

## A340-500/600 Flight Tutorial (LFBO – LFMN)

Dear Customer,

Although it's easy to make a typical flight with the Airbus **A340-600**, with the help of this tutorial, it visualizes a flight profile from T/O till and including the landing.

### Table of Contents

<b>General information</b>	1
<b>Disclaimer</b>	2
<b>Flight Planning</b>	3
Flightplan data	3
Hidden functions	4
<b>Flight Simulator 9</b> Flight plan loading	4
<b>Flight Simulator X</b> Flight plan loading	5
<b>FS9</b> Fuel and Payload	6
<b>FSX</b> Fuel and Payload	7
Final initialization	8
User's information – FCU	9
Engine Start procedure	14
<b>T/O Profile</b>	16
<b>Climb Profile</b>	18
<b>Cruise Profile</b>	21
MCDU flight information	23
Relevant descent/approach data	26
Managed Mode	27
<b>Descent Profile</b>	29
Preparations	29
<b>Approach Profile</b>	31
Final Approach	32
<b>Appendix</b>	38
STAR LFMN	38
LFMN ILS Information	39
LFMN Airport Information	40
Use of FSNavigator 4.7 (FS9 <b>only</b> )	41

### General information

We've planned for you a short flight from Southern France **LFBO** (Toulouse/Blagnac) to **LFMN** (Nice/Cote d'Azur).

It's no more then a 40 to 50 minutes flight, with a maximum flight level of FL210<sup>1</sup> but it's enough to give you an idea of the possibilities of the CLS Airbus A340 Series.

During this **training flight**, we use a combination of flying - manually tuned - via VORs and NDB beacons<sup>2</sup>, a waypoint and via the FMS/GPS. In other words, it will cover all kind of possible flight techniques and navigation devices. With this tutorial we **assume** that you've got **basic knowledge** of how **navigation systems** work, how to power-up the aircraft system and starting the engines.

We start at the beginning of runway 32L (default FS2004 **33L** or default FSX **32L**). This document is **only applicable** for the Airbus A340 Series of Commercial Level Simulations. Some add-on programs are implemented like those of Aerosoft sceneries and for FS2004 **only** - FSNavigator 4.7. For your convenience, we have added to the download package the FSNavigator file of the flight plan (**LFBO-LFMN.fsn**) and the exported FS2004 (**LFBO-LFMN.pln**) file. The exported FS2004 file (\*.pln) can also be used in FSX. Further on there is **no** add-on program used in combination with the tutorial.

### Finally, some words about the User's Information.

Throughout the tutorial you find these useful blue background notes. They are helping you understanding the basics or giving you the necessary flight information.

<sup>1</sup> In France, the semicircular rule is based on a East/West track, instead of the normal in Europe used North/South.

<sup>2</sup> ADF (Automatic Direction Finder) is the aircraft instrument, which receives navigation information from the NDB.

## A340-500/600 Flight Tutorial (LFBO – LFMN)

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### Disclaimer

This manual is not provided from, or endorsed by Airbus Industries, or any airline in any way.

Any exact similarities between this manual and Commercial Level Simulations aircraft to actual aircraft, procedures, or airlines carriers are strictly confidential.

All copyrights remain the property of their respective owners.

The procedures contained within are the Commercial Level Simulations interpretation of generic flight operations.

These procedures are not always accurate in all situations.

All diagrams have been either been recreated to mimic actual procedures or scenarios, or remain the copyrights of the respective owners. The purpose of the manual is not to claim ownership of the procedures or diagrams herein, rather, to show flight operations of the A340-500 / -600 based on available information. This manual is not intended for real world flight. Commercial Level Simulations aircraft are intended as an add-on for Microsoft FS2004 or FSX.

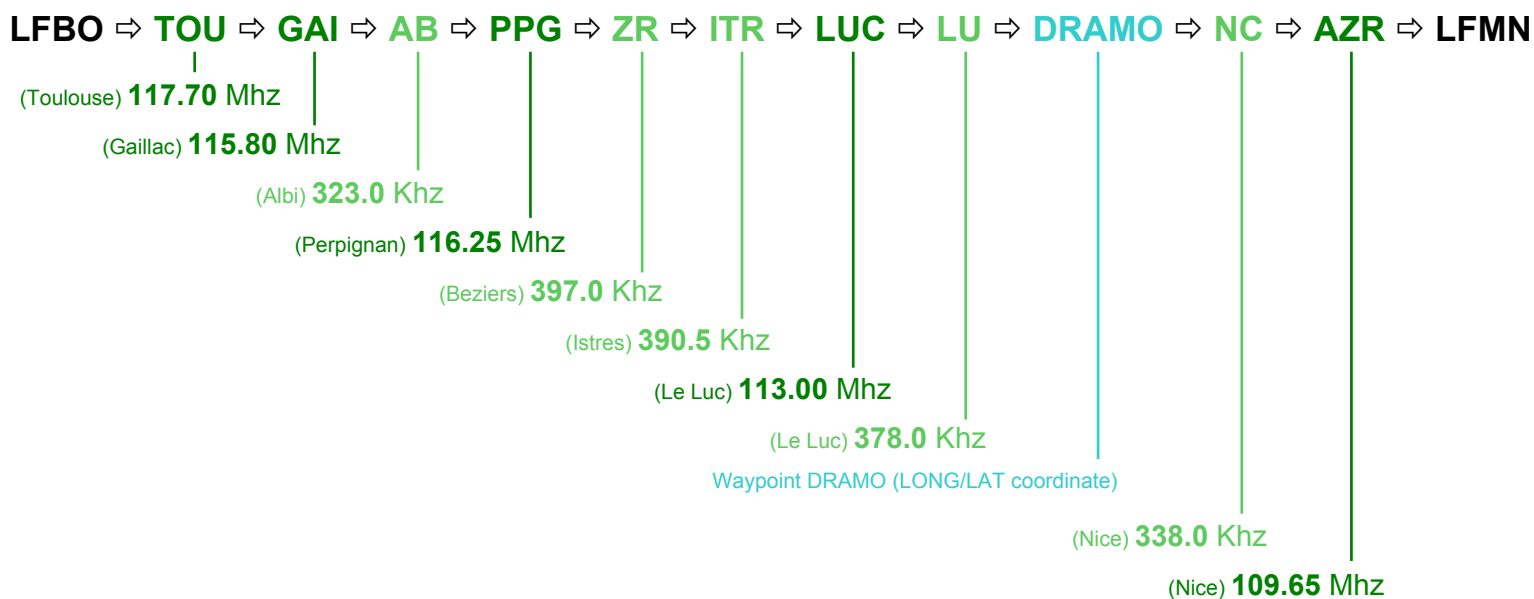


## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Flight Planning

#### Flightplan data

Our tutorial flightplan for today looks like:



id	Location	Freq	Course	IAS	VSpeed	Altitude	Distance	ETE	Fuel [Lbs]
LFBO	Blagnac		-	-	-	499	0.0	00 00' 00"	0.0
TOU	TOULOUSE	117.70	321	250	1800	2072	3.7	00 00' 52"	247.8
GAI	GAILLAC	115.80	56	260	1800	12384	27.7	00 05' 43"	1623.5
AB	ALBI	323.0	106	290	1800	15635	10.7	00 01' 48"	511.8
	End of Climb		156	290	1729	21000	19.5	00 03' 06"	879.4
PPG	PERPIGNAN	116.25	156	290	0	21000	58.5	00 08' 58"	1425.3
ZR	BEZIERS	397.0	30	290	0	21000	39.1	00 06' 00"	952.5
	Beginning of Descent		82	290	0	21000	44.7	00 06' 51"	1089.4
ITR	ISTRES	390.5	82	290	-997	16581	28.0	00 04' 25"	175.8
LUC	LE LUC	113.00	100	270	-854	7260	58.4	00 10' 54"	433.1
LU	LE LUC	378.0	90	250	-713	5435	11.7	00 02' 33"	101.6
DRAMO	DRAMO		83	250	-673	3297	14.2	00 03' 10"	125.9
NC	NICE	338.0	51	250	-634	949	16.0	00 03' 42"	147.0
AZR	NICE	109.65	46	250	-608	101	5.9	00 01' 23"	55.4
LFMN	Nice/Cote d'Azur		311	216	-601	13	0.5	00 00' 08"	5.8
TOTAL :							338.7	00 59' 41"	7774.2

Figure 1 – Property FSNavigator flight plan  
 (Included for training purposes the LFBO-LFMN.PLN file)

End of Climb equals **TOC** (Top of Climb)  
 Beginning of Descent equals **TOD** (Top of Descent)

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Cockpit facts

#### Hidden functions

Since we have loaded our flight plan into the Airbus A340, we are also able to read it out on the MCDU<sup>3</sup>.

The standalone MCDU can be called-up via the **black button** on the glare shield just above the PFD<sup>4</sup>, like this .....



Figure 2 – Call-up standalone MCDU

Another important and handy item, is the possibility to call-up all the panels from one single location, the **Button Collection**.

By clicking the **spot** under the ND<sup>5</sup>, automatically our **Button Collection** will appear and other panels can be called-up.

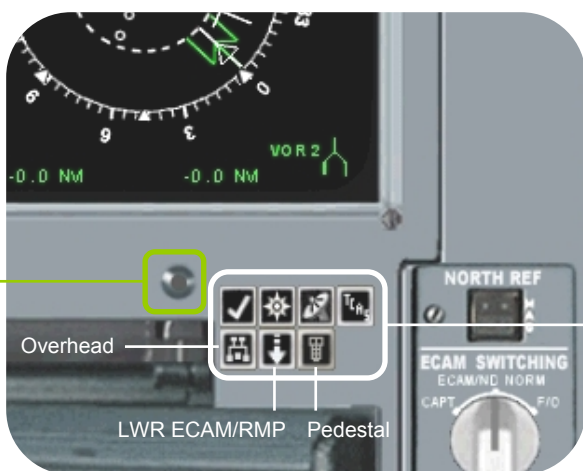


Figure 3 – Button Collection for additional panels

### Flight Simulator 9 Flight plan loading

Since we use an handmade FSNavigator flight plan (LFBO-LFMN.fsn), we have added this file to the package, as well as the **exported FS2004 (LFBO-LFMN.pln)** file.

Loading the **LFBO-LFMN.pln** file is done in the following way:

Select from the **FS2004** menu - **Flights**  
Select from this menu - **Flight Planner ...**

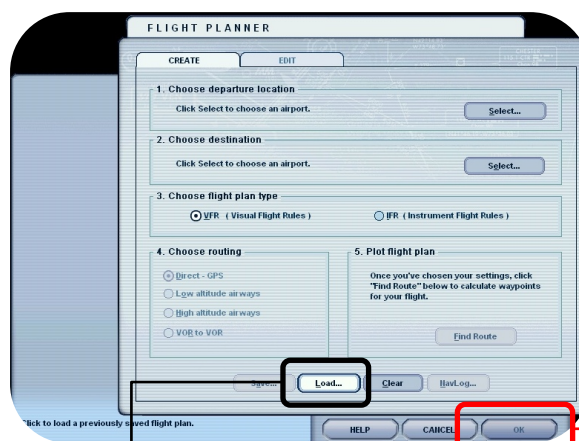


Figure 4 – FS2004 Flight Planner

Select **Load...** and find **LFBO-LFMN.PLN**  
Usually these files are located in  
**My Documents\Flight Simulator Files**

Click the **OK** button to close this window  
Click again the **OK** button

<sup>3</sup> Multi purpose Control Display Unit

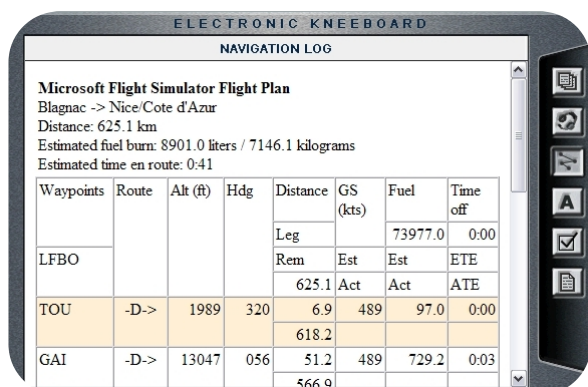
<sup>4</sup> Primary Flight Display

<sup>5</sup> Navigation Display



## A340-500/600 Flight Tutorial (LFBO – LFMN)

After this is done, we can find our flight plan via the FS2004 kneeboard or via the MCDU. This will be explained later in detail.



**Microsoft Flight Simulator Flight Plan**  
Blagnac -> Nice/Cote d'Azur  
Distance: 625.1 km  
Estimated fuel burn: 8901.0 liters / 7146.1 kilograms  
Estimated time en route: 0:41

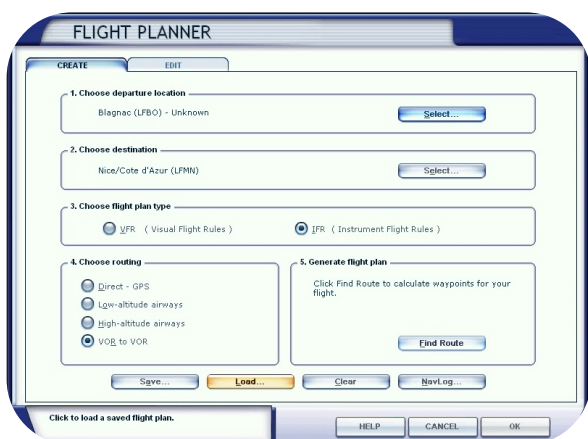
Waypoints	Route	Alt (ft)	Hdg	Distance	GS (kts)	Fuel	Time off
LFBO				Leg		73977.0	0:00
				Rem	Est	Est	ETE
				625.1	Act	Act	ATE
TOU	-D->	1989	320	6.9	489	97.0	0:00
GAI	-D->	13047	056	618.2			
				51.2	489	729.2	0:03
				566.9			

Figure 5 – FS2004 Kneeboard

### Flight Simulator X Flight plan loading

Although FSNavigator 4.7 **cannot** be used in FSX, the created FS2004 export flight plan, still works in FSX, therefore loading the LFBO-LFMN.pln file is done as follows:

- Select from the **FSX** menu - **Flights**
- Select from this menu - **Flight Planner ...**



**FLIGHT PLANNER**

1. Choose departure location: Blagnac (LFBO) - Unknown

2. Choose destination: Nice/Cote d'Azur (LFMN)

3. Choose flight plan type: ☒ VFR (Visual Flight Rules) ☐ IFR (Instrument Flight Rules)

4. Choose routing: ☒ Direct - GPS ☐ Low-altitude airways ☐ High-altitude airways ☐ VOB to VOR

5. Generate flight plan: Click Find Route to calculate waypoints for your flight.

Buttons: Save..., Load..., Clear, Navlog..., HELP, CANCEL, OK

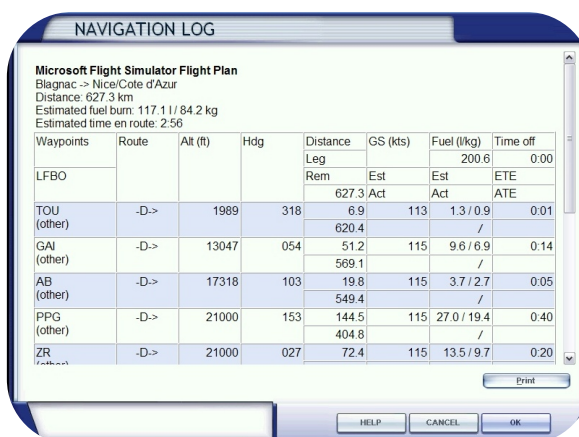
Figure 6 – FSX Flight Planner

- Select **Load...** and find **LFBO-LFMN.PLN** usually these files are located in My Documents\Flight Simulator X Files
- Click the **OK** button to close this window
- Click again the **OK** button

In FSX we have three ways to retrieve our imported flight plan.

### Option I

Select from the **FSX** menu – **Flights**  
Select from this menu – **Navigation Log...**



**Microsoft Flight Simulator Flight Plan**  
Blagnac -> Nice/Cote d'Azur  
Distance: 627.3 km  
Estimated fuel burn: 117.1 l / 84.2 kg  
Estimated time en route: 2:56

Waypoints	Route	Alt (ft)	Hdg	Distance	GS (kts)	Fuel (l/kg)	Time off
LFBO				Leg		200.6	0:00
				Rem	Est	Est	ETE
				627.3	Act	Act	ATE
TOU (other)	-D->	1989	318	6.9	113	1.3 / 0.9	0:01
GAI (other)	-D->	13047	054	51.2	115	9.6 / 6.9	0:14
AB (other)	-D->	17318	103	19.8	115	3.7 / 2.7	0:05
PPG (other)	-D->	21000	153	144.5	115	27.0 / 19.4	0:40
ZR (other)	-D->	21000	027	72.4	115	13.5 / 9.7	0:20

Figure 7 – FSX Navigation Log (Option I)

### Option II

Select **Aircraft** from the **FSX** menu  
Select **Kneeboard**  
Choose **Navlog**



**Microsoft Flight Simulator Flight Plan**  
Blagnac -> Nice/Cote d'Azur  
Distance: 627.3 km  
Estimated fuel burn: 117.1 l / 84.2 kg  
Estimated time en route: 2:56

Waypoints	Route	Alt (ft)	Hdg	Distance	GS (kts)	Fuel (l/kg)	Time off
LFBO				Leg		200.6	0:00
				Rem	Est	Est	ETE
				627.3	Act	Act	ATE
TOU (other)	-D->	1989	318	6.9	113	1.3 / 0.9	0:01
				620.4		/	

Figure 8 – FSX Kneeboard (Option II)

### Option III

We can always get the necessary details via the CLS onboard MCDU. This will be explained later in detail.

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### FS9 Fuel and Payload

Since we don't use the official T/O performance tables and our flight is a training flight, we make the following MSFS adjustments regarding fuel and payload.

- Select from the FS2004 menu **Aircraft**
- Select **Fuel and Payload**
- Tick **Display fuel quantity as weight**

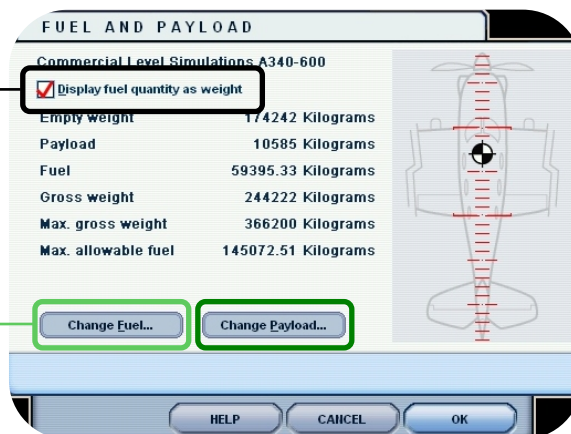


Figure 9 – FUEL AND PAYLOAD

- Select **Change Fuel...**
- Bring the Left/Right Aux. tank quantities for each tank back to **20000**.  
**Important** ....after you've changed the value into 20000, it will change into **19983**
- Bring the Center tank quantity back to **0**
- Bring the Center 2 tank quantity back to **0**
- Bring the Center 3 tank quantity back to **0**
- Click the **OK** button



Figure 10 – FUEL SETTINGS

Select **Change Payload...**(figure 10)

- Change First Class into **0**
- Change Business Class into **210**
- Change Tourist Class into **0**
- Change Fwd Cargo Compt into **5000**
- Change Aft Cargo Compt into **5000**
- Click the **OK** button
- Click the **OK** button to close the FUEL and PAYLOAD window (figure 10)

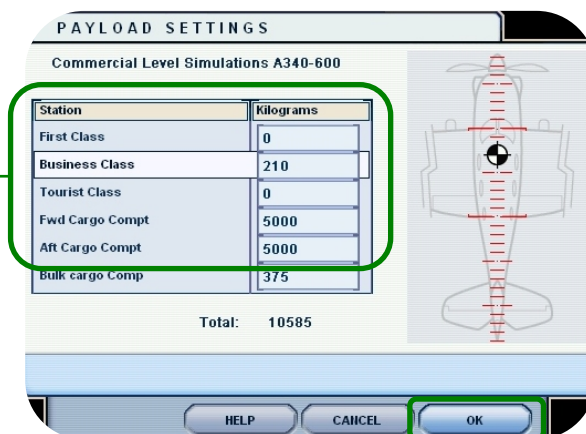


Figure 11 – PAYLOAD SETTINGS

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### FSX Fuel and Payload

Since we don't use the official T/O performance tables and our flight is a training flight, we make the following MSFS adjustments regarding fuel- and payload.

- Select from the FSX menu **Aircraft**
- Select **Fuel and Payload...**
- Tick **Display fuel quantity as weight**

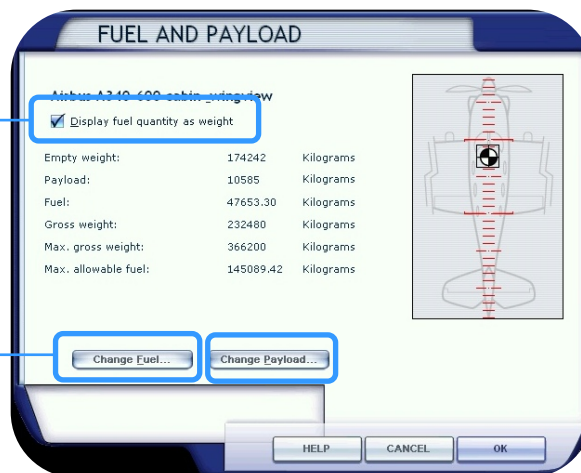


Figure 12 – FSX FUEL AND PAYLOAD

- Select **Change Fuel...**
- Bring the Left/Right Aux. tank quantities for each tank back to **20000**.  
**Important** ....after you've changed the value into 20000, it will change into **19986**
- Bring the Center tank quantity back to **0**
- Bring the Center 2 tank quantity back to **0**
- Bring the Center 3 tank quantity back to **0**

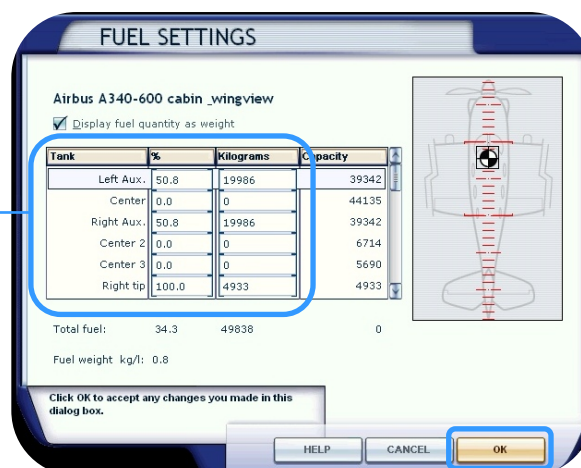


Figure 13 – FSX FUEL SETTINGS

Select **Change Payload...**(figure 12)

- Change First Class into **0**
- Change Business Class into **210**
- Change Tourist Class into **0**
- Change Fwd Cargo Compt into **5000**
- Change Aft Cargo Compt into **5000**
- Click the **OK** button
- Click the **OK** button to close the FUEL and PAYLOAD window (figure 12)

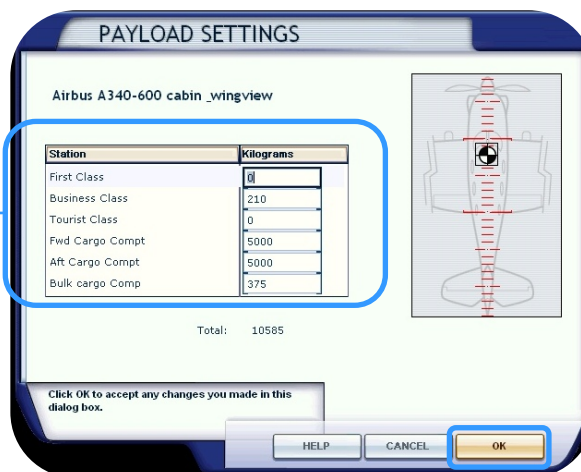


Figure 14 – FSX PAYLOAD SETTINGS

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Final initialization

Before we can make our T/O, we first need to do a last double check if all the data is correctly entered into the respective fields. I would like to remind you, that only the most important items for our training flight are discussed in the final initialization.

Basic knowledge of our CLS A340-500/600 Series is essential as well as general flight- and navigation techniques.

Fuel and payload ----- - Values changed according page 6

On the **EFIS Control Panel** set -----

- Click **FD**<sup>6</sup> pushbutton (green flowbar)
- BARO PRESS **≈ 1016.6**
- MODE selector **ROSE VOR**
- RANGE selector any position is ok
- VOR/ADF selector 1 **VOR 1**
- VOR/ADF selector 2 **VOR 2**



Figure 15 – FCU – EFIS Control Panel

On the **AFS Control Panel** set -----

- Speed (SPD) **230**
- Heading (HDG) **324**
- Initial altitude (ALT) **11000**
- Vertical Speed (V/S) **+1800**



Figure 16 – FCU - Auto Flight System part

<sup>6</sup> Flight Director



## A340-500/600 Flight Tutorial (LFBO – LFMN)

### User's information – FCU

The FCU located on the glareshield, is the short-term interface between the crew and the FMGC. It is used to select any flight parameters or modify those selected in the MCDU. The autopilots and autothrust functions may be engaged or disengaged. Different guidance modes can be selected to change various targets (speed, heading, track, altitude, flight path angle, vertical speed).

One type is managed by the Flight Management Guidance System (FMGS); the other uses target quantities which are manually entered by the pilot.

When the aircraft uses target quantities from the FMGS (managed guidance), the FCU windows display dashes and the white dots next to those windows light up.



EFIS Control Panel

AFS (Auto Flight System) Control Panel

EFIS Control Panel

Flight Control Unit (FCU)

On the **Center Instrument** panel set .....

- ECAM SWITCHING selector in **NORM**
- RMI VOR/ADF selectors: **VOR** position
- AUTO BRK selector: **RTO**
- Engine are running and stabilized

On the **LWR ECAM/RMP** panel .....

- Select on the ECAM Control Panel, the **F/CLT** pushbutton
- Check for PITCH TRIM **0.0** position



Figure 17 – ECAM Control Panel with LWR ECAM display



## A340-500/600 Flight Tutorial (LFBO – LFMN)

On the **LWR ECAM/RMP** panel (con't) .....

- Set FLAPS to position **3**
- At the RMP<sup>7</sup> verify that the switch (RH lower corner) is in the **ON** position
- Enter in the ACTIVE window: **117.70**  
(via the STBY/CRS window and then transfer to the ACTIVE side)
- Enter in the STBY/CRS window: **115.80**
- Verify **NAV1** is selected



Figure 18 – RMP NAV1 with TOU and GAI VOR frequencies

- Verify **NAV2** is selected
- Enter in the STBY/CRS window: **115.80** (GAI)
- Use the transfer switch to move the entered frequency to the ACTIVE window.



Figure 19 – RMP NAV2 with GAI VOR frequency

- Press the **NAV1** pushbutton again and verify that the ACTIVE window shows **117.70**
- Click the **NAV** pushbutton
- By turning the knob, enter in the STBY/CRS window a value of **C-325**



Figure 20 – RMP STBY NAV with TOU CRS

<sup>7</sup> Radio Management Panel

## A340-500/600 Flight Tutorial (LFBO – LFMN)

On the **ND** (VOR Mode) ----- With the MODE SEL on the **EFIS** panel still in the **VOR** position, our ND looks like below. Notice the **VOR1 (TOU)** and **VOR2 (GAI)** at the bottom.



Figure 21 – ND ROSE Selector in the VOR Mode

On the **ND** (NAV Mode)----- On the **EFIS Control Panel**:  
- Press the **CSTR** pushbutton (**green flow bar**).



Figure 22 – EFIS Control Panel ND additional options

- Change the MODE SEL to the **NAV** position.  
This results in an added flight plan.  
Notice the **BLUE circle in the middle (LFBO)** and a part of our flight plan (**green line**).



Figure 23 – ND ROSE Selector in the NAV Mode

## A340-500/600 Flight Tutorial (LFBO – LFMN)

On the **ND** (ARC Mode)----- Now change the MODE SEL to the **ARC** position. The **only difference** between the previous NAV and ARC mode is that the ARC only covers a range of just 90° degrees.



Figure 24 – ND ROSE Selector in the **ARC** Mode

On the **ND** (PLAN Mode)----- Finally change the MODE SEL to the **PLAN** position. A **difference** between the previous ARC and PLAN mode is of course the 360°, but now the aircraft is literally flying over the flight track, which is moving underneath the aircraft.



Figure 25 – ND ROSE Selector in the **PLAN** Mode

## A340-500/600 Flight Tutorial (LFBO – LFMN)

This page will cover some details of the MCDU (FMS<sup>8</sup>), which are needed for this flight. When airborne, we will discuss or explain other MCDU pages in detail.

On the Standalone **MCDU** check/set ----- - Call-up the standalone MCDU (see page 4)



Figure 26 – MCDU Keys and buttons

**MENU keys**  
**LSK (Line Select Keys)**  
**Alphanumeric keyboard**

- **MAIN MENU** page, click LSK 3L (< **INIT**)
- **INIT** page, select LSK 6R (**ALIGN IRS >**)
- or you can click on the **INIT** menu key
- Click the **MAIN MENU** button
- **MAIN MENU** page, click LSK 4L (< **TO/APPR**)
- **TAKE OFF** page,  
Click LSK 1L (< **CALC/SET T/O V SPEEDS**)
- Write on a piece of paper those values:  
**V1** ..... knots  
**VR** ..... knots  
**V2** ..... knots
- Click the **MAIN MENU** button
- **MAIN MENU** page, click 5L (< **RAD NAV**)
- **RAD NAV** page or click on  
the **RAD NAV** menu key,  
Verify **NAV1** and **NAV1 STBY** frequencies  
(see for frequency details on page 10)
- Click the **MAIN MENU** button
- **MAIN MENU** page, click 3R (**FLT PLAN >**)
- **FLIGHT PLAN** page or click on  
the **F-PLAN** menu key  
Our FSNavigator flight plan can be found here.
- With the **PREV PAGE** and **NEXT PAGE** menu  
keys, we can change the MCDU display  
between **TIME /TRK** and **DIST/FREQ**.

With the **UP/DOWN** arrow next of the  
**PREV/NEXT** keys, we can scroll through the  
flight plan.

<sup>8</sup> Flight Management System

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Engine Start procedure

- On the **Overhead** panel perform .....
- BAT 1 and BAT 2 pushbuttons **ON**
  - APU BAT switch shows **OFF**
  - AVIONICS BUS switch is **ON**
  - Select all GEN switches **ON** (**OFF** lights extinguished)

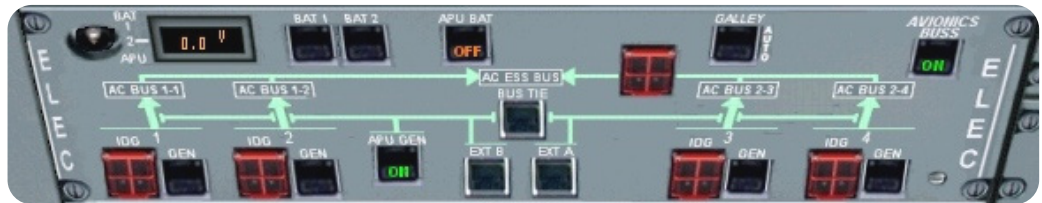


Figure 27 – Overhead Panel / ELEC Part

- Start the APU<sup>9</sup>:
- APU MASTER SW **ON**
- APU START pushbutton **ON**



Figure 28 – Overhead Panel / LIGHTS/APU Part



Figure 29 – ECAM APU Page

- If APU is running (**ON** light extinguished),
- Select APU GEN and BLEED switch **ON**
- Select NO SMOKING and SEAT BELT **ON**
- Select NAV and BEACON lights **ON**
- ARM SPOILERS switch **ON**



## A340-500/600 Flight Tutorial (LFBO – LFMN)

Open the **Pedestal** ..... - Select ENGINE START switch to **IGN/START**  
Select MASTER switch ENG number 1 to **ON**

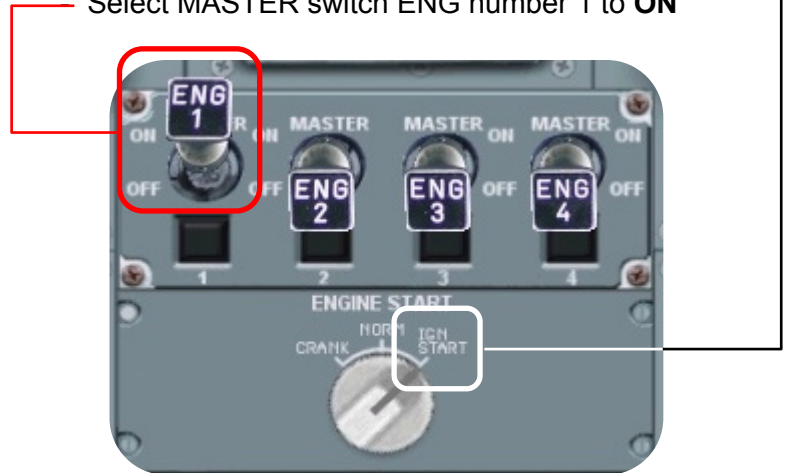


Figure 30 – Pedestal ENGINE START Panel

On the **Overhead** panel ..... - Select **ENG MAN START 1** pushbutton **ON**



Figure 31 – Overhead / ENG MAN START Panel

- Engine run-up can be monitored on the UPPER and LOWER ECAM displays.
- Same engine start procedure – as written above - can be applied for engines 2, 3 and 4.

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### T/O Profile

The following pages will give you a step-by-step view with explanation of what you can expect during your T/O, climb, cruise, descent and approach, ending with a landing.

- Take Off -----
- **PARKING BRAKES Press PERIOD (.) to release**
  - Apply smoothly FULL T/O thrust
  - While keeping the aircraft on the runway centerline, notice your V SPEEDS



Figure 32 – Cockpit overview – T/O

## A340-500/600 Flight Tutorial (LFBO – LFMN)

- At aircraft rotation ----- - At **VR** (see page 13) gentle pull on the column and bring the aircraft into a 8° PITCH UP position. **DO NOT** rotate > than 10° to avoid a tail strike.



Figure 33 – Primary Flight Display (PFD)

- When there's a positive CL<sup>10</sup> ----- - Select GEAR UP  
 - Maintain a speed equal to **V2+15** (see page 13)  
 - Maintain a V/S of **1500 fpm** (also written as 1500')  
 - Increase climb angle to **10° PITCH UP**  
 - Follow the **VOR1 needle** (TOU VOR)

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Climb Profile

- At Thrust Reduction Altitude (1500') -----
- Retract SLATS/FLAPS in steps to **0**  
Maximum SLAT/FLAP speeds limits are:  

SLAT/FLAP position	Maximum Speeds (knots)
CONF 1	280
CONF 1+F	233
CONF 2	216
CONF 3	206
FULL	200
  - Accelerate to **FCU speed** (230 knots)
  - Perform the following FCU actions:  
 Click **AP1** pushbutton (Auto Pilot 1)  
 Click **A/THR** pushbutton (Auto Thrust)  
 Click **ALT** pushbutton (Altitude)



Figure 34 – FCU AP1, A/THR and ALT selected

- Passing **TOU** (Toulouse) VOR -----
- Change aircraft heading to **GAI VOR**  
Follow the double needle on the ND or RMI<sup>11</sup>



Figure 35 – ND VOR2 GAI

## A340-500/600 Flight Tutorial (LFBO – LFMN)

- Passing **TOU** (Toulouse) VOR (con't) -----
- On the **FCU** panel:
    - Turn the **HDG** knob.
    - Align it above VOR2 needle (▽)



Figure 36 – ND / HDG knob FCU

- On the **LWR ECAM/RMP** panel:
  - Verify **NAV1** is selected
  - Enter in the **STBY/CRS** window **116.25** (PPG)
  - Transfer the frequency to the **ACTIVE** window
- Verify **ADF1** is selected
- Enter in the **STBY/CRS** window **323** (AB)
- Transfer with the transfer switch to the **ACTIVE** window



Figure 37 – RMP ADF1 entered

- Change **VOR/ADF selector** on the EFIS Control Panel to the **ADF position**.  
Notice the **ADF1** needle at the **ND**

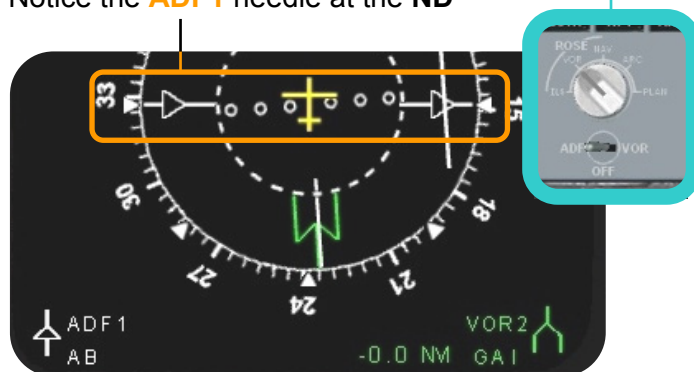


Figure 38 – ND ADF1 (AB) verification



## A340-500/600 Flight Tutorial (LFBO – LFMN)

- At **transition altitude** LFBO (5000') -----
- On the **EFIS** Control Panel:
    - Click the BARO PRESS knob
    - Window indication changes to **1013.2**
- Approaching FL100<sup>12</sup> -----
- On the **overhead** panel:
    - Switch off landing- and taxi lights
    - Switch ARM SPOILERS pushbutton to **OFF**
  - On the **AFS** Control Panel:
    - Select your CR<sup>13</sup> altitude **21000'**
    - Increase the SPD to **300**



Figure 39 – FCU CRZ altitude and SPD selected

- Additional info regarding climb limitations:
 

Altitude	Speed (knots)
Sea level till/including FL100	250
Above FL100	300/0.84 Mach
- Passing **GAI** (Gaillac) VOR -----
- On the **FCU** panel:
    - Turn the **HDG** knob in that way you line it up with the **ADF1** needle.

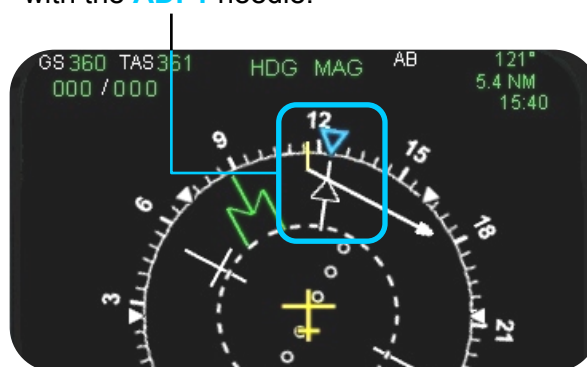


Figure 40 – ND ADF1 and HDG knob indications

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Cruise Profile

- End of Climb (TOC<sup>14</sup>)** ..... - Aircraft levels off at 21.000'
- Make the following NAV preparations on the **LWR ECAM/RMP** panel:
    - Verify **NAV1** is selected
    - Enter in the **STBY/CRS** window **113.00** (LUC)
  - On the **AFS** Control Panel:
    - Click the **SPD/MACH** button to change the SPEED windows from SPEED to Mach
    - **Modify** the Mach value to **.52 Mach**



Figure 41 – FCU - AFS Control Panel Mach value

For your information,

**.52 Mach** equals the **green dot** speed for **FL210**

- Just before passing AB (Albi) NDB** ..... - Change **VOR/ADF selector** on the **EFIS** Control Panel to the **VOR position**.  
Notice the **VOR1** information on the **ND**

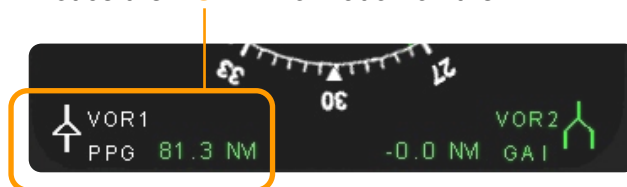


Figure 42 – ND VOR1 PPG VOR tuned

- On the **FCU** panel:
    - Turn the **HDG** knob in that way you line up the aircraft with the VOR1 needle.
- We are now flying to PPG VOR (Perpignan)

## A340-500/600 Flight Tutorial (LFBO – LFMN)

MCDU FMS<sup>15</sup>/GPS<sup>16</sup> control ..... Just 48Nm before PPG, we've switched over to **GPS / FMS** control.



Figure 43 – Cockpit Overview / Managed mode activated on AFS Control Panel with laid-in ND PLAN Mode

### User's information

The Airbus A340 Series in general are not really designed to fly manually from VOR (NDB) to VOR (NDB) or any combination - as we did till so far - of those old fashioned ground stations.

For pilot's convenience, Airbus Industries introduced already in the A320 Family a management system consisting of a combined Auto Flight-, Flight Management-, Auto thrust- and GP System. Interrogating the system, applying flight track modifications are done via the MCDU.

At the moment we select on the FCU the **lateral**, **longitudinal** and **thrust modes** as shown above in the picture (---●), the system works in the **managed mode**. This means in normal English "the flight plan is automatically followed and calculations during the flight are constantly updated and predictions are shown on the MCDU".

In other words ... the computers are flying the aircraft and you can look around.

## A340-500/600 Flight Tutorial (LFBO – LFMN)

Before passing **PPG** VOR, it's a good moment to have a close look to some of the MCDU menu's including their function and information. The MCDU and FMS are therefore to reduce the pilot's workload as well as calculating performances.

### MCDU flight information

- Call-up the standalone **MCDU** ..... - Click the **INIT** menu key  
- Our FMS/GPS provides us with the current **LAT** and **LONG**<sup>17</sup> position.



Figure 44 – MCDU INIT Page LAT/LONG position

- Click the **F-PLAN** menu key  
- It comes up with **TIME / TRK** page.  
Using the **UP/DOWN** arrow on the keypad allows us to scroll thru the flight plan

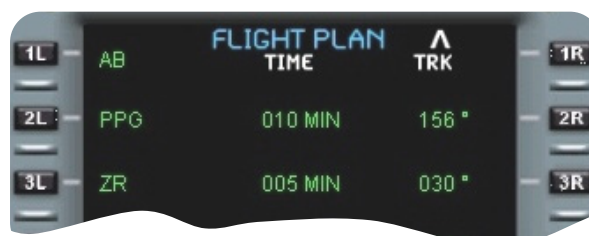


Figure 45 – MCDU FLIGHT PLAN Page TIME/TRK

When using the **PREV/NEXT PAGE** button on the keypad, we go to the **DIST / FREQ** page.

## A340-500/600 Flight Tutorial (LFBO – LFMN)

- Call-up the standalone **MCDU** (con't) -----
- Let's have a closer look to a specific VOR, NDB or waypoint – if applicable - of our flight plan.
  - Click the **F-PLAN** menu key.
- The result can be seen below.

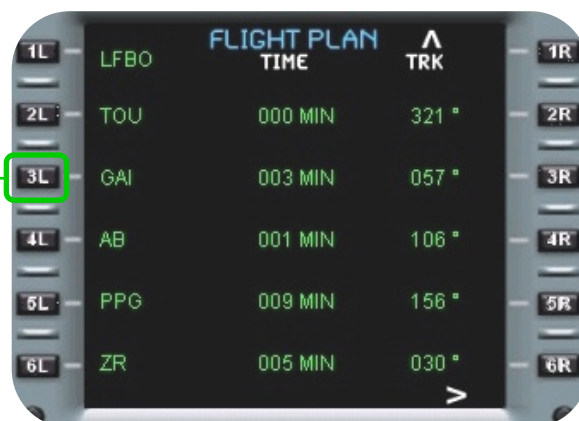


Figure 46 – MCDU FLIGHT PLAN Page

- Click **LSK 3L GAI**
- Sub page **WAYPOINT DATA** appears



Figure 47 – MCDU WAYPOINT DATA Page

- That's nice, all relevant data of **GAI** VOR can be found here like **LAT/LONG** position, **DIST TO WYPT** (**GAI VOR**) and **DIST TO DEST** (Distance to Destination).



## A340-500/600 Flight Tutorial (LFBO – LFMN)

- Call-up the standalone **MCDU** (con't) -----
- Click the **PROG** menu key
  - Select LSK **6R** (**FUEL PRED >**)



Figure 48 – MCDU FUEL PREDICTION Page

The FMS has made a **prediction** that **PPG VOR** will be over flown at **13:52 UTC**<sup>18</sup> with **54.2 tons** of fuel onboard.  
Further on, under these conditions, we will land at **LFMN** at **14:24 UTC** with **49.8 tons** of fuel.

- Click the **TO APPR** key
- Click LSK **6R** (**APPROACH >**)

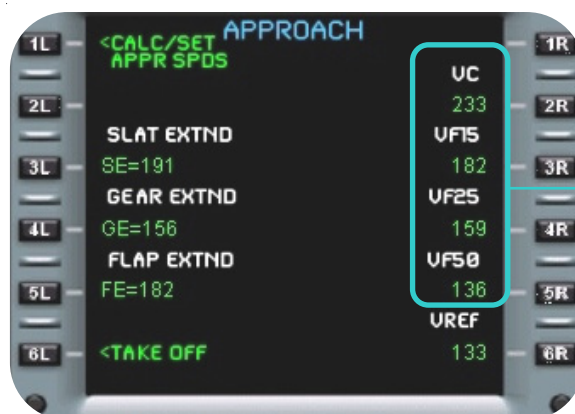


Figure 49 – MCDU APPROACH Page

We don't need it yet but let's have a look to it to see what we can expect for the approach.

- Click **LSK1L** (**< CALC/SET APPR SPDS**) we can calculate directly our landing speeds. The **most important speed** for the moment you need to remember is **VREF** (next of LSK 6R). Almost all other speeds are based on VREF.
- |                             |                     |
|-----------------------------|---------------------|
| <b>Vc</b>                   | Clean Configuration |
| <b>VF15 (VF25 and VF50)</b> | Flap Configurations |

## A340-500/600 Flight Tutorial (LFBO – LFMN)

Relevant descent/approach data

### User's Information

It's a good time to review our descent, approach and landing on LFMN.

Proper descent planning is necessary to ensure proper speed and altitude at the arrival point.

Descent rates are as follows:

Intended speed	Descent Rate	
	Clean Configuration	with speedbrakes
0.84Mach / <b>300</b> knots	<b>2500</b> FPM	<b>5500</b> FPM
<b>250</b> knots	<b>1400</b> FPM	<b>3500</b> FPM
V <sub>REF</sub> 30 + 80knots	<b>1100</b> FPM	<b>2400</b> FPM

- Generally, plan the descent so that your aircraft is approximately at FL100 / 250 knots, 30 NM from the airport.

In our case it's good to **start our TOD** at **50NM** before **LUC** VOR. With an intended speed of 300 knots, we need a V/S of 2500 FPM or e.g. 250 knots with 1400 FPM.

#### Explanation:

We have - according to the flight plan – to be at **LUC** VOR at **7000'**, which means an altitude difference of 14000'. Generally during a descent we require 3NM/1000', so 3NM times 14 equals 42NM. As we take a safe margin, we start out descent 50NM for **LUC** VOR.

- **Overall approach planning** with ATC/airport clearance available:
  - 250 knots below FL100 at around 30NM out of the airport
  - 180-230 knots while 23 NM out of the airport
  - Slow down to V<sub>REF</sub> at GS<sup>19</sup> capture
  - V<sub>REF</sub> can be found at the MCDU APPROACH page.
  - V<sub>REF</sub> 5 to 7 NM from the airport

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Managed Mode

Approaching **PPG** (Perpignan) VOR ----- While the system is flying the aircraft in **Managed Mode**, we don't have to do anything. A few NM's<sup>20</sup> out of **PPG VOR**, the Auto Flight System turns the aircraft heading to **ZR** (Beziers) NDB.



Figure 50 – Cockpit Overview/PFD-ND over fly PPG VOR

## A340-500/600 Flight Tutorial (LFBO – LFMN)

10NM out of **ZR** (Beziers) NDB ..... ATC cleared us to go **DIR TO LUC VOR**.

### User's Information

I view things before we start doing this:

- At **LUC VOR** we have to be at **7000'** (see page 3)
- **Maximum IAS<sup>21</sup> 250 knots**

- Call-up the standalone **MCDU**
- Click **LSK 3R (FLT PLAN >)**
- Click the **DIR TO** menu key

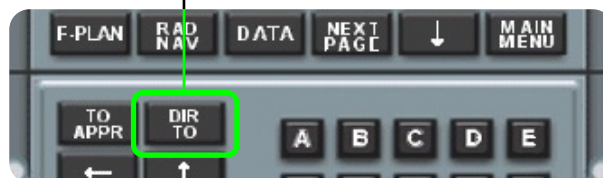


Figure 51 – MCDU DIR TO menu key

- With the **UP** arrow key, scroll thru the flight plan till **LU** is **visible** for example at **LSK 5L**
- Click **LSK 5L**
- At line **1L** there's now **\*[LUC]** visible, so we need to activate this.
- Click **LSK 1L** and the AFS will fly **directly** to **LUC VOR** and therefore skipping all other stations.

Below all remainder waypoints



Figure 52 – MCDU DIR TO Page

## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Descent Profile

#### Preparations

#### User's information

The following information is very important, especially for beginners but believe me, also for experienced and real pilots. It concerns the ATC clearance for flying the required STAR<sup>22</sup>, followed by approach fixes with finally the landing.

**Why is it then so important?** A lot of information is given in a short time.

That's not really a problem but in that relatively short time frame you have to do a lot of things to bring this A340-600 in one piece on the ground.

Read this text on this and the following page carefully. If it's too much, just put your aircraft in a holding at waypoint DRAMO. This gives you the necessary time to study what is coming up.

**Clearance LFMN** ..... - We've got the following clearance:

#### - LUC4 STAR

From LUC VOR we fly a **HDG** of **085°** to waypoint **DRAMO**, where we have to be at **4000'** (distance 25NM)



Figure 53 – STAR LFMN

- If you fly over **LUC VOR** **too high** (> 7000'), you can **increase** your **V/S** on the stretch to **DRAMO** or if applicable, make **265°** **holdings** (CCW) at **DRAMO**.





## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Approach Profile

At **≈ 50NM** out of **LUC** (Le Luc) VOR -----



- On the **AFS** Control Panel select:
- Altitude **7000'**
- V/S **-2500 (FPM)**



Figure 55 – AFS Control Panel

- If aircraft speed becomes **too high**, due to the V/S of 2500 FPM, select gradually the speedbrakes to.
- Instead of the speedbrakes, you can also **reduce the V/S to 2000 or 1500 FPM** on the AFS control panel.

Over fly **LUC** VOR -----



- We are **cleared** for a **LUC4 STAR**  
Via a **Hdg of 085°** we fly to waypoint **DRAMO**, where we have to be at **4000'**. The distance from **LUC VOR** to **DRAMO** is 25NM).
- Select on the **AFS** Control Panel:  
Altitude **4000'**  
V/S **-1000 FPM**



Figure 56 – AFS Control Panel

## A340-500/600 Flight Tutorial (LFBO – LFMN)

At 5NM before waypoint **DRAMO** ----- - On the **AFS** Control Panel set:

- Altitude **3000'**
- Speed **180** (knots)
- V/S **1000** (FPM)
- HDG **43**



Figure 57 – AFS Control Panel

- Select speedbrakes to reduce aircraft speed
- Select **FLAPS 1**
- On the **EFIS** Control Panel select:
- LFMN QNH: **1013.2**



Figure 58 – EFIS Control Panel

- Select **LS** (ILS) pushbutton (for PFD indication)

## Final Approach

**LOC** (Localizer) signal **alive** -----

- Select **FLAPS 2**
- On the **LWR ECAM/RMP** panel:
  - Verify **NAV1** is selected
  - Enter in the **STBY/CRS** window **109.95** (NC)
  - Transfer the frequency to the **ACTIVE** window
  - Select the STBY NAV **NAV** pushbutton
  - Click the **ILS** pushbutton
  - Enter the ILS frequency of LFMN: **109.95** as well as the runway HDG **046°**
- The LH lower corner on the **PFD** shows .... the **ILS information**.

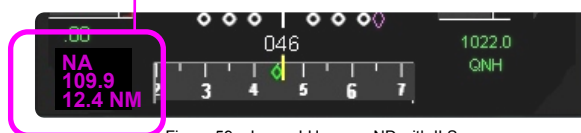


Figure 59 – Lower LH corner ND with ILS

## A340-500/600 Flight Tutorial (LFBO – LFMN)

- LOC (Localizer) signal alive (con't)** -----
- Select on the **Center Instrument Panel**:
    - **AUTOBRAKE 2**
  - Select on the **Overhead Panel**:
    - **ARM SPOILERS**
    - Landing lights **ON**
    - Runway Turn lights **ON**
    - Taxi lights **ON**
  - Select on the AFS Control Panel:  
**LOC** and **APPR** pushbuttons



Figure 60 – Cockpit Overview/PFD LOC alive

◇ LOC (localizer) symbol)



## A340-500/600 Flight Tutorial (LFBO – LFMN)

- GS** (Glide Slope) signal **alive** ..... - Select on the Center Instrument Panel:
- **GEAR DOWN**
  - **FLAPS 3**, followed by **FLAPS 4**
- On the **AFS** Control Panel reduce:
- Speed **151 knots**



Figure 61 – Cockpit Overview/PFD LOC and GS alive





## A340-500/600 Flight Tutorial (LFBO – LFMN)

On **final** runway **04L** LFMN -----



Figure 62 – Cockpit Overview/On final 04L



From 500' and lower, a red bar is visible which indicated the **rising runway**

## A340-500/600 Flight Tutorial (LFBO – LFMN)

- Taxi out to the gate ..... - On the **Pedestal**:  
- Select **FLAPS UP**



Figure 63 – Cockpit Overview during taxi to gate

## A340-500/600 Flight Tutorial (LFBO – LFMN)

Arrived at **gate 50B** LFMN .....

- On the **Pedestal**:
  - Set **PARKING BRAKE**
  - Select Engine Master switches **OFF**
- On the **EFIS Instrument Panel**:
  - Select FD pushbutton **OFF**
  - Select LS pushbutton **OFF**
  - Select AUTOBRAKE selector **OFF**
- On the **Overhead Panel**:
  - All lights switches **OFF**
  - NO SMOKING/FASTEN SEAT BELTS **OFF**
  - **ARM SPOILERS OFF**
  - **AVIONICS BUSS OFF**
  - All ACCESS DOORS **OPEN**
  - Select APU MASTER switch **OFF**
  - Select BAT1 and BAT2 **OFF**



Figure 64 – Cockpit Overview parked at the gate

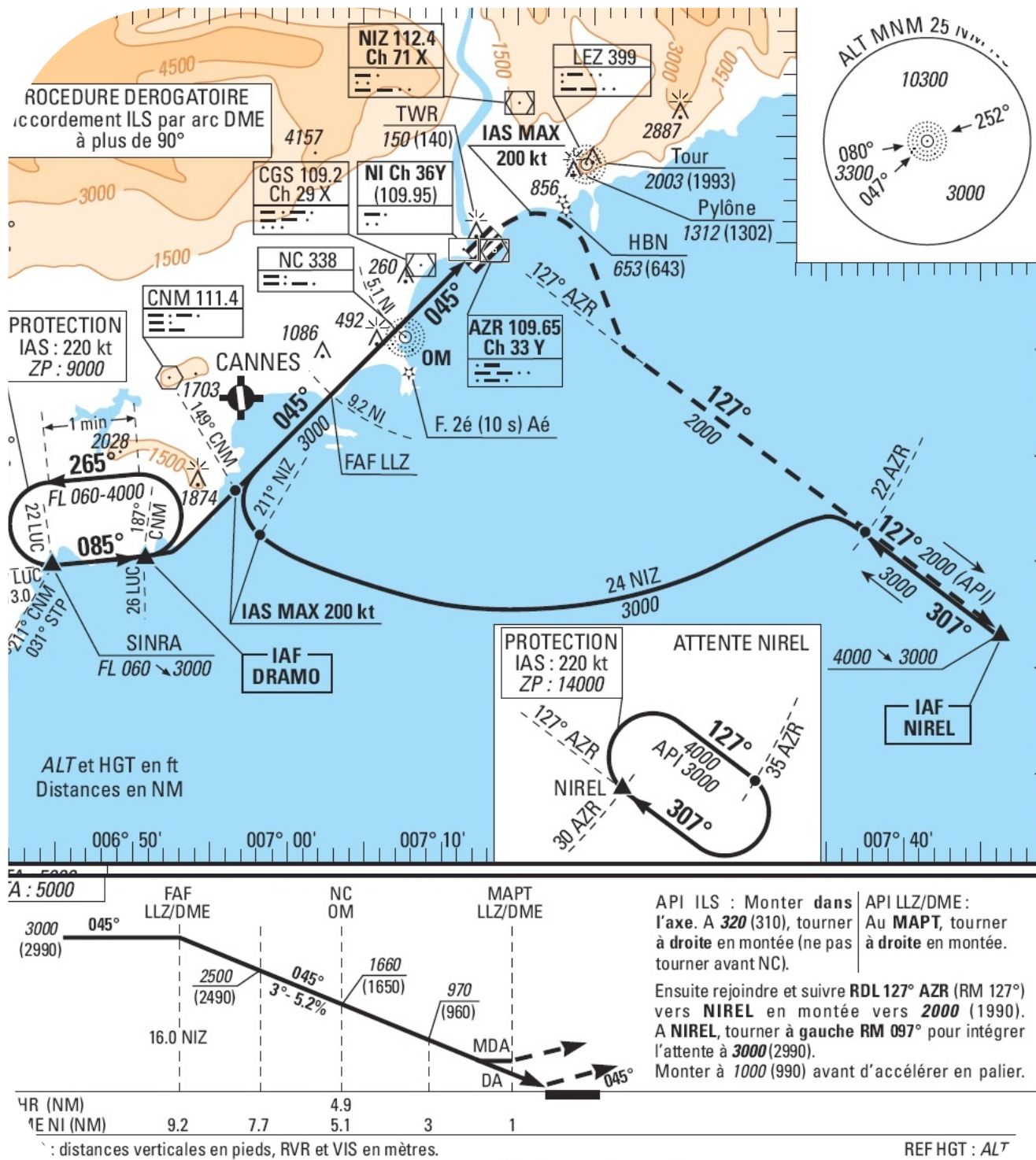
We thank you very much for buying our product and hope you will have a lot of fun with it.





## A340-500/600 Flight Tutorial (LFBO – LFMN)

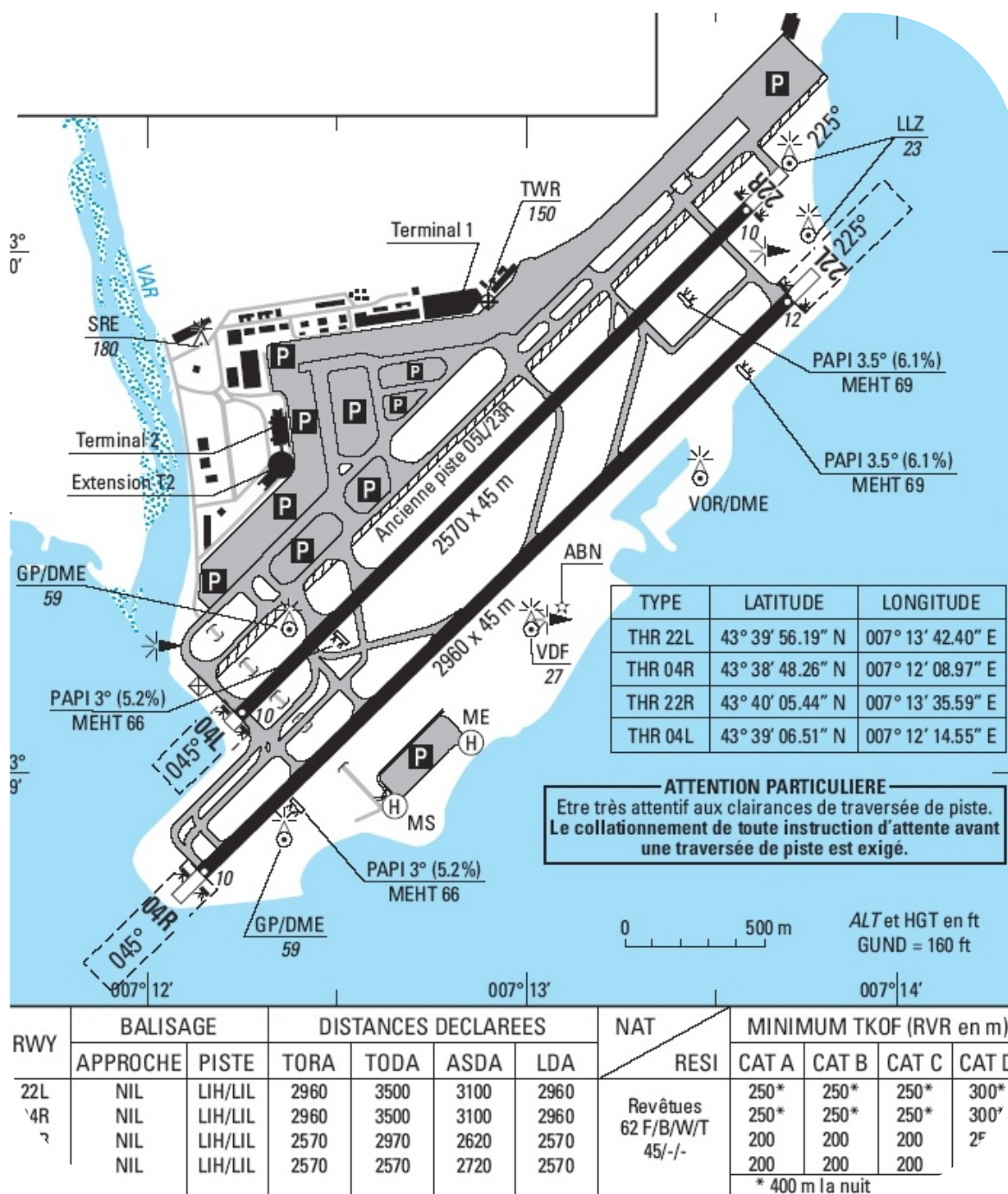
### LFMN ILS Information





## A340-500/600 Flight Tutorial (LFBO – LFMN)

### LFMN Airport Information



## A340-500/600 Flight Tutorial (LFBO – LFMN)

### Use of FSNavigator 4.7 (FS9 only)

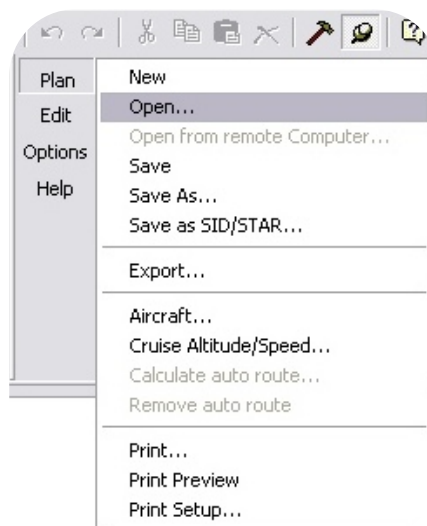
To track the complete flight plan, you can use for example FSNavigator 4.7. This program allows you so many things in relation to the flight plan, NAV aids, aircraft position, and export functions to other programs etc. More information can be retrieved from [www.fsnavigator.com](http://www.fsnavigator.com).

The intention of this appendix is to show you how to load the FSNavigator flight plan and to see the actual aircraft position, monitor its behavior, placing the aircraft to a new point etc.

**Location** of the **LFBO-LFMN.fsn file** ----- - Copy and paste the in the download package added LFBO-LFMN.fsn file, preferable in **..\Flight Simulator 9\Modules\FSNavigator\Plan**

Any other position on a local drive of your computer is also OK, as long as you remember where you put it.

Call up **FSNavigator** ----- - Start Flight Simulator 9  
- Click on the keyboard the **F9** key  
- Click **Plan** on the **FSNav** menu  
- In the pull down menu, click **Open...**



- Automatically you're guided to the FSNav directory, as shown above in **green**.
- Select out of the list **LFBO-LFMN.fsn**
- Click in the window the **Open** button
- On the globe the flight plan is added with all belonging details of this Douglas test flight
- Further details of how to use FSNavigator, can be found on their website.