

DA Fokker 100 Flight Tutorial

Zurich LSZH to Dinard LFRD

Version 2



The Fokker 70/100 is developed by Digital Aviation and available for purchase at www.flight1.com

© www.flytutorial.com

Introduction	3
Convention used in this tutorial.....	4
Copyright and Licence usage	5
References and add-ons you may consider using	6
FS and Aircraft Configuration.....	8
Flight Preparation / route and chart analysis.....	11
Getting on board / powering on the Aircraft.....	19
FMS Programming	30
Flight Deck preparation.....	38
Engine Start	57
Taxi and Take Off.....	63
Climbing	73
Cruise.....	79
Preparing Approach and Descent.....	87
Landing and Taxiing to the gates	95
Powering off the aircraft.....	101
Appendix	104

Use the BOOKMARK function of your PDF reader to navigate through the document !

Welcome to this tutorial for the Digital Aviation Fokker 100 and Flight Simulator 2004! This is another flight tutorial brought to you by www.flytutorial.com

There are many exciting reasons for choosing the Fokker 100 for this brand new tutorial. It is a nice alternative from Airbus or Boeing aircrafts and has a unique cockpit philosophy; it is also not in production anymore, but still being used by regional airlines all around the world. The simulation product achieved by the Digital Aviation team is also fantastic with almost every system simulated, making this aircraft an outstanding experience for any serious simulator pilots!

The Fokker 100 is a medium size twin-turbofan airliner from the Fokker company which was based in the Netherlands, Europe. The F100 design was announced in 1983, as an updated replacement for their popular, but outdated, Fokker F28 Fellowship design. The most noticeable difference is the much longer fuselage which almost doubled the seating from 65 in the original F28 series to 107 in a three-by-two, single-class arrangement. Fokker also introduced a redesigned wing for the F100 which they claimed was 30% more efficient in cruise. The engines were upgraded to the modern Rolls-Royce Tay turbofans while the cockpit was updated with an all-glass instrumentation package. Low operational costs and almost no competition in the 100-seat short-range class made it a best seller when it was introduced in the late 1980s.


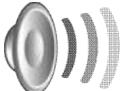








Things started to change shortly after that time, with the introduction of both Bombardier and Embraer in the regional aircraft market, with their popular CRJ200 and ERJ 145 family. This affected sales and Fokker became insolvent. Production ended in 1997 with 283 airframes delivered. Eventually, Fokker collapsed in 1996 and wound up production in early 1997. In August 2006, 229 Fokker 100 aircraft remained in airline service with 47 airlines around the world.

Will the future look bright for Fokker again? An Amsterdam based group, **Rekkof Aircraft** (Fokker spelled backwards) started negotiating to re-open the Fokker 70 and F100 lines in 2010/2011 and create a lighter and more fuel efficient Next Generation F100 aircraft, to compete with the other regional aircraft manufacturers. Good luck to them!



This tutorial is consistently divided into two parts, with the illustrations/screenshots on the left, and the instructions/references on the right.

The following illustrations will be used throughout the tutorial to enhance its use. Please report any typing errors or mistakes to contact@flytutorial.com

	Red boxes are pointing at highlights on a screenshot , for example on the pedestal.	 CABIN IS SECURE!	These icon, font and colour will be used to refer to an aural or warning message , mainly from the virtual first officer or cabin crew.
	This sign to indicate an action to perform , for example open or close the doors, set the parking brake, click on a switch, etc.		This icon illustrates a specific configuration / tweaking of the aircraft or the simulator to get the desired result, for example configuring the Maintenance page of the FMS.
	This sign to indicate a visual check to run , for example check the hydraulic pressure of the fuel quantity, go through a check list, etc.		This icon illustrates a warning or important step that requires special attention.
	This icon to indicate some specific information about the Fokker 100 , not in direct relation to the tutorial, for example the unique tail speed brake.		This area is highlighting a special click spot that most of the time will open or close a panel.
	Sequences of numbers also shown on screenshots are referring to a set of ordered actions, for example to power up the aircraft.		This area is highlighting a button/knob/switch of the aircraft that is either not serviceable or not simulated .

This tutorial has been written and published for recreational usage for Microsoft Flight Simulator and should **never be used for real flying situations**.

This tutorial is freeware and thus free of charge for any private users who wishes to enhance their experience flying the Fokker aircraft series from Digital Aviation.

This tutorial cannot be distributed, hosted, modified, and copied even partially without the agreement or consent of the author.

Please consult the readme.txt file included with this pdf document at the time of download.

If you think any part of this tutorial – text, images, references – is infringing existing copyright, please contact the author who will remove such material immediately.

The author can be directly contacted at contact@flytutorial.com


Private users are highly encouraged to contribute to the work of the author on a volunteer donation basis using either Paypal accounts or the International Call charge system available and explained on the website of the author www.flytutorial.com

Thank you!



Please contribute!



Digital Aviation Fokker tutorial	Version 2	5 / 108	© flytutorial.com	
----------------------------------	-----------	---------	-------------------	---



Below is a list of configuration, references and add-ons that were used to complete this tutorial. You may want to use exactly the same configuration to run though this tutorial or try your own settings. If you experience any technical issue, please contact Flight1 Fokker 100 dedicated forum @ www.simforums.com/Forums/forum_topics.asp?FID=41&title=fokker-70100

I recommend running your PC under **Windows XP Service Pack 3**

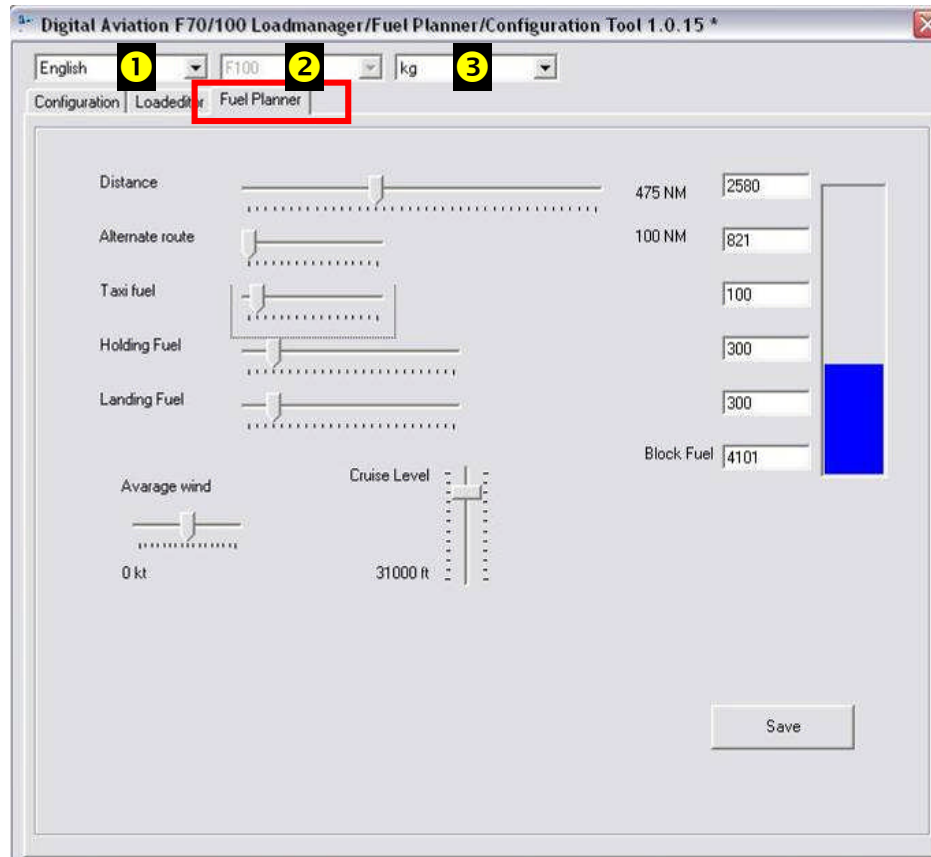
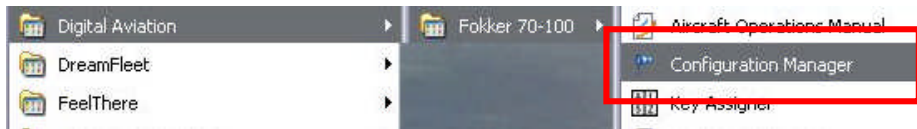
REQUIRED

Microsoft Flight Simulator 2004 with 9.1 patch	www.microsoft.com/games/pc/flightsimulator.aspx
Digital Aviation Fokker 70/100 with Service Pack 2.5	www.flight1.com
Fokker wide 2D panel (16:10 Panel Mod)	www.flightsim.com/kdl.php?fid=135970
Route Finder: flight plan calculation	http://rfinder.asalink.net/free
LFRD2004 freeware scenery	http://library.avsim.net/download.php?DLID=146790
LSZH freeware scenery, FreeZ v0.9 (for gate position)	http://lszh.aviation-art.ch



OPTIONAL

AIRAC updates – this tutorial is using cycle 1011	www.navigraph.com
Vroute flight and weather planning	www.vroute.net
Fokker Performance take-off performance calculator	www.digital-aviation.de/forum/download/file.php?id=212
LSZH full chart package (screenshots included in this tutorial)	www.vacc.ch/file/35
LFRD official charts (screenshots included in this tutorial)	www.sia.aviation-civile.gouv.fr
Fokker wing views	http://library.avsim.net/download.php?DLID=123596
Fokker push back mod panel	www.digital-aviation.de/forum/viewtopic.php?f=46&t=5115&p=28622#p28622



The first step is to configure the passenger and fuel load using the **Configuration Manager** tool available from the Windows start menu as illustrated here.

Fuel Planner tab

Click on the Fuel Planner tab and adjust the following values for our flight:

- Language= **English**
- Model = **F100**
- Unit = **Kg**

- Distance = **475NM**
- Alternate route = **100NM**
- Taxi Fuel = **100**
- Holding fuel = **300**
- Landing fuel = **300**
- Average wind = **0kt**
- Cruise level = **31 000 ft**


Digital Aviation F70/100 Loadmanager/Fuel Planner/Configuration Tool 1.0.15

English | F70 | kg

Configuration | **Loadeditor** | Fuel Planner

PAX section 0A: 8 | Cargo section 1: 1100.0
 PAX section 0B: 0 | Cargo section 2: 950.2
 PAX section 0C: 0 | Cargo section 41: 904.2
 PAX section 0D: 0 | Cargo section 42: 486.1
 PAX section 0E: 0
 PAX section 0F: 0 | Cargo untied: ☐

Passenger weight: 8



Random load
Standard load

Cargo section 1 | Cargo section 2 | Cargo section 41 | Cargo section 42

Passenger weight	935	%MAC	23.8%
Cargo weight	3440	Max zero fuel weight	36740
Zero fuel weight	30385	Max possible fuel load	14065
Fuel weight	4001	Max takeoff weight	44450
Gross weight	34386		
Trip fuel	2580		
Landing weight	31806		

Save

Loadeditor tab

Click on the **Loadeditor** tab and adjust the following settings:

- PAX Sections = **all to 0** except **section 0A with 8 Pax**.
- Cargo sections = as indicated on the screenshot

Do not click on Random Load or Standard Load for this tutorial.

Check the values at the bottom part of the window:

Passenger Weight = **935**

Cargo weight = **3440**

ZFW = **30385**

Fuel weight = **4001**

Gross weight = **34386**

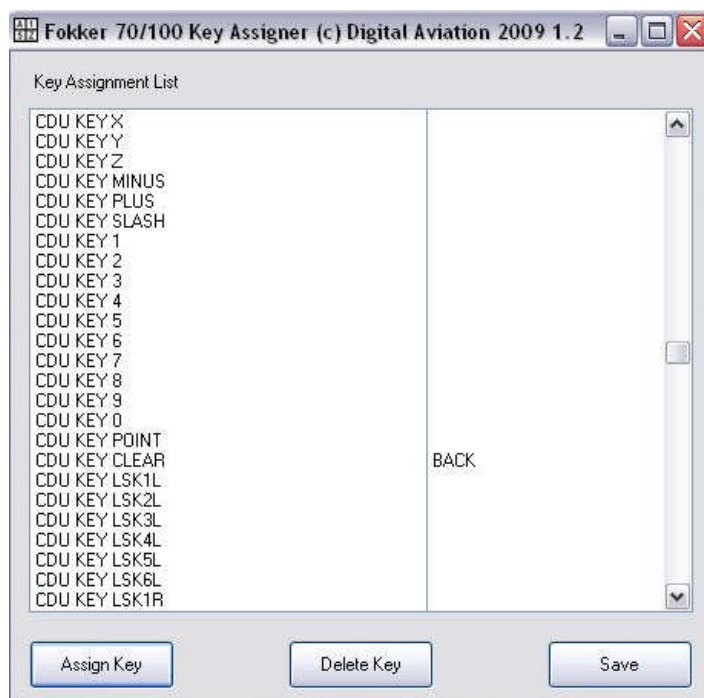
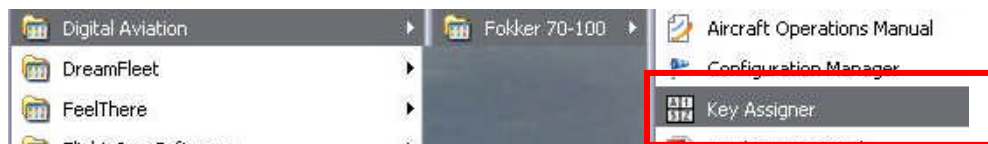
Trip fuel = **2580**

Landing weight = **31806**

%MAC = **23,8**

There is no need to note these values down as they will be accessible via the kneeboard of Flight Simulator

Click on **Save** and leave the configuration tool for now (use the classic top right red window cross).



Key Assigner utility

This is another configuration utility tool provided with the aircraft that enables you to map almost all functions with keyboard shortcuts.

We will not use this for the purpose of this tutorial but it is a very handy tool to configure any hardware modules with the Fokker 100.

I have used this tool to configure the **MCP Combo ands CDU II from VRinsight** which work pretty well with this aircraft. I have deleted all shortcuts for the CDU except the CLEAR key for proper use of the CDU.II.

The CDU is clearly an outstanding piece of software yet affordable to fly any FS liner!

Check www.flytutorial.com for configuration files to be used with hardware devices (available soon)



The CDU II and MCP Combo from VRinsight



Check out www.vrinsight.com for more information.



Welcome to the Briefing Room!

Before boarding the aircraft this morning, we are going to review the latest weather updates, departure and arrival procedures and charts as well as specific details about our flight.

Today Friday November 12, 10, we are operating a technical flight for Britair which consists of flying the F-GKHE F28-0100 to Sabena TAT technics located in Dinard, France, where the aircraft will receive light maintenance before retuning to its commercial service.

The flight will therefore be lightly loaded, with 10 crews on board, 2 pilots, 4 technical engineers and 4 Britair employees returning to Brittany. The cargo load will be heavier though, with a substantial amount of aircraft parts.

Take off is scheduled for **9am local time**, and the flight is expected to take **1 hour and 25 minutes**. The route is **460 nautical miles** at an expected cruising altitude of **31.000 feet**.

Our **alternate airport** will be **LFRN Rennes** just about 40nm south of LFRD.



Brit Air is a regional airline, based in Brittany, Western France. It is part of the Air France group, and as such operates some 62 routes to France and some European cities.

Brit Air fleet consists of some 40 regional jets ranging from 50 to 100 seats, including the Fokker 100 and Canadair Regional Jets. Sadly though, the airline is currently replacing all its Fokker 100 with brand new CRJ 1000. First delivery is expected to take place in December 2010 with another three aircrafts in January 2011

RouteFinder
Route generator for PC flight simulation use

Departure **LSZH** (example: LIRF) / Country Code: (optional)

Destination .. **LFRD** (example: EGLI) / Country Code: (optional)

Enroute altitude: between **FL310** and **FL330** Level: **Both** Database: **Cycle 1011**

☒ Use **SIDS** ☒ Use **STARs** ☒ **Ease transitions** ☒ **RNAV** equipped ☐ **TACAN** routes **NATS**: **Disabled**

Find route **Reset** Full version of RouteFinder is at: <http://rfinder.asalink.net/>



Computed route from **ZURICH** (LSZH, LS) to **DINARD PLEURTUIT SAINT MALO** (LFRD, LF): 17 fixes, 460.3 nautical miles

Cruise altitude between FL310 and FL330

LSZH (0.0nm) -SID-> **VEBIT** (24.8nm) -T51-> **LASUN** (45.8nm) -
UN176-> **LUMEL** (61.4nm) -UT10-> **KUBOM** (70.0nm) -UT10-> **TORPA**
(81.9nm) -UT40-> **LUL** (101.3nm) -UQ238-> **TRO** (200.9nm) -UM164->
BRY (229.2nm) -UM729-> **AMODO** (241.8nm) -UM729-> **RESMI** (274.4nm)
-UL851-> **TABOV** (296.4nm) -UL851-> **PIGOP** (309.0nm) -UN160->
BUSUK (335.7nm) -UN160-> **CEN** (385.5nm) -R50-> **VIREX** (411.1nm) -
STAR-> **LFRD** (460.3nm)

LSZH SID VEBIT T51 LASUN UN176 LUMEL UT10 TORPA UT40 LUL UQ238
TRO UM164 BRY UM729 RESMI UL851 PIGOP UN160 CEN R50 VIREX STAR
LFRD

Route planning

Connect to **routefinder** - <http://rfinder.asalink.net/free/> and complete the required information as illustrated here:

Departure : **LSZH**

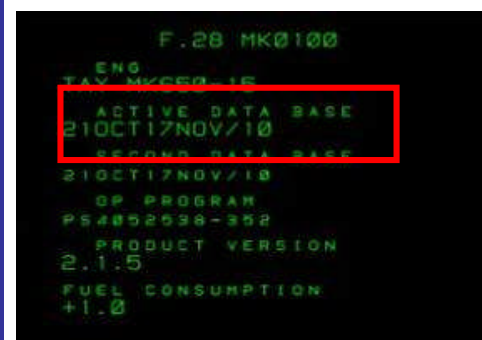
Destination : **LFRD**

Enroute Altitude between **FL310** and **FL330**

Database : **Cycle 1011**

Tick the **Ease transitions** option

Press **Find Route** – you should get your computed route such as illustrated on the left. Not all the information has been reproduced here. The important information we will need is the line at the bottom containing the waypoints and routes we will manually enter into the FMS-Flight Management System of the aircraft.



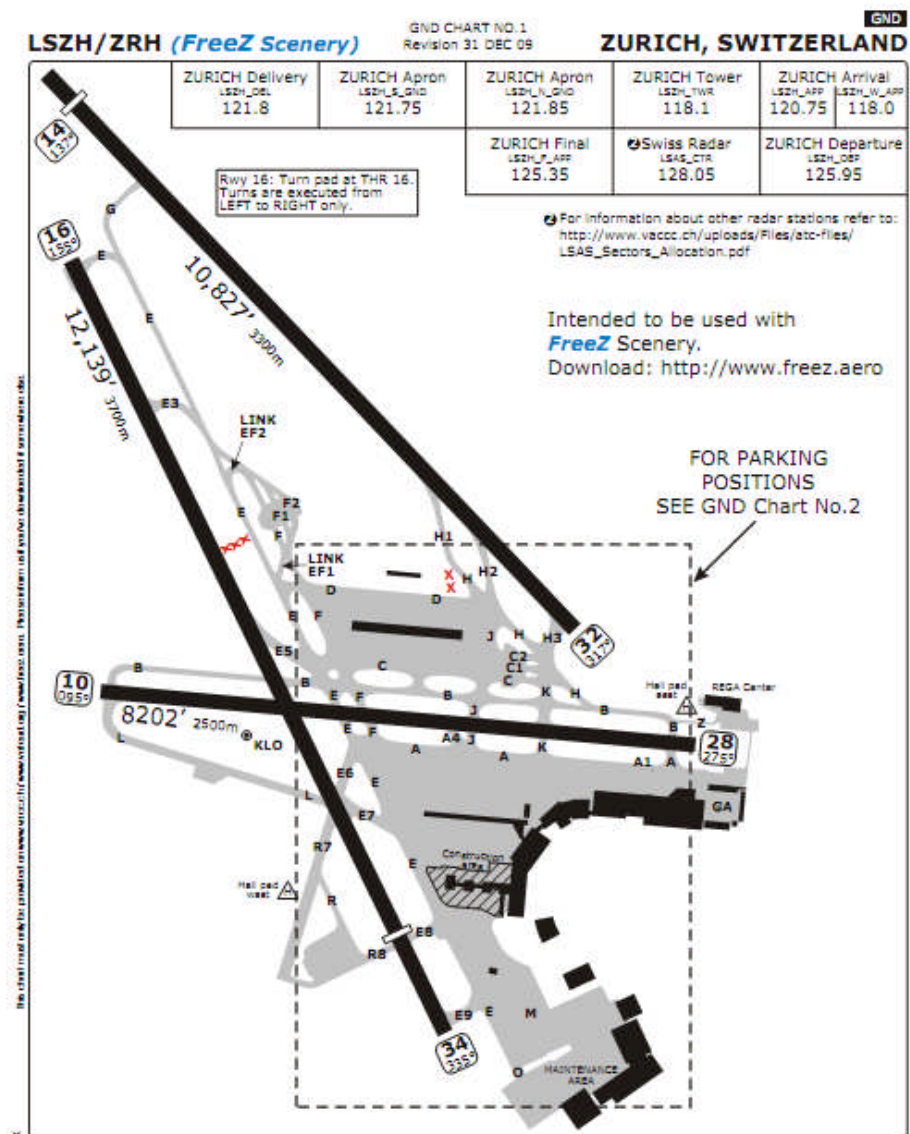
Is my FMS up to date?

You can check the active AIRAC installed on your FMS by pressing the REF key of the FMS keyboard. In this example the navdata expires after the 17 November 2010



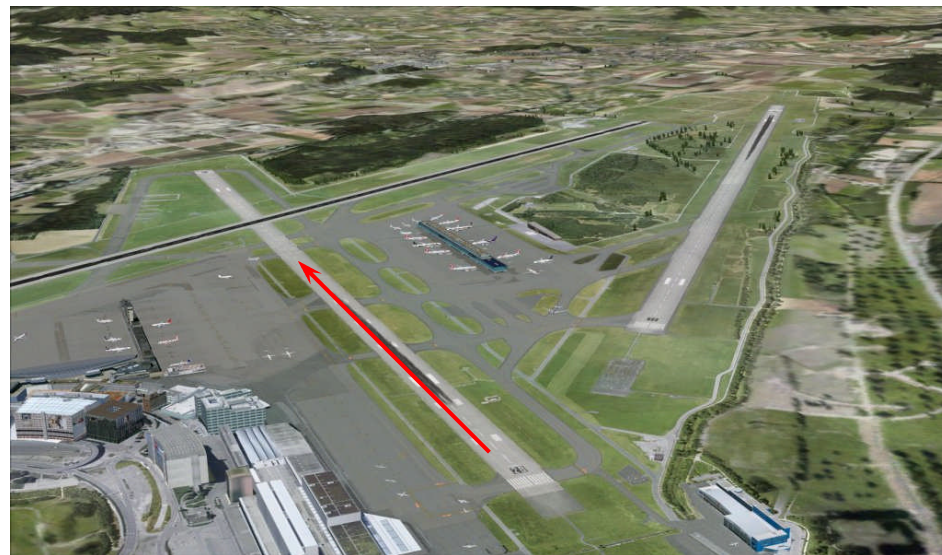
AIRAC cycles change every month. What this means is that you may **end up with a different route** for the same departure and destination airports. The good news is you can still fly this tutorial even if you don't have the latest cycle. Just make sure you select the relevant cycle on route finder and then print or make a note of the route result.

Refer to www.navigraph.com for latest AIRAC upgrades.



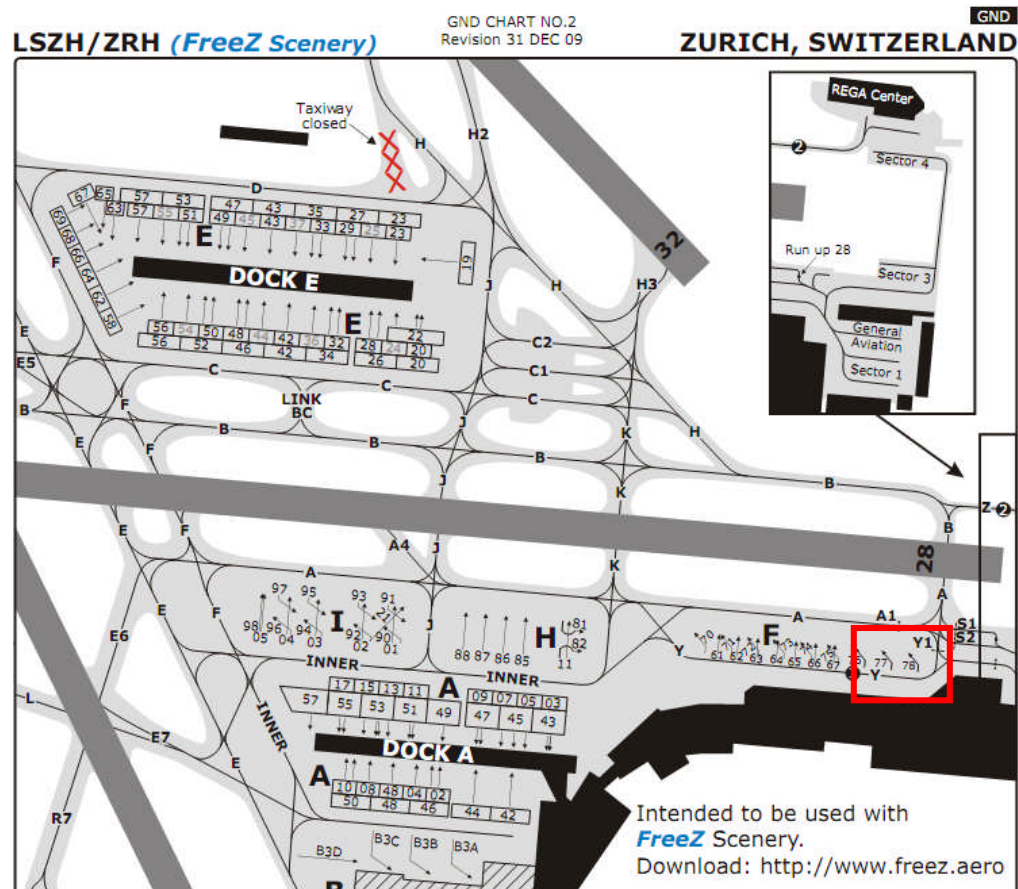
Departure Airport overview

LSZH Zurich has 3 main runways, with **runway 28** very likely to be in use when we take off this morning. This should give us a direct departure to the west to follow the dedicated SID and reach **VEBIT** which is the first waypoint of our flight plan.



Download and Install the excellent freeware scenery for FS9 from www.freez.aero. Do not forget to donate!

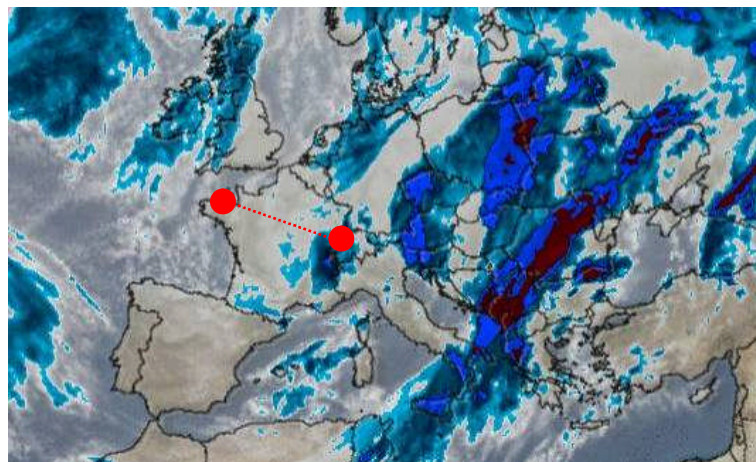
FREEZ
project freeware scenery zurich



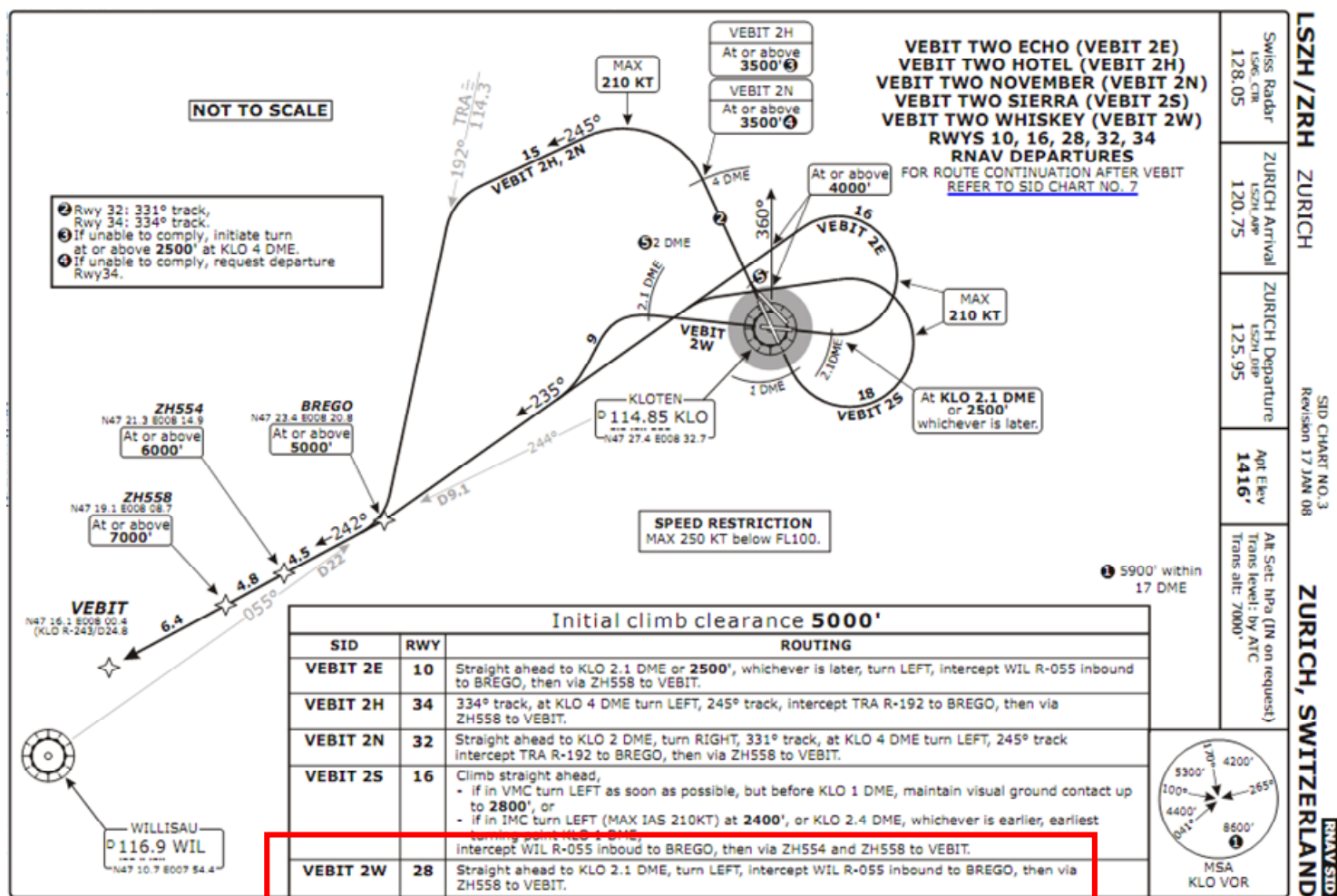
Parking stand and weather

Our aircraft is parked at **LSZH** at **gate F78** which is a few metres away from runway 28 threshold. It is very likely that runway 28 will be in used for take off today which means we will have a very short taxi and be prepared to run through the checklists very quickly when we start moving. There is no need to push back from this parking position.

The latest weather bulletin available on Vroute is pretty good. Although some light rain and a bit of turbulence is expected on take off in the Zurich area, the weather from East to West France should be clear with a dry arrival at LFRD.



Connect to www.vroute.net to get the latest weather updates.



VEBIT SID

We expect a departure on **runway 28** with a **VEBIT 2W** SID to the West to our first waypoint **VEBIT**.

LSZH SID VEBIT T51 LASUN(...)

The initial **climb clearance** is **5000'**

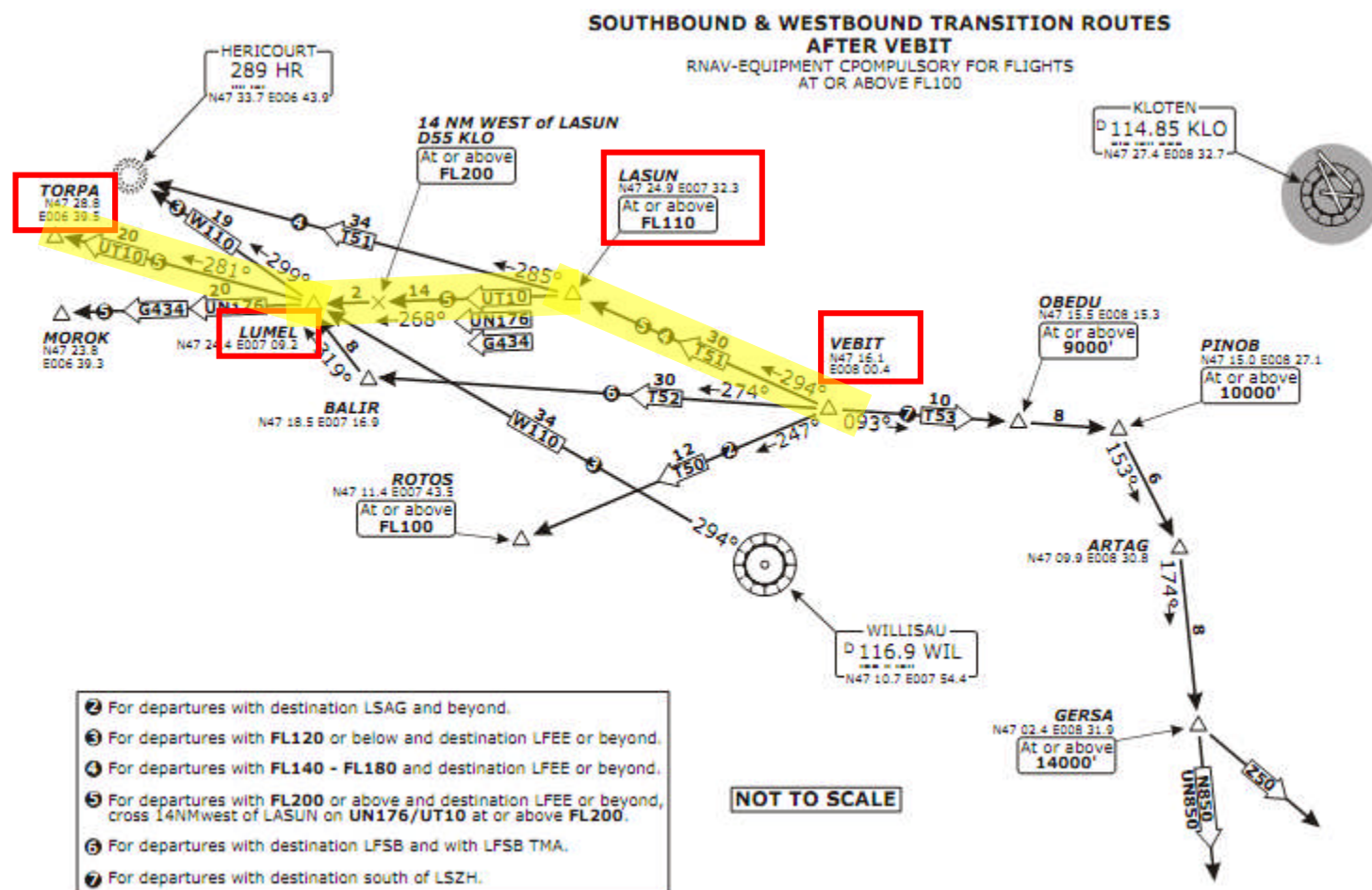
We have **several limitations:**

- **speed restriction** is max **250KT** below **FL100**
- at **BREGO** at or above **5000'**
- at **ZH554** at or above **6000'**
- at **ZH558** at or above **7000'**.

Transition altitude at LSZH is 7000'

Review and download full PDF charts from VACC CH

 **VACC**  **SWITZERLAND
SCHWEIZ
SUISSE
SVIZZERA**

**Transition routes after VEBIT**

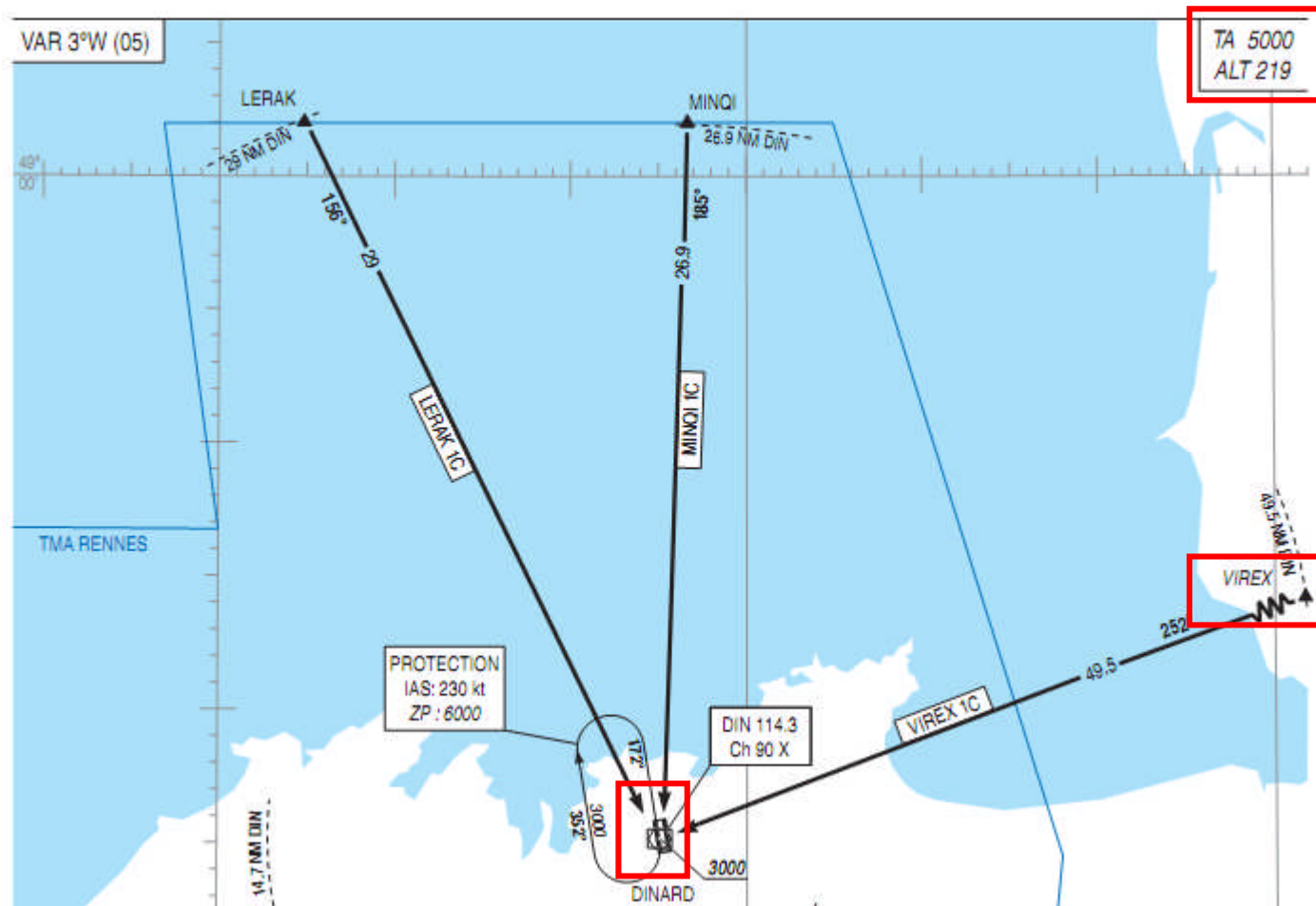
We check that our flight plan is in accordance with the transition routes instructed here, after VEBIT:

- route **T51** to **LASUN** at or above **FL110**
- at **14nm** west of **LASUN**, at or above **FL200**
- route **UN176** to **LUMEL**
- route **UT10** to **TORPA**

VEBIT T51 LASUN UN176 LUMEL UT10 TORPA
 UT40 LUL UQ238 TRO UM164 BRY UM729
 RESMI UL851 PIGOP UN160 CEN R50 VIREX
 STAR LFRD



We must remember to enter these restrictions into the FMS!

**LFRD STAR Arrival**

Our arrival at LFRD will be **VIREX 1C** taking us from our last waypoint **VIREX** direct to **DINARD**.

We have to reach 3000FT at DINARD, and **250KT** below FL100. Transition Altitude at Dinard is **5000'** and the airport altitude is **219'**.

We expect ATC to give us a vector close to arrival in order to intercept the ILS of runway 35 before reaching DIN.

Should we hold at DINARD, we can only do so at **3000' and 230kt**.

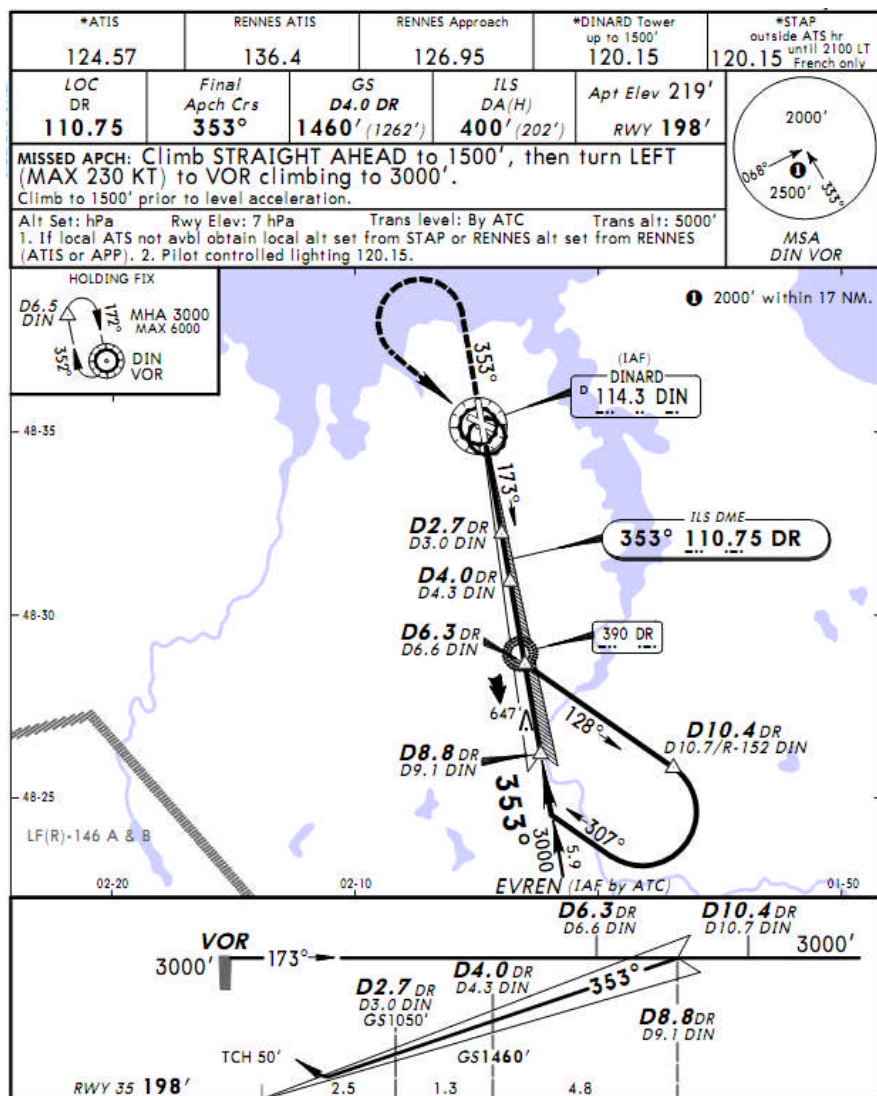
LSZH SID VEBIT T51 LASUN UN176 LUMEL UT10
TORPA UT40 LUL UQ238 TRO UM164 **BRT UM729**
RESMI UL851 PIGOP UN160 CEN R50 **VIREX STAR**
LFRD



Download full LFRD charts from **www.sia.aviation-civile.gouv.fr**



SERVICE DE L'INFORMATION AERONAUTIQUE



ILS Landing

From **DIN**, we will fly outbound **173° to 6.6 DIN or 6.3 DR** DME maintaining **3000'** then turn **LEFT** to reach **152° 10.7 DIN** then turn **RIGHT** to intercept the localizer **353°** inbound to DIN.

Should we land on runway 35, we must remember to set the ILS to a course of **353°** and set the frequency to **114.3 DIN**.

The glide slope should be captured at **DME DIN 9.1 or DR 8.8**

In case of a missed approach, we should climb straight ahead and at **1500FT** turn **LEFT** to **DIN** up to **3000FT**.

Our briefing is now complete!

Search for:

Airport name: Airport ID: Airport city:

Search results: (23938 airports found)

Name	ID	City	State / Prov.	Country / Region
Zubko	CYEV	Inuvik	Northwest Territ	Canada
Zuehl	1TE4	Marion	Texas	United States
Zueitina	HLZU	Zueitina		Libya
Zulfi	OEZL	Zulfi		Saudi Arabia
Zumbi Dos Palmares Intl	SBM0	Maceio		Brazil
Zurich	LSZH	Zurich		Switzerland
Zurik Stal	00H4	Olive Green	Ohio	United States
Zutendaal AB	EBSL	Zutendaal		Belgium

Filter search results by

Country/Region: State/Province:

City:

Runway/Starting position:

☐ Search default scenery ☐ Search add-on scenery

Selected aircraft: **1** Fokker - Digital Aviation F-100

Selected location: **2** Zurich

Selected weather: **3** Real world weather (updates)

Selected time and season: **4** 12/11/2010 08:27

☐ Start flight with ATC window open



Now the serious stuff begins!

Start Flight Simulator and either load the saved flight "**Fokker 100 Britair tutorial.FLT**" that is included with this tutorial or manually create a new flight:

➤ **Step 1 is selecting the aircraft** – Choose **Digital Aviation – Fokker** and the **Fokker 100**. Select the **Air France by Britair** variation (F-GKHE)

➤ **Step 2 is selecting the airport**. Choose **LSZH** or **Zurich** as the airport name and select **Gate F 78– RAMP GA MEDIUM**

➤ **Step 3 is selecting the Weather** – Real world weather (updates)

➤ **Step 4 is selecting time and season**, Friday the 12th of November 2010 at 08:27

Review the options and press **Fly Now!** to start the flight.



Remember it is easier to use the enclosed saved flight file with the tutorial as it will provide a full dark and cold cockpit. To manually create a cold and dark situation, refer to Appendix A of this tutorial



Also remember that it is recommended to install the freeware scenery of Zurich from FreeZ. If you don't have this scenery installed, you may not get the F78 gate, choose an alternate parking stand instead

Fokker - Digital Aviation F-100

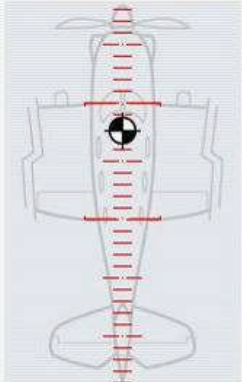
☒ Display fuel quantity as weight

Tank	%	Kilograms	Capacity
Left	53.0	2051	3870
Center	0.0	0	2990
Right	53.0	2051	3870

Total fuel: 38.2 4102 10731

Fuel weight Kg/L: 0.8

Type a percentage, a volume, or a weight for any of the aircraft's fuel tanks.



Fokker - Digital Aviation F-100

☒ Display fuel quantity as weight

Empty weight 26009 Kilograms

Payload 4438 Kilograms

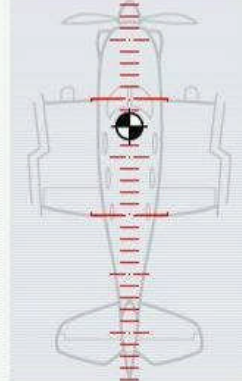
Fuel 4102.02 Kilograms

Gross weight 34549 Kilograms

Max. gross weight 44452 Kilograms

Max. allowable fuel 10730.92 Kilograms

Change Fuel... Change Payload...

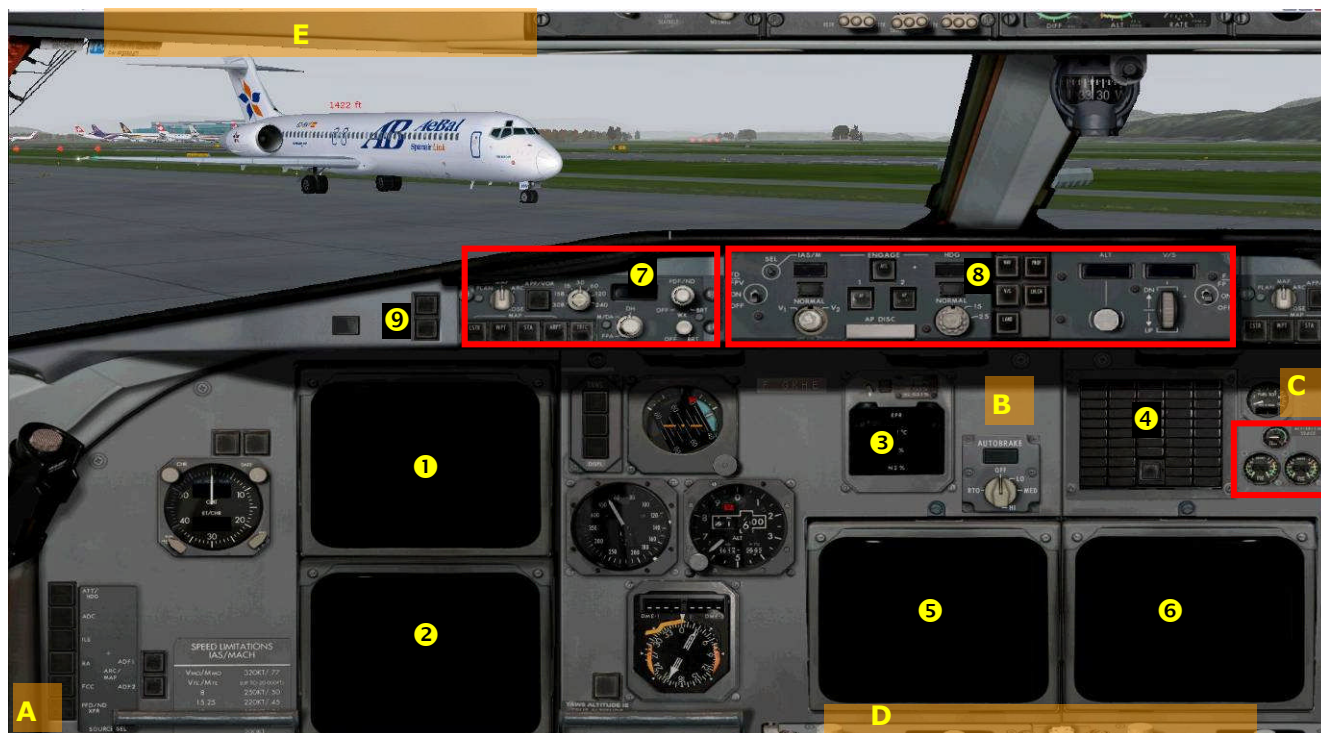


➤ Click on menu then **Aircraft/Fuel and Payload** to open the Fuel and Payload menu, then click the **Change Fuel button**.

➤ Adjust the **fuel quantity** if necessary, in order to get close to 4 tons as calculated previously. 53 % in each left and right tank should do the trick. Do not use the centre tank for this tutorial.

✓ Check the values on the payload page, and you should get a gross weight of approximately **34.5 tons or 34500 kilos**.

➤ Press OK to return to the simulator.



- The Primary Flight Display 1 PFD
- The Navigation Display 2 ND
- The Standby Engine Indicator 3 SEI
- The Standby Annunciator Panel 4 SAP
- The Left Hand side Multi Function Display 5 LH-MFDU
- The Right Hand side Multi Function Display 6 RH-MFDU
- The Electronic Flight Instrument System control panel 7 EFIS
- The Flight Mode Panel 8 FMP
- The Master Warning and Caution Lights 9 MWL – MCL

We are now sitting on board of the Fokker 100, on the captain seat to the left of the flight deck.

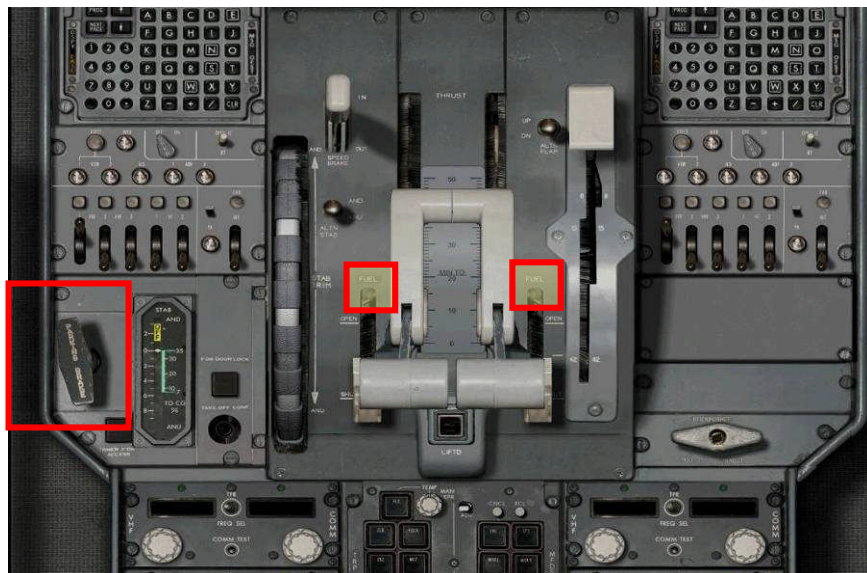
Everything should be dark and no noise heard.



From now on, we will make references to the different parts of the main panel using abbreviation, it is therefore important to get familiar with them

Orange areas are hidden spots that will be useful to open the different panels and is a nice alternative to using keyboard shortcuts:

- A** – open the **utility** panel
- B** – open the **FMS**
- C** – display the **landing gear position lights** (3 green when down)
- D** – open the **pedestal panels** (up, mid and low)
- E** – open the **overhead panels** (low and up)



- Open the mid pedestal (using the hidden spot or Shift+7) and check that the **parking brake is set** and the **fuel levers are off**.

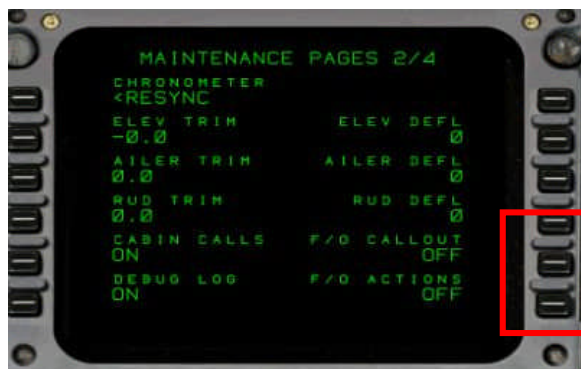
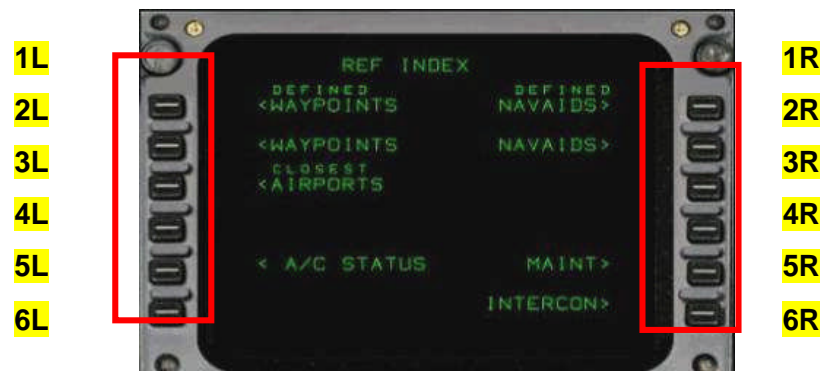


It can be tricky to operate the fuel levels as they are located under the throttles, which, in a 2D world is not so obvious! The easiest way to operate the fuel levers is to place the mouse to each highlighted area and do a **right click to open** and a **left click to close** them. It is OK to move the levers when the aircraft is completely shut down, but remember to close them again before continuing this tutorial

- Close the pedestal and return to the main panel.
- Open the **utility** panel using the hidden click spot
- Click on **PAX, FWD, MID** to open the passenger, forward and mid cargo doors
- Click on **ELEC** to connect the aircraft to the ground supply of power.
- Click on the **hidden click spot** to close the panel



The pushback mini panel is not provided with the Fokker and has been manually added using the mod created by Christian from the DA forum and gauges from **Rob Barendregt** on **avsim.com**. Check full references on page 7 or flytutorial.com



➔ Open the FMS (shift +9 or hidden click spot). The screen should be blank because there is no power in the aircraft.

A full introduction of the FMS will be provided in the next pages, for now you should know that we will make references to the 6 buttons to the left and right side of the screen as **1L** to **6L** for the left hand side of the panel and **1R** to **6R** for the right side of the panel.

➔ Press  then **5R MAINT.** to access the maintenance page.



There are four pages of maintenance option. These are a fictional set of configuration options that are not available in the real aircraft. Refer to Appendix A for further information on this. In cold and dark situations, only page 1 and 2 are available for display

➔ For now press  to access page 2/4

➔ Press **5R** and **6R** in order to turn the First Officer (F/O) callouts and actions **OFF**. This will give us full control and responsibilities to operate the aircraft.

➔ Close the FMS panel



Let's now take a look outside to check our beautiful aircraft!

➤ press **S** three times on your keyboard to switch to external view or use your personal FS settings.

We can see the PAX door is down, as well as the front and mid cargo doors. Power is also connected to the aircraft using a ground outlet.

We should take advantage of this situation to perform the **walk around inspection** and make sure everything is in satisfactory conditions.

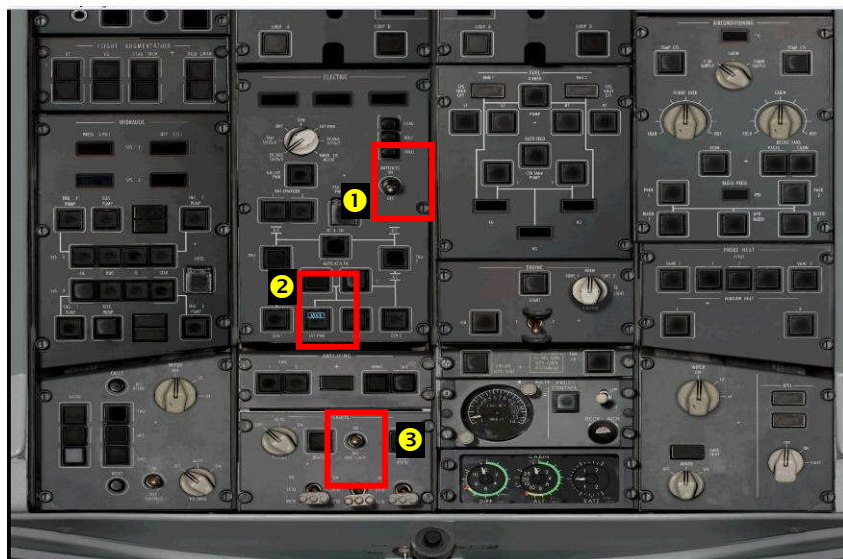


FLIGHT1
SOFTWARE

Flight1 view – a great free tool!

<http://www.flight1.com/view.asp?page=library>

This small module installs into FS2004 and supplies simple mouse-based movements, panning, and more, using the centre mouse wheel/button. You can also move past the default view limits of FS2004 (good for strolling through virtual cabins). After you download, please make sure you read the full instructions included.



Back on board, let's give life to our aircraft!

➤ Open the lower pedestal(shift+4) and check that all lights are out except the **EXT PWR** which is **AVAILABLE**.

➤ Turn the **Bat switch** to the **ON** position **1** and wait 10 seconds.



TCAS SYSTEM TEST FAIL

➤ Press the **EXT PWR** button that should indicate **ON** **2**



SINGLE CHIME

➤ Turn the **NAV/LOGO** switch to **ON** **3**

➤ Open the overhead panel and initialize **the electric system**:

➤ Rotate the **electric knob** to **BAT** position **4** and press the **VOLT** button **5**.

✓ Make sure there is sufficient voltage **6** for each battery, that is no lower than 24 volts.

➤ Press **all buttons that display OFF** so as to initiate the systems. Do not press the **EXT PWR** as it has to remain **ON**. Your electrical panel should look like the right side screenshot. The **Galley power** button can be kept to OFF as there is no passenger service scheduled for this flight.



The Fokker 100 has a **black panel philosophy** which means the systems are on and working when the lights go out.



➡ Close the overhead panel, and press the **Backup mode select** button in order to display the alerts on the **SAP**.

✓ Check that the lights come to live with alerts appearing on the panel. We can keep the panel on as long as the right MFDU is not initialized.



✓ Check the RH-MFDU, a procedure is displayed : **COLLECTOR TANK LOW LEVEL** with two actions to follow : **Check fuel management** and **avoid extreme altitudes**. This situation is apparently a bug in the simulator that happens when a saved flight is reloaded, so it should not be displayed in real life.

To perform/advance in a displayed procedure, the normal operation is to click on the **ADV switch** 2 located on the lower



It's not convenient to click on a switch located on a panel that is hiding away the MFDU. As a result, the DA team has implemented a shortcut that enables to quickly advance by simply left clicking on the MFDU screen, clever hey?



➡ **Left click** on the **FUEL MANAGEMENT.....CHECK** 1 that will turn green, meaning the action has been checked/done.

➡ **Left click** on the **AVOID EXTREME ALTITUDES** that will also turn green.

Left click one more time next to the two green lines and the procedure will disappear. The **STATUS page** 3 is displayed instead, which is what we want to see.



➤ Now open the upper overhead panel and locate the IRS switches that should be off.

➤ Rotate both switches to the **NAV** position. **ALIGN** and **ON DC** messages should be displayed, then DC ON will go off and ALIGN starts flashing.



The IRS alignment has been set to **10 seconds** using the maintenance panel of the FMS, which is unrealistic. In real life, it could take up to 15 minutes before alignment is realized. The ALIGN sign will keep flashing when the IRS are aligned. **Please refer to Appendix B to use the real time IRS procedure.**



➤ Close the overhead and open the FMS then press

➤ Type **LSZH/LFRD** using the FMS keyboard, the text will be displayed in the scratchpad area, then press **1R** to insert the text in the **FROM/TO** area.


➤ This screen has no useful information for us, so press **6R** to return to the **INIT** page




✓ Back on the **INIT** page, we now have the **LATitude** and **LONGitude** coordinates displayed in the FMS

➔ press **SHIFT+Z** to display the exact coordinates of the aircraft position which are **N47*27.31'** and **E8*34.17'4**. We need to adjust the FMS values.



➔ Press  to change the **LAT** value to **4727.3N**

➔ Press **3R 0** to move the double arrow symbol from the **LAT** to the **LONG** side of the FMS and check their position **2**

➔ Press  to adjust the **LONG** value to **00834.2E**. These are rounded values which are the closest to the real position of the aircraft.

➔ Once adjusted and checked, press **4R** to **ALIGN IRS** **3**.

✓ Check that the **ALIGN IRS** **4** message has disappeared.

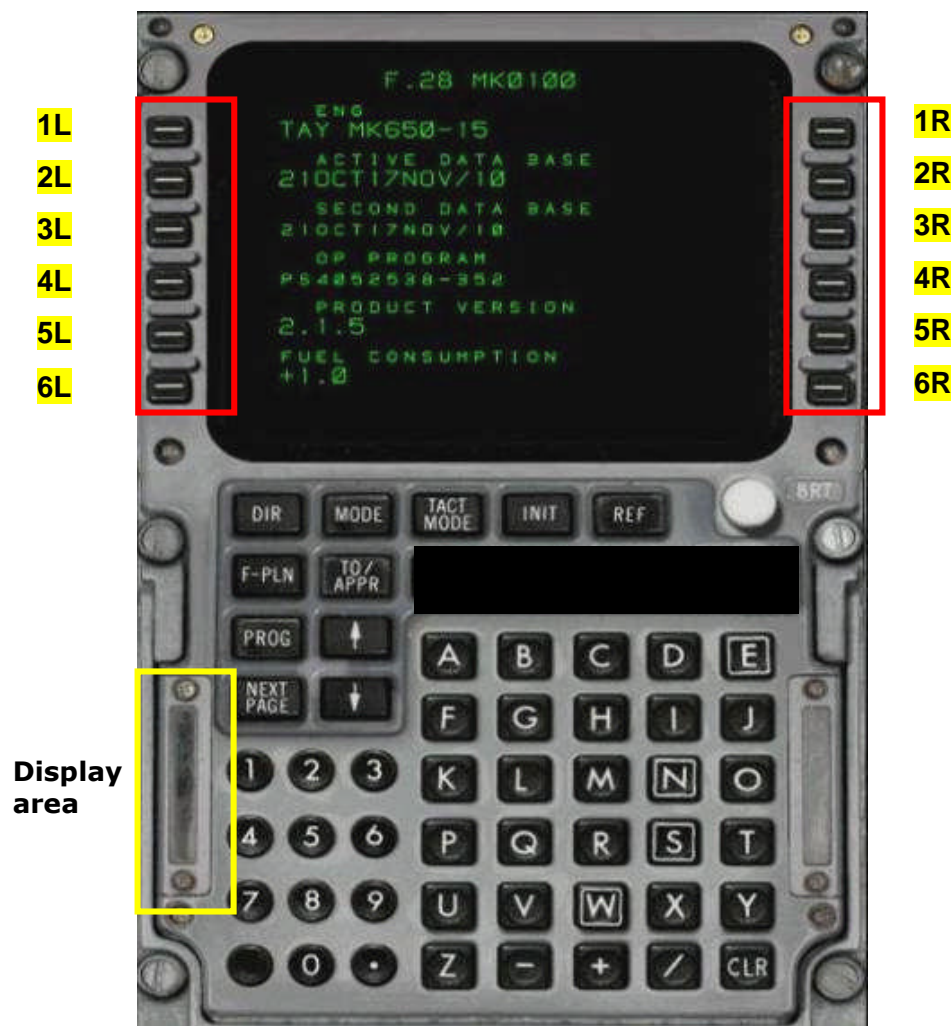
➔ Open the upper overhead panel



✓ Check that the flashing ALIGN lights have gone out. If they are still flashing, you may need to wait a bit longer.

✓ Check that the **PFD** is properly initialized, with the **artificial horizon** displayed. Also the **ATT/HDG** should disappear and all source buttons are blank.

It is now time to move to one of the most challenging part of the flight which FMS programming!



FMS Programming

It is now time to move to one of the most important phase of flight: FMS programming. Basically, this consists of programming our flight plan including SID and STAR procedures and determining several parameters of flight such as performance, speeds, altitudes and constraints.

As mentioned a bit earlier in this tutorial, we will refer to **1L** to **6L** for keys to the **left side**, and **1R** to **6R** for keys to the right side.

Red shaded keys are **INOP**.

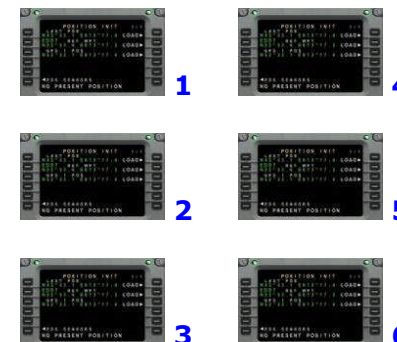
The Display Area will read **DISPL** when the flight plan is scrolled and **MSG** when a level II message is pending.

Once powered, the FMS presents us with the welcome screen, displaying the engine references, the current **AIRAC** (here valid from 21/OCT to 17/NOV of 2010) as well as the **product version** which is 2.1.5 here.



Follow me on the next pages!

FMS explanations are quite intensive in terms of screenshots, so in order to squeeze maximum information, just make sure to follow this simple logic reading scheme:





Press The flight plan page is displayed with the FROM / TO area already completed..



➤ Type **LFRN** as our alternate airport.

✓ Check that **LFRN** is displayed in the scratchpad.

➤ Press **2R** to insert it into the **ALTN** field.



➤ Type **80** which is our cost index (fictional value) then press **4L** **COST INDEX** to insert it into the dedicated area.



➤ We will cruise at **31 000** feet so type **310** then press **5L** **CRZ FL**



➤ We estimate that wind will be heading **140°** at a fair speed of **3 knots** (average values) so type **140/3** in the scratchpad then press **6R** **CRZ WIND**.



The first page of INIT is now completed. The **little green arrow** on the top right corner indicates that there is another INIT page available.

➤ Press

TAKE OFF FUEL	4881	
TAKE OFF WEIGHT ACT	34388	MAX
TRIP FUEL	2580	
LANDING WEIGHT ACTUAL	31806	MAX
MACTOW	23,8%	
TRIM BY CABIN SECTION		
OA 8 OB 0 OC 0 OD 0 OE 0 OF 0		

➔ Open the Electronic Kneeboard and access the **loadsheets** page and check the **FUEL**, **ZFW** and **MACTOW** values.

This is the second **INIT** page.

➔ We estimate a fuel weight of **4 tons**, so type **4** then press **1R** into **BLOCK** fuel.

➔ Our Zero Fuel Weight is approximately 30 350 kilos so type **30.3** then press **2R** for **ZFW**.



✓ the Take Off Gross Weight **TOGW** and Landing Weight **LW** are calculated automatically.

The Centre of Gravity **CG** expressed in %MAC is **23,8%** as indicated on the loadsheets.

➔ Type **23.8** then press **5R**



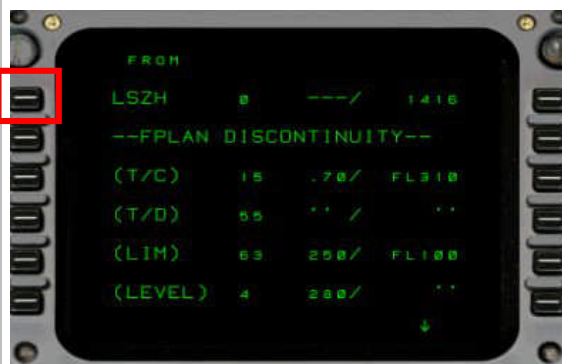
This now complete the INIT page inputs, we will not fill in the **ALTN**, **FINAL/TIME** and **EXTRA/TIME** fields for this flight.

➔ Press



This is the Flight Plan page with the departure airport displayed at the top.

➔ Press **1L** **LSZH** to select a SID route.





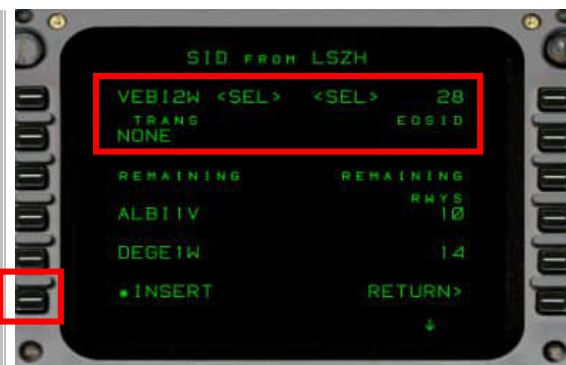
➔ Press **1L** to enter the **SID** pages.



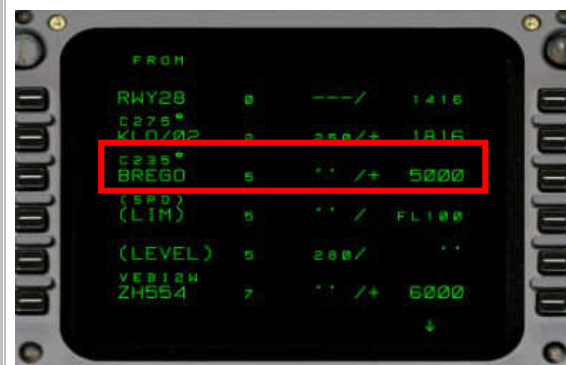
➔ Referring to the LSZH departure charts, press **4R** to select **runway 28** for takeoff.



➔ The **SID** that we need to follow is **VEBIT 2W** so press **4L VEBI2W**



✓ Check that the runway and SID are properly selected on top then press **6L INSERT** to add the SID legs to our flight plan.

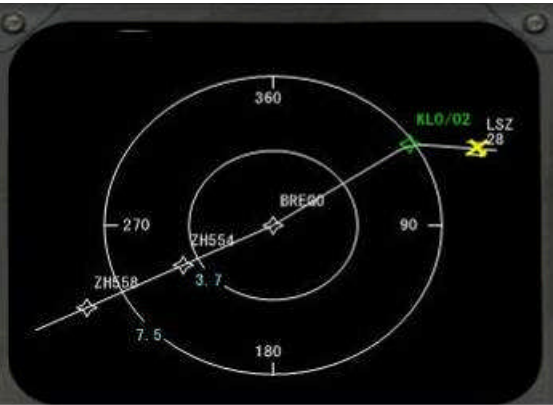


✓ The flight plan page now displays a number of waypoints such as **BREGO**. An altitude constraint of **5000ft** has also been added, in accordance to the altitude restrictions of the SID. **ZH554** has also an altitude constraint of **6000ft**.





Let's take a look on the ND of the flight plan created so far.


➔ Rotate the ND mode selector to **PLAN** and change the scale to **15** on the **EFIS** control panel.



The **ND** now displays the flight plan with the little yellow aircraft being our position. We can clearly identify **BREGO**, **ZH554** and **ZH558** being the first waypoints of the **SID**.

➔ Back to our flight plan, use the   keys so that **VEBIT** can be seen on the screen and press the matching L key, **5L** in this example.

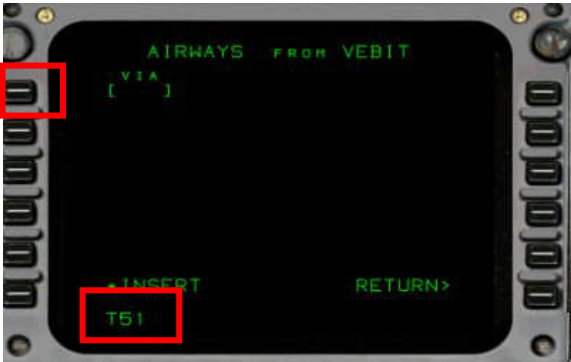


To scroll **down**, use the **TOP** arrow, this will actually slide the screen towards the top. The **DOWN** arrow will take you back towards the beginning of the flight plan, very confusing!! If you get lost, press  to return to the very beginning of the flight plan.

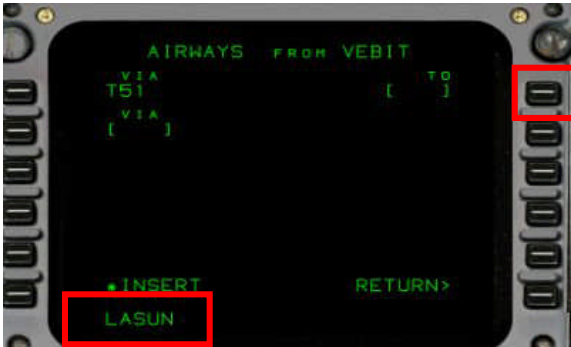
This is the LATERAL REVISION page from **VEBIT**. The next point of our flight plan is **LASUN** using airway **T51**.

➔ Press **2L AIRWAY**

VEBIT T51 LASUN UN176
LUMEL UT10 TORPA UT40 LUL
UQ238 TRO



➔ Type **T51** then press **1L**



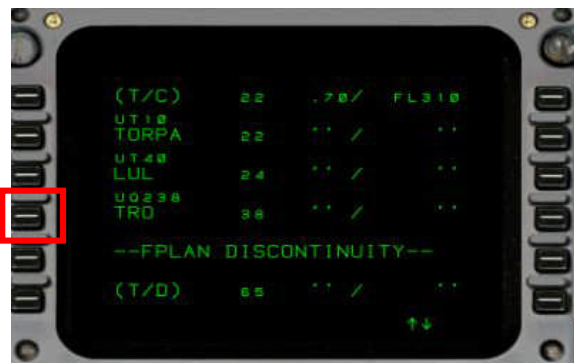
➔ Type **LASUN** then press **1R**




Referring to the flight plan, continue fill in the airways and waypoints, until the screen gets full, as illustrated here.

➔ Once **UQ238** and **TRO** have been inserted, press **6L INSERT**.





This takes us back to the flight plan page.

➔ Press  several times until **TRO** is displayed then press the matching L key, here **4L**



Once again, press **2L AIRWAY**

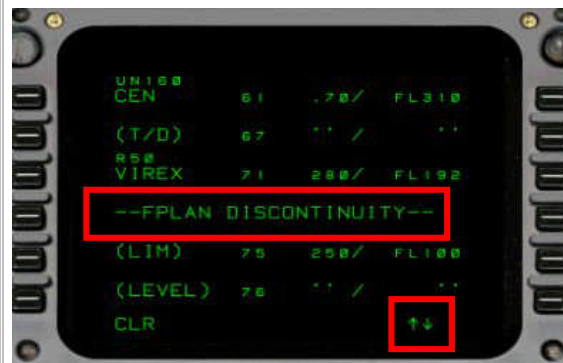
LSZH SID VEBIT T51 LASUN
 UN176 LUMEL UT10 TORPA
 UT40 LUL UQ238 **TRO** UM164
 BRY UM729 RESMI UL851
 PIGOP UN160 CEN R50 VIREX
 STAR LFRD

➔ Add the remaining airways and waypoints from **TRO**, the last ones being **R50** and **VIREX**

➔ Press **6L INSERT** when completed

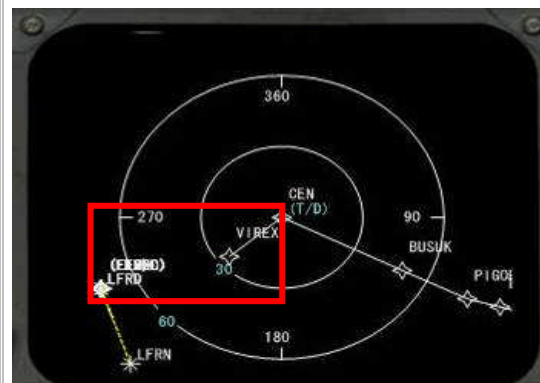


➔ Use the arrows to move down the flight plan until **VIREX** is in sight.




From VIREX, we will need to define our approach, which will very likely be direct to DIN.

➔ Use the Arrow keys to scroll until **VIREX** is displayed on the flight plan as illustrated here. A **FPLAN DISCONTINUITY** is displayed just after **VIREX**.

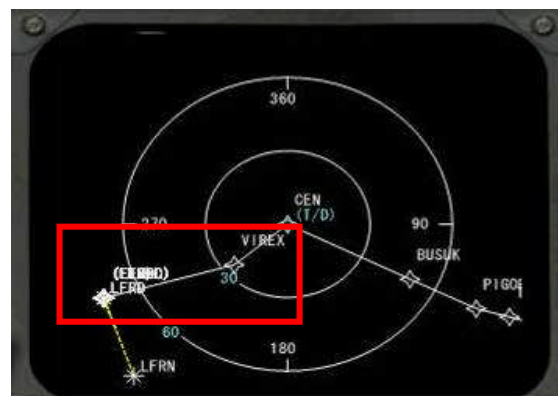


✓ Check the **ND** where the **discontinuity** can clearly be identified between **VIREX** and **LFRD** (no solid line linking both waypoints)



➡ Press  so that **CLR** is displayed in the scratchpad then press **4L** in front of the **FPLAN DISCONTINUITY** in order to remove it.

✓ Check that the **FPLAN DISCONTINUITY** has been removed



✓ On the **ND**, **VIREX** and **LFRD** and now connected!



➡ Also, we have an altitude constraint of **3000ft** at **LFRD** so type **/3000** then press the matching R key, here **5R**

➡ Press  to enter the **TAKEOFF** page.

We need to enter the **V1**, **VR** and **V2** speeds here.

TAKE OFF SPEEDS		PRESSURE ALTITUDE						
		28	30	32	34	36	38	40
FLAPS 0	V1=VR	111	116	120	125	130	134	138
	V2	119	123	128	132	135	139	143
	VFR	119	123	128	132	135	139	143
	VFTO	148	153	158	163	168	172	177
	V1=VR	107	112	116	120	123	127	131

Open the electronic kneeboard again and refer to the V Speed table to locate the closest speeds matching a **0 flap take off** and our gross weight which **34.1 tons**.



➔ Type **125** then press **1L**



➔ Type **132** then press **2L** and **3L**

➔ Finally, press **PROG** to enter the **PROGRESS** page.



✓ At the moment, VOR1 and VOR2 are tuned automatically by the FMS, as the **A** for Automatic states it here.

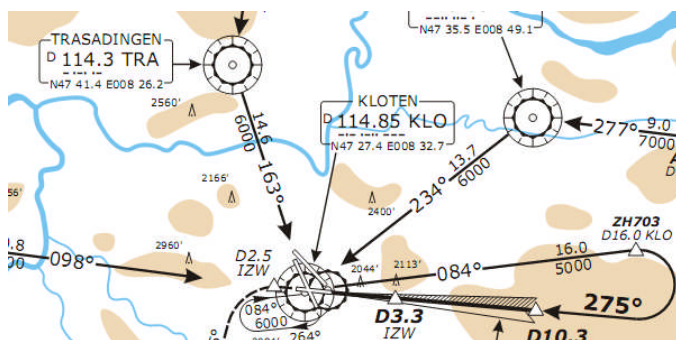
➔ Type **114.3** then press **6L** to insert the frequency into **VOR1**

➔ Type **114.85** then press **6R** to insert the frequency into **VOR2**

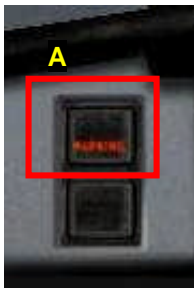


Make sure the stations are **Remotely** tuned as illustrated here. The **R** letter is shown in front of the frequency.

Our FMS programming is now complete !



Should we return to LSZH in case of aborted take off, we need to manually tune the FMS to **VOR1** to **114.3 TRA** and **VOR2** to **KLO 114.85**

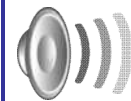


SYSTEM TESTS

We are now going to perform a few system tests.

➤ Let's initiate the **A-B LOOP** by pressing all buttons on the **APU FIRE** ① and **ENGINE FIRE 1 & 2** ③ ④ ⑤ ⑥. All buttons should turn dark.

➤ Press **APU FIRE** ⑦ to start the APU fire test.



TRIPLE CHIME

✓ Check that **FIRE (C)** illuminates on the APU FIRE section of the overhead, **WARNING (A)** is flashing on the **MWL**, and **FIRE APU (B)** is displayed on the **LH-MDFU**.



Let's now perform the FIRE ENGINE test.

➔ Right click the **ENG FIRE** switch **1** to **position 2**



TRIPLE CHIME

✓ Check that the **Engine Fire handle 2 light** is ON

✓ LH MFDU presents a **FIRE ENG 2** red alert message and **FIRE ENG 2** procedure is shown on RH MFDU.

➔ Stop the test by replacing the ENG FIRE switch **1** to the central position



✓ After stopping the alarm, the **FIRE ENG 2** procedure turns to white.

➔ Left click on the procedure steps so that each process becomes green, until the **STATUS** page is displayed.

➔ Repeat the whole procedure for **Engine 1**



➔ Press and hold the **A-SKID** button to test the system.

✓ The **A-SKID** light must be on, until the button is released

➔ Press and hold the **ANN**unicator button

✓ All illuminated buttons must be ON, including on the main panel, until the button is released



OVERSPEED SOUND



AP DISCONNECT SOUND



➡ Press the **WARN SYS** button to start the **Flight Warning System** test and close the overhead to check the main panel.

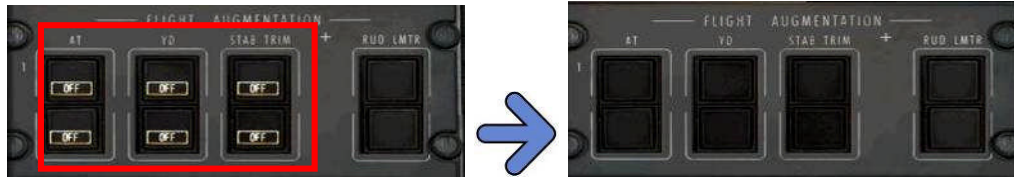
✓ Warning light will be ON on the main panel and a WARN SYS IN TEST message displayed on the LH-MFDU. **The end of the test is indicated by a single chime.**



SINGLE CHIME

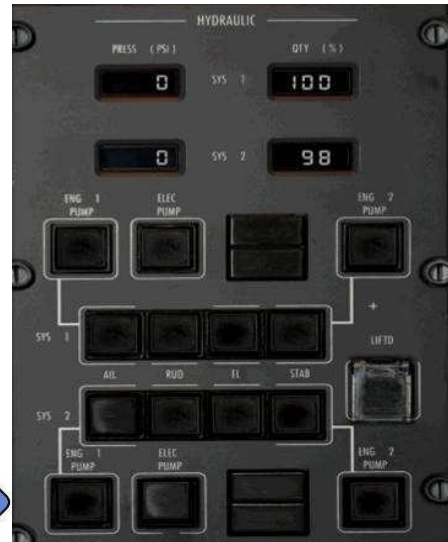
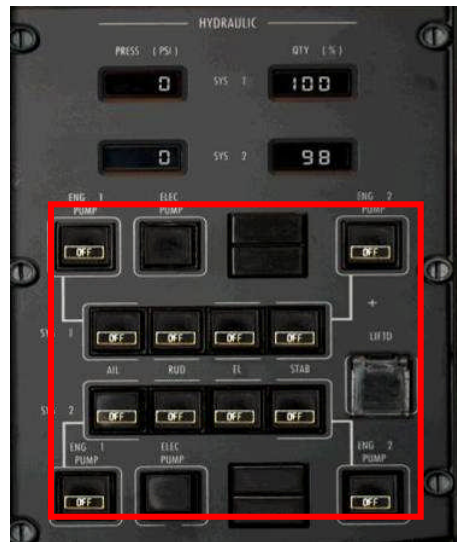


The **SMOKE** and **GPWS** tests are not working on this version of the aircraft.



FLIGHT AUGMENTATION PANEL

- ➔ Press all buttons so that the **OFF** light goes off



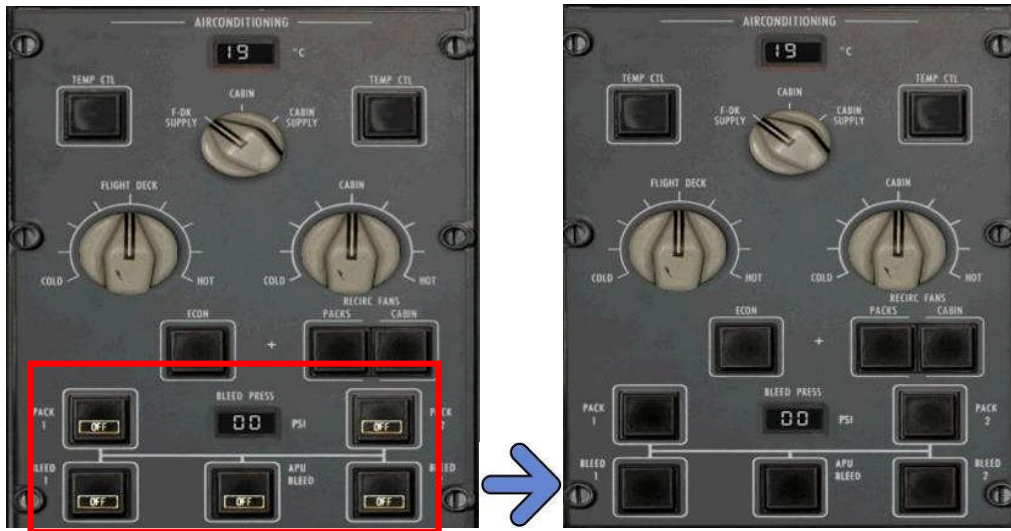
HYDRAULIC PANEL

- ➔ Press all buttons so that the **OFF** light goes off.
- ✓ Check that **Hydraulic quantity** is close to **100%**



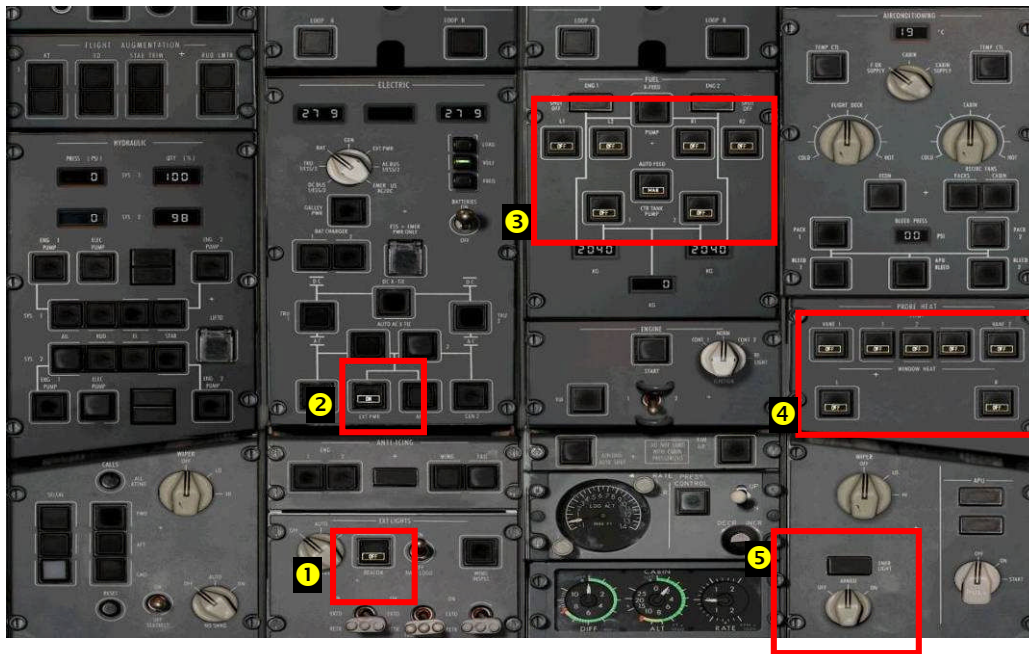
AIRCOND AUTOSTART

- ➔ Press the button so that the **OFF** light goes off.

**AIR CONDITIONING PANEL**

➔ Press all buttons so that the **OFF** light goes off

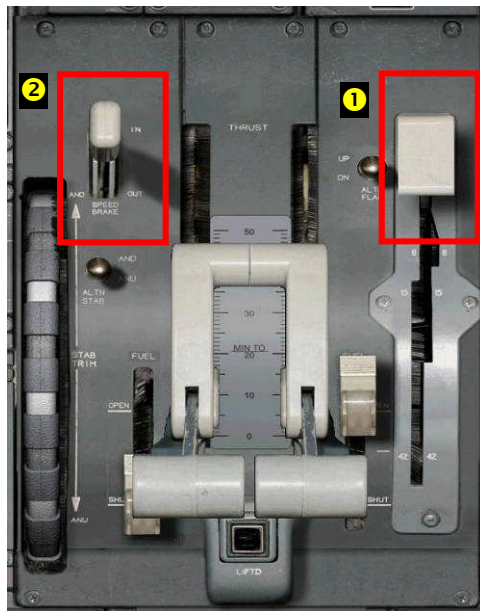
✓ The **bleed air pressure** reads **0 PSU** as the **APU** has not been started yet



✓ Check that the only lights available on the overhead panel are as follow:

- The **BEACON LIGHT** **1** **OFF**
- The **EXT POWER** **2** **ON**
- The **FUEL PUMPS** **3** **OFF**
- The **PROBE HEAT** **4** **OFF**

✓ Check also that the **EMERGENCY LIGHT** knob is **ARMED** and the button is blank **5**.

**UPPER PEDESTAL CHECKS**

✓ Check that the **IRS DISPLAY** is working and displaying the accurate latitude and longitude coordinates.

MIDDLE PEDESTAL CHECKS

✓ Check that the **flap selector 1** is positioned to **UP**

✓ Check that the **speed brake 2** selector is to **IN**

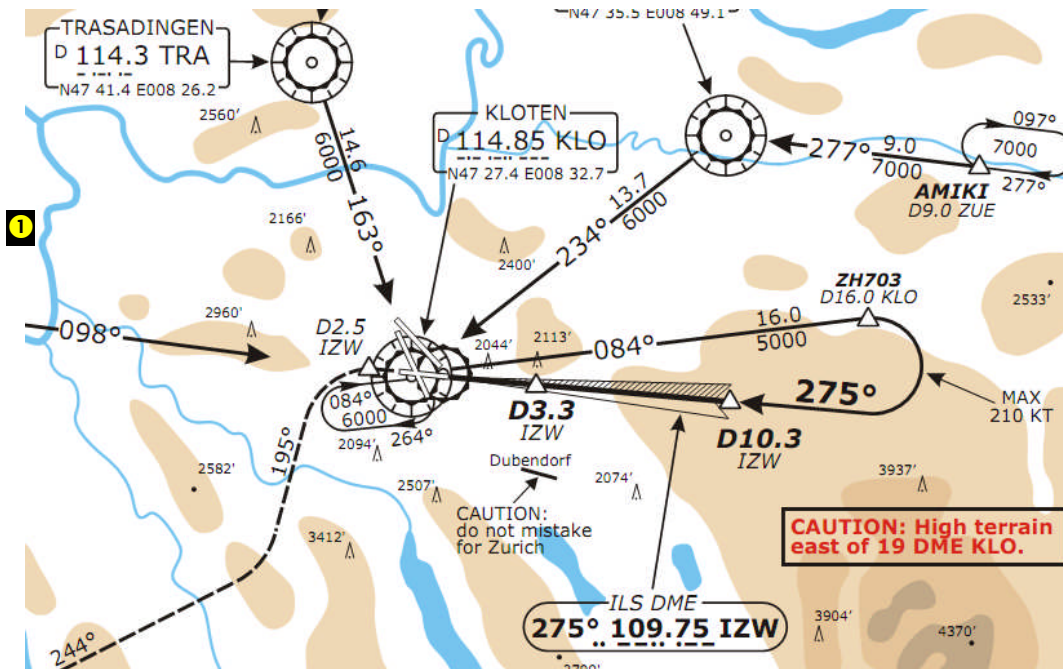
**LOWER PEDESTAL CHECKS**

- ✓ Check that the **TCAS** selector is positioned to standby - **STBY**
- ➔ Press the centre **1** of the TCAS selector so as to initiate the TCAS test. An aural test result will be heard.

**TCAS SYSTEM TEST OK****FLIGHT CONTROLS UNLOCKED****FLIGHT CONTROL LOCKED**

- ✓ Check that the Flight control lock is **ON** to prevent excessive movement of the flight controls while we are on the ground.

- ➔ **Right click on the handle** to lock/unlock the flight controls. The flight controls are locked when the handle is up.



RADIO TUNING

Referring to the departure chart and SID, we will fly the departure using the **KLOTEN VOR**. In case we need to return to Zurich, we would fly **163° outbound from TRA** and then **084° from KLO** to intercept runway 28 ILS 109.75 at **275°**.

➔ Move the **ND selector** to the **ARC** position and check that the **APP/VOR** button displays **VOR**

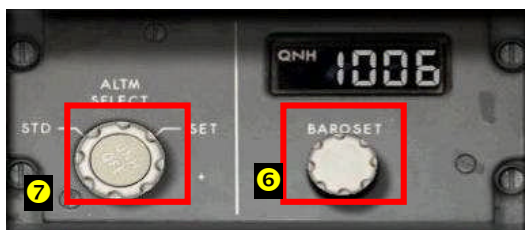
➔ Set **VOR1** **1** to **114.30** and course **2** **163°**

➔ Set **ILS FREQ** **3** to **109.75** with a course **4** **275°**

➔ Set **VOR2** **5** to **114.85** and course **6** **084°**



The manual VOR settings are only as a backup in case of FMS Failure.



TRANSPONDER / ATC-FID TUNING

ATC has provided us with a transponder code of 3142

- Type code "**3142**" and press the **IDENT** **1** button to enable the code immediately.
- Our **Flight IDentification FID** today is **BZH080**. Let's enter this code into the ATC/FID function of the aircraft.
- Press the **ATC/FID** **2** button then **press and hold** the **CLR** **3** button for a few seconds until a cursor appears.
- Type "BZ0803 via the keyboard, similar to a mobile phone alphanumeric input.
- Press the **ENT** **4** key when completed.

ALTIMETERS

Listen to ATIS for QNH for Zurich which informs us to calibrate our altimeters to **2971** or **1006 mBar**.

- On the main panel, calibrate the standby altimeter to **2971** by rotating the barometric reference pressure selector **5**. This gives us a QNH value of **1006**.
- Open the pedestal and set both **ADS barometric** to **1006** by rotating the **BAROSET** knobs **6**
- ✓ Check that the **ADS** selectors **7** are positioned to **SET**.

Fokker 70/100 TPC

Fokker 70/100 Take-off performance calculator

Runway length: **1** Feet: **8202** Meters: 2499,9696

TOGW: **2** Kg: **34386** Works from 27 tonnes up to 45 tonnes.

Flex: Celsius: **3** 2 Airport elevation (feet): **1416**

Flaps: 0° 8° 15°

Take-off speeds: V1/Vr: 130 V2: 135 VFR: 135 VFTO: 168

4 Calculate V-speeds

5 Calculate FLEX

FLEX: 40+ Flexible thrust can be higher than 40°, refer to the charts below! **6**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	
1000	2400	48500	48187	47875	47437	47000	46500	46000	44687	43375
2600	50625	50187	49750	49312	48875	48387	47900	46512	45125	
2000	2400	47000	46625	46250	45875	45500	44750	44000	42875	41750
2600	48750	48375	48000	47625	47250	46625	46000	44625	43250	
1416	2400	47624	47274	46926	46524	46124	45478	44832	43628	42426
2600	49530	49128	48728	48326	47926	47357	46790	45409	44030	
2499	48576	48201	47826	47425	47024	46417	45810	44519	43227	

david.katona@yahoo.co.uk

FLEXIBLE TAKE OFF SETTING

We are going to check whether we can use **flexible thrust** for take off. Flexible thrust is a good way of preserving the engines by performing a take off with reduced thrust instead of using the maximum thrust takeoff/go around **TOGA** mode.

➔ Open the TDC utility and type **8202** for **Runway Length** **1**, **34386** for **TOGW** **2**, **2°** for **Celsius** and **1416** for **Airport Elevation** **3**

➔ Press **Calculate V-speeds** **4** and **Calculate FLEX** **5**

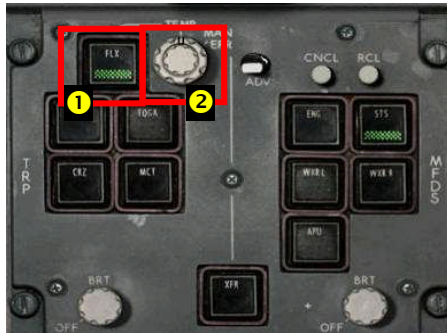
✓ The calculation results give us an assumed temperature of 40+ **6**. Unfortunately, we have no values calculated beyond 40° so we will use the maximum value indicated on the tables here.



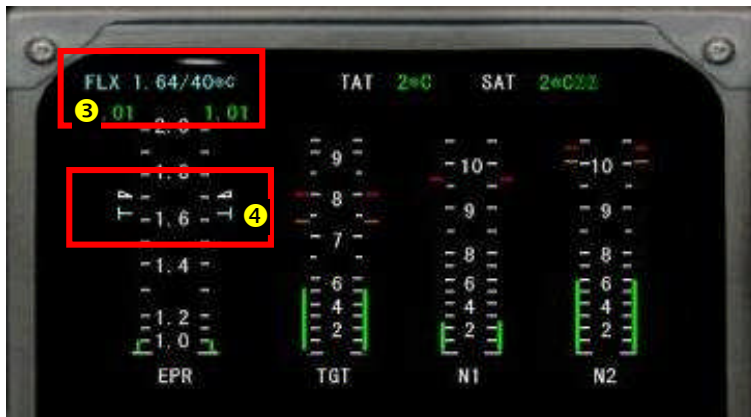
The True Air Temperature **TAT** can be read on top of the **LH-MFDU**



The TDC utility can be downloaded here: www.digital-aviation.de/forum/download/file.php?id=212



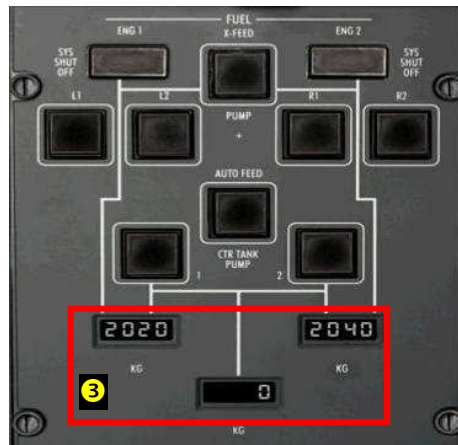
➤ On the pedestal, press the **FLX TRP button** **1** and rotate the **MAN EPR knob** **2** to raise the temperature to **40°C**



✓ The temperature is displayed on top of the **LH-MFDU: FLX 1.64/40°C** **3** and is resulting in an **Engine Pressure Ratio EPR** of **1.64**.

This is also reflected on EPR tape with blue limiter symbols **4** positioned on the EPR tape.





LANDING ALTITUDE

- ✓ Check LFRD arrival charts for airport altitude which is **219 feet**.
- Open the overhead, locate the **landing altitude meter**, and rotate the highlighted knob **1** so that the **LDG ALT needle is just above 0**. If the destination airport elevation was 2000 feet for example, we would position the needle to 2.
- Adjust the manual rate control knob **2** to **DECR** if needed

FUEL QUANTITY

- Check the fuel quantity **3** on the overhead panel. In this example we have **2 tons of fuel** in both the left and right tank. The centre tank is empty and therefore reads 0.
- Check the total quantity of fuel onboard on the main panel. The figure shown here **4.07 4** is the addition of all tanks, which is **4070 kilos**.

LANDING GEAR 3 GREEN

- Move the mouse to the left of the fuel quantity indicator to reveal the **hidden gear panel 5**, which should read **3 greens**.



APU Starting



The APU could be started much before this stage, especially to start air conditioning and prepare the cabin for passenger arrival, but it burns fuel and we have no PAX, so we only start it now in this tutorial.

➡ Open the lower overhead panel and rotate the **APU** knob to the **ON** position, and **only to this position!**

✔ Check the **RH-MFDU** and **WAIT** for the **READY TO START** message to be displayed, it should take a couple of seconds only.

➡ Back on the overhead panel, rotate the **APU** knob to the **START** position. The knob is spring-loaded and will return to the **ON** position once released.



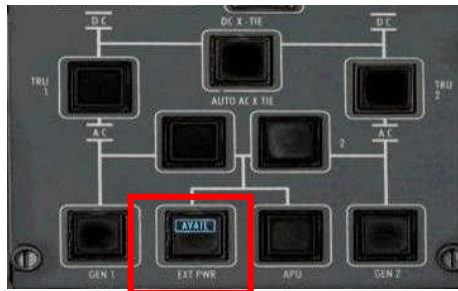
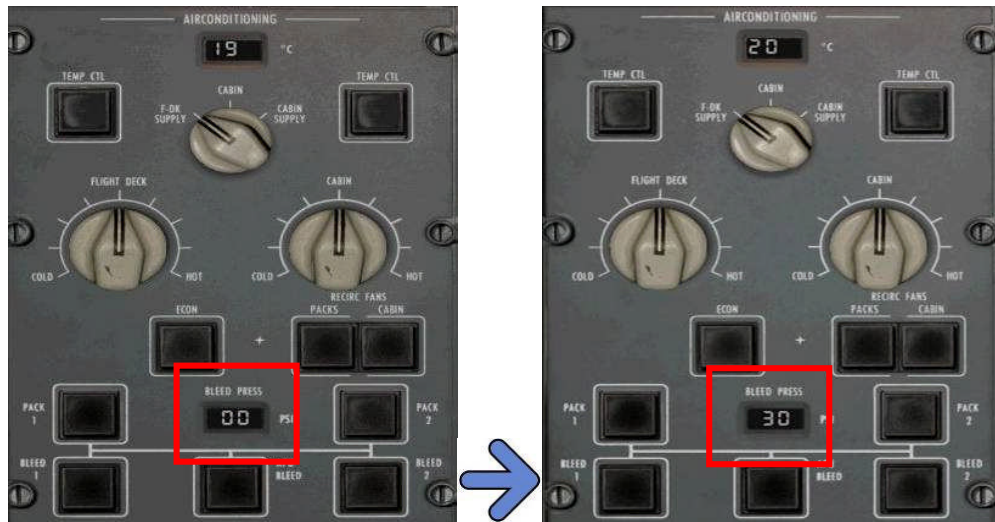
✓ The APU is starting and the process can be monitored on the **RH-MFDU**.



✓ Once APU has started, **APU AVAILABLE** is both displayed on the **LH** and **RH-MFDU**.



✓ On the overhead panel, the APU button should also read **AVAIL**.



After starting the APU, the bleed air is not immediately available (it should take approximately 2 minutes). To check if bleed air is available, check the **BLEED PRESS** indicator, which should read **30 PSI**. Air flow will also be heard in the cockpit.

➤ Now that the APU is available, disconnect the ground power source by pressing the **EXT PWR** on the electric panel

✔ The button should read **AVAIL** in blue

We are now going to remove the power cable that connects the aircraft to the ground.

➤ Open the utility panel and press **ELEC**.

The whole crew is now on board and the cargo has been loaded.

➤ Press **PAX**, **FWD** and **MID** button so that all doors and ground equipment are closed/removed.



✓ Moving to external view, we can visually check that all doors are closed and the ground connection to power has also been removed.

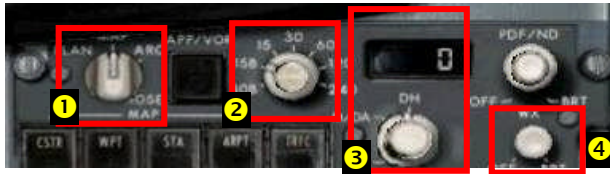
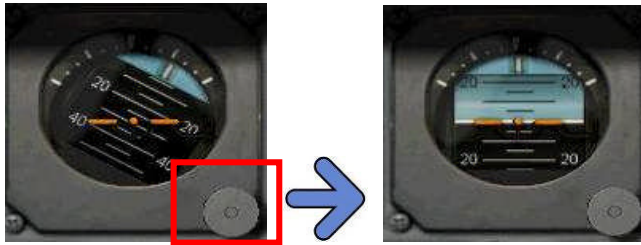
✓ Check on the **LH-MFDU** that **EXT POWER CONNECTED** has disappeared. Only **PARK BRAKE SET** and **APU AVAILABLE** should be displayed.

✓ Check on the **RH-MDDU** that **PAX DOORS** message has also disappeared which confirms doors are up and locked.

➡ Let's manually start the Flight Data Recorder **FDR** and Cockpit Voice Recorder **CVR** by pressing the button on the overhead panel.



The **FDR/CVR** starts automatically once the engines have been started.



➤ Right click on the **STAND BY ALTIMETER** knob in order to bring it to life.

➤ Switch the **ND** mode to **MAP** ①

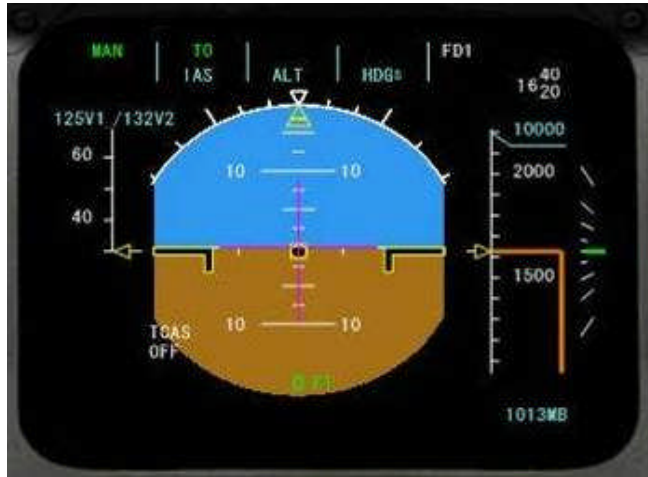
➤ Rotate the **map scale knob** ② to read **15**

➤ make sure the **Decision Height DH** ③ reads **0**. Rotate the knob in order to adjust the DH if needed.

➤ Make sure the weather radar **WX** ④ is **OFF** by turning the WX knob all the way to the left.

✓ Check on the **ND** that the **MAP** mode is displaying the flight plan.

✓ Check that **SRC SELECT** is normal at the lower left corner of the main panel, with all buttons being blank.



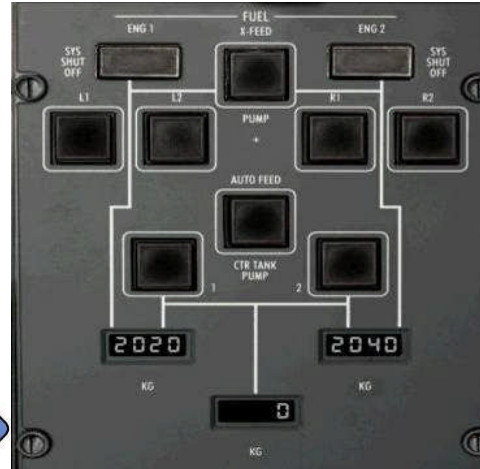
FMP settings

- Turn both **FD/FPS** switches **1 2** to **ON**
- Adjust **IAS** **3** to **V2+10** which is **140** knots
- Adjust **HDG** **4** to runway heading which is **275°**
- ATC has cleared us to the transition altitude so set **ALT** **5** to **7000**
- Pull the **ALT knob** **5** to arm the altitude by right clicking it.
- ✓ Check that the **PINK cross** from the **FD** is displayed on the **PFD**
- ✓ Check that **IAS**, **ALT** and **HDG** modes are armed (displayed in blue)

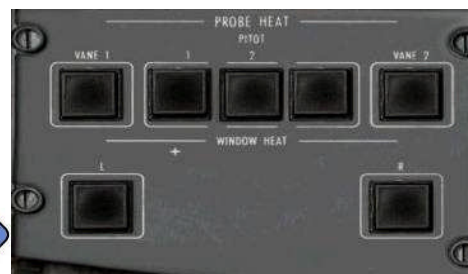
It's time to start the engines!



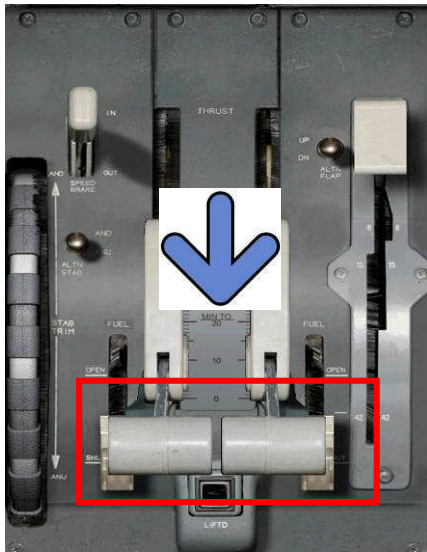
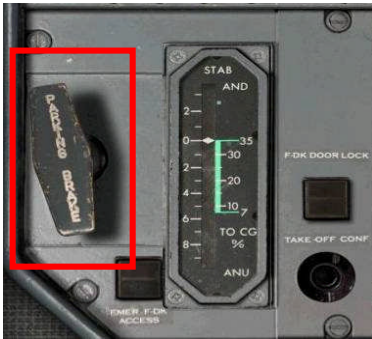
- Position the **seatbelt sign** 1 switch to **ON**
- **No smoking sign** 2 to **ON**
- **STROBE** knob to **AUTO** 3
- **BEACON** button 4 to **ON** (the button should be blank)



- Press all **FUEL buttons** that displays **OFF** so the panel becomes dark and all fuel pumps are initiated.



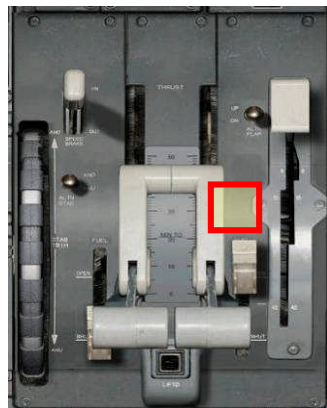
- Activate the **PROBE HEAT** system by pressing all buttons of the panel so that it becomes dark too.



✓ Make sure the **parking brake** is set.

✓ Make sure the throttles are in an **IDLE** position.

✓ Also, check that the **engine anti-ice** are **OFF** on the overhead panel (all buttons should be dark).



➤ Turn on the **Standby Engine Indicator SEI** by moving the switch to **ON**, in order to have an accurate reading of the engine parameters.

➤ Press the **ENGINE START** button and make sure the **ON** light is displayed, then right click on the switch just below to start **ENGINE 2**.

➤ Immediately close the overhead panel after that.

✓ On the main panel, check that the engine is starting by monitoring N2% which should be rising.

➤ **When N2 reaches 20%**, open the pedestal and **right click** on the highlighted area in order to open the fuel lever for engine 2.



✓ Engine n°2 should start immediately.

Turbine Gas Temperature TGT 1, **oil pressure** 2 and **fuel flow** 3 are rising.

➡ Repeat the procedure for Engine 1 by left clicking on the engine start switch.

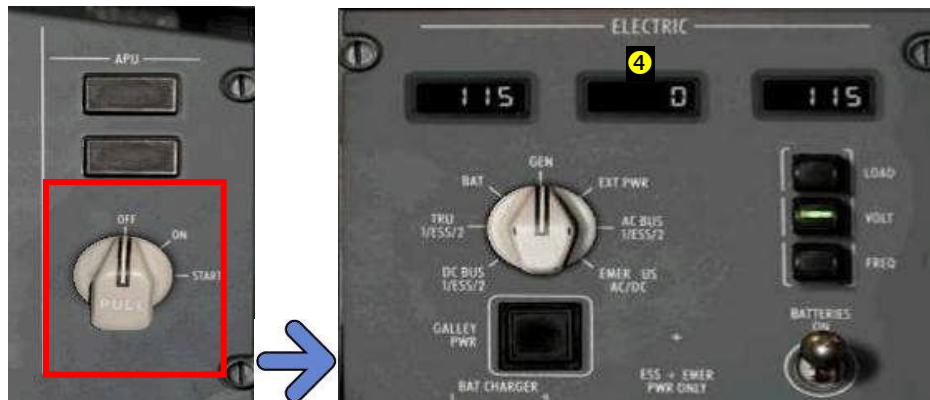
✓ Once both engines have started, check on the **SEI** and **MFDU** that the values are **stable and even**.



- ➔ Press the **ENGINE START** **1** button so that no light is shown.
- ✓ The runway is dry so we keep the **IGNITION** knob to **NORM** **2**. In case the runway is wet, we should move the knob to CONT1
- ✓ Check that the overhead panel is **DARK** with no buttons lit.



➤ On the overhead panel, rotate the power selector to **GEN** and check the values displayed on top in volts : **generator 1** (2), **APU** (2) and **generator 2** (3).



➤ Close the **APU** by rotating the APU switch to **OFF**

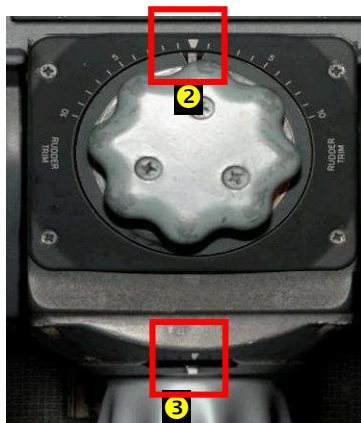
✓ Check on the electric power that APU is not supplying power any longer (4)

➤ Close the overhead panel.



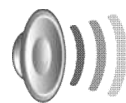
It's time to call the ATC and ask for taxi clearance!

This is going to be a very short taxi as we are very close to the runway threshold so we now have to concentrate in order to complete the final preparation for take off



Trim

➤ Using the trim command set up in your flight simulator configuration (mine is set on the yoke buttons), adjust the vertical stabilizer so that the **white diamond pointer 1** reads **23.8 (approximately)**

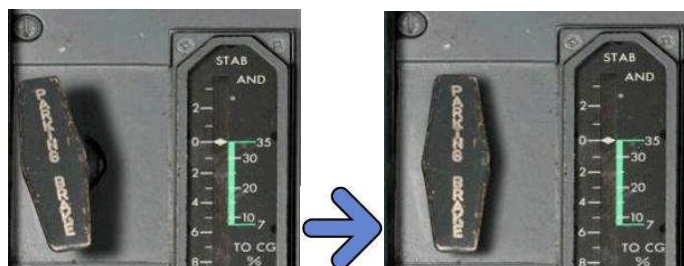


WHOO WHOOP

✓ On the lower pedestal, check that the **aileron 2** and **rudder 3** trim wheels are set to neutral position

➤ Turn the **Standby Annunciator Panel SAP OFF** by pressing **4**

➤ Rotate the **AUTOBRAKE** to the **Rejected Take Off - RTO 5** position

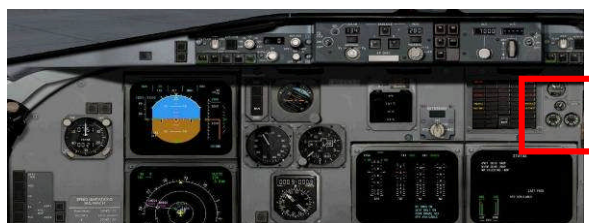


- On the overhead panel, extend and turn the **taxi lights ON**.
- Extend the **landing lights** but **do not turn them on** by now.

- **Release the parking brake** by pushing onto it.

✓ Once the parking brake is released, the **RH MFDU** screen turns blank, only displaying an horizontal white bar to indicate the screen is powered and ready to display any alert messages.

Start taxiing the aircraft, by slightly increasing the throttles. Be careful not as the airport is very busy this morning and we are very close to the runway threshold.



➔ Press **ATS** **1** to arm the auto throttles.

➔ Press **NAV** and **PROV** **2** buttons to arm the lateral and vertical navigation controlled by the FMS

➔ On the EFIS control panel, press **CSTR** **3** and **TRFC** **4** buttons.

✓ Check on the **PFD** that **CLB IAS ALT** and **NAV** **2** mode are engaged.

✓ Check on the **ND** that the **altitude constraints** **3** are displayed in **pink**.

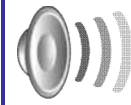
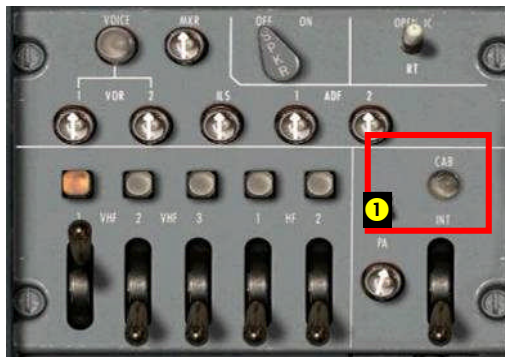
✓ Check that the brake temperatures are in the green zone.



Elapsed time should be reset now, in order to get an accurate flight time.

- Double click on the **ET selector 1** with the left mouse button
- ✓ Check that the **ET/CHR 2** is blank.
- Right click on **ET selector 1** once again to start the chronometer.
- On the pedestal, rotate the weather radar selector knob to **WX+T Weather + Terrain**
- Rotate the **TCAS** Mode select knob to **TA/RA**

✓ Check the **Static Air Temperature SAT** displayed on top of the LH-MFDU. In case SAT is below +6°C, engine anti ice should be on, which is the case in our tutorial. We are deliberately going to forget to turn them on to see what happens!

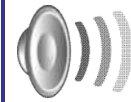


BRRRRR.....

During taxi, you will hear a buzzing sound, this is the cabin crew calling the flight deck.

✓ On the overhead panel, the **FWD cabin call** button is illuminated.

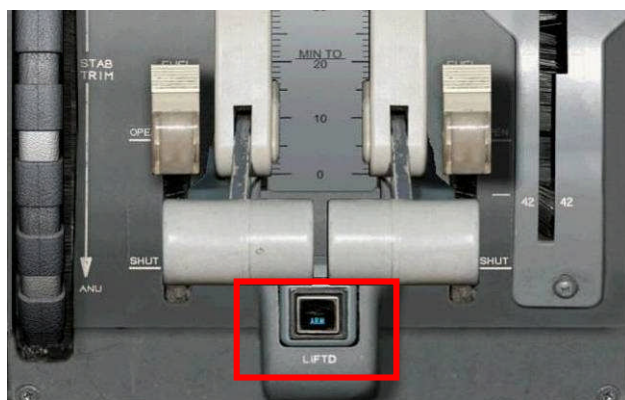
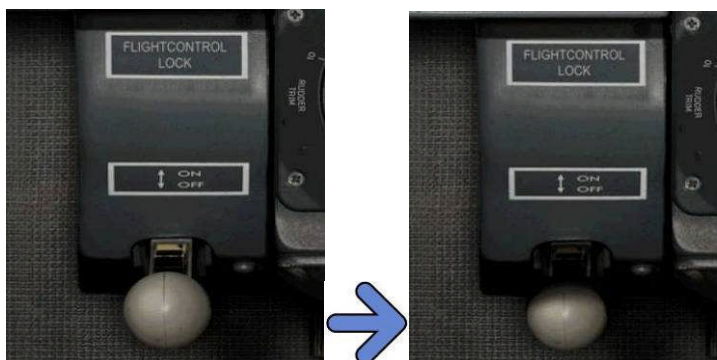
➡ Open the pedestal and click the **CAB CALL ACCEPT BUTTON 1**



CABIN IS SECURE!

We are now at the runway threshold and ask the tower for take off clearance.

➡ Advance the throttles and line up the aircraft to the centre of the runway.



➤ On the lower pedestal panel, push the flight control lock down to the **OFF** position in order to release the lock.

✓ Check that all flight controls move freely.

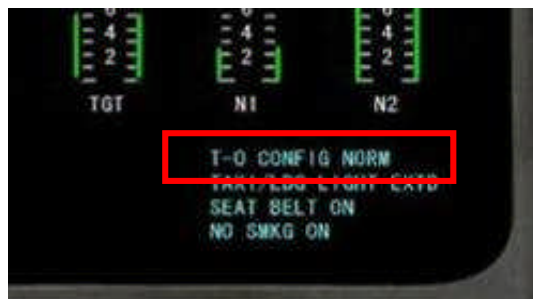
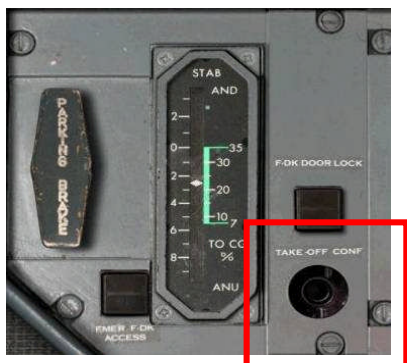
➤ Warn the cabin crew that takeoff is imminent by pressing **the ALL ATTEND CALL** button on the overhead panel.



CABIN CREW PREPARE FOR TAKE OFF

➤ **Arm the lift dumpers** by pressing the button just below the throttles.

✓ Check that **ARM** is displayed on the button.



- Press the **TAKE OFF CONFIG** button on the pedestal
- ✓ Check on the **LH-MFDU** that **TO CONFIG NORMAL** is displayed

- Turn the **Landing lights ON**
- Rotate the **STROBE** knob to the **ON** position.
- Release the parking brake

We are now ready for take off!



Hey, I forgot the flaps!

A very specific feature of the Fokker 70/100, which has a very high lift capability of the wing, is that take off is possible in most situations without any flaps out.

➡ Press the centre of the map range knob in order to activate **TCAS ABOVE** display

✓ Check on the **ND** that **TCAS** is displayed, the position of other aircraft should be displayed in blue and **TA ONLY ABOVE** is displayed.



➡ Manually advance the throttles to approximately **EPR 1.3**

➡ On reaching 1.3, click the hidden **TOGA** button as highlighted here.

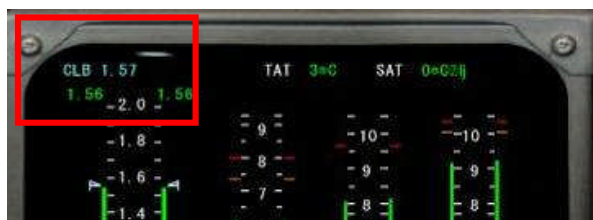
✓ The throttles will automatically advance to **FLEX 1.64**

✓ At 80 kts, check the LH-MFDU, the ATS declutches, two white D's can be seen on the EPR scale

➡ Maintain the aircraft aligned to the centre of the runway using the rudder pedals while the aircraft accelerates.

➡ Monitor the speed tape and at VR, gently pull on the yoke to lift the aircraft off the ground

➡ Gear up!



➡ On the FMP, engage **AP1**.

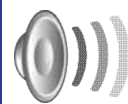
✓ **AP2** will also engage automatically because we are in **TO** mode.

✓ Check on the ND that **NAV** mode is engaged.

➡ Retract the taxi lights

✓ Soon the **CLB** and **IAS** mode become also active. **AP2** is disconnected automatically. The aircraft is now following the flight plan, and climbing at the speed set by the FMS.

✓ Check on the **LH-MFDU** that the **Thrust Rating System TRS** has selected **climb mode CLB**. The declutched mode has also disappeared.



SINGLE CHIME

A single chime will be heard and **ICING** 1 will appear on the **MFDU**

- Open the overhead, the **ICE** warning is also **ON** 4
- turn the **ENGINE** 2, **WING** and **TAIL** 3 anti icing system **ON**

Leave the anti ice on until the True Indicated Temperature TAT reaches -18°C – check the MFDU for TAT

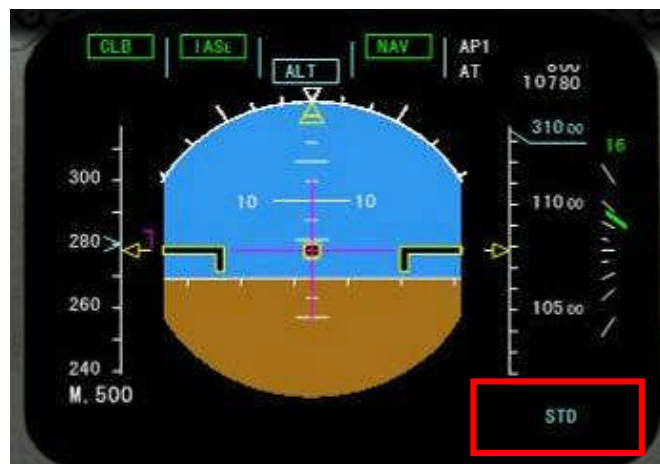


Icing is very likely to form and adhere to the surfaces between +3° and -18°C.

The Fokker wing has no slat and due to its specific design is more likely to be contaminated by ice than its competitors.

In 2008, a Regional F100 crashed in southern France upon departure due to ice on the wing that was not detected.

The F100 wing leading edge has also a unique feature to detect ice which is **a black stripe** which can be view from the flight deck and informs the pilot that ice is forming on the leading edge.



At **transition altitude (7000 feet)**, we must change altimeter setting to standard.

➤ Open the pedestal and left click the **ALT SELECT** button so that **PRESET** is displayed. You will not see the figure of 1013 displayed, this will remain at 1006 QNH ready for switching back when we descent.

✓ The **PFD** will display **STD** in blue on the lower right of the display



**Standard pressure:
2992 = 1013 QNH**

➤ Also, change the **Standby Altimeter** on the main panel, reading to **1013 or 29 92** by rotating the knob **1**.

➤ Turn **OFF** the Standby Engine Indicator **2** as we don't need a precise reading of the engines for now.



We are now cleared by ATC to reach our cruising altitude

- Rotate the altitude knob to read **31000**

In case the aircraft has already reached the previous altitude setting which was 7000 feet, **right click on the altitude knob 3** to reengage the climbing mode.

- Adjust the **EFIS range selector 4** to **30** or **60** in order to increase the ND range display

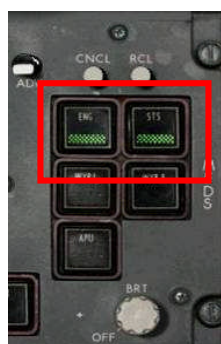


➤ Turn the weather and terrain radar on to **WX+T**

✓ Weather and Terrain alerts should be displayed on the **ND**. **Tilting** can be changed using the **TILT** knob on the pedestal but this will be done during cruise.

➤ Passing 10 000 feet, turn the **landing lights OFF and retracted** and **seat belt sign OFF**

➤ Remove constraint display from the ND by pressing the **CSTR** button on the EFIS control panel.



Remove remote VOR tuning from the CDU so that it returns to the automatic mode:



➔ Open the FMS, press the **CLR** so that **CLR** appears in the scratchpad.

➔ Press **6L** so that **R114.85** returns to automatic tuning

➔ Repeat the process for **6R**

✓ Check that both receivers are set to **AUTO** tuning

➔ Press **ENG** and **STS** buttons on the pedestal in order to display the status page and engine conditions on the **RH-MFDU**

✓ Check for normal **OIL** Pressure and **Temperature** as well as engine **VIB**ration indications. The top part of MFDU remains blank and is available for alert messages.



Continue climbing until cruising altitude of 31 000 feet is reached

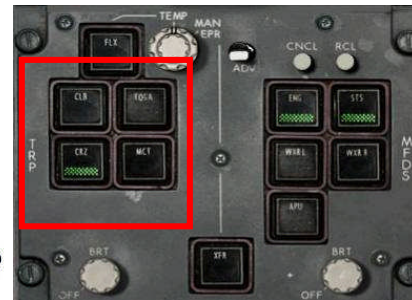
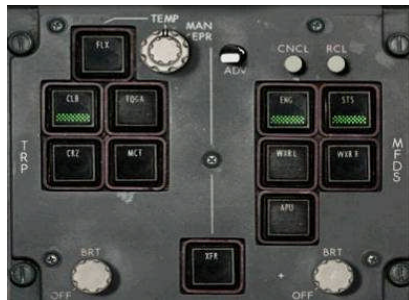
- ✓ Check on the ND for T/C Top of Climb indicator. It should happen short after passing KUBOM.



SINGLE CHIME

- ✓ At 30 500 feet, a single chime will be heard and **ALT mode** will move from **ARM** (bleu) to **ACTIVE** (green)





CRUISE

➔ Change **TCAS** to **BELOW** by pressing the **TCAS button** located on the ND range selector.

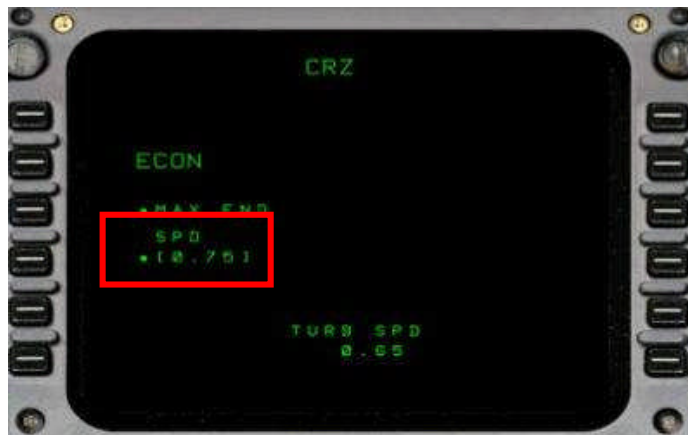
✓ Check that **BELOW** is displayed on the ND.

➔ Change thrust mode to **CRZ** cruise on the **TRP** panel

✓ Check the cabin temperature on the air conditioning panel and adjust it if necessary using the flight deck and cabin knobs



In case the cabin temperature is too cold, the cabin crew will call the flight deck and ask the pilots to increase temperature.



Adjust weather radar tilting:

- Select ND range selector to read **60**
- Adjust tilt on the pedestal to **-5°**



How to adjust tilting?

As a rule of thumb, weather radar should be tilted to an angle resulting from the current altitude divided by the selected range on the ND.


Example :

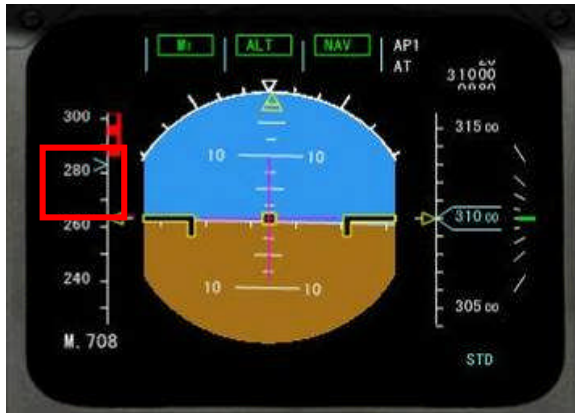
Cruising alt = **FL310**

ND range = **60**

$310/60 = 5$

Passing **LUL** waypoint, ATC informs us that we need to accelerate to Mach 0.75. We are going to change the cruise speed using the FMS


- Open the FMS then press 
- Type **.75** then press **4L**
- ✓ Check that 0.75 is inserted into 4L



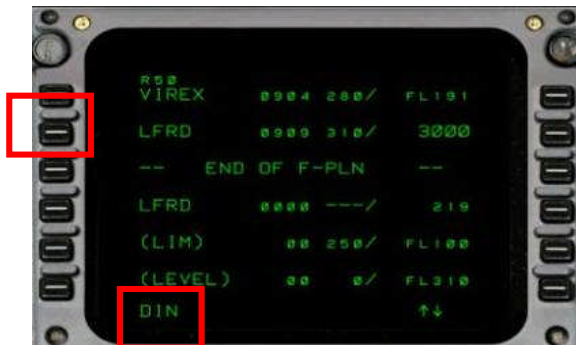
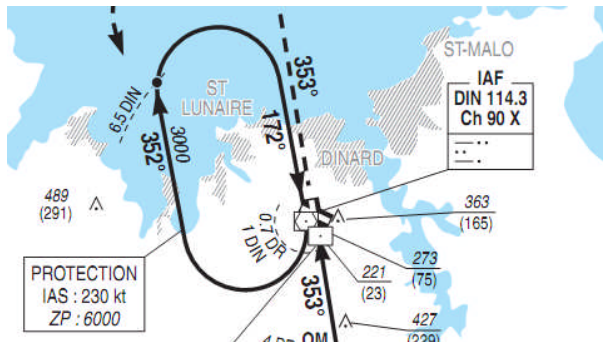
➡ Press **4L** again, the aircraft will disengage the **ECON** mode and starts accelerate to Mach 0.75.

✓ Check on the **PFD** that the **blue speed bug** is now positioned to 280 or mach 0.75

Following our speed increase we need to check fuel quantities and forecasts.

Press  on the FMS then press **2R FUEL PRED.**

✓ The **FUEL PREDICTION** page estimates that we will have **1.6 ton** of fuel left at **LFRD**. If we land at our alternate airport which is **LFRN**, we would have **1.2 ton** left. Our current Gross Weight **GW** is **33.2 tons** and the Fuel On Board **FOB** is **2.9 tons**.



We are now peacefully cruising and there is not much to do, apart from keeping an eye on the flight plan and regularly check the MFDS for potential alert messages. Let's take advantage of this calm period to review our arrival procedure and make some adjustments to the flight plan.

From DIN we will be flying the approach possibly using a **HOLD entry**, then a **VOR/radial/distance** entry in the FMS followed by a **full automatic ILS landing**.

Let's insert the HOLD procedure to our flight plan first.

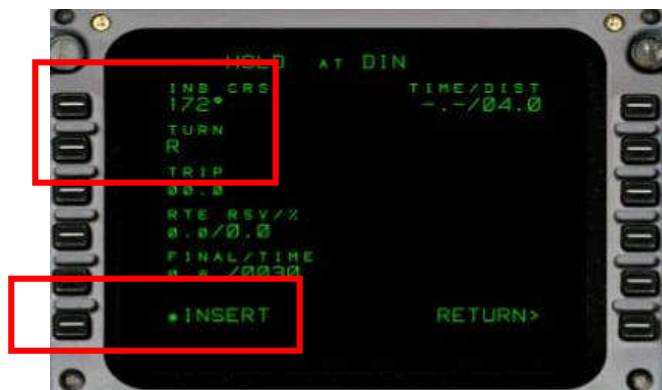
➤ Press the **F-PLN** page of the FMS then using the arrows, move across until **LFRD** is sign. Be careful, we are interested in **LFRD BEFORE the end of the flight plan line**, the one after is the secondary flight plan which we are not using for this flight.

The holding circuit is starting at **DIN** so we must add it to the flight plan.

➤ Type **DIN** in the scratchpad then insert it **between VIREX and LFRD** so in this example we press **2L**.

A **Flight PLAN DISCONTINUITY** has been inserted between DIN and LFRD, so we need to remove it.

➤ Press the **CLR** key located at the bottom of the FMS keyboard that will display the CLR message into the scratchpad then insert it on **FPLAN DISCONTINUITY**, that is **3L** in this example.



✓ Check that the flight plan discontinuity has been removed.

➤ Next step is to click on the adjacent L key of **DIN**, in this example we press **3L DIN**, then press **2R HOLD**

We are now on the **HOLD** page for **DIN**. Referring to the hold diagram on the previous page, holding at DIN follows a **Right course of 172°** at **3000 feet** and a maximum speed of **230 knots**.

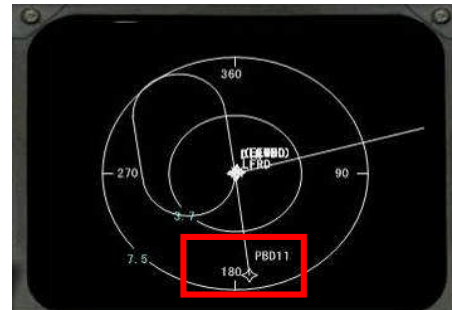
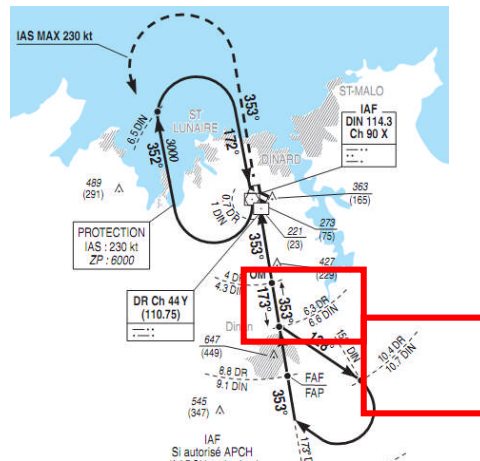
➤ Type **172** in the scratchpad then click **1L INB CRS** (inbound course)

➤ Type **R** then press **2L TURN** to change to a right turn hold.

➤ Click **6L** to **INSERT** the hold into the flight plan, then **6R RETURN** using on the next page to return to the plan.

✓ Check on the flight plan that a **HOLD R** entry has been added after **DIN**, and a repeat of DIN (**DINA**) after the hold.

✓ The hold pattern should also be visible on the **ND**.



When we reach **DIN**, the aircraft will turn into the hold pattern and back towards the DIN waypoint, until we instruct it to leave the hold.

What's next after the HOLD?

First we need to reach 6.6 DIN at 173°

Second, turn right heading 128°

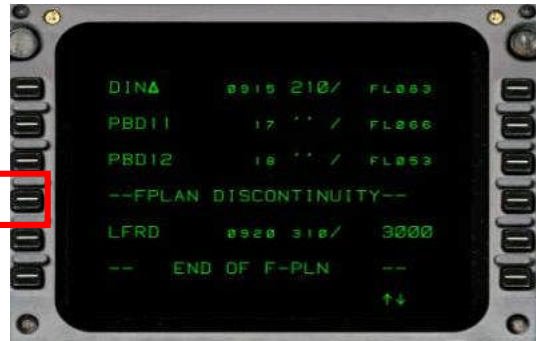
Third, reach 10.7 DIN at 152°

Fourth, turn left heading 353° to intercept the ILS.

➡ On the flight plan page, type **DIN/173/6.6** in the scratchpad then insert it after **DINA**, by pressing **SL** in this example.

✔ A new **Place Bearing Distance PBD** waypoint is created, the reference number – here 11 – is an incremental numbering of all PBD waypoints created in the FMS.

✔ Check on the ND that **PBD11** is also drawn.

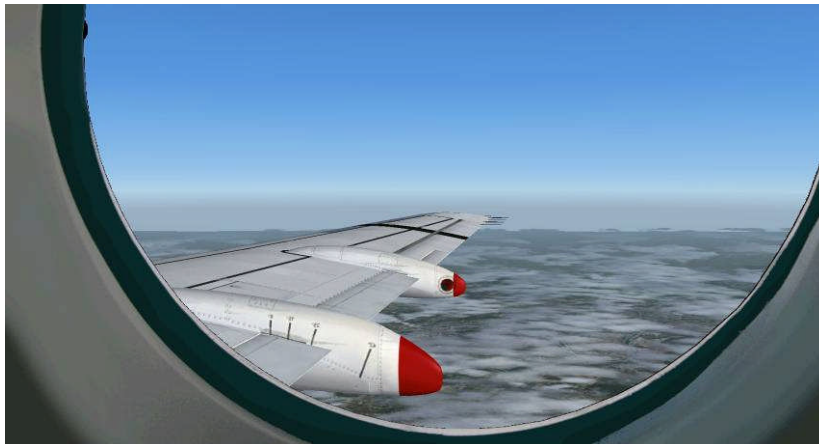
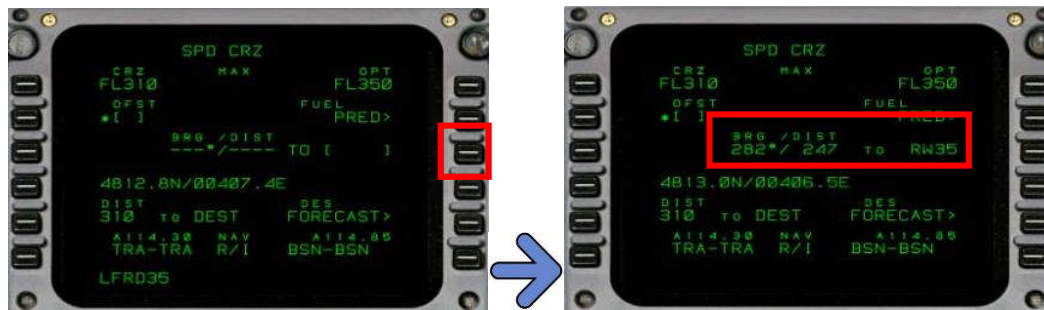


➡ Create another PBD waypoint by typing **DIN/152/10.7** then insert it just below the previous PBD waypoint.

✓ Check that the second PBD – here **PBD12** – is both displayed in the flight plan and the ND. Increase the ND scale if the waypoint is out of view.

➡ Scroll down and remove the **FPLAN DISCONTINUITY** as learnt before, by typing **CLR** then pressing the adjacent L key..


➡ Finally, type **230/3000** then insert it to all waypoints recently added by clicking on the **R** keys matching **DIN**, **HOLD R**, **DINA**, **PBD11** and **PBD12**, in order to insert **230 knots and 3000 feet constraints**.



flying over Paris area

➔ Press  then type **LFRD35** then insert it into **3R**

✓ This is now giving us information on **heading** and **distance** to runway 35 at LFRD. In this example, we are **247nm of runway 35**.

➔ Press the  to check the approach page.

✓ Our **landing weight LW** is expected to be **31.6 tons (1R)**, we are configured for a **flap 42 approach (3L)**, and the **approach speed** has been calculated to be **120 knots (4L)**



Should we want to use a flap 25 approach, we would press **2L 25**



Flaps setting workout

Use this convenient and simple table:

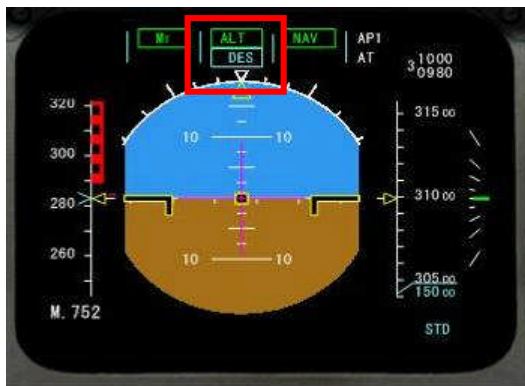
Flaps 8 VAPPR + 60 = 180

Flaps 15 VAPPR + 40 = 160

Flaps 25 VAPPR + 20 = 140

Flaps 42 VAPPR = 120

It is now time to prepare our descent!



➤ Increase the ND range so as to monitor the **Top of Descent T/D** indicated in blue on the flight plan. It should take place short after **CEN** waypoint.

At around 20nm from T/D, ATC clears us to descent to 15 000 feet.

➤ Set the altitude to **15 000** on the **FMP** then **PULL** the **ALT** knob to arm the descent. Once armed, the aircraft will automatically start descending when T/D is reached.

✓ Check on the **PFD** that the **DES** mode is armed (in blue)



Remember on the FMP:

- **PULLING** is **ARMING**
- **PUSHING** is **ENGAGING**



When should I descent ?

The FMS is calculating for us the best T/D, but in case you need to manually descend, and as a rule of thumb, to work out the distance required for the descent, **multiply the difference in altitude (in thousands) by three to give distance in nautical miles.**



For example we know that we must reach 3 000 feet at LRFD, and we are now cruising at 31 000, so $31\,000 - 3\,000 = 28\,000 \times 3 = \mathbf{84 \text{ miles from DIN}}$ is when we should start descending.

Descent Should BEGIN after **approximately 1 hour of elapsed time** on the clock. At T/D, the aircraft throttles will move to idle and the aircraft will start to descent.

✓ Check that **DES** mode is now active on the PFD

RADIO TUNING

➔ On the **EFIS control panel**, turn the ND selector to **ARC**.

➔ Set **VOR1** and **VOR2** to **DIN** frequency **114.30** course **173**

➔ Tune the **ILS** to **110.75** and a course of **353°**.

➔ Move the **AUTOBRAKE** selector to **LO** position

➔ We are now clear to **5 000 feet** so rotate the **ALT** and **pull** on the **ALT knob** to arm it.



➤ Referring to LFRD approach charts, set the **DH** to **400** on the EFIS control panel

✓ Double Check the Cabin Pressurisation panel on the overhead to make sure that our **LDG ALT** is set to **219**

PASSING 10 000 FEET



➤ **seat belt sign ON** and **landing lights extracted and ON**



➤ Press the cabin call button to warn the crew to prepare for landing



CABIN CREW PREPARE FOR LANDING



➤ On the FMS **PROG** page, manually tune **DIN 114.30** to both NAV stations by typing DIN into the scratchpad then pressing **6R** and **6L**.

✓ Make sure **DIN** is remotely tuned by checking the presence of **R114.30**.

➤ Turn all **anti-ice systems ON** on the overhead panel.

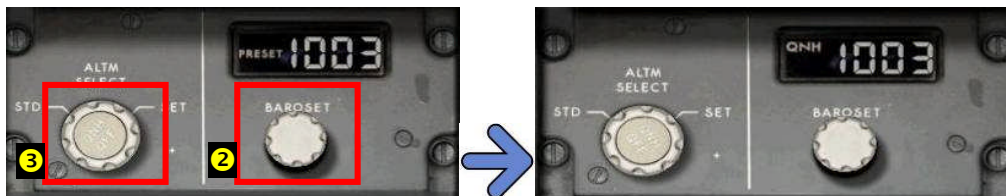


LFRD tower has informed us that QNH is now 1003 and has cleared us to 4.000 feet and 230 knots.

➤ Adjust the **standby altimeter 1** to **1003 QNH**

➤ Rotate the **BAROSET 2** knob in order to display 1003

➤ Rotate the **ALTM SELECT 3** knob to **SET** and check that **QNH** is displayed next to 1003



PASSING 5 000 FEET



- Rotate the speed knob **1** to read 230 then **PULL** the speed knob.
- Adjust altitude to read **4000** then **PULL** the **ALT** **2** knob to descend.

✓ **LVLCH** **3** mode becomes active on the **MFD**

- Set **CSTR ON** on the **EFIS control panel**

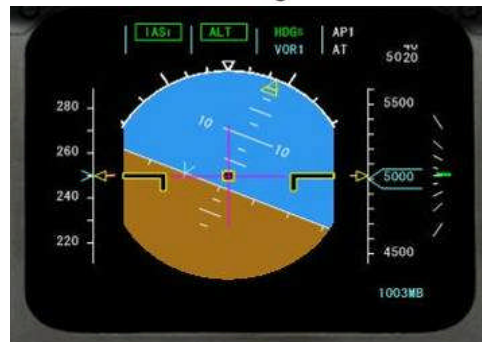
- Adjust the **ND scale** to read **15**

At 5nm from DIN, ATC instruct us to fly heading 230° then intercept DIN 173°

✓ Monitor the distance left to reach **DIN** on the **ND** and **RMI (Radio Magnetic Indicator)**

- Rotate the HDG knob to **230** then **PULL** it to engage **HDG** mode

✓ **NAV** mode is disconnected, **HDG** mode is engaged, and the aircraft is turning to the left



➤ Rotate the **ND MODE** selector to **ROSE** and make sure the **APP/VOR** button reads **VOR**

➤ Arm the **VOR LOC** mode by pressing the **V/L** button

✓ Check that **VOR1** mode is **armed** on the **PFD**

Soon after that, the aircraft should capture the heading and VOR LOC mode becomes active. The aircraft will now follow heading 173°.



➤ In preparation for our next turn, preset a heading of **128°** on the **FMP**

➤ At **6.6 DIN DME**, **PULL** the **HDG 1** knob

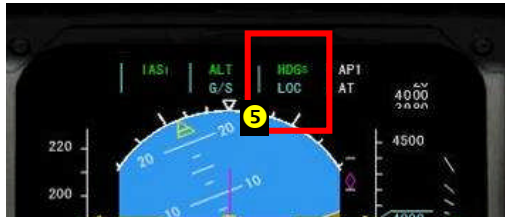
✓ The aircraft is leaving the **VOR LOC** mode and **HDG 2** is now active.

➤ Once the aircraft is heading 128°, **push the HDG knob** so that the current heading of 128° is maintained.

➤ Then **rotate the HDG knob to read 307°** which will be our next turn to the right

➤ On the pedestal, change **NAV1** course to read **152°**

✓ Monitor the **RMI** and/or **ND**. At **10.7 DIN DME** or so, the VOR needle should be more or less in the centre of the rose, meaning we are at 152° from DIN.



➤ Pull the **HDG** **1** knob so that the aircraft turn right to **307°**

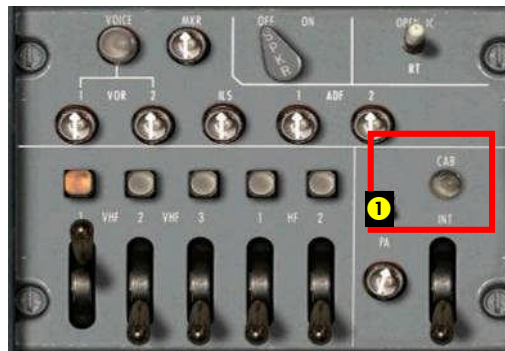
➤ Reduce speed to **180 knots** **2**

➤ Press **APP** **3** so that **APP/VOR** becomes **APP**

➤ When reaching heading 280° or so, press the **LAND** **4** button to capture the ILS.

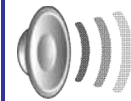
✓ Check that the **LOC** **5** mode is armed on the PFD.

We are about to land!!



At **9.1 DIN DME**, the ILS glide slope is captured and the aircraft start descending.

➤ Set **flaps to 15** and reduce speed to **160 knots**



BRRRRR.....

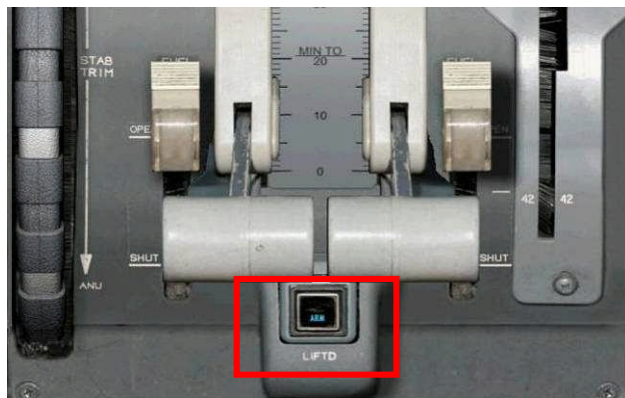
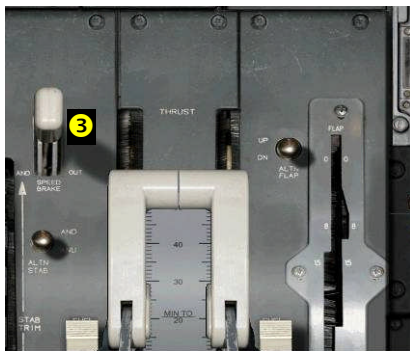
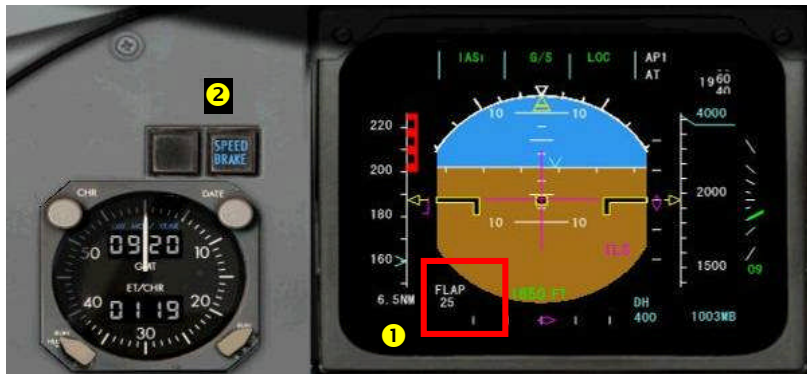
During final approach, you will hear a buzzing sound, this is the cabin crew calling the flight deck.

✓ On the overhead panel, the **FWD cabin call** button is illuminated.

➤ Open the pedestal and click the **CAB CALL ACCEPT BUTTON** **1**



CABIN IS SECURE!



➤ At 4.3 DME, set **flaps to 25** and **gear down**, reduce speed to **140 knots**

✓ Check the current flap configuration on the PFD **1**.

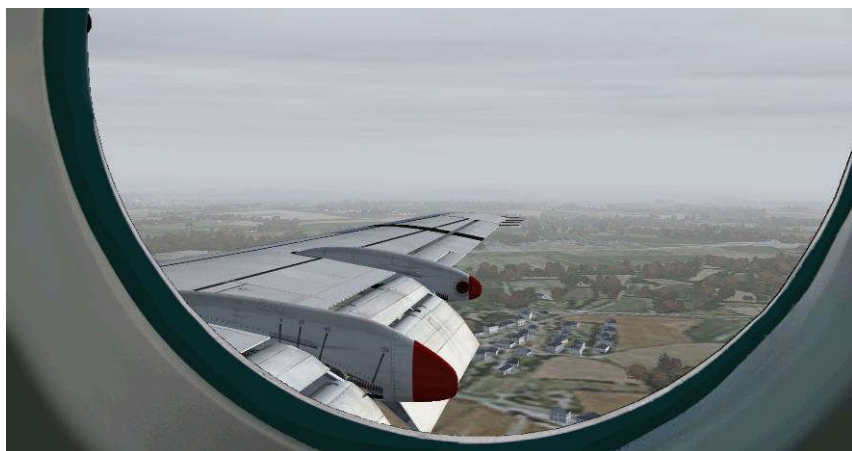
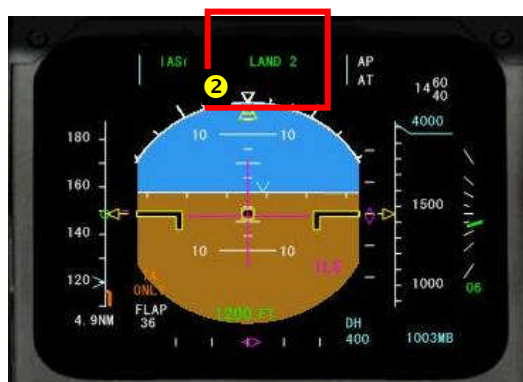
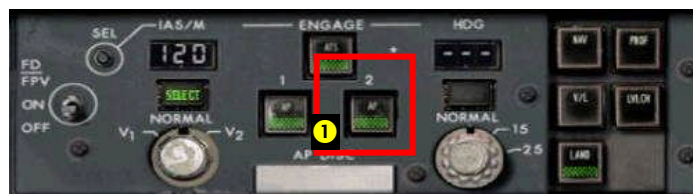


Should the aircraft not decelerating fast enough, **use the speed brake** by moving the speed brake lever to **ON** **3**. Speed brake deployment is indicated on top of the clock as illustrated here **2**.

✓ Check landing gear **3 green** **4**.status.

➤ **Arm the lift dumpers** by pressing the button just below the throttles.

✓ Check that **ARM** is displayed on the button.



✓ At **4 DME**, the aircraft will be at **1500 feet** and both **AP2 1** and **LAND2 2** mode are engaging.

➔ Reduce speed to **120 knots** and set **flaps to 42**

Check the wing view for flap animation !



LANDING

The aircraft is about to land now, and once LAND2 mode is engaged, the aircraft will slow down and flare while the throttles will retard, all automatically.

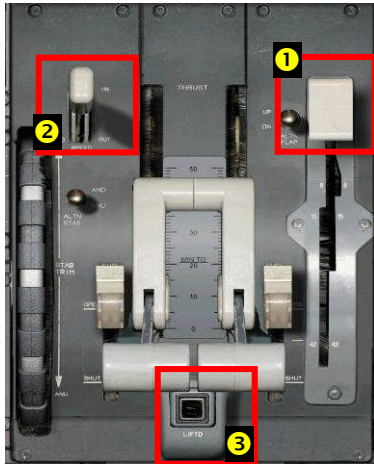
Be ready to action the reverse thrust (F2) upon touching down!



touch down!



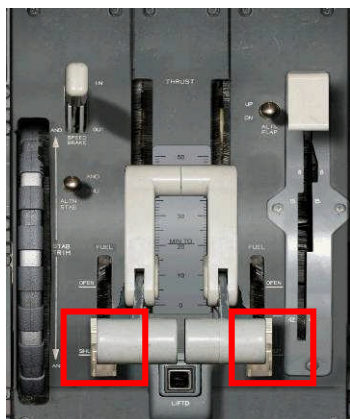
lift dumpers and reverse in action!



➤ On the pedestal, rotate the **TCAS** selector to standby and **WX+T** to **TEST**

- Flaps **UP** **1**
- speed brake **IN** **2**
- lift dumpers **OFF** **3** (button is blank)

➤ Push fully forward on your yoke and **engage the flight control lock**



AT STAND

Park the aircraft where instructed by FS9 ATC or go to GATE1 which is the closest to the airport facilities.

➤ Set the parking brake

➤ Stop timer clock by pressing the **Elapsed time button** once.

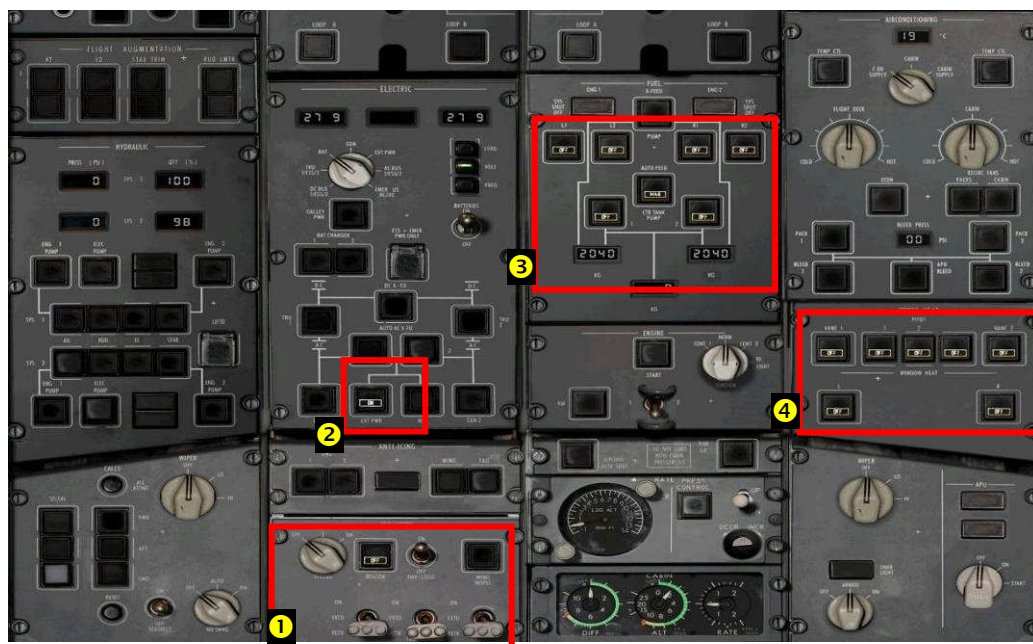
✔ Our flight time today was **1 hour and 23 minutes**, not bad!

➤ Shut down **engine 1 and 2 fuel levers**

➤ Turn the **Seat belt sign OFF**



- ➔ Open the utility panel and open **PAX**, **FWD** and **MID** cargo doors
- ➔ Connect the ground power source by turning the **ELEC button ON**.



Open the overhead panel and complete the following steps:

- ➔ **Taxi lights** and **Beacon** **OFF** **1**
- ➔ **External power** **ON** **2**
- ➔ **Fuel pumps** **OFF** **3**
- ➔ **Probe heat** **OFF** **4**

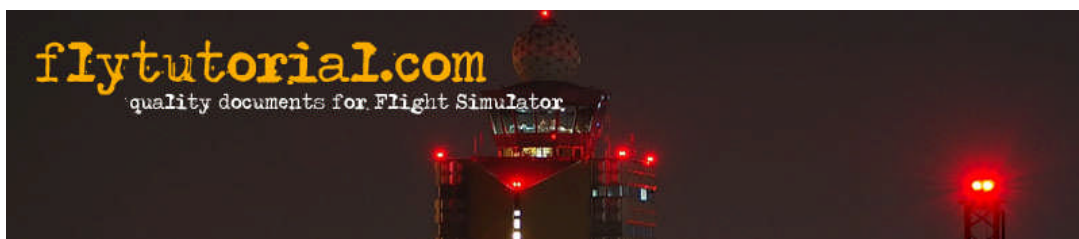


Well done!



Welcome to **Saint-Malo!**

Only 10 km east of the airport, Saint-Malo during the Middle Ages was a fortified island at the mouth of the Rance River, controlling not only the estuary but the open sea beyond. Saint-Malo became notorious as the home of the corsairs, French privateers and sometimes pirates. Nowadays Saint Malo is a thriving touristic city attracting thousands of visitors each year, not being very far from the famous **Mont Saint Michel**.



Check www.flytutorial.com for latest versions and other tutorials

Thank you very much for using this tutorial, I hope you enjoyed using it!
For any suggestions or improvements email to contact@flytutorial.com
This tutorial is also available in French.


Your contribution is greatly appreciated!

David Maler
April 2011

APPENDIX A – Cold and Dark and Initial configuration



To get a full cold and dark panel, every time you start a flight with the DA Fokker, follow these steps:

- 1) Create any flight within Flight Simulator and select the DA Fokker 100 as the aircraft.
- 2) Once the flight is created, you should be in a "**ready to start**" situation.
- 3) Open the FMS window (shift + 9) then press  then **5R MAINT**

- 4) On **page 1/4**, press **1L Reload State next start** to change the option to **NO**. Next time you fly with the Fokker, the panel will be cold and dark.

- 5) Press 

- 6) On **page 2/4**, the options are not saved and therefore must be changed for every single flight. I suggest to disable the First Officer callouts and actions by pressing **5R** and **6R**.

- 7) Press 



8) On **page 3/4**, you can change the **Pack volume** to **LOW** or **MED** using **4L** if you find the pack volume too loud. Also, the **IRS alignment time** can be changed to **REAL** using **6L** (see next appendix for details on this)

8) Press



9) On **page 4/4**, Press **6L CDU KEYBOARD** to display **ALLWAYS** if you use a hardware device such as the CDU II from VRInsight. This means that the DEL key of the keyboard will always be affected to the CLR function of the FMS every time you fly with the Fokker, so make sure not to allocate this key to any other FS function.



We have reviewed quite a few configuration options using the MAINT pages of the FMS, these functions are usually available in the config tool and it is quite unusual, but also convenient to retrieve them in the aircraft FMS.

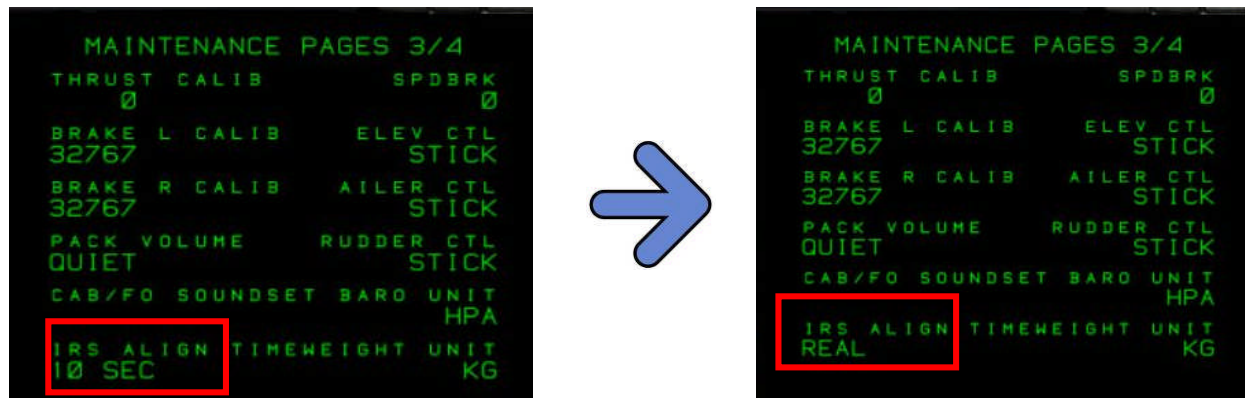
As a summary, to create **a cold and dark cockpit**, there is one single option to change on page 1 which is **NO** to **reload panel state next start**.

APPENDIX B – Using real IRS alignment

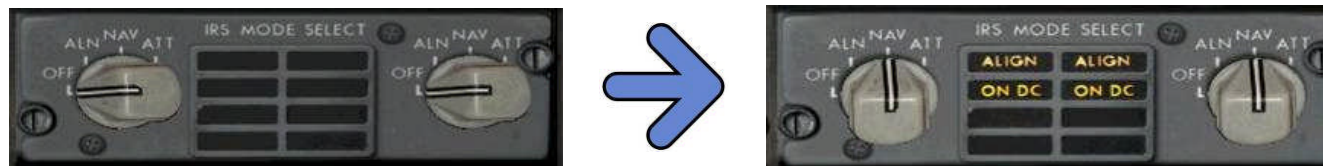
By default, the aircraft is configured to use a fictional **10 second IRS alignment**. In real life it can take up to 15 minutes to get a full IRS alignment.

Please follow these steps if you want to use real time IRS alignment:

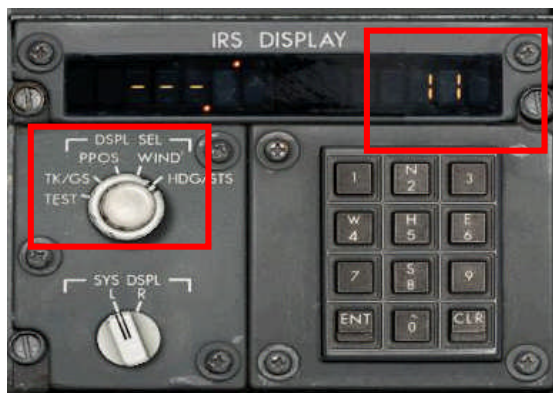
- 1) Once your flight has been loaded, open the FMS and press the **MAINT** key then NEXT twice to get to Maintenance Page 3/4 as illustrated below.
- 2) Press **6L** to change the IRS align from 10 SEC to REAL
- 3) Close the FMS



- 4) Initialize the electrical systems as demonstrated in this tutorial then move the IRS knobs to the align position on the overhead panel:



5) To monitor how much time left before the IRS are fully aligned, open the pedestal and move the display selector - DISP SEL to HDG/STS. The number displayed as illustrated below is the number of minutes left before the IRS are fully aligned!



6) Once the IRS are fully aligned, the PFD and ND will be automatically initialized and ready to use



IRS not aligned



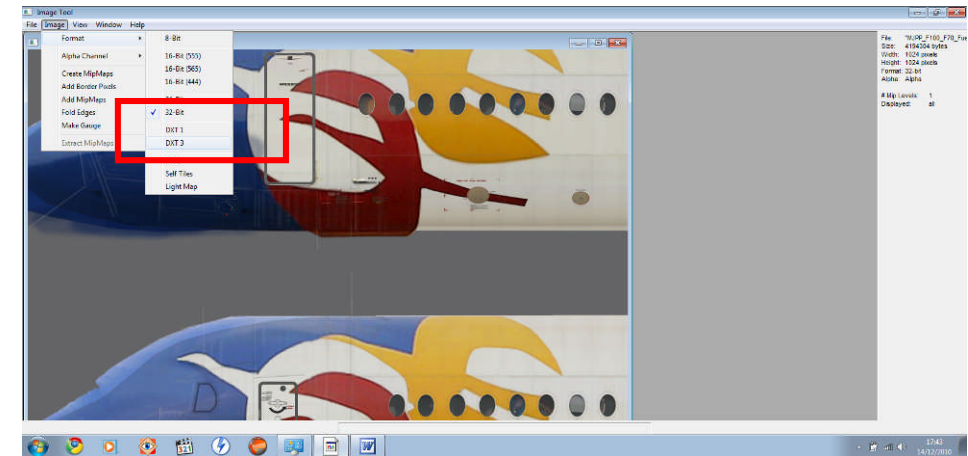
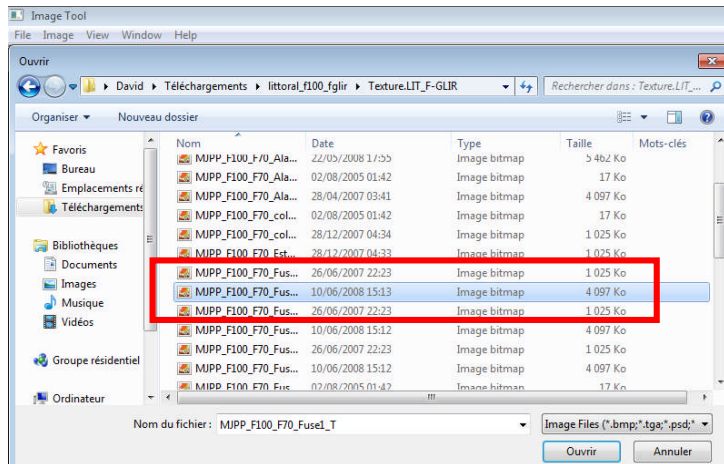
IRS aligned

APPENDIX C – DXT3 texture conversion

By default, the *Air France by Britair* livery provided with the Aircraft are **32 bit textures** which means high quality but loading performance issues on some computers. I highly recommend to convert these textures to **DXT3 format** using **imagetool**, this will reduce the size of the textures while not degrading the quality of them. Only the .BMP exceeding 4MB need to be converted, this will result in 4x smaller files averaging 1MB each.

To convert 32 bits textures:

- 1) Download imagetool.exe @ <http://www.flusi.info/files/imagetool.exe> and run the executable file.
- 2) Backup the original texture folder to be on the safe side
- 3) Start imagetool.exe and click on **file/open**. Browse to the folder containing the textures to be converted and select the first BMP file to convert then click on **OPEN**.
- 4) For each texture file, click on **image / format** then select **DXT3**



- 5) Save and close the file

- 6) Repeat the process for all large files. Files that initially were 4Mo or so should be down to 1Mo only.

Check [www.flytutorial](http://www.flytutorial.com) for more information on imagetool.

