Add-on for Microsoft
Flight Simulator *X*

aeroSOFT™

Airbus X

Manual

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Add-on for

Microsoft Flight Simulator X

Content

Starting Off

System Requirements

To fully enjoy "Airbus X" in FSX we recommend the following:

- Microsoft Flight Simulator X with Acceleration or SP2
- Windows XP / Vista or 7
- Processor with 3.0 GHz (Core2Duo Intel requested)
- 500 MB free space on your hard disk
- 2 GB RAM
- 3D graphic card with 256 MB, recommended 512 MB
- CD-ROM drive

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Installation

You have to be logged in with administrator rights before you start the installation of "Airbus X". After you have chosen your preferred installation language, the welcome screen appears and you will be presented with some important information and the license agreement. Please read it carefully.

You will be asked to insert the serial number. You will find the serial number on the CD sleeve. Please keep this serial number on a save place, you will need again if you want to reinstall this scenery.

If you bought the download version of our scenery you will be asked to insert your email address and the product key. Please insert them exactly the way they were written in the confirmation mail you received of our online shop.

The installation program will attempt to locate the correct path of Microsoft Flight Simulator. If this path cannot be successfully located, or if you wish to install to another location, then you will have to enter the correct path for installation manually. In order to do this, click on "Browse" and navigate to the correct path. Before the installationprogram starts to copy the files onto your hard disc, you will be presented with all the installation details.

The installation program will now copy all of the "Airbus X" files onto your hard disc and subsequently register the scenery in the scenery library. A backup copy of the original Scenery.cfg will also be made (Scenery_CFG_Before_Airbus X_was_installed. cfg). The necessary adjustments for the AI Traffic in Microsoft Flight Simulator will be automatically carried out by the installation program.

Removing "Airbus X"

In order to fully remove "Airbus X" click on the "Start" Button in the Windows task bar, choose "Settings" and then "Control Panel". Here you will see an icon named "Programs and Functions". Double click on this icon to open it and you will see a list of all installed programs.

Locate "aerosoft's - Airbus X", click once with the left mouse button and then click on the "add-remove"-button.

The deinstallation program will now begin to remove the scenery "Airbus X"- files from your hard disc.

Entries in the FS scenery library will also be removed.

1. Displays / Panels

The Aerosoft Airbus X has no 2D-panel just a virtual cockpit. There are 5 fixed virtual cockpit views: Glareshield – Main Panel, MCDU, ECAM, Pedestal / Radio and Overhead. These views can be accessed via three different methods:

- FSX Menu: Views – View Mode – Cockpit – …
- Keyboard: Use "S" to toggle to "Cockpit View" and then "A" to toggle between the various cockpit views like Virtual Cockpit, Glareshield – Main Panel, MCDU, ECAM, Pedestal / Radio and Overhead.
- Keyboard: F9 = Glareshield – Main Panel, F10 = ECAM / MCDU, F11 = Pedestal / Radio and F12 = Overhead.

Instructions for adjusting views are found in chapters 5.1 and 5.2.

1.1. Glareshield and Main Panel

Glareshield and Main-Panel (F9)

1 = PFD (Primary Flight Display)
2 = ND (Navigation Display)
3 = EFIS (Electronic Flight Information System)
4 = FCU (Flight Control Unit)
5 = E/WD (Engine and Warning Display)
6 = Brakes
7 = Chronometer

8 = Dimmer for PFD and ND
9 = Master Warning and Master Caution Lights
10 = A/Skid & Nose Wheel Steering

1.1.1. PFD-Primary Flight Display
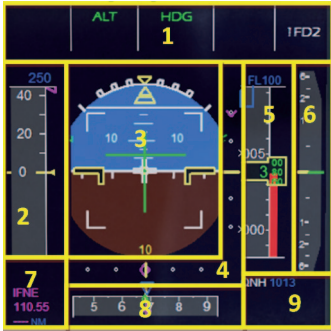
PFD

1= FMA – Flight Mode Annunciator
2 = Speed Indicator
3 = Attitude Indicator – Artificial Horizon - Flight Director Indicator
4 = Lateral and Vertical ILS Glide Path
5 =Radar Altitude Indicator
6 = Vertical Speed Indicator
7 = ILS Identification
8 =Heading and Track Indicator
9 = Air Pressure

1.1.2. ND-Navigation Display

ND

1= Speed (Ground Speed / True Air Speed) and wind (direction / speed)
2 = Next waypoint, degree, distance, time of arrival
3 = Lateral flight path

1.1.3. EFIS

EFIS

1 = Air Pressure Display
2 = AP (Hg or hPa selector and setting knob)
3= Flight Director / ILS
4 = Flight Plan Information on ND
5 = ND mode setting knob
6 = ND range setting knob
7 = ADF / VOR 1 and 2 switch

1.1.4. FCU – Flight Control Unit

FCU

1 = Speed (display and setting knob)
2 = Heading (display and setting knob)
3 = Altitude (display and setting knob)
4 = Climb / Descent (display and setting knob)
5 = Autopilot 1 and 2
6 = ILS lateral localizer
7 = Auto throttle
8 = Expedite
9 = Approach ILS lateral / vertical localizer

1.1.5. E/WD – Engine- and Warning Display

E/WD

1= Engine Information
2 = FOB = Fuel On Board
3= FLAPS Status
4 = Status Information, Start Menu or Landing Menu

1.2. Overhead-Panel
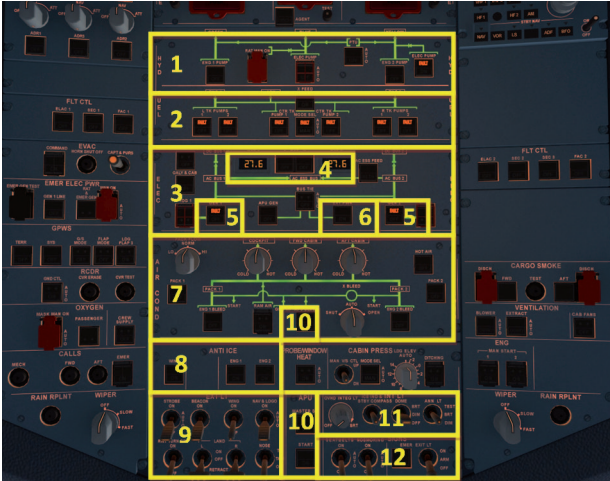
Overhead-Panel (F12)

1 = Hydraulic Panel
2 = Fuel Panel
3 = Electric Panel
4 = Batteries 1 and 2, Battery Voltage
5 = Generators 1 and 2
6 = External Power
7 = Air Condition Panel
8 = Anti-Ice Panel
9 = External Lights
10 = APU Master / APU Start (APU Bleed)
11 = Internal Lights (Cockpit – Test)
12 = Signs (No Smoking, Seat B. and Emergency)

1.3. FMGC - MCDU

1 = Display
2 = LSK 1-6L = Line Select Key 1-6 left
3 = LSK 1-6R = Line Select Key 1-6 right
4 = Scratch pad
5 = Page Keys
6 = Keyboard (numeric)
7 = Keyboard (alphabetic)

MCDU

1.4. ECAM

ECAM (F10)

1 = ECAM (Electronic Centralized Aircraft Monitoring)
2 = Gear
3 = MCDU - Multifunction Control and Display Unit
4 = Dimmer for Upper and Lower ECAM Display
5 = ECAM Panel

1.5. Pedestal

Pedestal (F11)

1 = Radio
2 = Audio
3 = Cockpit Panel Light
4 = Thrust Levers
5 = Engine Mode and Master
6 = Spoiler / Speed Brakes Lever
7 = Parking Brakes
8 = Flaps Lever
9 = Transponder
10 = TCAS - Traffic Alert and Collision Avoidance System

2. General Information / Tips:

2.1. Additional Information

If you're looking for complete, accurate information about this very complex aircraft, its systems and its features, you'll find additional information in the documentation included in your FSX folder under Aerosoft\Airbus X\Documentation.

2.2. Pictures

The following description of the tutorial flight refers to the pictures and terms explained in the previous section, making it easier to find the relevant knobs, switches and buttons.

2.3. Procedure List and Checklist

Based on the original Airbus A321 IAE procedure list and checklist, a modified procedure list and checklist have been prepared for the Aerosoft A321 IAE. This list is included in this tutorial.

2.4. Switching Features ON and OFF – Changing Values

The left mouse button turns a button, knob or switch ON; the right mouse button turns it OFF. Use the mouse wheel to adjust values.

2.5. Joystick Settings

For the most optimal, realistic Aerosoft A321 IAE flight experience, use a joystick. The FSX settings (Options / Settings / Controls / Calibration) for flying the A321 IAE with a joystick should look like this:
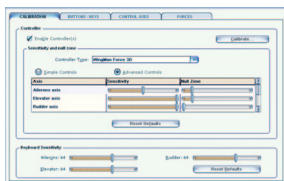
FSX Joystick Configuration

In addition, the following "Buttons / Keys" should be assigned to the joystick, which will make it much easier to perform certain actions during the critical takeoff phase, as you won't need to take your hand off the joystick to use the mouse or keyboard. We recommend assigning the brakes, view, autopilot, flaps, spoilers and gear settings to the joystick. Joystick settings can be changed in FSX under Options / Settings / Controls / Buttons/Keys.

2.6. Units of Measure

The MCDU weight and temperature settings are in kg and degrees Celsius. To compare values, FSX should be configured accordingly. Under Options / Settings / General, change International – unit of measure to Hybrid (feet, milibars) as in the picture below.
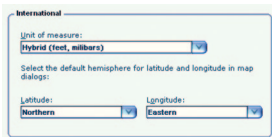
FSX – Unit of measure

2.7. Saving Flight States

You can save any flight state with the Aerosoft Airbus X on the main page on the MCDU using LSK 4R - ACFT STATE. You can save a different state with LSK 6L - SAVE USER STATE and load a previously saved state with LSK 5L - LOAD USER STATE. We recommend saving after Cockpit Preparation, Engine Start, Take Off and Cruise.

2.8. Aerosoft A321 IAE Tutorial Flight

The following flight is from FRANKFURT/Germany (ID: EDDF) (ATIS – frequency = 118.025) to VIENNA/Austria (ID: LOWW) (ATIS-frequency = 121.725).

3. Flight Preparation

3.1. Start FSX

Start FSX with the following flight:

Aircraft:	Cessna C172SP Skyhawk
Weather:	Fair weather
Location:	Frankfurt (EDDF) any gate
Time and Season:	Day – any season

After loading, change your aircraft to the Aerosoft Airbus X A321 IAE. The aircraft may not be "cold & dark" when you load it because Aerosoft saves the last configuration / situation status of the A321 IAE when you "exit" the plane. In this case, please set all knobs, switches and buttons to OFF so that no lights are ON (Batteries 1 + 2 should be set OFF last) – please see Picture 7: Overhead Panel.

3.2. Fuel and Payload Planning

A Load Manager for passengers, cargo and fuel is included in this package. You'll find the relevant icon on your desktop after installation. (In addition to the desktop shortcut, the Load Manager can be accessed via the Start Menu: / Aerosoft/AirbusX/LoadManager.)
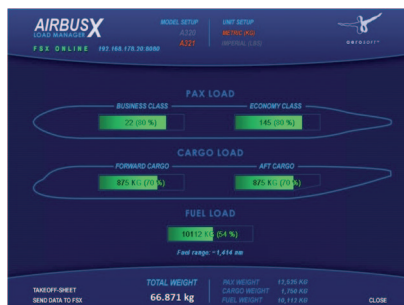
Airbus X Load Manager

- Please set "MODEL SETUP" = A321 and "UNIT SETUP" = METRIC (KG)
- Set the passenger loads to 80%
- Set the cargo loads to 70%
- Set the fuel load to 54% (enough for a flight of approx. 1,400 nm)
- Click on "SEND DATA TO FSX". The values in FSX will be adjusted accordingly

Empty weight	42,484 kg
Payload	14,275 kg
Zero Fuel Weight	**56,759 kg**
Fuel (Block)	10,112 kg
Gross weight	**66,871 kg**

Total weight settings in Load Manager

Total weight settings in FSX

3.3. Flight Plan Planning

The flight from Frankfurt EDDF to Vienna LOWW uses the following flight plan:

EDDF – SULUS UZ650 VEMUT UZ37 BUDEX UZ205 VENEN - LOWW

This is a real flight plan used by commercial airlines. The flight plan terminology is as follows: We fly from Frankfurt to the first waypoint SULUS (using the SID – standard instrument departure airway – SULU3E) and then fly via airway UZ650 to the waypoint VEMUT. From there we fly via airway UZ37 to BUDEX and then via airway UZ205 to VENEN. From VENEN (using the STAR – standard arrival route – VENE1W) we fly to Vienna Runway 16.

The Aerosoft Airbus 321 IAE MCDU uses the same terminology as the FSX Flight Planner, which does not use airways (or SIDs and STARs) – just waypoints. This makes it possible to import FSX flight plans into the Aerosoft Airbus A321 IAE MCDU. If you want to use "real" flight plans (which are available on various websites), you'll need to use a commercial flight planning program to export those flight plans in the FSX format (see chapter 5.3 for details).

We've already created a flight plan (EDDF-LOWW.PLN) for this flight, which you'll find in the folder "My Documents / Flight Simulator X Files". The flight plan looks like this:

NO.	ID	NAME	DIST. (NM)	HEADING	VIA	ALT. (FT)
1	EDDF	FRANKFURT	5	069	SULU3E	375
2	DF149	DF149	5	100	SULU3E	2,148
3	DF151	DF151	35	087	SULU3E	3,706
4	OSBIT	OSBIT	36	088	SULU3E	14,568
5	SULUS	SULUS	20	105	UZ650	25,000
6	TONSU	TONSU	7	110	UZ650	31,000
7	ERETO	ERETO	10	104	UZ650	31,000
8	NOGRA	NOGRA	12	092	UZ650	31,000
9	NIKUS	NIKUS	10	098	UZ650	31,000
10	TIPAM	TIPAM	7	095	UZ650	31,000
11	VEMUT	VEMUT	16	120	UZ37	31,000
12	ETVIS	ETVIS	55	124	UZ37	31,000
13	VADOV	VADOV	18	125	UZ37	31,000
14	BUDEX	BUDEX	24	157	UZ205	31,000
15	VENEN	VENEN	8	086	VENE1W	27,000
16	WW190	WW190	9	093	VENE1W	24,000
17	WW191	WW191	8	093	VENE1W	22,000
18	WW192	WW192	9	086	VENE1W	19,000
19	MASUR	MASUR	8	093	VENE1W	16,643
20	TEMTA	TEMTA	17	093	VENE1W	13,960
21	NERDU	NERDU	29	135	VENE1W	8,740
22	LOWW	SCHWECHAT				600
		Total :	**359 NM**			

Detailed Flight Plan EDDF - LOWW

4. Flight Tutorial

The flight tutorial covers all aspects of the flight from Frankfurt to Vienna, from starting cold and dark in Frankfurt to landing, parking and securing the aircraft in Vienna.

During the tutorial flight we will use the Aerosoft A321 IAE procedure and checklist which is based on the Airbus original. This list is arranged numerically to help identify the action to be performed and in which panel or sub-panel the necessary knobs, switches and buttons can be found. The various panels are explained in chapter 1. If an action requires additional instructions, it will be marked in yellow and you'll find an explanation below the procedure and checklist using the list number as a reference.

If a procedure is absolutely necessary for a flight, the number field will be green – you can use the green procedures as a shortlist for your flight.

To accurately follow this tutorial, you should start off with the cockpit cold and dark. After switching ON batteries 1+2, it should look like Picture 7: Overhead Panel. If not, switch off all the lights on the Overhead Panel – the last ones to be switched off should be "Batteries 1+2". Then start the preliminary cockpit preparation according to the tutorial.

Another option is to load the plane and then go to the MCDU view, MCDU MENU / ACFT STATE and select "LOAD COLD DARK STATE". Then begin the preliminary cockpit preparation.

4.1. Preliminary Cockpit Preparation

PRELIMINARY COCKPIT PREPARATION

No.	TYP	PART (Name)	PART (No.)	ACTION	Remark
1	OVERHEAD	ELEC	3	BAT 1 + 2 (Batteries)	ON (BOTH)	
2	OVERHEAD	ELEC	6	EXT PWR (External Power)	ON	(if available – see MCDU MENU / DOORS)
3.1	MAIN PANEL	MA. WARN	9	PUSH	OFF	
3.2	MAIN PANEL	MA. CAUT	9	PUSH	OFF	
3.3	MAIN PANEL	PFD LIGHT	8	SWITCH	ON	
3.4	MAIN PANEL	ND LIGHT	8	SWITCH	ON	
3.5	ECAM	DIMMER	4	SWITCH UPPER and LOWER	ON	
3.6	MCDU	MENU	ACFT DOORS	DOORS	OPEN	As required – color switches to red
3.7	OVERHEAD	APU	10	MASTER SW	ON	
4	OVERHEAD	APU	10	START	ON	Becomes AVAIL after a short period
5	OVERHEAD	APU	10	BLEED	ON	If START shows AVAIL
6	OVERHEAD	FUEL	2	FUEL PUMPS	PRESS	OFF should disappear
7	PEDESTAL	INT. LIGHT	3	INTEG LT	ON	
8	OVERHEAD	INT. LIGHT	11	ANN LT	TEST	
9	PEDESTAL	P. BRAKE	7	PARKING BRAKE	CHECK IF SET TO ON	
10	PEDESTAL	FLAPS	8	FLAPS LEVER	CHECK POSITION = 0	
11	PEDESTAL	SP. BRAKE	6	SPEED BREAK LEVER	CHECK RET. AND DISARMED	
12	PEDESTAL	SP. BRAKE	6	SPEED BREAK LEVER	PRÜFEN OB NULLSTELLUNG	

7. **Fuel Pumps:** The warning FAULT will remain even after the fuel pumps are turned ON because they are not yet running. FAULT will automatically disappear when the engines are running. All "white" lights should be extinguished

8. **Cockpit Lights:** Depending on the position of the sun, the panels can be quite dark– please switch the cockpit light to BRT.

9. **ANN LT BRT / TEST:** Switch to TEST to test the functionality of all annunciator lights. Switch back to BRT for standard operation. The DIM setting is ignored.

4.2. Cockpit Preparation – Part 1

COCKPIT PREPARATION					
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
13	OVERHEAD	EXT. LIGHTS	9	EXT. LIGHTS (= Nav Lights)	ON	
14	OVERHEAD	SIGNS	11	SIGNS (Seat Belts/ No Smoking/ Emergency)	ON (ALL)	
15	OVERHEAD	AIR COND	7	AIR CON PACK FLOW	NORM	
16	PEDESTAL	AUDIO	2	AUDIO SWITCH	VHF1 and MKR	Press VHF1 and MKR = white ring
17	PEDESTAL	RADIO	1	SWITCH	ON	
18	PEDESTAL	RADIO	1	SET FREQUENCIES	SET	If ATC is used
19	PEDESTAL	RADIO	1	ATC CLEARANCE	OBTAIN	If ATC is used

20. **RADIO – SET FREQUENCIES** – The ATIS frequency for Frankfurt is 118.025, so set the VHF1 frequency in STBY/CRS to 118.025 (using the mouse wheel, you can select from 118. to 136. on the outer knob and from .000 to .975 on the inner knob). The green arrow toggles the previously entered value from STBY to ACTIVE. After a short period you will hear the ATIS information (weather, winds, pressure and runways in use, etc.). After you've got all the necessary information, press the switch again.

4.3. FMGS / MCDU – Data Insertion

No.	TYP	PART (Name)	PART (No.)	ACTION		Remark
		PANEL		ACTION		Remark
20	MCDU	INIT 1		FSX FLIGHT PLANNER	LOAD	EDDF-LOWW.pln
21	MCDU	INIT 1		ALIGN IRS	PRESS	
22	MCDU	INIT 1		FLT NBR (Flight Number)	ENTER	
23	MCDU	INIT 1		CRZ FL (Cruise Flight Level)		From FSX flight plan
24	MCDU	INIT 2		ZFWCG/ZFW	ENTER	Click for computed data
25	MCDU	INIT 2		BLOCK	ENTER	Click for computed data
26	MCDU	F-PLAN		FLIGHTPLAN	ENTER	Speeds and altitudes are now calculated
28	MCDU	PERF-TO		FLAPS / THS	ENTER	
29	MCDU	PERF-TO		FLEX TO TEMP	ENTER	
30	MCDU	PERF-TO		THR RED / ACC	AS REQRD	
31	MCDU	PERF-TO		V1, VR and V2	ENTER	Click for computed data
32	MCDU	PERF-CLIMB		DATA	CHECK	
33	MCDU	PERF-CZR		DATA	CHECK	
34	MCDU	PERF-APPR		DATA	CHECK	
35	MCDU	PER-GO ARD		DATA	CHECK	

COCKPIT PREPARATION – FMGS/MCDU DATA INSERTION

xx. **Open the MCDU:** IF the data or menu page is displayed, use the INIT button to open INIT A (INIT A can only be opened if the plane is on the ground).

20. **FROM/TO:** Open FSX Flight Planner and load the flight EDDF-LOWW or create another flight plan. Select "No" if you are asked if your aircraft should be moved to the departure airport (because you are already at EDDF). The flight plan EDDF-LOWW will be loaded from the FSX Flight Planner into the MCDU automatically.

21. **ALIGN IRS:** Press LSK 3R to start the IRS (Inertial Reference System). This may take some time. If the IRS is aligned the ND changes to the standard view.

22. **FLT NBR:** Use the MCDU keyboard to enter the flight number (in our case, LH321) on the scratch pad and then use LSK 3L to cut and paste it into the field FLT NBR.

xx. **COST INDEX:** The Cost Index determines the speed used for climb, cruise and descent if managed speed is used. Currently, this is not programmed into the MCDU. Use the MCDU keyboard to enter a value of 50 and then use LSK 5L to cut and past the value into the field COST INDEX. Cost Index 50 means "economically" – in order to conserve fuel, we won't fly too fast.

23. **CRZ FL**: The Cruise Flight Level will be loaded into the MCDU from the FSX flight plan automatically. In our case, it is 31,000 feet. The outside temperature for this flight level (-47° Celsius) will be calculated automatically.

xx. **CO RTE – ALT/CO RTE:** Both fields read NONE because this functionality, using alternative routes and alternative destination airports, is not included in the Aerosoft A321 IAE MCDU.

xx. **Next Page – INIT 2:** Use the button with the right arrow to go to the INIT B page (INIT B can only be opened if the engines are not running).

24. **ZFWCG/ZFW:** Press LSK 1R and the value 23.5/57.1 (or any other value based on your configuration) will appear in the field.

25. **BLOCK:** Please press LSK 2R and the value 10.1 (or any other value based on the fuel load) will appear in the field (see chapter 3.2 for details). Takeoff weight (TOW) should be 67.2 and landing weight (LW) should be 59.3.

26. **F-PLAN:** Use the F-PLAN button to go to the F-PLAN page. Look through it using the up and down arrows to verify that speed and altitude have been calculated for all waypoints.

28. **FLAPS/THS - PERF page:** Go to the PERF (performance) page by pressing the respective button on the MCDU. Use the MCDU keyboard to type 1 and then cut and paste it into the FLAPS/THS field (flaps and trimmable horizontal stabilizer) using LSK 3R.

29. **FLEX TO:** Type 57 using the MCDU keyboard and copy/paste it into the FLEX TO TEMP field using LSK 4R (please also see paragraph 5.5).

30. **THR RED/ACC:** Leave the thrust reduction altitude proposed by the MCDU (ground level plus 1500 Feet) as it is.

31. **V1, V2 and VR:** Press LSK 1L (V1) and a calculated value (142) will appear in the field. Repeat for V2 (146) using LSK 2L and for VR (149) using LSK 3L (please also see paragraph 5.5).

xx. **Performance Pages:** Check the other PERF pages (CLB, CRZ, DES and APPR) using LSK 6R or LSK 6L. Make sure all parameters are OK. The Cost Index, which determines the climbing, cruising and descending speed, must be checked if managed speed is used.

4.4. Cockpit Preparation – Part 2

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
COCKPIT PREPARATION						
36	EFIS	AP SETTING	2	BARO REF	SET	
37	EFIS	FD /ILS	3	FD (Flight Director)	CHECK ON	
38	EFIS	FD / ILS	3	ILS	OFF	
39	EFIS	ND MOD/RGE	5 & 6	ND mode and range	SET	Mode: ARC / Range 10
40	EFIS	ADF/VOR	7	VOR / ADF select	AS REQUIRED	
41	FCU	ALTITUDE	3	First Altitude	SET TO 12,000 Feet	> than THR RED altitude
42	FCU	FCU	1 to 4	DASH-BALL-DASH-BALL-ALT-BALL-DASH	CHECK	
43	ECAM	ECAM	1	STATUS	CHECK	
44	PEDESTAL	THR LEVER	4	LEVERS	CHECK IDLE	
45	PEDESTAL	ENG	5	ENG MASTER 1 + 2	CHECK OFF	
46	PEDESTAL	ENG	5	ENG MODE SEL	CHECK NORM	
47	PEDESTAL	RADIO	1	ATC - FREQUNCY	SET	If ATC is used
48	PEDESTAL	RADIO	1	ATC CLEARANCE	OBTAIN	If ATC is used
49	GLARESHIELD	ND-DISPL.	2	IRS ALIGN	CHECK	

36. **BARO REF:** As we are flying with "fair weather" there will be no surface winds in Frankfurt and runways 7L and 7R will be in use. The current air pressure is 1013 hPa and the temperature is 5° Celsius. As this is the standard value, you don't need to adjust anything.

37. **Flight Director:** The flight director button should be green (meaning it's ON). In this case, the FMA on the PFD should read CLB and RWY TRK (both values in blue). If not, switch the F/D off and on again, which also assures that all data from the previous flight will be deleted.

39. **ND Modus und Reichweitenanzeige:** Set ND mode during takeoff to ARC and range to 10.

41. **First Altitude:** Set the 1st altitude on the FCU (Flight Control Unit) – Altitude to 12,000 ft. This value must be greater than the Thrust Acceleration Altitude (in our example, 1864 ft.). If this is the case, a ball will appear to the right of the specified altitude, indicating that the aircraft will fly in "managed mode" until this altitude is reached.

4.5. Before Pushback and Start

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
50	MCDU	F-PLAN		F-PLAN PAGE	SET	
51	OVERHEAD	ELEC	6	EXT PWR (External Power)	OFF	(if available – see MCDU MENU/DOORS)
52	MCDU	MENU	ACFT DOORS	DOORS	CLOSE	Color switches to green
53	PEDESTAL	THR LEVER	4	LEVERS	CHECK IDLE	
54	PEDESTAL	RADIO	1	PUSHBACK / START CLEAR	OBTAIN	If ATC is used
55	PEDESTAL	P. BRAKE	7	PARKING BRAKE	OFF	FSX: . (period)
56	OVERHEAD	EXT. LIGHTS	9	BEACON	ON	

BEFORE PUSHBACK OR START

55. **Pushback:** Engines can be started during or after pushback. To start pushback, use SHIFT+P (to stop push back, use SHIFT+P again). If a 90° turn is required, use 1 (tail goes to the left) or 2 (tail goes to the right) as well.

4.6. Engine Start

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
57	PEDESTAL	ENGINE	5	ENG MODE SEL	IGN START	
58	PEDESTAL	ENGINE	5	MASTER SW 2	ON	
59	MAIN PANEL	E/WD	5a	No. 2 RUNNING UP	CHECK	
60	PEDESTAL	ENGINE	5	MASTER SW 1	ON	
61	MAIN PANEL	E/WD	5a	No. 1 RUNNING UP	CHECK	
62	PEDESTAL	P. BRAKE	7	PARKING BRAKE	ON	FSX: SHIFT+.(period)

ENGINE START – During Pushback

xx. **Engine Start:** After setting the Engine Mode Selector to IGN START, you can verify on the EWD that the FADEC (Full Authority Digital Engine Control) is on because the amber information will be replaced with active displays.

4.7. After Engine Start

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
AFTER ENGINE START						
63	PEDESTAL	ENGINE	5	ENG MODE SEL	NORM	
64	ECAM	ECAM	1	ECAM STATUS	CHECK	
65	ECAM	ECAM	1	ECAM DOOR PAGE	CHECK	
66	OVERHEAD	ANTI-ICE	8	ENG ANTI ICE (1 &2)	ON	
67	OVERHEAD	ANTI-ICE	8	WING ANTI ICE	ON	
68	OVERHEAD	APU	10	APU MASTER SW	OFF	

4.8. TAXI

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
TAXI						
69	OVERHEAD	EXT. LIGHTS	9	NOSE LIGHT	TAXI	
70	PEDESTAL	RADIO	1	TAXI CLEARENCE	OBTAINED	If ATC is used
71	PEDESTAL	P. BRAKE	7	PARKING BRAKE	OFF	FSX: . (period)
72	MAIN PANEL	AUTO BRAKE	6	SET TO	MAX	
73	PEDESTAL	THR LEVER	4	LEVERS	AS REQUIRED	
74	PEDESTAL	SPEED-BR.	6	GRD SPOILERS	ARM	FSX: SHIFT+/
75	FCU	HDG / ALT	2 & 3	FCU HDG/ ALT=DASH- BALL-DASH-BALL	CHECK	As we will use the Autopilot
76	EFIS	FD / ILS	3	FD	CHECK ON	
77	PEDESTAL	TRANSPONDER	9	ATC CODE	CONFIRM / SET	If ATC is used

72. **AUTO BRAKE:** To set Auto Brake to MAX, the Parking Brakes must be released (no. 71). If for any reason the Parking Brake is used again before takeoff, the Auto Brake will be switched off automatically. In that case, it must be set to MAX again before takeoff.

73. **TAXI:** Set Thrust Levers to the manual range. Approx. 40% N1 (EWD) should be sufficient to move the aircraft. Taxi at 20 knots and reduce speed to 10 knots during turns. Once the aircraft is moving, 30% N1 (EWD) thrust should be enough to get it to the holding point of runway 07L.

74. **GRD SPOILERS:** To arm the spoilers without extending them, please move the throttles slightly out of idle. (FSX uses Boeing-style spoilers, which extend when armed and the throttles are in the idle position.)

4.9. Before Takeoff

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
78	PEDESTAL	RADIO	1	TAKEOFF / LINE UP CLEAR	OBTAIN	If ATC is used
79	MAIN PANEL	N/SKID NW	10	A/SKID & NW STRG	ON	
80	PEDESTAL	TCAS	10	TCAS	TA ONLY	
81	PEDESTAL	FLAPS	8	FLAPS	SET to 1	FSX: F7
82	MAIN PANEL	E/WD	5a	TO MEMO	CHECK NO BLUE	
83	ECAM	PANEL	5	TO CONFIG	PRESS	
84	PEDESTAL	RADIO	1	ATC (if no AUTO position)	ON	If ATC is used
85	OVERHEAD	AIR COND	7	PACKS 1 + 2	OFF	
86	OVERHEAD	EXT. LIGHTS	9	EXT. LIGHTS (Strobes, Land. and Nose Lights)	SET	

Before Takeoff

79. **Approach Path Clear:** Look left and right and verify that the runway is clear. Then proceed to runway 07L for takeoff.

80. **TCAS:** Use the outer ring of the knob to set the mode to TA ONLY.

4.10. Takeoff (Part 1)

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
87	PEDESTAL	THR LEVER	4	SET LEVERS TO	FLEX	
88	GLARESHIELD	CHRONO	7	CHRONO	START	Push upper-right button

TAKEOFF

87. **Takeoff:** If cleared for takeoff, push the thrust levers to 60-70% N1 (EWD) and monitor the EWD to make sure that thrust is available. If everything is OK, you can push the thrust levers to the FLEX detent (you will hear two clicks) and it will be confirmed on the FMA. You can also use the TOGA detent (if the runway is short or wet). But for this flight we've decided to save some fuel and use FLEX thrust takeoff instead.
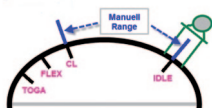
Thrust Lever Positions

The IRS are now automatically aligned with the GPS position and the aircraft should be displayed on the ND at the beginning of runway 07L.

4.11. Takeoff Abort

TAKEOFF ABORT					
PANEL			ACTION		REMARK
TYP	PART (Name)	PART (No.)			
PEDESTAL	THR LEVER	6	THRUST LEVERS	IDLE	FSX: F1
PEDESTAL	THR LEVER	6	REV	MAX	FSX: F2 (hold some time)
PEDESTAL	THR LEVER	6	REV	OFF	At 70 knots = FSX: 1
MAIN PANEL	BRAKES	6	AUTOBRAKES	OFF	At 35 knots
PEDESTAL	FLAPS	10	FLAPS	UP	<12 knots
PEDESTAL	SPEED-BR.	8	GRD SPOILERS	DISARM	<12 knots
OVERHEAD	EXT. LIGHTS	9	STROBES	OFF	<12 knots
OVERHEAD	EXT. LIGHTS	9	LANDING LIGHTS	OFF	<12 knots
PEDESTAL	TCAS	10	TCAS	STANDBY	<12 knots
PEDESTAL	FLAPS	10	FLAPS	TO POSITION	
PEDESTAL	SPEED-BR.	8	GRD SPOILERS	ARM	
Please follow the procedure again starting from no. 82					

If it is necessary to abort takeoff, just draw the thrust levers back to IDLE and set the reversers to MAX.

4.12. Takeoff (Part 2)

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
				At VR		
89				ROTATE		
				When V/S POSITIVE		
90	MAIN PANEL	GEAR	7	LANDING GEAR	"UP"	FSX: G
91	PEDESTAL	SPEED-BR.	6	GROUND SPOILERS	DISARM	FSX: /
92	OVERHEAD	EXT. LIGHTS	9	NOSE LIGHT	OFF	
93	FCU	AP	5	AUTOPILOT	ON	
				At thrust reduction altitude:		
94	OVERHEAD	AIR COND	7	ONE PACK	ON	
95	PEDESTAL	THR LEVER	4	SET LEVERS TO	CL	Blinking announcement in FMA
				At F speed:		
96	PEDESTAL	FLAPS	8	FLAPS 1	SELECT	If applicable
				At S speed:		
97	PEDESTAL	FLAPS	8	FLAPS 0	SELECT	FSX: F6
98	OVERHEAD	AIR COND	7	2ND PACK	ON	

89. **Rotate:**

a. During the takeoff roll, the stick should be pressed halfway forward until the speed reaches 80 knots. The stick position can be monitored on the PFD (see picture 16).

b. As soon as the takeoff thrust is applied and if the runway has an ILS, the yaw bar appears on the PFD to help guide the aircraft along the runway centerline (see picture 16).

c. When the speed exceeds 80 knots, the stick can be released to return to a neutral position.

d. When VR is reached (indicated by a blue circle on the PFD speed tape), pull the stick for the rotation. If the FD is not perfectly stable at this time, adopt a 15° pitch angle.

Joystick-Position
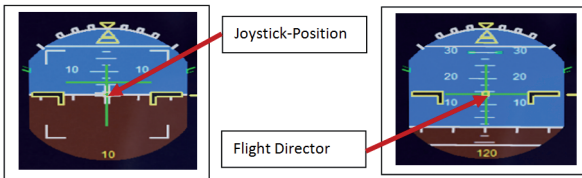
Flight Director

On the runway   During takeoff

- Shortly after takeoff the joystick position indicator and the runway yaw bar on the Attitude Indicator will disappear and the Flight Director Indicator will appear.

90. **Landing Gear – Autobrake:** The autobrake will automatically turn off 10 seconds after the Landing Gear is retracted.

xxx. **Thrust Reduction Altitude:** When the THR RED altitude is reached (1,864 ft. in our example), a flashing LVR CLB message will appear on the FMA (1st column). Move the thrust levers back to the CL detent. As the thrust reduces when the levers are moved back to the CL detent, you should anticipate the pitch reduction caused by this thrust reduction

xxx. **Acceleration Altitude:** At this altitude the CLB mode on the FMA (2nd column) activates. The aircraft will now accelerate to the target speed of 250 knots (below 10,000 ft.).

xxx. **A.FLOOR:** The Alpha Floor mode (Display = A.FLOOR in PFD / FMA section) will switch on automatically if your pitch is too high. Full thrust will be set automatically, regardless of the position of the thrust levers. As soon as the pitch is back to normal, the thrust levers will set back to TOGA LK (displayed on the FMA) automatically. This is a "locked" or fixed mode and can only be switched off via the following procedure

e. Set the thrust levers to the TOGA position
f. Switch off auto thrust using the FCU button
g. Now bring the thrust lever back to the CL position
h. Activate auto thrust again using the FCU button
i. If already activated, the Autopilot must be switched ON again

4.13. Takeoff (Part 3)

CLIMB						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
99	FCU	ALT	3	VALUES / DATA	SET IF AP ON	ALT = 31,000 FEET
100	MCDU	Var.PAGES		VALUES / DATA	SET IF AP ON	
101	At transition altitude:					AT 18,000 FEET
102	EFIS	A PRESSURE	2	BARO REF	SET / X CHECK	
103	At 10,000 feet:					
104	OVERHEAD	EXT. LIGHTS	9	LANDING and NOSE LIGHTS	OFF	
105	EFIS	INFOR.	4	EFIS OPTION	ARPT	
106	PEDESTAL	RADIO	1	RADIO NAV	CHECK	
107	OVERHEAD	SIGNS	11	SEAT BELTS	OFF	
108	PEDESTAL	ECAM	1	ECAM MENU	REVIEW	
109	MCDU	PROG		OPT / MAX ALTITUDE	CHECK	

99. **CLIMB / Altitude:** Before reaching the first set altitude (12,000 ft.) (see no. 41), please enter the selected cruise altitude from the MCDU (31,000 ft.) into the FCU and press the ALT button. This toggles to managed mode.

101. **Transition Altitude:** When setting up the MCDU we did not change the proposed transition altitude (18,000 ft.). When this altitude is reached, the system must be set to "STD = Standard". Press the "BARO" button at 18,000 ft.

103. **At 10,000 feet:** As soon as an altitude of 10,000 ft. is reached the 250 knots speed restriction is no longer valid. The aircraft thus accelerates to Mach .78 (FMGC or MCDU), as calculated based on the COST INDEX used for this flight.

4.14. Cruise

No.	PANEL			ACTION		Remark
Cruise						
	TYP	PART (Name)	PART (No.)			
110	PEDESTAL	ECAM	1	ECAM MEMO / SYS PAGES	REVIEW	
111	MCDU	Var.PAGES		FLIGHT PROGRESS	CHECK	
112	MCDU	FUEL PRED		FUEL	MONITOR	
113	MCDU	PROG		NAV ACCURANCY	CHECK	
114	OVERHEAD	AIR COND	7	CABIN TEMP	MONITOR	

111. **Cruise Altitude:** As soon as the cruise altitude of 31,000 ft. has been reached (near the waypoint NOGRA and indicated on the ND by a white arrow), the FMA data on the PFD should change to SPEED, ALT CRZ and NAV.

4.15. Descent Preparation

No.	PANEL			ACTION		Remark
Descent Preparation						
	TYP	PART (Name)	PART (No.)			
115	MCDU	Var.PAGES		FMGS	PREPARE	
116	MCDU	PERF APPR		LDG CONF	AS REQUIRED	Enter 3
117	PEDESTAL	RADIO	1	DESCENT CLEARANCE	OBTAIN	If ATC is used
118	OVERHEAD	ANTI-ICE	8	ANTI ICE	AS REQUIRED	Leave it on

4.16. Descent

No.	PANEL			ACTION		Remark
Descent						
	TYP	PART (Name)	PART (No.)			
119	FCU	ALT	3	DESCENT	INITIATE = PUSH	
120	MAIN PANEL	PFD	1	FMA	CHECK	
121	MCDU	Var.PAGES		DESCENT DATA	INSERT	
122	MAIN PANEL	PFD	1	DESCENT	MONITOR	

123	PEDESTAL	SP BRAKES	6	SET	AS REQUIRED	
When cleared to altitude:						
124	EFIS	A.PRESSURE	2	BARO REF	SET / X CHECK	
125	ECAM	ECAM	1	ECAM STATUS	CHECK	
At 10,000 feet:						
126	OVERHEAD	EXT. LIGHTS	9	LAND LIGHTS	ON	
127	OVERHEAD	SIGNS	11	SEATBELTS	ON	
128	EFIS	INFORM.	4	SET OPTION	CSTR	
129	EFIS	FD / ILS	3	ILS	PUSH	
130	PEDESTAL	RADIO	1	RADIO / NAV	SELECT / IDENT	
131	MCDU	PROG		NAV ACCURANCY	CHECK	

119. **Initiate Descent:** Before the T/D (Top of Descent) point (between BUDEX and VENEN) is reached, the altitude should be set to 3,000 ft. This altitude should be set in such a way that the vertical glide path is caught from below. At the T/D (Top of Descent) point turn the ALT knob and set the descent V/S to -2,000.

Top of Descent – Initiate descent

124. **Transition Altitude:** When setting up the MCDU we did not change the proposed transition altitude (18,000 ft.). Once 18,000 ft. has been reached, the system has to be set to the actual pressure. Please press the "BARO" button when the altitude is 18,000 ft.

xxx. **At 10,000 feet:** As soon as an altitude of 10,000 feet is reached (near TEMTA), the 250 knots speed restriction becomes valid again. The aircraft automatically reduces the target speed to 250 knots. During descent it may be difficult to maintain 250 knots – in this case, use the speed brakes to decelerate to 250 knots.
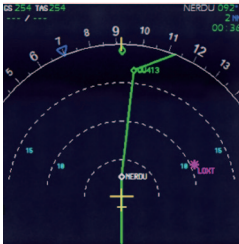
ND: Deceleration Point

xxx. **Deceleration Point:** Near NERDU the set altitude 3,000 ft. will be reached. The approach phase will begin soon. Before WW413 the target speed should be changed to the Vapp speed in our example (136 knots) as calculated by the FMGC – MCDU (PERF APP). Use the speed knob and set the target speed to 136 knots.
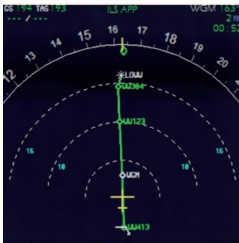
Final Approach Phase for LOWW

129. **ILS:** Once you reach WW413, set the ILS frequency for LOWW RW16 (OEZ = 108.5) by typing it into the MCDU – RAD NAV scratchpad = OEZ and pressing LSK 1L. Then go back to the EFIS Panel and push the respective LS button on the EFIS panel and the lateral and vertical ILS glide paths as well as the ILS identification will become available on the PFD (see also picture 23). Then push the LOC button to catch the lateral glide path.

4.17. ILS Approach

No.	PANEL TYP	PART (Name)	PART (No.)	ACTION		Remark
ILS Approach						
Initial approach:						
132	OVERHEAD	SIGNS	11	SEATBELTS	CHECK ON	
133	PEDESTAL	ENGINE	5	ENG MODE	CHECK NORM	
Approx. 15 NM from touchdown:						
134	MCDU	PROG		NAV ACCURACY	MONITOR	
135	MCDU	PERF		APPR PHASE	CHECK	
136	MAIN PANEL	PFD	1	POSITIONING	MONITOR	
When cleared for ILS approach:						
137	FCU	APPR	9	APPR	PRESS	
138	FCU	AP	5	BOTH AP	ENGAGE	
At green dot:						
139	PEDESTAL	FLAPS	8	FLAPS 1	SELECT	FSX: F7
AT S SPEED						
140	PEDESTAL	TCAS	10	TCAS	CHECK TA ONLY	
141	MAIN PANEL	PFD	1	FMA	CHECK	
142	MAIN PANEL	PFD	1	LOC CAPTURE	MONITOR	
143	MAIN PANEL	PFD	1	G/S CAPTURE	MONITOR	
144	FCU	ALT	3	GO-AROUND ALT	SET TO 5,000 FEET	Just enter - do not push knob
At 2,000 feet AGL:						
145	PEDESTAL	FLAPS	8	FLAPS 2	SELECT	FSX: F7
AT F SPEED						
When Flaps 2:						
146	MAIN PANEL	GEAR	7	L/G DOWN	SELECT	FSX: G
147	PEDESTAL	SP. BRAKEs	6	GROUND SPOILERS	ARM	FSX: SHIFT+/
148	MAIN PANEL	AUTO BRAKE	6	SET TO	MEDIUM	
When L/G down, below VFE						
149	PEDESTAL	FLAPS	8	FLAPS 3	SELECT	FSX: F7
150	ECAM	ECAM	1	ECAM WHEEL PAGE	CHECK	
When FLAPS 3 , below VFE:						
151	PEDESTAL	FLAPS	8	FLAPS FULL	SELECT	FSX: F7

AT VAPP					
152	FCU	ATHR	7	A/THR	CHECK SPD	
153	OVERHEAD	ANTI-ICE	8	WING ANTI ICE (if not required)	CHECK ON	
154	OVERHEAD	EXT. LIGHTS	9	EXTERIOR LIGHTS	CHECK	
155	MAIN PANEL	EWD	5	LANDING MEMO	CHECK NO BLUE	

137. **Approach:** As soon as the final approach phase has been activated (no. 135 – see also picture 23) the ND display shows ILS APP on top – verify that the lateral glide path has been caught. Then press the APPR button on the FCU. After catching the lateral glide path, the aircraft will now also follow the vertical glide path regardless of other FCU or MCDU settings.

138. **Autopilot:** Press the 2nd Autopilot button. This means we are making a Category 3 approach (no pilot interaction until after touchdown) and the aircraft will land fully automatically with both autopilots in use.

xxx. **Flaps / Landing Gear:** During the approach the flaps will slowly extend step-by-step from 1 to FULL based on the speed of the aircraft. When the flaps are at 2 (F-speed of 154 knots), the landing gear should also be extended. When flaps are extended to FULL the aircraft should have reached its final approach speed (Vapp) of 136 knots.

142. **LOC Capture:** The lateral glide path will be caught first (LOC* or LOC displayed on the PFD -FMA), followed by the vertical glide path (additionally G/S* or G/S displayed on the PFD -FMA).

143. **G/S Capture:** After the vertical glide path has been caught, the display on the PFD-FMA will look like this (picture 24 below):
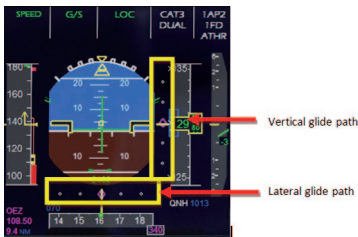
PFD - Vertical and lateral glide path

The middle of both fields shows the vertical and lateral position of the glide path while the purple diamond shows the actual position of the aircraft. This means that during the approach both diamonds move towards the center. The picture above shows the aircraft in the ideal position for landing. Select the LS view using the appropriate knob on the EFIC control panel. This view also shows the glide path and the relative position of the aircraft.
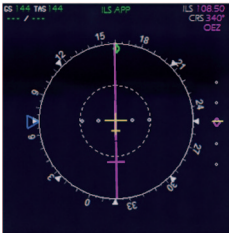
ND – ILS view LOWW Rwy16

144. **Go-Around Altitude:** Set the altitude in the FCU to the first altitude to be reached after a "go-around". Just change the altitude and do not press or draw the knob at this point.

148. **Auto Brake:** Set to MED (medium).

152. **Auto Throttle:** Leave the A/THR on...

153. **Wing Anti-Ice:** Leave the Wing Anti-Ice on...

154. **Exterior Lights:** Check if all Exterior Lights are on: Strobe, Beacon, Nav & Logo as well as Landing Lights.

155. **Landing Memo:** In the meantime, the Landing Memo should have appeared on the EWD. Please verify that there are no "blue" entries. If there are still "blue" entries (you might have forgotten to adjust certain settings), adjust those settings now.

There are also various other approach procedures used depending on airline and weather conditions (ILS- and non-ILS-approaches). For example, another ILS-approach procedure uses LOC to catch the lateral glide path first and then uses APPR to catch the vertical glide path.

4.18. Landing

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
At 20 feet:						
156				FLARE	PERFORM	
157	MAIN PANEL	PDF	1	ALTITUDE	MONITOR	
158	PEDESTAL	THR LEVER	4	THRUST LEVERS	IDLE	FSX: F1
159	*At touchdown:*					
160	FCU	AP	5	AP (if applicable)	OFF	FSX: Z
161	PEDESTAL	THR LEVER	4	REV	MAX	FSX: F2
162				BRAKES	AS REQUIRED	
163	*At 70 knots:*					
164	PEDESTAL	THR LEVER	4	REV	IDLE	FSX: F1
165	*At taxi speed:*					
166	PEDESTAL	THR LEVER	4	REV	STOW	
167	*Before 20 knots:*					
168	MAIN PANEL	AUTO BRAKE	6	AUTOBRK	DISENGAGE	

156. **LAND and FLARE mode:** As the aircraft gets closer to the ground, LAND mode engages, followed by FLARE mode. The current mode is shown on the FMA.

158. **Thrust Levers: IDLE:** At the altitude of 20 feet you will hear an aural warning: "Retard, Retard". Pull the thrust levers back to IDLE and let the aircraft gently touch the ground.

161. **Trust Levers: REV:** Activate the thrust reversers (F2 on the keyboard) after touchdown.

162. **BRAKES:** The autobrake makes the aircraft decelerate on the ground. You can also take control at any time by using the brakes. Manual braking automatically disconnects the autobrake system.

4.19. Go-Around

Go-Around					
PANEL			ACTION		REMARK
TYP	PART (Name)	PART (No.)			
			ROTATION	PERFORM	
PEDESTAL	FLAPS	8	FLAPS	RETRACT ONE STEP	FSX: F6
MAIN PANEL	GEAR	7	L/G	UP	FSX: G
FCU	HEAD	2	HDG	SELECT	
PEDESTAL	THR LEVER	4	THRUST LEVERS	CL	
PEDESTAL	THR LEVER	4	THRUST LEVERS	CL	
At GA ACCEL Altitude:					
PEDESTAL	FLAPS	8	FLAPS	RETRACT ON SCHEDULE	FSX: F6
MAIN PANEL	PFD	1	SPEED	MONITOR	
Please follow procedure again from # 142					

xxx. **Thrust Levers: TOGA:** If there is an emergency situation and you need to perform a "go-around" (the runway is blocked by another aircraft or there is a problem with the aircraft itself), just set the thrust levers to TOGA and fly using the procedure and checklist that we've using so far.

4.20. After Landing

After Landing						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
169	OVERHEAD	EXT. LIGHTS	9	LANDING LIGHTS	RETRACT	
170	PEDESTAL	SP.BRAKES	6	GRND SPLRS	DISARM	FSX: /
171	PEDESTAL	FLAPS	8	FLAPS	RETRACT	FSX: F6
172	OVERHEAD	EXT. LIGHTS	9	EXT. LIGHTS (Strobes)	AS REQUIRED	
173	PEDESTAL	ENGINE	5	ENG MODE SEL	NORM	
174	PEDESTAL	RADIO	1	ATC (if no AUTO position)	STBY / OFF	
175	PEDESTAL	TCAS	10	TCAS MODE SEL	STBY	
176	OVERHEAD	ANTI-ICE	8	ANTI ICE (WING and ENGINES 1&2)	OFF	
177	OVERHEAD	APU	10	APU	START	

172. **Exterior Lights:** Set "NOSE" light to "Taxi".

xxx. **FMGC / FMA reset:** One minute after the aircraft has touched the ground the settings are cleared to prepare for the next flight.

4.21. Parking

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
178	GLARESHIELD	CHRONO	7	CHRONO	STOPP	Push upper right button
179	PEDESTAL	P.BRAKE	7	PARKING BREAK	ON	FSX: CRTL + . (period)
180	OVERHEAD	APU	10	APU BLEED	ON	
181	PEDESTAL	ENGINE	5	ENG MASTER 1 & 2	OFF	
182	OVERHEAD	FUEL	2	FUEL PUMPS	OFF	OFF should appear
183	PEDESTAL	RADIO	1	GROUND CONTACT	ESTABLISH	If ATC is used
185	OVERHEAD	EXT. LIGHTS	9	BEACON LIGHT	OFF	
186	OVERHEAD	SIGNS	11	SEAT BELTS	OFF	
187	MCDU	MENU	ACFT DOORS	DOORS	OPEN (AS REQUIRED)	

Table title: PARKING

4.22. Securing Aircraft

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
188	PEDESTAL	P.BRAKE	7	PARKING BREAK	CHECK ON	
189	OVERHEAD	ADIRS		ADIRS (1 + 2 + 3)	OFF	Not animated
190	OVERHEAD	EXT. LIGHTS	9	EXTERIOR LIGHTS	OFF	
191	OVERHEAD	APU	10	APU BLEED	OFF	
192	OVERHEAD	APU	10	APU MASTER SW	OFF	
193	OVERHEAD	SIGNS	11	NO SMOKING & EMERGENCY LIGHT	OFF	
194	MCDU	MENU	ACFT DOORS	DOORS	CLOSE (AS REQUIRED)	

Table title: Securing Aircraft

195	OVERHEAD	EXT. PWR	6	EXT PWR	AS REQUIRED	
196	OVERHEAD	ELEC	5	GEN 1 + 2 (Electric Generators)	PRESS	OFF should appear
197	PEDESTAL	INT. LIGHT	3	INTEG LT	OFF	
198	MAIN PANEL	PFD LIGHT	8	SWITCH	OFF	
199	MAIN PANEL	ND LIGHT	8	SWITCH	OFF	
200	ECAM	DIMMER	4	SWITCH UPPER and LOWER	OFF	
201	OVERHEAD	BATTERIES	4	BAT 1 + 2	OFF	

190. **Exterior Lights:** Switch off all exterior lights.

xxx. **Cockpit „Dark & Cold":** The cockpit status should now be cold and dark. All systems and switches should be OFF. Before switching the batteries OFF, the panel should look like Picture 26: Overhead Panel before switching OFF both batteries.

Overhead Panel before switching OFF both batteries

5. Tips and Tricks

5.1. Adjusting views

If you want to adjust one of the various available views, open it. This makes it the active window and the following key combinations can be used:

- CRTL + Return   - Left
- CRTL + Backspace   - Right
- CRTL + SHIFT + Return   - Forwards
- CRTL + SHIFT + Backspace   - Backwards
- SHIFT + Return   - Higher
- SHIFT + Backspace   - Lower
- SPACE BAR + Mouse wheel   - Zoom in or out
- SPACE BAR + Mouse   - Change the view angle

5.2. Keeping / Saving Adjusted Views

If you've adjusted a view or views (using the key combinations above), they will remain active for the duration of the flight. If you want to keep those adjustments for future flights, save the current flight. The next time you load the saved flight the previous adjustments will still be in effect.

5.3. Working with Real Flight Plans

There are several websites where you'll find real flight plans (like the one we used in this tutorial). Two sites that we recommend are:

http://www.vatflight plan.net/web_showfphp?dep=EDDF&dest=LOWW &start=1 and **http://rfinder.asalink.net/free/**

You'll find many flight plans there, but you'll need to know the airport codes (like EDDF for Frankfurt or LOWW for Vienna). You'll find those codes in Microsoft FS Flight Planner. Using a commercial flight planning tool, you can export plans to FS Flight Planner and use them for the Aerosoft A321 IAE.

5.4. Working with FS Flight Planner / Saving Flight Plans

You can load current or saved flight plans from Microsoft FS Flight Planner into the MCDU. If you create a new flight plan or load a saved flight plan in FS Flight Planner, it will be imported into the MCDU automatically.

5.5. Takeoff Performance Calculation (FLEX TO, V1, VR and V2)

FLEX TO, V1, VR and V2 depend on various facts like runway length and condition, airport elevation, wind, temperature, air pressure, takeoff weight, flap and anti-ice settings. The speeds calculated automatically by the MCDU use average data. If you want to fly with more accurate data, please use a freeware "Takeoff Performance Calculator".

5.6. "Catching" the ILS Glide Path

Sometimes the flight plan created with FS Flight Planner reaches the last waypoint before the runway in a way that creates an angle that is too large (as shown in the picture below). The ideal angle should not be greater than 45°. If the angle is too large, you should fly a manually set course to correctly catch the glide path.

In the following example – Picture 24: Angle "catching" a glide path – (before we reach WPT), turn the FCU knob with the blue triangle (by using the right mouse button) and set a course of approx. 50°. Start to execute a turn. Before reaching the lateral glide path (your course is approx. 110° whereas the runway course is 160°), press LOC to catch the lateral glide path. After catching the lateral glide path, press APPR (to catch the vertical glide path) and prepare for a smooth landing.

Angle "catching" a glide path

5.7. Use of the Procedure and Checklist

After using this tutorial and flying the Aerosoft Airbus A321 IAE several times, you won't need the preceding explanations anymore. You can simply use the procedure and checklist by itself and fly the Airbus like a pilot, almost as though it were the real thing. You'll find the procedure and checklist in Appendix 7.

6. Appendix / Glossary

Abkürzung	Beschreibung (Englisch)
ABV	Above (TCAS)
ADF	Automatic Directon Finder
A/C	Aircraft
AGL	Above Ground Level
A.FLOOR	Alpha Floor
AMP	Audio Management Panel
ANN	Annunciator
A/THR	Autothrust
AC	Air Conditioning
ADIRU	Air Data Inertial Reference Unit
AIRAC	Aeronautical Information Circular
ALT	Altitude
AP	Autopilot
APPR	Approach (Key on FCU)
APU	Auxiliary Power Unit
ATC	Air Traffic Control
BLOCK	Fuel Weight (kg)
BLW	Below (TCAS)
BRG	Bearing
CFM	Engine Manufacturer GE + SNECMA
CL or CLB	Climb
CLR	CLEAR (Key on MCDU Keyboard)
CO RTE	Company Route
CRZ FL	Cruise Flight Level
DES	Descent
DH	Decision Height
DIR	Direct
DME	Distance Measuring Equipment
ECAM	Electronic Centralized Aircraft Monitoring
EFIS	Electronic Flight Instrument System
EFOB	Estimated Fuel on Board
ELAC	Elevator and Aileron Computer
ENG	Engine

ETD	Estimated Time of Departure
E/WD	Engine/Warning Display
EXPED	Expedite (FCU Key)
EXT PWR	External Power
EXT LT	External Lights
FAC	Flight Augmentation Computer
FADEC	Full Authority Digital Engine Control
FCU	Flight Control Unit
FD	Flight Director
FF	Fuel Flow
FL	Flight Level
FLEX	Flexible
FLX/MCT	Flexible/Maximum Continuous Thrust
FMA	Flight Mode Annunciator
FMGC	Flight Management and Guidance Computer
FO	First Officer
FOB	Fuel ON Board
FPA	Flight Path Angle
F-PLAN	Flight Plan (MCDU Page)
FQ	Fuel Quantity
GPU	Ground Power Unit
GPWS	Ground Proximity Warning System
GS	Glide Slope
GW	Gross Weight
HDG	Heading
hPa	Air Pressure Unit of Measurement (hector Pascal)
IAE	Int. Aero Engines = Engine Manufacturer RR, P&E, MTU + JAEC
ILS	Instrument Landing System
In Hg	Air Pressure Unit of Measurement (mm Mercury)
INIT	Initiation (MCDU Page)
KG	Kilogram
IRS	Inertial Reference System
L/G	Landing Gear
LK	Lock
LOC	ILS Localizer
LSK	Line Select Key
MCDU	Multifunction Control and Display Unit

MDA	Minimum Descent Altitude
MKR	Marker
N/W	Nose Wheel
ND	Navigation Display
NDB (ADF)	Nondirectional Beacon (Automatic Direction Finder)
NM	Nautical Miles
PERF	Performance (MCDU Page)
PFD	Primary Flight Display
PPU	Power Push Unit
PROG	Progress (MCDU Page)
QNH	Barometric Pressure Reported By A Station
PSI	Pounds Per Square Inch
PTU	Power Transfer Unit
RAD/NV	Radio/Navigation (MCDU Page)
RMP	Radio Management Panel
RTO	Rejected Takeoff
RWY	Runway
SD	System Display
SEC	Spoiler and Elevator Computer
SID	Standard Instrument Departure
SRS	System Reference System
STAR	Standard Terminal Arrival Route
STDBY	Standby (TCAS)
SW	Switch
TA	Traffic Advisory (TCAS)
TA/RA	Traffic Advisory & Resolution Advisory
TAS	True Airspeed
T/C	Top of Climb
TCAS	Traffic Alert and Collision Avoidance System
T/D	Top of Descent
TERR	Terrain Proximity Alert (GPWS)
THR	Thrust
THR RED	Thrust Reduction
THRT	TCAS Threat
THS	Trimmable Horizontal Stabilizer
TOGA	Takeoff Go-Around
TOW	Takeoff Weight

TRANS	Transition
TRK	Track
UTC	Universal Coordinated Time
V1	Speed at which takeoff cannot be aborted
V2	Minimum Takeoff Safety Speed
V/S	Vertical Speed
Vfe	Maximum Flap Extended Speed
VHF	Very High Frequency
Vls	Minimum Safe Speed
Vmax	Maximum Operating Speed In Current Condition
Vmo/Mmo	Maximum Operating Limit Speed
VOR	Very High Frequency Omnirange Station
Vr	Rotation Speed
XFR	Transfer
ZFW	Zero Fuel Weight
ZFWCG	Zero Fuel Weight Centre of Gravity

7. Appendix – A321 IAE Procedure- and Checklist

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
PRELIMINARY COCKPIT PREPARATION						
1	OVERHEAD	ELEC	3	BAT 1 + 2 (Batteries)	ON (BOTH)	
2	OVERHEAD	ELEC	6	EXT PWR (External Power)	ON	(if available – see MCDU MENU / DOORS)
3.1	MAIN PANEL	MA. WARN	9	PUSH	OFF	
3.2	MAIN PANEL	MA. CAUT	9	PUSH	OFF	
3.3	MAIN PANEL	PFD LIGHT	8	SWITCH	ON	
3.4	MAIN PANEL	ND LIGHT	8	SWITCH	ON	
3.5	ECAM	DIMMER	4	SWITCH UPPER and LOWER	ON	
3.6	MCDU	MENU	ACFT DOORS	DOORS	OPEN	As required – color switches to red
3.7	OVERHEAD	APU	10	MASTER SW	ON	
4	OVERHEAD	APU	10	START	ON	Becomes AVAIL after a short period
5	OVERHEAD	APU	10	BLEED	ON	If START shows AVAIL
6	OVERHEAD	FUEL	2	FUEL PUMPS	PRESS	OFF should disappear
7	PEDESTAL	INT. LIGHT	3	INTEG LT	ON	
8	OVERHEAD	INT. LIGHT	11	ANN LT	TEST	
9	PEDESTAL	P. BRAKE	7	PARKING BRAKE	CHECK IF SET TO ON	
10	PEDESTAL	FLAPS	8	FLAPS LEVER	CHECK POSITION = 0	
11	PEDESTAL	SP. BRAKE	6	SPEED BREAK LEVER	CHECK RET. AND DISARMED	
12	PEDESTAL	SP. BRAKE	6	SPEED BREAK LEVER	PRÜFEN OB NULLSTELLUNG	

COCKPIT PREPARATION						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
13	OVERHEAD	EXT. LIGHTS	9	EXT. LIGHTS (= Nav Lights)	ON	
14	OVERHEAD	SIGNS	11	SIGNS (Seat Belts/No Smoking/Emergency)	ON (ALL)	
15	OVERHEAD	AIR COND	7	AIR CON PACK FLOW	NORM	
16	PEDESTAL	AUDIO	2	AUDIO SWITCH	VHF1 and MKR	Press VHF1 and MKR = white ring
17	PEDESTAL	RADIO	1	SWITCH	ON	
18	PEDESTAL	RADIO	1	SET FREQUENCIES	SET	If ATC is used
19	PEDESTAL	RADIO	1	ATC CLEARANCE	OBTAIN	If ATC is used

COCKPIT PREPARATION – FMGS/MCDU DATA INSERTION						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
20	MCDU	INIT 1		FSX FLIGHT PLANNER	LOAD	EDDF-LOWW.pln
21	MCDU	INIT 1		ALIGN IRS	PRESS	
22	MCDU	INIT 1		FLT NBR (Flight Number)	ENTER	
23	MCDU	INIT 1		CRZ FL (Cruise Flight Level)		From FSX flight plan
24	MCDU	INIT 2		ZFWCG/ZFW	ENTER	Click for computed data
25	MCDU	INIT 2		BLOCK	ENTER	Click for computed data
26	MCDU	F-PLAN		FLIGHTPLAN	ENTER	Speeds and altitudes are now calculated
28	MCDU	PERF-TO		FLAPS / THS	ENTER	
29	MCDU	PERF-TO		FLEX TO TEMP	ENTER	
30	MCDU	PERF-TO		THR RED / ACC	AS REQRD	
31	MCDU	PERF-TO		V1, VR and V2	ENTER	Click for computed data
32	MCDU	PERF-CLIMB		DATA	CHECK	
33	MCDU	PERF-CZR		DATA	CHECK	
34	MCDU	PERF-APPR		DATA	CHECK	
35	MCDU	PER-GO ARD		DATA	CHECK	

COCKPIT PREPARATION

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
36	EFIS	AP SETTING	2	BARO REF	SET	
37	EFIS	FD /ILS	3	FD (Flight Director)	CHECK ON	
38	EFIS	FD / ILS	3	ILS	OFF	
39	EFIS	ND MOD/ RGE	5 & 6	ND mode and range	SET	Mode: ARC / Range 10
40	EFIS	ADF/VOR	7	VOR / ADF select	AS REQUIRED	
41	FCU	ALTITUDE	3	First Altitude	SET TO 12,000 Feet	> than THR RED altitude
42	FCU	FCU	1 to 4	DASH-BALL-DASH-BALL-ALT-BALL-DASH	CHECK	
43	ECAM	ECAM	1	STATUS	CHECK	
44	PEDESTAL	THR LEVER	4	LEVERS	CHECK IDLE	
45	PEDESTAL	ENG	5	ENG MASTER 1 + 2	CHECK OFF	
46	PEDESTAL	ENG	5	ENG MODE SEL	CHECK NORM	
47	PEDESTAL	RADIO	1	ATC - FREQUNCY	SET	If ATC is used
48	PEDESTAL	RADIO	1	ATC CLEARANCE	OBTAIN	If ATC is used
49	GLARES-HIELD	ND-DISPL.	2	IRS ALIGN	CHECK	

BEFORE PUSHBACK OR START

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
50	MCDU	F-PLAN		F-PLAN PAGE	SET	
51	OVERHEAD	ELEC	6	EXT PWR (External Power)	OFF	(if available – see MCDU MENU / DOORS)
52	MCDU	MENU	ACFT DOORS	DOORS	CLOSE	Color switches to green
53	PEDESTAL	THR LEVER	4	LEVERS	CHECK IDLE	
54	PEDESTAL	RADIO	1	PUSHBACK / START CLEAR	OBTAIN	If ATC is used
55	PEDESTAL	P. BRAKE	7	PARKING BRAKE	OFF	FSX: . (period)
56	OVERHEAD	EXT. LIGHTS	9	BEACON	ON	

ENGINE START – during pushback					
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
57	PEDESTAL	ENGINE	5	ENG MODE SEL	IGN START	
58	PEDESTAL	ENGINE	5	MASTER SW 2	ON	
59	MAIN PANEL	E/WD	5a	No. 2 RUNNING UP	CHECK	
60	PEDESTAL	ENGINE	5	MASTER SW 1	ON	
61	MAIN PANEL	E/WD	5a	No. 1 RUNNING UP	CHECK	
62	PEDESTAL	P. BRAKE	7	PARKING BRAKE	ON	FSX: SHIFT+. (period)

AFTER ENGINE START					
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
63	PEDESTAL	ENGINE	5	ENG MODE SEL	NORM	
64	ECAM	ECAM	1	ECAM STATUS	CHECK	
65	ECAM	ECAM	1	ECAM DOOR PAGE	CHECK	
66	OVERHEAD	ANTI-ICE	8	ENG ANTI-ICE (1 &2)	ON	
67	OVERHEAD	ANTI-ICE	8	WING ANTI-ICE	ON	
68	OVERHEAD	APU	10	APU MASTER SW	OFF	

TAXI					
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
69	OVERHEAD	EXT. LIGHTS	9	NOSE LIGHT	TAXI	
70	PEDESTAL	RADIO	1	TAXI CLEARENCE	OBTAINED	If ATC is used
71	PEDESTAL	P. BRAKE	7	PARKING BRAKE	OFF	FSX: . (period)
72	MAIN PANEL	AUTO BRAKE	6	SET TO	MAX	
73	PEDESTAL	THR LEVER	4	LEVERS	AS REQUIRED	
74	PEDESTAL	SPEED-BR.	6	GRD SPOILERS	ARM	FSX: SHIFT+/
75	FCU	HDG / ALT	2 & 3	FCU HDG/ALT=DASH-BALL-DASH-BALL	CHECK	As we will use the Autopilot
76	EFIS	FD / ILS	3	FD	CHECK ON	
77	PEDESTAL	TRANSPON-DER	9	ATC CODE	CONFIRM / SET	If ATC is used

BEFORE TAKEOFF

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
78	PEDESTAL	RADIO	1	TAKEOFF / LINE UP CLEAR	OBTAIN	If ATC is used
79	MAIN PANEL	N/SKID NW	10	A/SKID & NW STRG	ON	
80	PEDESTAL	TCAS	10	TCAS	TA ONLY	
81	PEDESTAL	FLAPS	8	FLAPS	SET to 1	FSX: F7
82	MAIN PANEL	E/WD	5a	TO MEMO	CHECK NO BLUE	
83	ECAM	PANEL	5	TO CONFIG	PRESS	
84	PEDESTAL	RADIO	1	ATC (if no AUTO position)	ON	If ATC is used
85	OVERHEAD	AIR COND	7	PACKS 1 + 2	OFF	
86	OVERHEAD	EXT. LIGHTS	9	EXT. LIGHTS (Strobes, Land. and Nose Lights)	SET	

TAKEOFF

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
87	*PEDESTAL*	*THR LEVER*	*4*	*SET LEVERS TO*	*FLEX*	
88	GLARESHIELD	CHRONO	7	CHRONO	START	*Push upper right button*
At VR						
89					ROTATE	
When V/S POSITIVE						
90	MAIN PANEL	GEAR	7	LANDING GEAR	"UP"	FSX: G
91	PEDESTAL	SPEED-BR.	6	GROUND SPOILERS	DISARM	FSX: /
92	*OVERHEAD*	*EXT. LIGHTS*	*9*	*NOSE LIGHT*	*OFF*	
93	FCU	AP	5	AUTOPILOT	ON	
At thrust reduction altitude:						
94	*OVERHEAD*	*AIR COND*	*7*	*ONE PACK*	*ON*	
95	PEDESTAL	THR LEVER	4	SET LEVERS TO	CL	Blinking announcement in FMA
At F speed:						
96	PEDESTAL	FLAPS	8	FLAPS 1	SELECT	If applicable
At S speed:						
97	*PEDESTAL*	*FLAPS*	*8*	*FLAPS 0*	*SELECT*	*FSX: F6*
98	*OVERHEAD*	*AIR COND*	*7*	*2ND PACK*	*ON*	

Climb						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
99	FCU	ALT	3	VALUES / DATA	SET IF AP ON	ALT = 31,000 FEET
100	MCDU	Var.PAGES		VALUES / DATA	SET IF AP ON	
101	*At transition altitude:*					AT 18,000 FEET
102	EFIS	A PRESSURE	2	BARO REF	SET / X CHECK	
103	*At 10,000 feet:*					
104	OVERHEAD	EXT. LIGHTS	9	LANDING and NOSE LIGHTS	OFF	
105	EFIS	INFOR.	4	EFIS OPTION	ARPT	
106	PEDESTAL	RADIO	1	RADIO NAV	CHECK	
107	OVERHEAD	SIGNS	11	SEAT BELTS	OFF	
108	PEDESTAL	ECAM	1	ECAM MENU	REVIEW	
109	MCDU	PROG		OPT / MAX ALTITUDE	CHECK	

CRUISE						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
110	PEDESTAL	ECAM	1	ECAM MEMO / SYS PAGES	REVIEW	
111	MCDU	Var.PAGES		FLIGHT PROGRESS	CHECK	
112	MCDU	FUEL PRED		FUEL	MONITOR	
113	MCDU	PROG		NAV ACCURANCY	CHECK	
114	OVERHEAD	AIR COND	7	CABIN TEMP	MONITOR	

DESCENT PREPARATION						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
115	MCDU	Var.PAGES		FMGS	PREPARE	
116	MCDU	PERF APPR		LDG CONF	AS REQUIRED	Enter 3
117	PEDESTAL	RADIO	1	DESCENT CLEARANCE	OBTAIN	If ATC is used
118	OVERHEAD	ANTI-ICE	8	ANTI ICE	AS REQUIRED	Leave it on

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DESCENT

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
119	FCU	ALT	3	DESCENT	INITIATE = PUSH	
120	MAIN PANEL	PFD	1	FMA	CHECK	
121	MCDU	Var.PAGES		DESCENT DATA	INSERT	
122	MAIN PANEL	PFD	1	DESCENT	MONITOR	
123	PEDESTAL	SP BRAKES	6	SET	AS REQUIRED	
When cleared to altitude:						
124	EFIS	A.PRESSURE	2	BARO REF	SET / X CHECK	
125	ECAM	ECAM	1	ECAM STATUS	CHECK	
At 10,000 feet:						
126	OVERHEAD	EXT. LIGHTS	9	LAND LIGHTS	ON	
127	OVERHEAD	SIGNS	11	SEATBELTS	ON	
128	EFIS	INFORM.	4	SET OPTION	CSTR	
129	EFIS	FD / ILS	3	ILS	PUSH	
130	PEDESTAL	RADIO	1	RADIO / NAV	SELECT / IDENT	
131	MCDU	PROG		NAV ACCURANCY	CHECK	

ILS - APPROACH

No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
Initial approach:						
132	OVERHEAD	SIGNS	11	SEATBELTS	CHECK ON	
133	PEDESTAL	ENGINE	5	ENG MODE	CHECK NORM	
Approx. 15 NM from touchdown:						
134	MCDU	PROG		NAV ACCURACY	MONITOR	
135	MCDU	PERF		APPR PHASE	CHECK	
136	MAIN PANEL	PFD	1	POSITIONING	MONITOR	
When cleared for ILS approach:						
137	FCU	APPR	9	APPR	PRESS	
138	FCU	AP	5	BOTH AP	ENGAGE	
				At green dot:		
139	PEDESTAL	FLAPS	8	FLAPS 1	SELECT	FSX: F7
				AT S SPEED		
140	PEDESTAL	TCAS	10	TCAS	CHECK TA ONLY	
141	MAIN PANEL	PFD	1	FMA	CHECK	
142	MAIN PANEL	PFD	1	LOC CAPTURE	MONITOR	

143	MAIN PANEL	PFD	1	G/S CAPTURE	MONITOR	
144	FCU	ALT	3	GO-AROUND ALT	SET TO 5,000 FEET	Just enter - do not push knob
At 2,000 feet AGL:						
145	PEDESTAL	FLAPS	8	FLAPS 2	SELECT	FSX: F7
AT F SPEED						
When Flaps 2:						
146	MAIN PANEL	GEAR	7	L/G DOWN	SELECT	FSX: G
147	PEDESTAL	SP. BRAKEs	6	GROUND SPOILERS	ARM	FSX: SHIFT+/
148	MAIN PANEL	AUTO BRAKE	6	SET TO	MEDIUM	
When L/G down, below VFE						
149	PEDESTAL	FLAPS	8	FLAPS 3	SELECT	FSX: F7
150	ECAM	ECAM	1	ECAM WHEEL PAGE	CHECK	
When FLAPS 3 , below VFE:						
151	PEDESTAL	FLAPS	8	FLAPS FULL	SELECT	FSX: F7
AT VAPP						
152	FCU	ATHR	7	A/THR	CHECK SPD	
153	OVERHEAD	ANTI-ICE	8	WING ANTI-ICE (if not required)	CHECK ON	
154	OVERHEAD	EXT. LIGHTS	9	EXTERIOR LIGHTS	CHECK	
155	MAIN PANEL	EWD	5	LANDING MEMO	CHECK NO BLUE	

LANDING						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
At 20 feet:						
156				FLARE	PERFORM	
157	MAIN PANEL	PDF	1	ALTITUDE	MONITOR	
158	PEDESTAL	THR LEVER	4	THRUST LEVERS	IDLE	FSX: F1
159	*At touchdown:*					
160	FCU	AP	5	AP (if applicable)	OFF	FSX: Z
161	PEDESTAL	THR LEVER	4	REV	MAX	FSX: F2
162				BRAKES	AS REQUIRED	
163	*At 70 knots:*					
164	PEDESTAL	THR LEVER	4	REV	IDLE	FSX: F1
165	*At taxi speed:*					

166	PEDESTAL	THR LEVER	4	REV	STOW	
167	*Before 20 knots:*					
168	MAIN PANEL	AUTO BRAKE	6	AUTOBRK	DISENGAGE	

AFTER LANDING					
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
169	OVERHEAD	EXT. LIGHTS	9	LANDING LIGHTS	RETRACT	
170	PEDESTAL	SP.BRAKES	6	GRND SPLRS	DISARM	FSX: /
171	PEDESTAL	FLAPS	8	FLAPS	RETRACT	FSX: F6
172	OVERHEAD	EXT. LIGHTS	9	EXT. LIGHTS (Strobes)	AS REQUIRED	
173	PEDESTAL	ENGINE	5	ENG MODE SEL	NORM	
174	PEDESTAL	RADIO	1	ATC (if no AUTO position)	STBY / OFF	
175	PEDESTAL	TCAS	10	TCAS MODE SEL	STBY	
176	OVERHEAD	ANTI-ICE	8	ANTI-ICE (WING and ENGINES 1&2)	OFF	
177	OVERHEAD	APU	10	APU	START	

PARKING					
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
178	GLARESHIELD	CHRONO	7	CHRONO	STOPP	Push upper-right button
179	PEDESTAL	P.BRAKE	7	PARKING BREAK	ON	FSX: CRTL + . (period)
180	OVERHEAD	APU	10	APU BLEED	ON	
181	PEDESTAL	ENGINE	5	ENG MASTER 1 & 2	OFF	
182	OVERHEAD	FUEL	2	FUEL PUMPS	OFF	OFF should appear
183	PEDESTAL	RADIO	1	GROUND CONTACT	ESTABLISH	If ATC is used
185	OVERHEAD	EXT. LIGHTS	9	BEACON LIGHT	OFF	
186	OVERHEAD	SIGNS	11	SEAT BELTS	OFF	
187	MCDU	MENU	ACFT DOORS	DOORS	OPEN (AS REQUIRED)	

SECURING AIRCRAFT						
No.	PANEL			ACTION		Remark
	TYP	PART (Name)	PART (No.)			
188	PEDESTAL	P.BRAKE	7	PARKING BREAK	CHECK ON	
189	OVERHEAD	ADIRS		ADIRS (1 + 2 + 3)	OFF	Not animated
190	OVERHEAD	EXT. LIGHTS	9	EXTERIOR LIGHTS	OFF	
191	OVERHEAD	APU	10	APU BLEED	OFF	
192	OVERHEAD	APU	10	APU MASTER SW	OFF	
193	OVERHEAD	SIGNS	11	NO SMOKING & EMERGENCY LIGHT	OFF	
194	MCDU	MENU	ACFT DOORS	DOORS	CLOSE (AS REQUIRED)	
195	OVERHEAD	EXT. PWR	6	EXT PWR	AS REQUIRED	
196	OVERHEAD	ELEC	5	GEN 1 + 2 (Electric Generators)	PRESS	OFF should appear
197	PEDESTAL	INT. LIGHT	3	INTEG LT	OFF	
198	MAIN PANEL	PFD LIGHT	8	SWITCH	OFF	
199	MAIN PANEL	ND LIGHT	8	SWITCH	OFF	
200	ECAM	DIMMER	4	SWITCH UPPER and LOWER	OFF	
201	OVERHEAD	BATTERIES	4	BAT 1 + 2	OFF	

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