PROGRESS.....**CHECK**

Verify the flight progress by ensuring the aircraft flies to the right waypoints.

Step flight level

STEP FLIGHT LEVEL.....**AS APPROPRIATE**

Proceed step flight level as planned in the flight plan.

DESCENT PREPARATION

FOR SIMULATION PURPOSES

Descent Preparation

Landing information

We recommend to start the preparation 80 nautical miles before the top of descent.

WEATHER AND LANDING INFORMATION.....**OBTAIN**
The pilot can receive the landing information via AOC, ATIS, or ATC. Verify the weather reports at the destination and at the alternate airport. Also, verify the runway to be selected for the approach.

LANDING ELEVATION.....**CHECK**
Verify that the landing elevation value is displayed on the cruise page of the system display.

Barometric reference

BAROMETRIC REFERENCE.....**PRESET**
Set the QNH on the electronic flight instrument system control panel.

Electronic Centralized Aircraft Monitor

STATUS PAGE/STATUS MORE PAGE.....**CHECK**
The STATUS page appears automatically when the QNH is set or when the slats are extended. Take a look at the status page before completing the approach briefing. Take note of any failures or system degradation that can affect the landing capability, the approach or the descent. Verify the "ALERTS IMPACTING LDG PERF" on the STATUS MORE page to verify if any alert has an impact on the landing performance.

Landing performance

SYNCHRO ECAM BUTTON.....**CLICK**

LANDING PERFORMANCE.....**CHECK**
In the Onboard Information System, verify the estimated arrival conditions of the selected airport and runway. Then, enter the estimated landing conditions in the CONDITIONS part, and check any items relevent to the aircraft in the AIRCRAFT STATUS part. Finally, launch the computation and compare the result with the airline policy or local regulations.

Flight Management System

FMS ACTIVE/F-PLN/ARRIVAL PAGE.....**INSERT/CHECK**
Insert the applicable APPR, STAR, TRANS, and APPR VIA in the active flight plan arrival page of the flight management system. If the message "NO FLS FOR THIS APPR" appears on the flight management system message area, the approach will be a non-precision approach without the flight management system landing system function

DES panel of the FMS ACTIVE/PERF PAGE.....**INSERT/CHECK**
We recommend to verify the managed speed in the flight management system. If a different speed is needed, insert that speed in the ECON entry field.

Note: *The managed speed profile has as default value of speed limit of 250 knot below 10 000 feet. The pilot can alter this speed limit on the VERT REV page of the flight management system.*

APPR panel of the FMS ACTIVE/PERF page.....**INSERT/CHECK**

Insert the approach information on the APPR panel of the active performance page of the flight management system. Enter the destination QNH, temperature and wind. We do not recommend entering gust values. Then, insert the minimum altitude as applicable. Insert the value to the nearest ten feet. However, please note that any runway change or any arrival type change will reset the minimum altitude. Finally, verify the landing configuration. Select the landing configuration on the APPR panel of the performance page. Depending on the runway length, go-around performance, windshear, severe turbulance, or system failure, the pilot can choose the FLAPS 3 configuration rather than FLAPS FULL.

We recommend the use of the managed speed when the landing configuration and the configuration selected on the APPR panel are exactly the same. If an in-flight failure occurred that affects the landing performace, compute the new value in the landing performance application for the approach speed, then insert the new value in the approach panel of the active performange page of the flight management system.

GA panel of the FMS ACTIVE/PERF page.....**CHECK**

Verify the accuracy of the throttle reduction altitude and the acceleration altitude.

FMS POSITION/NAVAIDS page.....**CHECK**

Insert the required NAVAIDS. Verify the VOR/ADF idents on the navigation displays and the ILS/GLS ident on the primary flight displays. When performing an ILS/GLS approach, verify the frequency and course of the appropriate ILS/GLS. We recommend for navigation accuracy monitoring purpose to enter the associated ident and select a VOR/DME close to the airfield.

SEC pages.....**AS REQUIRED**

We recommend preparing a secondary flight plan to an alternative runway for destination or to the landing runway in case of holdings. Please do not forget setting the new minimum and navaids when selecting the secondary flight plan.

FMS.....**CROSSCHECK**

Onboard Airport Navigation System

RUNWAY SHIFT.....**AS REQUIRED**

The pilot shifts the runway threshold and the runway end as required. The brake to vacate system will locate the dry line and the wet line and select an appropriate runway exit.

Brake To Vacate system

We recommend the use of the BTV autobrake system when the runway is in dry or wet conditions.

CAUTION	*We do not recommend the use of the brake to vacate system when the runway is contaminated, an inoperative engine thrust reverser, or any aircraft failure affecting the landing performance.*

Navigation Display MODE.....**PLAN**

Navigation Display RANGE.....**ZOOM**

RUNWAY.....**SELECT**

RUNWAY EXIT.....**SELECT**

We recommend to select the exit in accordance with the runway conditions. It is recommended to select an exit after the wet line to anticipate any changes of runway condition, as well as a smoother deceleration for passenger comfort. We also recommend to take into account arrival gate, the ground circulation, the runway exit configuration, and the predicted turn around time, which is displayed on the navigation display.

Autobrake

AUTO BRAKE/BTV.....**SELECT, AS REQUIRED**

We recommend the use of the autobrake system to have equal brake pressure and prevent brake overheat. Select the appropriate autobrake mode, depending on the weight, the runway length, the conditions and the winds. However, if the pilot selects the BTV system, set the BTV mode before removing the onboard airport navigation display from the navigation display. We recommend on contaminated runway to use the autobrake mode 3. We recommend the use of the HI mode if the BTV mode is not available or on short runway conditions

- **If the pilot selected BTV:**

  OANS RUNWAY LENGTH VERSUS CHARTS RUNWAY LENGHT.....**CROSSCHECK**

  In order to verify the onboard airport navigation display, verify the runway length corresponds to the active charts. The difference of length between the onboard airport navigation must not be more than 115 feet.

Landing briefing

LANDING BRIEFING.....**PERFORM**

The landing briefing has the objective of prepare the planned approach. We recommend using the flight management system pages as guide to the descent and approach.

Descent clearance

DESCENT CLEARANCE.....**OBTAIN**

CLEARED ALTITUDE ON AUTO FLIGHT SYSTEM CONTROL PANEL.....**SET**

We recommend setting the cleared altitude on the auto flight system control panel if above the safe altitude. If the safe altitude is higher than the cleared altitude, please refer to the air traffic control. Meanwhile, set the safe altitude on the auto flight system control panel.

Anti-Ice protection

ANTI-ICE.....**AS REQUIRED**

*We recommend setting the engine anti-ice to **ON** when expecting icing conditions. However, please note that during descent, if the engines are at idle, the anti-ice will reduce the descent path angle.*

DESCENT

FOR SIMULATION PURPOSES

Descent

Descent initiation

DESCENT.....**INITIATE**

We recommend to initate the descent by engaging the DES mode at the top of descent (T/D shown on the navigation display or the active flight plan page of the flight management system) calculated by the flight management system. The top of descent is calculated so that the aircraft reaches VAPP at 1 000 feet above ground level.

Note: *The top of descent is not displayed when the heading mode or track mode is engaged.*

- **When the aircraft reaches the top of descent**

  ALTITUDE.....**PUSH**

- **If the ATC requires an early descent**

  We recommend the use of the DES mode. This will lead to a lower vertical speed. This will ensure that the aircraft will converge with the planned descent path.

- **If the ATC delays the descent**

  We recommend to engage the DES mode with managed speed active when cleared Beyond the T/D, the by the air traffic control.

Descent monitoring

DESCENT.....**MONITOR**

Descent adjustment

RATE of DESCENT.....**ADJUST, AS REQUIRED**

If there is need to increase rate of descent, we recommend to increase the selected speed if the air traffic control authorizes. We also recommend to maintain a high speed as long as possible, if the air traffic control authorize. This ensures a more fuel efficient descent. We do not recommend the use of speed brakes. We also do not recommend to combine descent and deceleration.

SPEED BRAKES.....**AS REQUIRED**

We recommend to use the speed brakes to increase the rate of descent in the OP DES mode. However, we do not recommend the use of speedbrakes in DES mode. The autothrottle will engage higher thrust to compensate the increased drag.

At 20 000 feet

Cabin Crew.....**ADVISE**

Note: *We recommend the captain to use the seat belt sign selector to sound 3 chimes (by selecting auto than on) and then make a passenger announcement "Cabin crew, prepare for landing".*

Terrain Avoidance Warning System and Weather Radar

TERRAIN RADAR.....**AS REQUIRED**
The terrain pushbutton is situated on the electronic flight instrument system control panel.

WEATHER RADAR.....**AS REQUIRED**
The weather radar pushbutton is situated on the electronic flight instrument system control panel.

At 10 000 feet

LANDING LIGHTS.....**ON**
*The pilots must follow regulatory recommendations or airline policy. They should put the landing lights to **ON** when reaching the specified altitude.*

SEAT BELTS SIGN.....**ON**
*The pilots must follow airline policy or regulatory recommendations. We recommend to set the seat belt sign to **ON** at the beginning of the descent.*

CSTR.....**ON**
When pushing that button situated on the electronic flight instrument display control panel, altitude constraints will show on the navigation display.

LS.....**AS REQUIRED**
We recommend pressing the landing system pushbutton when an ILS/GLS, ILS G/S out, LOC only, LOC B/C, or Non-Precision approach with flight management system landing system approach is planned. When pushing the landing system push button, the primary flight display will show landing system data according to the selected approach on the flight management system arrival page.

- **For Non-Precision Approach flown with the Flight management system landing system function:**

  FLS CAPABILITY.....**CHECK**
  Verify that the flight management system landing system capability by ensuring that the "NO FLS FOR THIS APPR" does not appear on the flight management system message area. The FLS can be unavailable if the required conditions are not met.

  FLS DATA.....**CHECK**

NAVAIDS.....**AS REQUIRED/CHECK**

Holding

HOLDING PATTERN.....**AS REQUIRED**
With air traffic control authorization, the pilots can insert a holding pattern in the flight management system.

Approach checklist

APPROACH CHECKLIST.....**COMPLETE**
The checklist can be found in the document "FBW A380X Checklist".

PRECISION APPROACH

FOR SIMULATION PURPOSES

Initial Approach

Initial approach

APPROACH PHASE……**CHECK/ACTIVATE**

The aircraft will activate the APPR phase automatically if flown over the pseudo waypoint in NAV mode. However, if the aircraft is in heading or track mode, we recommend to activate the APPR phase 15 nautical miles from touchdown.

POSITIONING……**CHECK/ACTIVATE**

We recommend to use the VERT DEV on the primary flight display when using NAV mode. However, when using HDG or TRACK mode, we recommend the use of the energy circle on the navigation display.

MANAGED SPEED……**CHECK**

We recommend to regularly verify the managed speed and to monitor the target speed.

Note : *When in NAV, LOC*, or LOC mode is engaged, the aircraft will automatically decelerate at the DECEL waypoint.*

SPEED BRAKES……**AS REQUIRED**

Navigation accuracy

- **If GPS PRIMARY LOST :**

  NAVIGATION ACCURACY……**MONTIOR**

  We recommend to verify on the POSITION/MONITOR page the navigation accuracy. We recommend to change approach strategy if the following message on the flight management system message area: "NAV ACCUR DOWNGRADED".

Intermediate and Final Approach

APPR mode activation

- **When the ATC clears the aircraft for the approach :**

APPR mode……**PRESS**

We recommend to press the APPR mode pushbutton situated on the auto flight system control panel when the air traffic control clears the approach to the aircraft. This will provide the LOC and Glideslope of the selected ILS approach (as selected on the flight management system). However, the LOC and glideslppe mode will engage approximately 3 seconds after the APPR mode activation.

Note : *The multifunction display and the primary flight display will display "CHECK APPR SEL" if the pilot selected a non-precision approach in the active flight plan, and if the pilot manually inserted an ILS frequency on the POSITION/NAVAIDS page.*

LOC capture domain

Please note, the LOC capture point represent the point of the projected LOC centerline.

AUTOPILOT 1+2……**ON**

We recommend to engage both autopilot when the APPR mode is engaged.

FMA……**CHECK**

The pilot can verify on the flight mode annunciator the approach capability (CAT2, CAT3 SINGLE, CAT3 DUAL, or AUTO LAND) for the selected approach.

Approaching green dot speed

FLAPS 1……**ORDER**

FLAPS 1……**SET**

We recommend setting the flaps before being within 3 nautical mile from the final approach fix (FAF). Verify the aircraft is decelerating toward the S speed. If the aircraft is above the glideslope, or the aircraft does not decelerate, we recommend to extend the landing gear. We do not recommend the speed brakes due to limited effect at low speed.

TCAS MODE……**TA ONLY or TA/RA**

*We recommend the use of **TA/RA** for normal situations. If it is inappropriate, such as converging runways or parallel runways, the use of TA ONLY mode is recommended.*

LOC CAPTURE……**MONITOR**

We recommend to pay close attention to the LOC beam capture. Verify that during the capture phase, the LOC deviation is within the LOC scale. The deviation should be displayed on the primary flight display and on the navigation display. If the GPS PRIMARY is lost, expect an overshoot of the LOC beam.

Note: *There are international regulations for LOC beam capture. In ICAO standards, the LOC beam must ensure a normal capture within 10 nautical mile, at more or less 35 degrees from the centerline. However, expect some abnormal captures at airports following minimal requirements.*

G/S CAPTURE……**MONITOR**

Note: *Please note that the glideslope can capture independently from the LOC beam capture. This depends on the PRIM pin program.*

- **If above the glideslope :**

V/S MODE……**AS REQUIRED**
We recommend to not exceed 2 000 feet per minute.

AUTO FLIGHT SYSTEM CONTROL PANEL ALTITUDE……**SET ABOVE AIRCRAFT ALTITUDE**
We recommend to select an altitude above the aircraft altitude to prevent any altitude engagement.

- **When G/S Capture (G/S*) :**

GO-AROUND ALTITUDE……**SET**
Note : *We recommend setting the go-around altitude to prevent an undesired level off.*

Verify that when the aircraft intercept the ILS above the validity range, the CAT 1 appears on the flight mode annunciator.

Below VFE Next, at 2 500 feet above ground level minimum

FLAPS 2……**ORDER**

FLAPS 2……**SET**
Verify that the aircraft is decelerating toward the F speed. If the aircraft interception of the ILS/GLS glideslope is below 2 000 feet above ground level, we recommend setting the flaps 2 at one dot below the glideslope. If the aircraft is above the glideslope, or the aircraft does not decelerate, we recommend to extend the landing gear. We do not recommend the speed brakes due to limited effect at low speed.

After FLAPS 2 selection, at 2 000 feet above ground level minimum

LANDING GEAR DOWN……**ORDER**

LANDING GEAR……**DOWN**
*Set the landing gear lever to the **DOWN** position.*

AUTO BRAKE……**CONFIRM**
We recommend to be prepared for changing runway conditions. Change the autobrake mode if required.

Note: *We recommend to land on the runway indicated on the BTV settings if using the brake to vacate system. If the aircraft lands on a different runway, the autobrake will change automatically to HI in short final.*

GROUND SPOILERS……**ARM**
Arm the ground spoilers by pulling the spoilers lever.

EXTERIOR LIGHTS……**SET**
Set the appropriate exterior lights, as required in the local regulations.

After landing gear down down

- **Below VFE NEXT :**

  FLAPS 3.....**ORDER**

  FLAPS 3.....**SET**

  WHEEL SYSTEM DISPLAY PAGE.....**CHECK**

  Verify the wheel system display page appears below 800 feet above ground level or at the extension of the landing gear. We recommend to verify the five landing gear green indication, as well as at least one green triangle on each landing gear. This indicates the landing gear strut is locked at the down position.

- **Below VFE NEXT :**

  FLAPS FULL.....**ORDER**

  FLAPS FULL.....**SET**

  Set the flaps to the full position. Verify that the aircraft is decelerating towards the approach speed.

AUTOTHROTTLE.....**CHECK IN SPEED MODE or OFF**

When available, and for GLS CAT I landing with autoland function, and if the autothrottle is availabe, engage the autothrottle.

SLIDING TABLE.....**STOWED**

LANDING MEMO.....**NO BLUE LINE**

Verify on the Engine Warning Display the absence of blue lines.

CABIN.....**READY**

Verify the cabin is ready by either observing the appearance of the ECAM message "CABIN READY" on the Engine Warning Display, or by obtaining a confirmation from the chief flight attendant "Cabin ready for landing".

LANDING CHECKLIST.....**COMPLETE**

The checklist can be found in the document "FBW A380X Checklist".

FLIGHT PARAMETERS.....**CHECK**

The pilot in command should announce all modifications made to the flight mode annunciator, as the pilot monitoring announces any deviation of the flight parameter.

- **At 500 ft AGL (or RA) and below and if the flight crew selected BTV autobrake mode :**

  The pilot monitoring should adjust the navigation display range selector to display the onboard airport navigation system. This will show the dry and wet lines.

- **At 350 ft AGL (or RA) :**

  LAND ON FLIGHT MODE ANNUNCIATOR.....**ANNOUNCE**

  ILS(GLS) COURSE.....**CHECK**

  Verify the ILS or GLS course on the primary flight display.

At minimum + 100 feet

ONE HUNDRED ABOVE……**MONITOR or ANNOUNCE**

At minimum altitude

MINIMUM……**MONITOR or ANNOUNCE**

LANDING or GO-AROUND……**ANNOUNCE**

We recommend to maintain the aircraft on a stabilized flight path until the flare. At 50 feet, one dot below the glideslope means a difference of 7 feet below the glideslope. We recommend to not duck under the glideslope.

NON PRECISION APPROACH

FOR SIMULATION PURPOSES

Initial Approach

APPROACH PHASE……**CHECK/ACTIVATE**

The approach phase will activate automatically if the aircraft fly over the DECEL pseudo waypoint in navigation mode. However, if the aircraft is in HDG or TRACK mode, the pilots will need to activate and confirm the approach phase on the active performance page on the flight management system 15 nautical miles before landing.

POSITIONING……**CHECK/ACTIVATE**

We recommend the use of the VERT DEV on the primary flight display and on the destination panel of the active performance page of the flight management system if the aircraft is in the navigation mode. If the aircraft is in heading or track mode, we recommend the use of the energy circle on the navigation display. This shows the required distance to land.

MANAGED SPEED……**CHECK**

Verify the active managed speed and watch the targeted speed closely.

Note : *The aircraft will decelerate automatically at the DECEL pseudo waypoint when on these modes: managed speed is active, and either NAV or LOC mode is engaged.*

SPEED BRAKES……**AS REQUIRED**

We recommend the use of speed brakes if the aircraft is unable to reduce its speed on idle engine thrust.

REQUIRED NAVIGATION PERFORMANCE on the FLIGHT MANAGEMENT SYSTEM……..**AS REQUIRED**

Verify if the Required Navigation Accuracy is appropriate to the phase of the flight on the POSITION/MONITOR page of the flight management system.

FLIGHT MANAGEMENT SYSTEM LANDING SYSTEM CAPABILITY……..**CHECK**

Verify the flight management system landing system capability by selecting the approach. If the MultiFunction Display message "NO FLS FOR THIS APPR", the system can't perform the approach. If it isn't appropriate, prepare to change the approach strategy.

NAVIGATION DISPLAY MODE……**ARC or ROSE NAV**

Select at the pilot's discretion for each navigation display.

VOR(ADF) NEEDLES (VOR pb (ADF pb)) ……**AS REQUIRED**

Intermediate and Final Approach

Approach phase activation.

APPR BUTTON ON THE AUTO FLIGHT SYSTEM CONTROL PANEL.....**PRESS**

We recommend to press the APPR pushbutton when cleared for the approach by the Air Traffic Control. When the APPR pushbutton is pressed, the F-LOC/LOC/LOC B/C and F-G/S modes will activate if the pilots selected an Non-Precision Approach on the flight management system arrival page and when the multifunction display do not display the "NO FLS FOR THIS APPR" message.

FLYING REFERENCE.....**TRK-FPA**

You can activate the TRK-FPA mode by clicking on the TRK-FPA pushbutton on the auto flight system control panel.

AUTOPILOT ENGAGEMENT.....**AT PILOT'S DISCRETION**

FLIGHT MANAGEMENT SYSTEM LANDING SYSTEM CAPABILITY.....**CHECK**

Verify on the flight mode annunciator the appearance of either F-APP or F-APP + RAW, depending on the approach type.

Approaching Green dot speed

FLAPS 1.....**ORDER**

FLAPS 1.....**SET**

We recommend to set the flaps 1 position before 3 nautical mile from the final approach fix. The pilot must monitor the deceleration of the aircraft toward the S speed. If not, the pilot can extend the gear to help, or the use of the speed brakes. We also recommend to be on the glideslope with flaps 1 and at S speed at or above 2 500 feet above ground level.

TCAS MODE.....**TA ONLY or TA/RA**

We recommend the use of TA/RA for normal situations. If it is inappropriate, such as converging runways or parallel runways, the use of TA ONLY mode is recommended.

F-LOC, LOC, OR LOC B/C CAPTURE.....**MONITOR**

Monitor the capture of the F-LOC/LOC/LOC B/C. During the capture, indications should move toward the center of the scale in the primary flight display and the navigation display.

F-G/S CAPTURE.....**MONITOR**

- **If above the flight glideslope beam :**

  FLIGHT PATH ANGLE MODE.....**AS REQUIRED**

  We recommend to not exceed 2 000 feet per minute.

  AUTO FLIGHT SYSTEM CONTROL PANEL ALTITUDE.....**SET ABOVE AIRCRAFT ALTITUDE**

  We recommend the selection of an altitude above the current altitude to prevem ALT mode engagement.

- **At flight glideslope engagement :**

  GO-AROUND ALTITUDE.....**SET**

  We recommend setting the go-around altitude to prevent a level off at the flight glidescope interception altitude.

  AUTO FLIGHT SYSTEM CONTROL PANEL ALTITUDE.....**SET ABOVE AIRCRAFT ALTITUDE**

Below VFE next, at 2 500 feet above ground level minimum

FLAPS 2.....**ORDER**

FLAPS 2.....**SET**

Before setting the flaps to the second position, please verify the aircraft is decelerating toward the F speed. If the aircraft need to slow down, we recommend to use the landing gear. We do not recomment de use of spoilers.

After Flaps 2 selection, at 2 000 feet above ground level minimum

LANDING GEAR DOWN.....**ORDER**

LANDING GEAR.....**DOWN**

*Set the landing gear lever to the **DOWN** position.*

AUTO BRAKE.....**CONFIRM**

We recommend to be prepared for changing runway conditions. Change the autobrake mode if required.

Note: *We recommend to land on the runway indicated on the BTV settings if use of BTV. If the aircraft lands on a different runway, the autobrake will change automatically to HI in short final.*

GROUND SPOILERS.....**ARM**

Arm the ground spoilers by pulling the spoilers lever.

EXTERIOR LIGHTS.....**SET**

Set the appropriate exterior lights, as required in the local regulations.

After landing gear down selection

- **Below VFE Next :**

  FLAPS 3.....**ORDER**

  FLAPS 3.....**SET**

  Set the flaps to the third position.

  WHEEL SYSTEM DISPLAY PAGE.....**CHECK**

  Verify the wheel system display page appears below 800 feet above ground level or at the extension of the landing gear. We recommend to verify the five landing gear green indication, as well as at least one green triangle on each landing gear. This indicates the landing gear strut is locked at the down position.

- **Below VFE Next :**

  FLAPS FULL.....**ORDER**

  FLAPS FULL.....**SET**

  Set the flaps to the full position. Verify that the aircraft is decelerating towards the approach speed.

AUTOTHROTTLE.....**CHECK IN SPEED MODE or OFF**

For a ground based augmentation system landing system CAT I with autoland functionality, verify if the use of autothrottle is available. We recommend to use the autothrottle for this case.

SLIDING TABLE.....**STOWED**

LANDING MEMO.....**NO BLUE LINE**

Verify on the Engine Warning Display the absence of blue lines.

CABIN.....**READY**

Verify the cabin is ready by either observing the appearance of the ECAM message "CABIN READY" on the Engine Warning Display, or by obtaining a confirmation from the chief flight attendant "Cabin ready for landing".

LANDING CHECKLIST.....**COMPLETE**

The checklist can be found in the document "FBW A380X Checklist".

- **At final approach fix:**

  F-G /S MODE.....**CHECK ENGAGED**

  Verify the aircraft is heading toward the final approach fix associated waypoint. Verify also it is respecting the altitude restrictions on a valid published approach chart.

FLIGHT PARAMETERS.....**CHECK**

The pilot in command should announce all modifications made to the flight mode annunciator, as the pilot monitoring announces any deviation of the flight parameter.

- **At 500 ft AGL (or RA) and below and if the flight crew selected BTV autobrake mode :**

  The pilot monitoring should adjust the navigation display range selector to display the onboard airport navigation system. This will show the dry and wet lines.

At minimum + 100 feet

ONE HUNDRED ABOVE.....**ANNOUNCE**

At minimum altitude

MINIMUM.....**ANNOUNCE**

- **If the flight crew obtains appropriate visual references :**

  LANDING or GO-AROUND.....**ANNOUNCE**

  The pilots must take the decision to either land or perform a go-around. The pilots must be able see the landing runway.

  AUTOPILOT.....**OFF**

  If the autopilot is still engaged at the minimum descent altitude or heigh minus 50 feet, the flight mode annunciator will display the "DISCONNECT AP FOR LDG"

  FLIGHT DIRECTOR OFF.....**ORDER**

  *The pilot in command order to the pilot monitoring to turn **OFF** the flight director.*

  FLIGHT DIRECTOR.....**OFF**

  The pilot monitoring turn off the flight director..

  RUNWAY TRACK.....**CHECK/ORDER**

  The pilot in command order the pilot monitoring to set the runway heading on the auto flight system control panel.

  RUNWAY TRACK.....**SET AS REQUIRED**

  The pilot monitoring set the runway track on the auto flight system control panel.

LANDING SYSTEM……**ORDER AS REQUIRED**

*The pilot in command order the pilot monitoring to push the landing system pushbutton. We recommend to set **ON** of the landing system if the F-LOC(LOC)(LOC B/C) beam is aligned with the runway within 4 degree difference. If it isn't the case, the landing system should be set to **OFF**.*

LANDING SYSTEM……**SET AS REQUIRED**

We recommend to maintain the aircraft in a stabilized flight path until touchdown. We also recommend to not duck under the flight path glideslope beam.

- **If the flight crew obtains appropriate visual references :**

  GO-AROUND……**ANNOUNCE**

VISUAL APPROACH

FOR SIMULATION PURPOSES

Approach

Initial / Intermediate Approach

The pilot must use external visual references for this type of approach.

At the beginning of the downwind leg

APPROACH PHASE.....**ACTIVATE**
The pilot can activate the approach phase on the APPR panel of the active perf page.

FLIGHT DIRECTOR OFF.....**ORDER**
*The pilot in command orders to the pilot monitoring to turn **OFF** the flight director.*

FLIGHT DIRECTOR.....**OFF**
*The pilot monitoring turn **OFF** the flight director.*

FLYING REFERENCE.....**TRK-FPA**
The pilot can activate the TRK-FPA mode on the auto flight system control panel.

AUTOTHROTTLE ACTIVE.....**CHECK**
The pilot can verify the autothrottle is active by looking on the flight mode annunciator.

On the downwind leg

When on the threshold, the pilot must extend the downwind leg by 45 seconds, including wind correction. The pilot can turn into the base leg. He must ensure the aircraft doesn't bank more than 30°. We recommend to follow the flight path angle.

- **Below Vfe Next**

  FLAPS 2.....**ORDER**
  The pilot in command order to the pilot monitoring to set the flaps to the second step.

  FLAPS 2.....**SET**
  The pilot monitoring set the flaps levers to the second step, and verify the aircraft deceleration toward the F speed.

Final Approach

- When using manual thrust, the pilot can use the speed trend arrow and flight path vector to help coordinating thrust settings. We recommend to avoid performing a descent with idle thrust. This may lead to a speed decay and altitude loss.
- The aircraft must be stabilized by 500 ft above ground level. If not, a go-around procedure must be initiated.
- We recommend to avoid performing big corrections in the last 100 ft above ground level in order to have a smooth landing.

LANDING

FOR SIMULATION PURPOSES

Landing

For manual landing

AUTOPILOT.....**OFF**

We recommend disengaging the autopilot in whatever type of approach. We also recommend to keep the autothrottle speed mode engaged.

At around 80 ft above ground level

AUTOPILOT.....**DISENGAGE**

At around 40 feet radio altimeter

When performing a stabilized approach, the normal flare height is 40 ft above ground level.

FLARE.....**INITIATE**

ATTITUDE.....**MONITOR**

The pilot monitoring monitor the pitch and banking. If excessive angles, there is possibility of wing strike and tail strike.

THRUST LEVERS.....**IDLE**

We recommend to move the thrust levers at idle when the main landing gear touches down.

Note: The ground spoilers won't extend if two or more thrust levers remains above the IDLE detent.

For Automatic Landing

Between 50 feet and 40 feet radar altimeter

FLIGHT MODE ANNUNCIATOR.....**CHECK FLARE**

Verify the flare mode is active on the flight mode annunciator.

FLARE.....**MONITOR**

Monitor the behaviour of the flare. If any unexpected behaviour, disengage the autopilot.

At approximately 30 feet radar altimeter

FLIGHT MODE ANNUNCIATOR.....**CHECK THROTTLE IDLE**

Verify the autothrottle decreases the thrust to the idle position.

At 10 feet radar altimeter

There should have an automatic "RETARD" callout triggered.

THRUST LEVERS.....**IDLE**

The autothrottle disconnects.

LATERAL GUIDANCE.....**MONITOR**

The pilots must monitor the lateral guidance using external references.

At touchdown

FLIGHT MODE ANNUNCIATOR.....**CHECK ROLL OUT**

- **If AUTO ROLL OUT:**
  AUTOPILOT.....**KEEP ENGAGED, UNTIL END OF ROLL OUT**

Derotation

- **As soon as the main landing gear touches down:**

DEROTATION.....**INITIATE**

Landing Roll

REVERSER LEVERS.....**PULL**

We recommend to select MAX REV as soon as the landing gear touches down. If for operational reason the use of the thrust reversers are limited, we recommend to maintain IDLE REV until the aircraft reaches the taxi speed. Please acknowledge that in a case of a failure of one thrust reverser, it is still possible to use the opposite engine thrust reverser.

GROUND SPOILERS EXTENDED.....**ANNOUNCE**

Verify the slats/flaps display on the lower part of the primary flight display. Ensure that the ground spoilers are deployed. In the event of no deployment, check that all thrust levers are positioned at the IDLE detent. If no ground spoilers extended, set both thrust reversers to MAX REV, and press the brake pedals.

Note: If the flight crew didn't arm the spoilers, the spoilers will automatically deploy at thrust reverser activation.

REVERSERS.....**CHECK/ANNOUNCE**

You can verify the reversers on the Engine Warning Display. It should display the reverser deployment.

DIRECTIONAL CONTROL.....**MONITOR/ENSURE**

We do not recommend the use of the nosewheel steering control handle before reaching the taxi speed.

- **If autobrake selected:**

AUTO BRAKE.....**CHECK/ANNOUNCE**

Verify on the flight mode annunciator the autobrake mode (BTV, BRK LO, BRK 2, BRK 3, or BRK HI).

Note: The autobrake doesn't activate if the ground spoilers aren't extended.

- **If no autobrake:**

BRAKES.....**AS REQUIRED**

DECELERATION.....**CHECK/ANNOUNCE**

The pilot must confirm the deceleration by looking at the speen trend on the primary flight display.

- **If AUTO ROLLOUT, before 20 knots:**

AUTOPILOT.....**DISCONNECT**

At 80 Knots

EIGHTY KNOTS.....**ANNOUNCE**

Verify the speed on the primary flight display.

REVERSER LEVERS.....**IDLE**

CAUTION	*We recommend avoiding high reverse thrust at low speed, unless the "KEEP MAX REVERSE" sounds, or in an emergency situation*

- *When 1 000 ft remains to the end of the runway, and the aircraft ground speed is higher than 10 knots:*

  BTV AUTOBRAKE MODE.....**OVERRIDE**

  MANUAL BRAKING.....**APPLY AS REQUIRED**

At taxi speed

REVERSER LEVERS.....**STOW**

We recommend to stow the reversers before leaving the runway. It may results in damage to the engine and the airframe, or cause an engine flameout or rollback.

CAUTION	*We recommend to avoid the use of reverse thrust on taxiways, unless in an emergency situation.*

AUTO BRAKE.....**DISARM**

The autobrake can be disarmed at the pilot's discretion. It is recommended to use one of the autothrottle instinctive disconnect pushbuttons to disarm the autobrake. If BTV mode was used, the autobrake will disarm automatically at 10 knots.

GO- AROUND

FOR SIMULATION PURPOSES

Go-Around

Go-around initialization

THRUST LEVERS.....**TOGA**

Set the thrust levers to the TOGA detent. You can then delay the reduction of thrust later if required. This ensures the activation of the Go-Around phase with the corresponding autopilot and flight director modes.

Notes: If the go-around phase isn't properly engaged, the FMS will continue the sequence to the destination waypoint in the flight plan, instead of engaging in the go-around procedure.

When the go-around phase engages, the approach used for this landing will be set back in the flight plan at the end of the go-around procedure.

ROTATION.....**PERFORM**

Perform a initial rotation to the pitch attitude of 12,5° to obtain a positive rate of climb. If one engine is failed, the pitch attitude should be 10°. Then, follow the speed reference system pitch command bar.

GO-AROUND.....**ANNOUNCE**

Announce to the pilots the go-around decision. Verify all crew member's comprehension.

FLAPS.....**RETRACT ONE STEP**

Retract the flaps levers one step.

FLIGHT MODE ANNUNCIATOR.....**CHECK/ANNOUNCE**

If the pilots requires not to follow the flight plan go-around procedure, we recommend the use of HDG/TRK preset function.

POSITIVE CLIMB.....**ANNOUNCE**

*The pilot monitoring must monitor the pitch attitude. If the pitch attitude value is higher than 20°, or below 10°, the pilot monitoring must announces "**PITCH**". If the aircraft doesn't climb, the pilot monitoring. should announce "**SINK RATE**".*

LANDING GEAR UP.....**ORDER**

*The pilot in command order to the pilot monitoring: "**Gear Up**".*

LANDING GEAR.....**UP**

*The pilot monitoring retract the gear and announces "**UP**" when all red lights are displayed.*

NAV or HDG.....**AS REQUIRED**

The pilot can select the navigation or heading mode.

At go-Around thrust reduction altitude

THRUST LEVERS.....**CL**

*You can set the thrust levers to climb when the message **LVR CLB** is flashing on the flight mode annunciator.*

At go-Around acceleration altitude

- **If the targeted speed does not increase to the initial climb speed:**

  AUTO FLIGHT SYSTEM CONTROL PANEL ALTITUDE.....**CHECK**
  Verify the parameters of the auto flight system control panel.

  ALTITUDE.....**PRESS**
  Verify the altitude parameters, then press the knob.

FLAPS.....**ORDER RETRACTION ON SCHEDULE**
At F Speed, order flaps 1. At S speed, order flaps 0.

FLAPS.....**RETRACT ON SCHEDULE**
At F speed, retract to flaps 1. At S speed, retract to flaps 0.

GROUND SPOILERS.....**DISARM**
Push the ground spoilers lever down to disarm the ground spoilers.

EXTERIOR LIGHTS.....**SET**
Set the appropriate exterior lights.

AFTER TAKEOFF/CLIMB CHECKLIST down to the line.....**COMPLETE**
The checklist can be found in the document "FBW A380X Checklist".

- **If the transition altitude is reached:**

  BAROMETRIC REFERENCE.....**SET STANDARD/CROSSCHECK**
  Set the standard barometric reference, then verify the parameters on all altimeters. The altitude should be the same.

AFTER TAKEOFF/CLIMB CHECKLIST below the line.....**COMPLETE**
The checklist can be found in the document "FBW A380X Checklist".

- **Preparation for second approach:**

  APPROACH PHASE.....**ACTIVATE**
  To activate the APPR phase, head to the ACTIVE PERF page on the FMS and activate the phase. If not activated, managed approach speed will not be available and the BARO/RADIO indications will not appear on the primary flight display.

- **To divert to the alternate:**

  FLIGHT MANAGEMENT SYSTEM.....**UPDATE**
  We recommend the use of the the alternate flight plan or secondary flight plan. They can be activated on the active flight plan page of the FMS. If the crew did not prepare any of the mentioned alternative, they should perform a selected climb, a lateral revision to the new destination.

- **When cleared to a waypoint:**

  DIRECT TO.....**PERFORM**

FLIGHT MANAGEMENT SYSTEM.....**CROSSCHECK**
Verify the informations across both captain and first officer flight management system.

AFTER LANDING

FOR SIMULATION PURPOSES

After Landing

Ground spoilers

GROUND SPOILERS.....**DISARM**
Disarm the ground spoilers by pushing the spoilers levers.

Flaps

FLAPS.....**RETRACT**
Retract the flaps to the flaps position 0.

Auxiliary Power Unit

AUXILIARY POWER UNIT MASTER SWITCH.....**ON**
The APU START Sequence can be delayed until the engine shutdown sequence, however we recommend to perform the sequence as early as possible.

- **Auxiliary Power Unit Starting sequence**
  AUXILIARY POWER UNIT START.....**ON**
  Verify on the APU SD page the FLAP OPEN message is displayed.

Engine start

ENGINE START SELECTOR.....**CHECK NORM**
*Verify the engine start selector is in the **NORM** position.*

Anti-Ice

ANTI-ICE.....**AS REQUIRED**
*When the engine anti-ice is active, the engine ground idle is increased. When taxiing in cold conditions (when the temperature is less than 3°C), the pilot must turn the anti-ice **ON**.*

Exterior lights

LANDING LIGHTS.....**OFF**
*Turn **OFF** the landing lights if they aren't necessary.*

STROBE.....**AUTO**
*The pilot can switch the strobe light to **AUTO** when leaving the runway.*

OTHER EXTERIOR LIGHTS.....**AS REQUIRED**
*As required, set the navigation light switch to **ON** to turn on the navigation and obstruction lights.*

NOSE.....**TAXI**
*When the aircraft leaves the runway, set the nose light switch to the **TAXI** position.*

RUNWAY TURN OFF LIGHTS & CAMERA.....**AS REQUIRED**
*At night conditions, turn **ON** the runway turn off lights and camera switch for ETACS purpose.*

Airport navigation

NAVIGATION DISPLAY RANGE.....**ZOOM, AS APPROPRIATE**

Turn the navigation display range selector to zoom at the pilot's discretion.

Electronic Flight Information System Control Panel

TAXI.....**AS REQUIRED**

*The ETACS displays on the PFD when the TAXI pushbutton is set to the **ON** position.*

WEATHER RADAR.....**CHECK OFF**

*The weather radar should automatically switch **OFF** 60 seconds after the landing.*

Brake temperature

BRAKE TEMPERATURE.....**MONITOR**

You can monitor the brake temperature on the WHEEL SD page. Verify the temperatures for discrepancies and high temperature (higher than 500°C).

After landing checklist

AFTER LANDING CHECKLIST.....**COMPLETE**

The checklist can be found in the document "FBW A380X Checklist"

PARKING

FOR SIMULATION PURPOSES

Parking

Anti-Ice system

ANTI-ICE.....**OFF**

*Turn the anti-ice **OFF** on the overhead panel.*

Auxiliary Power Unit bleed

AUXILIARY POWER UNIT BLEED.....**ON**

*We recommend setting the APU bleed to **ON** before shutting the engine off in order to prevent the engine exhaust fumes spreading in the air conditioning system.*

Parking brake

PARKING BRAKE.....**ON**

We recommend to avoid the application of the parking brake if the temperature of one brake is above 500° C, as indicated on the triple pressure indicator.

Engine masters 1,2,3, and 4

ENGINE MASTERS SWITCHES 1, 2, 3, AND 4.....**OFF**

Note: *We recommend to operate the engine at idle for 3 minutes before shutting down the engine when high thrust operations were required (such as the use of the maximum reverse thrust at landing). This cooldown time will ensure the thermal stability of the hot section of the engine.*

Note: *In the case that the APU isn't available, we recommend the connection of the external power before the engine shutdown sequence.*

*When turning the engine master switches **OFF**, verify that the engine parameters decrease.*

Clock

ELAPSED TIME (If applicable).....**STOP**

Stop the clock and note the elapsed time at the appropriate documentation.

Seat belts sign

SEAT BELTS.....**OFF**

*Turn the seat belts signs situated on the overhead panel to the **OFF** position.*

Slides

SLIDES DISARMED.....**CHECK**

Verify the slides on the DOOR/OXY SD page. If any slides are armed, please advise the flight crew.

Exterior lights

BEACON.....**OFF**
*When all the engines have spooled down, turn **OFF** the beacon light.*

OTHER EXTERIOR LIGHTS.....**AS REQUIRED**
*Turn the exterior lights **ON** or **OFF** as required.*

Ground contact

GROUND CONTACT.....**ESTABLISHED**
Verify with the ground crew that the chocks are in place.

Fuel pumps

FUEL PUMPS.....**OFF**
*Turn the fuel pumps **OFF** on the overhead panel. A white "OFF" Light will appear on the buttons.*

Head up display

HEAD UP DISPLAY.....**STOW**
Retract the head up display to the upper position.

Fuel quantity

FUEL QUANTITY.....**CHECK**
Verify the amount of fuel left on board is consistent with the predicted fuel remaining.

Parking checklist

PARKING CHECKLIST.....**COMPLETE**
The checklist can be found in the document "FBW A380X Checklist"

Parking brake

PARKING BRAKE.....**AS REQUIRED**
The pilots should monitor the ECAM displays in case of a BRAKE HOT alert. If that alert appears, make sure the chocks are placed, then release the parking brakes.

Notes: *You can leave the parking brakes set when the winds, including gust, exceed 30 knots, when the parking ramp slope is excessive, or when the surface is wet.*

Onboard Information System (OIS) closure

ONBOARD INFORMATION TERMINAL SLIDE.....**FLIGHT OPERATIONS**

ALL APPLICATIONS.....**CLOSE**

You can close all the applications running on the laptop.

EXIT SESSION.....**PERFORM**

When you exit the session, the FLT OPS STS page will initialize for the next flight.

Logbook

ONBOARD INFORMATION TERMINAL SIDE.....**NSS AVNCS**

In order to access the logbook, set the Onboard Information Terminal Side switch to the NSS AVNCS position.

FLIGHT CLOSURE.....**PERFORM**

Verify the VHF 3 DATA mode is active before closing the electronic flight.

SECURING THE AIRCRAFT

FOR SIMULATION PURPOSES

Securing the Aircraft

Parking brake

PARKING BRAKE.....**ON**

*We recommend to keep the parking brake **ON** in order to reduce any leaks in the hydraulic system.*

Oxygen crew supply

OXYGEN CREW SUPPLY.....**OFF**

*You can position the crew oxygen supply button to **OFF** on the pilot's side.*

Air Data Inertial Reference System

ADIRS (1+2+3).....**OFF**

*We recommend to not turn off the ADIRS when doing turnarounds at airports above the 70° N Latitude. This will avoid any excessive alignment time. We also recommend to wait 10 seconds before turning the electrical supply **OFF**. This will ensure that the system will remember the last data.*

Exterior lights

EXTERIOR LIGHTS.....**OFF**

*Turn all exterior lights to **OFF**.*

Ground services

GROUND SERVICING.....**AS REQUIRED**

*We recommend setting the GND SERVICING to the **ON** position if ground crew requires electrical power.*

Auxiliary Power Unit bleed

AUXILIARY POWER UNIT BLEED.....**OFF**

*Turn the Auxiliary Power Unit Bleed system **OFF**.*

External power

EXTERNAL POWER.....**AS REQUIRED**

The aircraft requires at least two external power units to supply the entire electrical network. Verify that the auxiliary power unit is below 50%. If above, it will require a third external power, or the maintain of the auxiliary power unit.

Note: *To reduce the electrical load, you can turn **OFF** the FANS and COOLG pushbuttons. We however recommend to turn them **ON** as soon as possible.*

Auxiliary Power Unit

AUXILIARY POWER UNIT MASTER SWITCH.....**OFF**

*We recommend to turn **OFF** the auxiliary power unit after all passengers have been disembarked.*

Passenger signs

EMERGENCY EXIT LIGHTS.....**OFF**

*We recommend to set the emergency exit light to **OFF** to preserve battery charge when either only the batteries are supplying the electrical network, or nothing supplying the electrical network.*

NO SMOKING.....**OFF**

*We recommend to turn **OFF** the no smoking sign in order to preserve battery charge.*

Onboard Information System (OIS)

ALL LAPTOPS.....**OFF**

*We recommend to turn the laptop **OFF**, by clicking on the SWITCH OFF LAPTOP button on the LOGIN page of the software.*

Note: The Network Server System (NSS) will automatically shuts down when the aircraft electrical supply is down.

Onboard Information Terminal.....**OFF**

Securing the aircraft checklist

SECURING THE AIRCRAFT CHECKLIST.....**COMPLETE**

The checklist can be found in the document "FBW A380X Checklist".

Battery 1, Essential, Battery 2, and Auxiliary Power Unit Battery

ALL BATT (Battery 1, Essential, Battery 2, APU Battery).....**OFF**

We recommend to wait until the APU flap is closed before shutting off the APU battery.

Cockpit way light

COCKPIT WAYLIGHT.....**ON, IF NECESSARY**

*If you select the **OFF** position, the cockpit waylight will turn off after 60 seconds, leaving enough time to leave the cockpit.*