

# AIRBUS X

# Volume 1

# The Airbus X in FSX

Version 01-07-XX

## RECORD OF REVISIONS

[illegible]

<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-1 30 August 2010
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## CONTENTS

INTRODUCTION .....	2
THE MANUALS.....	2
COPYRIGHTS.....	3
CREDITS .....	3
SYSTEM REQUIREMENTS .....	4
CONTACT SUPPORT .....	4
INSTALLATION AND REMOVAL.....	4
NAVIGRAPH AND NAVIGRAPH UPDATES .....	4
THE AIRBUS IN FSX .....	5
ANIMATIONS .....	5
AIRCRAFT STATE .....	7
AIRCRAFT DOORS .....	7
AIRBUS X CONNECT .....	8
LOAD MANAGER.....	8
TAKEOFF SHEET .....	8
WEB SERVER.....	8
MOUSE BEHAVIOR.....	9
ENTERING DATA IN THE MCDU .....	9
VIEWS .....	10
FSX SETTINGS .....	12
OPTIONS   SETTINGS   DISPLAY .....	12
AIRCRAFT   REALISM SETTING .....	13
FAQ.....	14

<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-2 30 August 2010
------------------------------	--	------------------	---------------------------

## INTRODUCTION

This Airbus had a long and complex history and to be honest everybody in the project is happy we reached the end. Doing a complex modern airliner is not easy-- we underestimated that for sure! But it was great fun and a learning experience like nothing else.

It started out with our CEO Winfried Diekmann asking about an airliner that would be relative easy to fly but would not compromise on anything except system complexity. So it had to look, sound and fly like the highest priced add-ons, yet it should be flyable by people who do not want to read 500 pages of manual or spend weeks trying to understand the systems. I.e. it should be a product focused on flying/operating the Airbus, not on emergencies or highly detailed procedures. It should be focused on the left seat, i.e. the tasks of the captain of the aircraft.

This was not an easy task description and we think we went slightly further than what we were asked to do. In the end we came up with a project that is perhaps slightly more complex than was asked for, but still is easy to learn. In our test we saw that people with little or no experience managed to fly the aircraft nearly perfect after just a few hours of use. We did keep to the demand to focus on the left seat, so in the whole project you will find that everything you see is focused around that position. For example you cannot operate the aircraft from the right seat. This limitation allowed us to make this aircraft extremely fast on frame rates.

The Aerosoft Airbus X does not claim to be the most complex, the most realistic or the most demanding aircraft simulation. But it allows you to fly the Airbus in normal operation with a high degree of realism at a modest price and with great fluidity!

We hope you will enjoy it.

## THE MANUALS

There are 7 separate documents that make up the manual.

- **Vol1\_InFSX.pdf:** You are reading it now. Contains information on using the aircraft in FSX and more general information.
- **Vol2\_Normal\_Procedures.pdf:** Contains all the procedures used to fly the Airbus.
- **Vol3\_Procedure\_Guide.pdf:** Contains the information in the Normal\_Procedures.pdf in a more condensed (checklist like) format.
- **Vol4\_Systems.pdf:** Contains an in-detail description of all systems.
- **Vol5\_Checklist.pdf:** Full checklist for use in the cockpit.
- **Vol6\_Step\_by\_Step.pdf:** A flight described in great detail for you to follow.
- **Vol7\_MCDU\_Procedures.pdf:** A simple guide to a complex bit of kit.

Also note that the readme.txt always contains the information on the latest updates. Before contacting support do make sure you installed the latest version!

<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-3 30 August 2010
------------------------------	--	------------------	---------------------------

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Aerosoft GmbH  
Lindberghring 12  
D-33142 Büren  
Germany  
[www.aerosoft.com](http://www.aerosoft.com)

## CREDITS

Concept:	Aerosoft
Modeling/Texturing/Animation:	Stefan Hoffmann (Aerosoft)
Project Management:	Mathijs Kok (Aerosoft)
Manual, documentation:	Mathijs Kok (Aerosoft) & Finn Jacobsen & Christoph Beck
XML coding:	Finn Jacobsen
ND/PFD coding:	Scott Printz
Flight modeling:	John Cagle
Sounds:	Turbine Sound Studios & Aerosoft & Alex Ridge
Installer:	Andreas Mügge
Testing:	Several good folks who will all be getting a copy

We would like to thank captain Ortwein who was extremely helpful in providing us with information and answers to sometimes rather silly questions and to the people of Air Berlin and Hamburg International airport who allowed us to spend a long time in the cockpit to make images and do the measurements we need for a project like this. We thank Roland Wukovitz for allowing us to use his code for the calculations of speeds.

Although Finn is mentioned in the credits, a special word of thanks is needed. As with other projects he was the pin around whom so many things turned. I can honestly say there would not be an Airbus X without him.

<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-4 30 August 2010
------------------------------	--	------------------	---------------------------

## SYSTEM REQUIREMENTS

- Intel Core 2 Duo E6850 CPU (Core 2 Quad advised)
- 2 GB RAM
- Direct X 9 compatible Graphics Card with minimal 512 MB
- Microsoft FSX (with SP2 or Acceleration)
- Windows XP, Windows VISTA, Windows 7 (fully updated)
- Adobe Acrobat® Reader 8 minimal to read and print the manual <sup>(1)</sup>
- This product is compatible with DX10 as much as it possible (note that Microsoft does not document or officially support the DX10 mode)

<sup>(1)</sup> Available for free, download at: <http://www.adobe.com/prodindex/acrobat/readstep.html>

## CONTACT SUPPORT

Support for this product is done by Aerosoft. We prefer to do support on the support forum for one simple reason, it is fast and efficient because customers help customers when we are sleeping.

Aerosoft forums: <http://www.forum.aerosoft.com/>

We feel strongly about support. Buying one of our products gives you the right to waste our time with questions you feel might be silly. They are not.

## INSTALLATION AND REMOVAL

Installation is simple-- start the .exe file you downloaded and follow the instructions on screen. Make sure FSX is closed and we do advise you to reboot your system before installing. After installing it can help to defragment your hard disk (unless it is a SSD drive that should not be defragmented)

Removal should **never** be done manually but only using the software removal applet you will find the Windows Control panel.

## NAVIGRAPH AND NAVIGRAPH UPDATES

We are using the well known NAVIGRAPH database as the source instead of the very outdated FSX navigation and routes database. If you like to keep that updated you can buy the updates at Navigraph.com. The set you need is the Cheyenne/Fokker/Mustang/Super 80 Professional one. Of course if you just like to use the product there is no need whatsoever to update these files. If you fly online or in a VA do check with your friends there though.

<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-5 30 August 2010
------------------------------	--	------------------	---------------------------

## THE AIRBUS IN FSX

### ANIMATIONS

There are many animations in the Virtual cockpit. As with all elements in the cockpit they open with the left mouse button and close with the right mouse button. The areas where you can click are shown in the images. All animations have their own sound effects.



<b>Aerosoft</b> <b>Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	Vol <b>1</b>	01-07-6 30 August 2010
------------------------------------	--	-----------------	---------------------------



On the external model all the usual flight controls are animated but also smaller elements like the APU air inlet. The doors and cargo hatches can be opened using controls built into the MCDU (see AIRCRAFT DOORS). A special animation will make the engines rotate in the wind when the aircraft is parked. Rotational heading and speed depends on the wind.



## AIRCRAFT STATE

You access this menu via the MCDU Main Menu by selecting ACFT STATE. It allows you to save and load the setting of any of the variables of the panels. Whereas FSX by default will only save a very limited number of settings (variables) in its Flights Files, the aircraft state function saves everything, from the settings of the Flight Management Systems (excluding the flight plan due to technical reasons), to the animation state of the jump seat. The use of this function very simple: select SAVE USER STATE, enter a name and save it. Loading is just as simple. We do advise you to pause the sim before saving. The same menu also allows you to load a few pre defined states:



- **COLD DARK STATE:** the aircraft is configured as you would find it on the first flight of the day, all systems are off.
- **TAXI STATE:** the engines are started, the AFTER START checklist has been run and the aircraft is ready to start taxiing to the runway.
- **TAKE-OFF STATE:** the aircraft is ready for take-off and the BEFORE TAKE-OFF checklist has been completed.
- **CRUISE STATE:** the aircraft is configured to standard cruise mode.

Please note that the file selection dialog will be hidden when FSX is running in full screen mode. Using Alt-Tab allows you to see it. When the aircraft is completely switched off (cold and dark) you can still access this option on the MCDU.

## AIRCRAFT DOORS

You access this menu via the MCDU Main Menu by selecting ACFT DOORS.

- The DOORS options on the left side allow you to open the doors and cargo hatches. Green is closed, red is open.
- The TRAFFIC CONES option will toggle the display of orange traffic cones under the wing tips and the tail.
- The CHOCKS option will toggle the display of chocks on all wheels.
- The EXTERNAL POWER options will toggle the display of a Ground Power Supply Unit near the nose wheel AND will activate the Ground Power option (meaning the ground bus is powered up).



When the aircraft is completely switched off (cold and dark) you can still access this option on the MCDU.



<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-8 30 August 2010
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## AIRBUS X CONNECT

Airbus X Connect is a program that runs outside FSX but connects to FSX to read and write data.

## LOAD MANAGER

The Load Manager allows you to load the aircraft with passengers, cargo and fuel. When started you will be presented with a simple screen where you can change the passenger and cargo load but also have the option to change the fuel load (note the fuel is loaded correctly, always filling the wing tanks before the center tank). Just clicking on the squares will show the load per person/KG and in % of the maximum. Underneath the fuel load you will also see a rough average of the distance you can fly with this fuel load. In this distance the reserve, alternate and block fuel are incorporated but it remains a very rough calculation as we don't know the weather conditions, altitude etc. When you set the desired numbers, click 'send to FSX' to transfer the data to FSX. Make sure FSX is loaded at this moment.

## TAKEOFF SHEET

**If you are not interested in getting your take-off speeds exactly correct you can ignore this section.** If you rather not bother with all of this, you can just ignore it, accelerate to 140 knots and take off. It will work in the sim and also in the real Airbus! But if you like this added piece of realism click on Takeoff Sheet on the load manager main screen. Now enter:

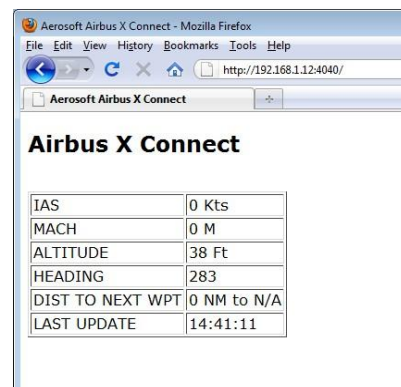
- Airport Code
- Runway number
- Runway length
- Runway condition
- Outside Air Temperature
- QNH
- Flap setting

The Aircraft weight is taken from the load manager page. All other items can be filled in but are not needed for the calculation. The program will now offer a FLEX setting and the Vs speeds.

## WEB SERVER

We all know how long a flight can be and how tedious it is to sit and wait for the miles to tick off. You have a life, you need to eat, watch TV. But you still like to keep an eye on your flight. So we added a nice little option to the Load Manager. If you keep it running in the background you will be able to follow your flight using any device with a web browser that's on the same network. Just enter the URL and you will see information on your speed, attitude, heading and most important, the distance to the next waypoint. The web page is formatted for smartphones. Using this option will have negligible effect on the speed of the simulator.

To see the progress page, enter <http://xxx.xxx.xxx.xxx:4040> in your browser, where xxx.xxx.xxx.xxx stands for the IP address of the PC FSX runs on. That IP address is shown on the main page of the Load Manager screen. The page is automatically updated every 30 seconds. It is possible (or better, most likely) that you will be presented with a firewall warning when you start Airbus X Connect. Just tell your firewall to allow Connect to talk to other devices.



<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-9 30 August 2010
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## MOUSE BEHAVIOR

In this whole product we use the left mouse button to activate (switch on) systems or to rotate buttons counter clockwise. The right button switches off and rotates clockwise. Switches that have three states will move left/up with the left mouse button and right/down with the right mouse button. All controls that rotate can also be controlled by the mouse wheel.

## ENTERING DATA IN THE MCDU

Learning about data entries in the MCDU is best explained in the MCDU guide, but there a few basic rules that belong here.

- It is never possible to directly enter data into one of the fields. All data is first entered in the 'scratchpad' (the bottom line on the MCDU) and then copied and 'activated' by pressing the key next to the field where the data should be.
- When setting any of the navigation radios you can either enter the frequency or the name of the navaid. When entering the name the system will use the **nearest** navaid with that name.
- When entering the cruise level your options depend on the transition altitude (that is set on the PERF TAKEOFF page).  
When the altitude is **below** the transition altitude (default at 18,000 as that's what FSX ATC uses) entering 1200, 120 or 0120 will be interpreted as 12000 feet. If the cruise altitude is **above** the transition altitude entering 24000, 0240, 240 will be interpreted as flight level 240 or 24,000 feet.

<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-10 30 August 2010
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## VIEWS

We are using a view system we have not yet used for an aircraft. Apart from the standard [S] choices and the sub classes chosen with [A], we added the easy to find and easy to use functions keys. Now these 4 additional views are not highly realistic as they use a viewpoint that is more or less central in the cockpit, but they are ideal for quick checking and resemble 2D panels.

Default VC view, selected with the [S] key and where needed cycled to this view with the [A] key.



Main Panel and Glareshield View (similar to a 2d panel) selected with [F9]



ECAM and Upper Pedestal view, selected with [F10]



Aerosoft Airbus X	The Airbus X In FSX General guidelines	Vol 1	01-07-11 30 August 2010
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Pedestal view, selected with **[F11]**



Overhead view, selected with **[F12]**



## FSX SETTINGS

There are a few settings that influence this aircraft.

### OPTIONS | SETTINGS | DISPLAY

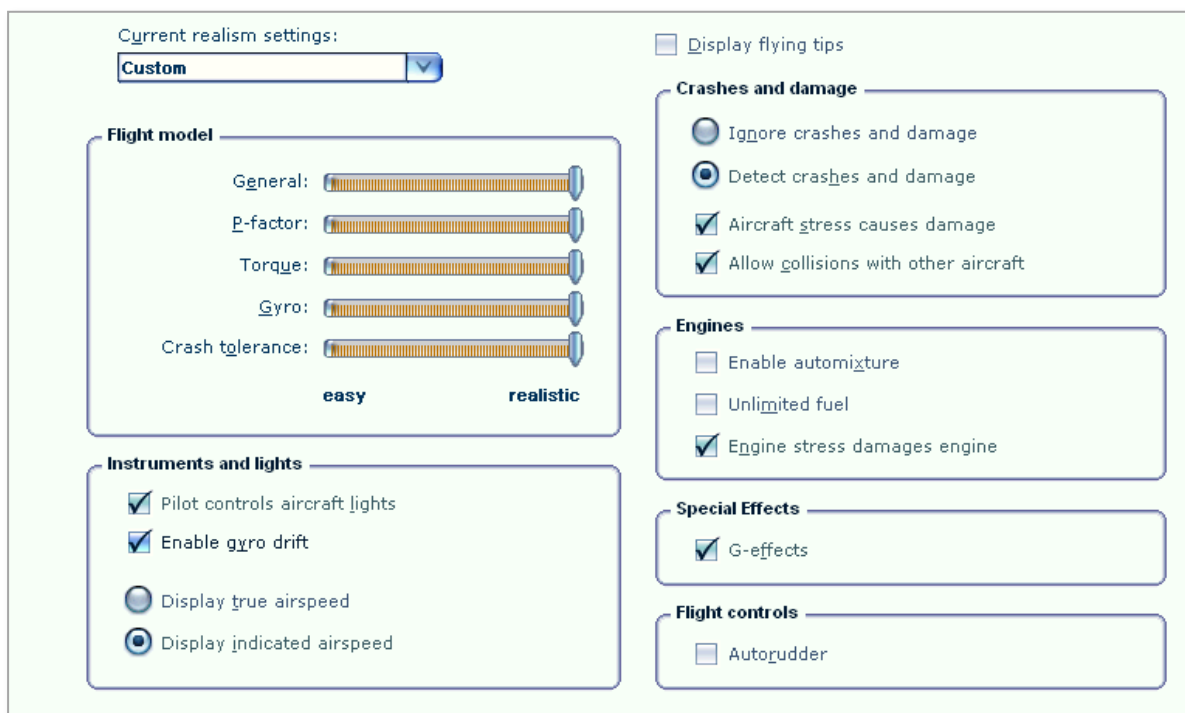


- **Advanced animations** needs to be ON
- **Preview DirectX 10** can be activate it, but to avoid problems we advise you to keep it OFF



- **Aircraft cast shadows on the ground** can be left ON as it will hardly affect frame rate.
- **Aircraft cast shadows on itself** can be ON when you got a fast machine, but it will hurt frame rate in external views.

## AIRCRAFT | REALISM SETTING



The most important settings are in the Aircraft settings: realism dialog.

- **Flight model:** Set it to full realistic. Believe us, it will fly easier that way.
- **Instrument and lights:** You do want to control the lights and the gyro drift is not hard to handle (in fact you can ignore it). Of course we want indicated airspeed, true airspeed is totally useless.
- **Crashes and damage:** Not to important. You might gain a bit of FPS setting this all **OFF**.
- **Engines:** Set as shown, but it does not really matter.
- **Special effects:** Yes you do want special effects! But if all goes well you never see them in the Airbus because the Fly By Wire protection rules will prevent that. Keep it on though.
- **Flight Controls:** Well it's an Airbus and that has Autorudder build in, but to prevent FSX messing things up best keep this **OFF**.



<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-14 30 August 2010
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## FAQ

**Q:** Pressing [z] does not seem to disable the autopilot.

**A:** Because FSX only has one autopilot and we have two you will need to keep the [z] key pressed for a second to disable both autopilots.

**Q:** Why does it sound like the aircraft is flying with the engines off?

**A:** The air cooling system (for the instruments and displays) in the cockpit is very loud, so loud that in a slow descend you simply do not hear wind noise or engines!

**Q:** The [q] key does not mute all sound.

**A:** Correct, the sounds we play for the animations etc. are played by a separate process outside FSX. This ensures the best performance and the least impact on frame rates.

**Q:** Is the GPSModule.dll always loaded in FSX, even if I do not use the Airbus X?

**A:** Yes, but it will not use any resources as it is event driven, when you need the few Kb it uses it will be automatically unloaded and the memory freed up.

**Q:** I got problems with the fuel tank, always errors on the ECAM!

**A:** To avoid an incorrect fuel load, **always fill the wing tanks complete before adding fuel to the centre tank**. If you see the MODE SEL button light up with a amber FAULT the most obvious cause is that the centre contains too much fuel and the wing tanks too little.

**Q:** Can I use the 3D REDUX lights?

**A:** We do not advise this.

**Q:** The speed brakes do not arm.

**A:** A well known FSX issue where FSX will not arm the spoilers when the throttles are in idle. Just arm the spoilers with the throttles slightly out of idle.

**Q:** This or that switch does not work.

**A:** Remember the left/right mouse button command system we use.

**Q:** The throttles do not seem to listen to my FSUIPC settings.

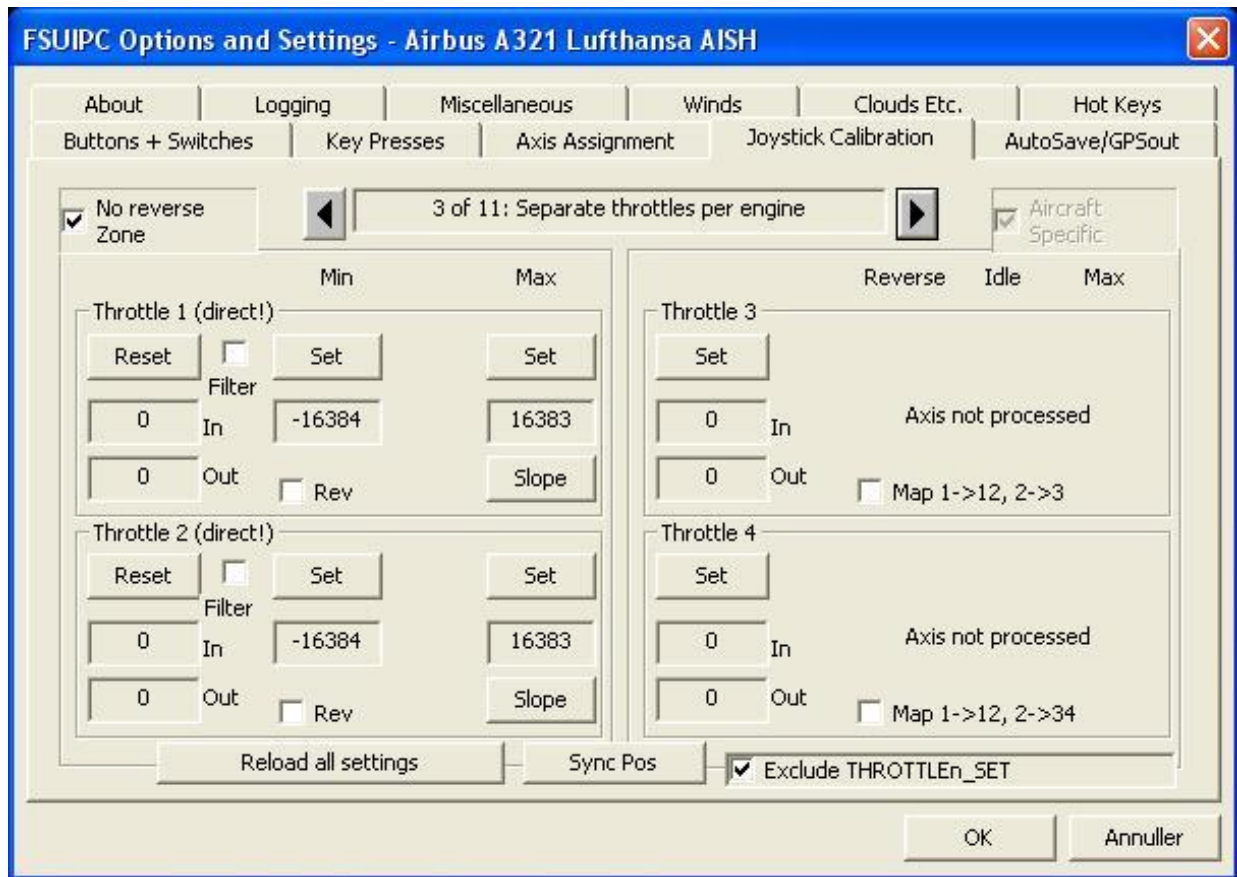
**A:** To avoid problems that even FSUIPC cannot solve we intercept the throttle on Operating System level (so not in FSX). We strongly recommend the use of FSUIPC though!

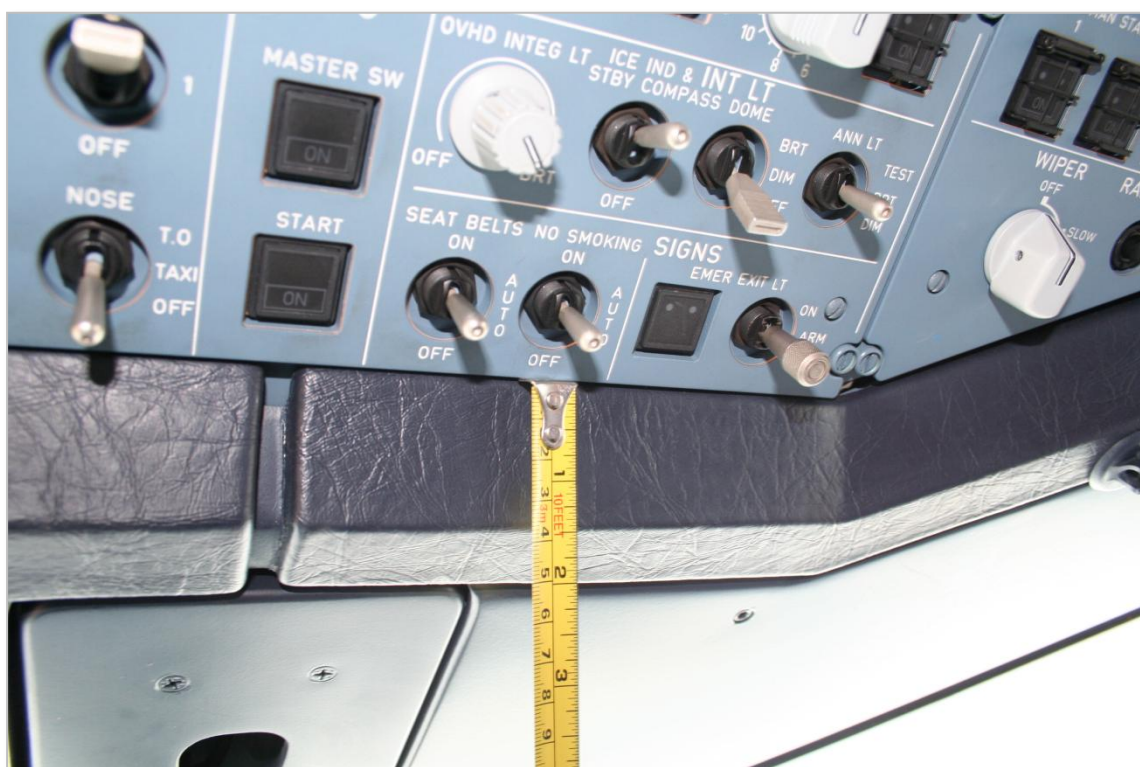


<b>Aerosoft Airbus X</b>	<b>The Airbus X In FSX</b> General guidelines	<b>Vol 1</b>	01-07-15 30 August 2010
------------------------------	--	------------------	----------------------------

**Q:** I have assigned all my controllers axes through FSUIPC, but the throttles don't move.

**A:** You MUST assign the throttle axes in the FSX Settings ->controls -> control axes menu. Furthermore it is important to create an FSUIPC "specific aircraft" assignment and calibration for the Airbus X so only this aircraft is affected. You can leave all other axes except the throttles as they are, but the throttles must be calibrated without a reverse zone like this;





*“THE MAKING OF”. Stefan Hoffmann measuring the A321 cockpit to make sure all details are as they should.*