AEROSOFT
318/319/320/321
professional

Volume 1:
The A318/A319/A320/A321 Professional in P3D

RECORD OF REVISIONS

revision	Issue date	Release	Description
001	15 June, 2018	1.0.0.0	Completion shared on forum.
002	11 July, 2018	1.0.0.0	Spellcheck (thanks Kendall)
003	6 March, 2019	1.0.2.3	Added chapters on printer and Connected Flight Deck
004	16 April, 2019	1.0.2.4	Added chapter on GSX2
006	15 October, 202	1.4.0.4 exp	Added chapter on Thrustmaster TCA controllers

CONTENTS

INTRODUCTION

The Aerosoft A318/A319/A320/A321 Professional is a follow up project to the previous Bus projects. In that project, we created an airliner aimed at an audience, that outgrew the simpler default aircraft and wanted a more complex simulation. Almost all code has been rewritten to give you the best experience possible.

In relation to that, we kept a strong focus on the left seat, the captains' seat, as the whole project is designed to be flown from that location. We figured that if you buy a project like this you want to be the captain and not the co-pilot!

Please note that the 'Professional' in the title reflects that it is part of our line of products aimed at P3D V4 and does not indicate this is in any way a serious training tool.

THE MANUALS

There are 9 separate documents that make up the manual.

- **Readme.txt:** Contains the change log, version number information and last-minute information.
- **Vol1_InP3D.pdf**: You are reading it now. Contains information on using the aircraft in P3D and more general information.
- **Vol2_Normal_Procedures.pdf**: Contains all the procedures.
- **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 detail for you to follow.
- **Vol7_Thrust Lever Setup.pdf:** Only to be read when you have problems with the Thrust levers in P3D.
- **Vol8_Weird and Wonderful Logic.pdf:** A document that describes some of logic of A320 systems. Recommended reading if you come from non-FBW aircraft or have never flown an A320.
- **Vol9_Connected Flight Deck Flows** (some work still needs to be done on this one)

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

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The beta testers of this product deserve special mentioning. In this development we experimented extensively with involving them directly in the production, they often tested code minutes after it was written, gave feedback and got new code almost immediately. Without them the product would not be where it is now.

A special mentioning to the Kindergarten. They did their best to delay this product with random chatter, but we prevailed.

The RUNWAY AWARENESS AND ADVISORY SYSTEM (RAAS) was developed by FS2Crew (www.fs2crew.com) with additional technical support from Tebin Ulrich and Manuel Ambulo. To purchase an unrestricted version of RAAS Professional that works with every FS9, P3D and Prepar3D aircraft (not just the Aerosoft Busses), please click here: http://www.fs2crew.com/cart/products/FS2Crew%3A-RAAS-Professional.html

SYSTEM REQUIREMENTS

- Intel Core i5 Quad Core (i7 recommended)
  AMD Ryzen 5 (Ryzen 7 recommended)
- 8 GB RAM (16 GB recommended)
- Direct X11 compatible Graphics Card with minimal 3 Gb (6 Gb recommended)
  GTX 1050 class minimal, GTX 1070 class recommended
- Lockheed Martin Prepa3D v4.3 minimal (**please note not compatible with older versions**)
- Windows 10 64-bit fully updated (it might work with other Windows versions, but we have not fully tested that)
- Control hardware with rudder and throttle channels
- 1024×768 minimum screen resolution for primary display
- Adobe Acrobat® Reader 8 minimal to read and print the manual [(1)]

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

INSTALLATION AND REMOVAL

To install just start the SETUP.EXE and follow the on-screen suggestions.

At the end of the installation you are asked if RAASPro should be installed. RAASPro is a fully functional version of the product with the same name released by FS2Crew (but it is locked to this product).

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

DRM OR LIMITATIONS?

No. If you paid for this product you can download it as many times as you like, install it as many times as you like and on as many machines as you want (if they are yours). Of course, it is not allowed to share your files and do note **they are personalized the moment you start the installer**.

The installer does not collect any information, does not connect to ay server, it just installs files. Nothing more. We promise.

WHERE THE FILES ARE INSTALLED

The complete product is installed in two folder, both OUTSIDE the simulator. It uses the P3D method of installing so the simulator can be fully replaced without having to re-install all add-ons.

THE AEROSOFT GENERAL FOLDER

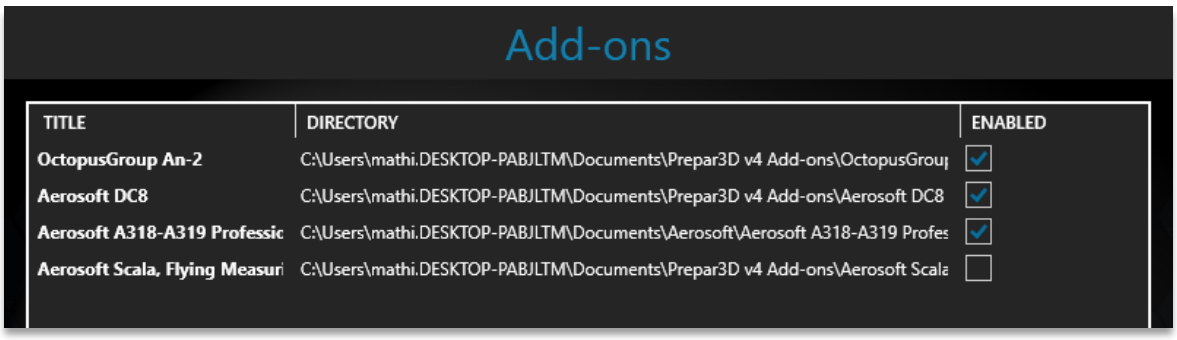
\Documents\Aerosoft\General: In this folder all the files that are shared between Aerosoft products are installed. **It absolutely must stay in this location and can't be moved.**

THE AIRCRAFT PRODUCT FOLDER

\Aerosoft A318-A319 Professional: This folder can be placed where you want if P3D is instructed where to find it. Of course, the installer will handle this. If you run this add-on on multiple computers you can install it on a shared drive, a server or a NAS.

DISABLING THE AIRCRAFT

Should you want to disable the aircraft for some reason but not de-install it you can use the P3D OPTIONS | Add-ons dialog to disable it.



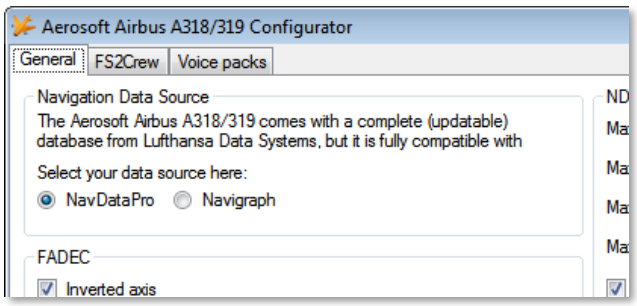
AFTER LOADING THE AIRCRAFT

When you load the aircraft (or select another mode) it needs to configure systems and load files. This will take around 20 to 30 seconds. Just wait, don't do anything, don't click, and don't press any keys until all is stabilized. If this is your first start, make sure you have the Step-By-Step guide open in addition!

NAVIGATION DATABASE

This product contains a complete copy of the NavDataPro navigation database, which provides the LIDO data and is the worlds most used navigation database in aviation. The database is fully updatable, look on the Aerosoft websites for NavDataPro.

The Aerosoft A318/A319/A320/A321 is also fully compatible with the well-known Navigraph database. You can use the configurator to select which database to use. Although these databases come from a different source and have some differences in structure, they are basically the same and you should not see any change between the two.



The database is in the \Documents\Aerosoft\General folder\A3XX NavData folder.

SUPPORT, FORUMS, RELEASES AND UPDATES

No product is bug free and we don't claim this one be. What is important is how bugs are handled and we feel it is important that we explain how we intend to handle that.

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. **It's also the difference between one support person reading the question, and 500 people, of which some know a LOT about the aircraft for various reasons.**

- Bus Professional forums: http://forum.aerosoft.com/index.php?/forum/863-aerosoft-bus-professional/
  There are FAQ in every section, please check those first
- If you prefer support by email: https://aerosoft.zendesk.com/anonymous_requests/new
  Please note that email support can be slow when things are busy (shortly after a major release form example). We try to get back to you in 24 hours, but if you want an answer fast, go to the forums.

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.

VERSION NUMBERS

- The release version number will be **1**.00.
- A service pack will show in the tens, 1.**1**0 (first service pack) -> new full build
- A hotfix will show in in the hundreds 1.1**1** (first hotfix to be put on service pack 1)

If there are many hotfixes we will also be releasing full new builds. If you are ever in doubt which version you have, check the product.cfg which you can find in your Aerosoft A318-A319 Professional folder.

UPDATING

To update your product, start the Aerosoft Updater Tool (look for that in your Windows Start Menu). You will see the supported products. Click on the product and select [Update selected product]. Under [Configuration] you can select to include experimental (and not supported!) updates.

MAKING VIDEOS

If you make video's you might see the FBW system show the flight control surfaces animate where they should not in replay mode (or when using a tool like FSRecorder. To avoid this, you can disable the FBW system for replay using a hidden option. In the right MCDU, under Options, press the LSKR1 button to activate. The aircraft will hardly be flyable with this de-activated though!

WEATHER RADAR

As the weather radar is a totally new development and unlike from any previous products, it is good to discuss its virtues and limitations.

The weather radar in the Aerosoft A318/A319/A320/A321 products **works with any weather add-on or even without**. It reads the weather conditions directly from P3D and does not need to link to any weather add-on. However, because it does just that it also shows some of the limitations of weather in P3D. For example, it is always builds up in square blocks. We choose to leave this effect visible because we believe a weather radar should show where the weather is, not how it should look in an ideal simulator. Because we simulate the actual working of the weather radar it also means a lot of calculations need to be done, this can influence your frame rate. Because wind shear and turbulence cannot correctly be placed in P3D detection of that is currently not possible.

As stated, the weather radar works with any weather add-on we have tried. But only the weather they inserted in P3D is detected. If they have weather that is shown on their own display but that has not yet been send to P3D it cannot be shown. As this weather is not in P3D it is of course not part of the simulation at that moment. In other words, if you can't see the weather the weather radar can't see it. Compatibility with weather tools that do not adhere to SDK standards has been considered but not guaranteed.

The display of the weather (and terrain) on the Navigation Display is controlled by the larger part of the ND control knob.

On a few systems the Weather Radar has shown to cause severe drop in frame rates combined with some advanced settings in weather tools. It is now possible to edit some functions via the AB_ND_GDI.ini (to be found in the product folder. The possible options are explained with the comments in that file.

TERRAIN DISPLAY

Just like the Weather Radar the Terrain Display is an overlay on the Navigation Display. The terrain is shown in colors depending on the height of the terrain in relation to the altitude of the aircraft.

A/C Altitude +2000	50% Red
A/C Altitude + 1000	50% Yellow
A/C Altitude -250 <> +500	25% Yellow
A/C Altitude -1000	50% green
A/C Altitude -2000	16% Green
A/C Altitude >2000	Black

Note that the terrain and weather cannot be displayed at the same time and that the same control it used as the weather display to set the transparency of the overlay.

CONNECTED FLIGHT DECK

This is another special feature almost no other add-on has. Connected Flight Deck (CFD from now on) allows you to connect your computer running the Aerosoft bus to another computer running the same aircraft. Using CFD is not complex (not as complex as flying an A318/A319/A320/A321 anyway) and following these steps should help you in getting connected. On our forum you will find a specific support forum for CFD.

You will need a voice connection of course if you are not in the same room. You can use Skype or any other VOIP service. But for gaming we prefer TeamSpeak (http://www.teamspeak.com/) or Discord (https://discordapp.com/).

A few things to keep in mind when using CFD:

- Use the same weather engine if possible (otherwise make sure the weather is as similar as possible) as our weather radar will send the WX overlay from the master to the slave computer.
- Stability is more important than bandwidth in the connection, but still a broadband connection is needed.
- You do not need to be connected to any online flying service like IVAO or VATSIM, but it most certainly is possible. One of the pilots needs to be active, the second needs be online as observer.
- You do not need any of P3D standard ways of connection, as this is a fully stand-alone connection.
- Vol 9 of the manuals contains a complete procedural flow of what is done by each pilot. Unless you are very experienced it is a good idea to have this on hand.
- Hifisim's ActiveSky is the only weather tool we know that guarantees the same exact weather is both systems have the same settings.
- Do not forget to say 'I have control' when you take over flying the aircraft.
- When both pilots try to fly the aircraft you will hear the computer complain ("Dual Input") and after it has decided who won it will say either "Priority Right" or "Priority Left".

STARTING SESSION AS CAPTAIN

PREPARATION

(none of these things are really needed but they make life a lot easier)

1. Make sure both pilots are at the same location
2. Make sure both pilots are in the same aircraft
3. Make sure both pilots are using the same weather
4. Make sure both pilots have Crash Detection off. Not only does this prevents some problems and speeds up the sim, but it is also a very buggy function and most high-end scenery does not contain any crashable objects. So even if it is enabled you can still drive through walls
5. Get your voice connection working first.

INITIALIZATION (ALL INSIDE THE SIM)

Note: it is best to do any changes to the settings (like roles) AFTER the connection and session are established!

1) Click to open the Settings MCDU (A318/319/320/321), on the A330 the Settings MCDU is the third MCDU:

2) The Settings MCDU will show, click CONNECTED FLIGHT DECK

3) Click CONNECTION

4) when a connection is made it will show CONNECTED. This means you are connected to the server.

5) Click CREATE SESSION. A session ID and Password will now be shown. This is the ONLY information you must give to your crew members! If you want to be the First Officer, you can select that now (or later).

6) Done! There is now a session running on the server that others can connect to.

JOINING SESSION AS FIRST OFFICER OR OBSERVER

PREPARATION

(none of these things are really needed but they make life a lot easier)

1. Make sure both pilots are at the same location
2. Make sure both pilots are in the same aircraft
3. Make sure both pilots are using the same weather
4. Make sure both pilots have Crash Detection off. Not only does this prevents some problems and speeds up the sim, but it is also a very buggy function and most high-end scenery does not contain any crashable objects. So even if it is enabled you can still drive through walls
5. Get your voice connection working first.

INITIALIZATION (ALL INSIDE THE SIM)

Note: it is best to do any changes to the settings (like roles) AFTER the connection and session are established!

1) Click to open the Settings MCDU (A318/319/320/321), on the A330 the Settings MCDU is the third MCDU:

2) The Settings MCDU will show, click CONNECTED FLIGHT DECK

3) Click CONNECTION

4) when a connection is made it will show CONNECTED. This means you are connected to the server.

5) Enter the Session ID and Password you got from the Captain on the Scratchpad and insert it by clicking the buttons. We do now longer advise settings like roles to be done before the connection is made and the session is entered.

6) Now click JOIN SESSION if you want to be able to fly or OBSERVE SESSION if you just want to sit on the observer seat.

Note that as observer you can do everything you can normally do, pan around, move in the cockpit and even click buttons (you should not do that). But nothing will be sent to the server, it's a receive only role

SAVING AND LOADING MODES

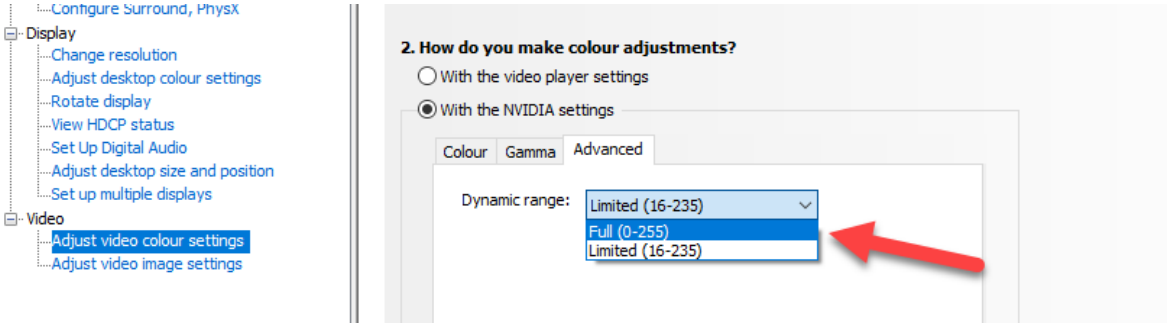
There are so many systems in the Busses that it is simply not possible to start up the sim and take-off. Many systems would simply not work. That's why we include an option to save AIRCRAFT STATES. In these saved states all the systems (except the MCDU) are stored. There are 4 predefined states that are most used: COLD & DARK, TURN AROUND, TAXI and TAKE-OFF.

> Note: when you used COLD & DARK you will need to activate the Batteries (or External Power) to be able to use the right MCDU.

NON-STANDARD SHADERS AND COLOR SETTINGS

Many users prefer to tweak their shader (the tables used by the simulator to determine how to show colors). We are not big fans of many of them because they mean that the colors we use will not be what you see. Even worse they often level colors, or in simple terms reduce the amount of colors. Before you comment on any texturing make sure you checked the product with the default shaders!

Also make sure that your graphics card is set to show the full color range (000<>255) and not a limited color range (16<>235). You will find this setting on your graphics driver. It makes a huge difference on how the sim looks as the cockpit contains a lot of colors in the 000 to 016 range and the sky is often in the 235 to 255 range.



VOICE SETS

There are three different voice sets in this product

- GROUND: the voices of the ground staff that you communicate with when you are starting or shutting down.
- CAPTAIN (PF): The left seater.
- CO-Pilot (PM) (also called 'pnf' in the file names): The right seater.

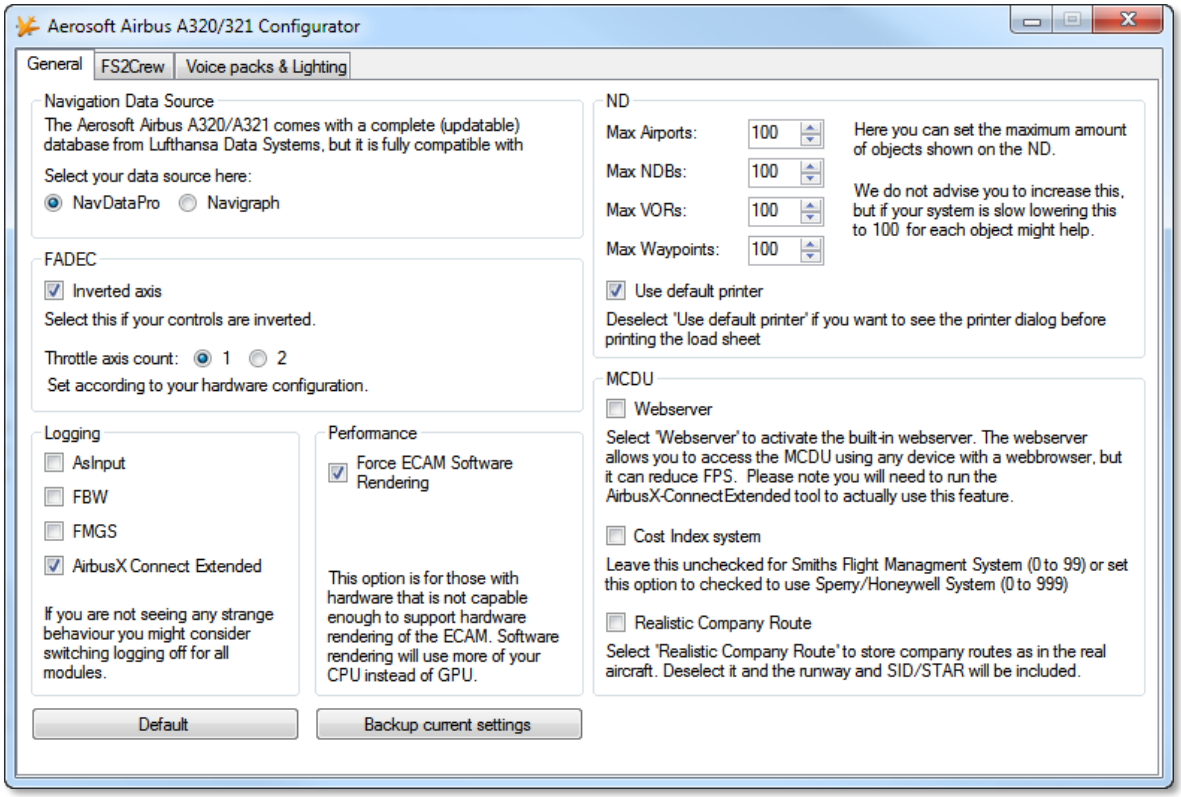
We included complete sets, and these and these are used for the checklists etc. They use terminology, that is common at Lufthansa (airlines differ slightly in these things). There are additional sets available in our forums: http://forum.aerosoft.com/index.php?/forum/865-voice-sets/ and you will also find instructions there on how to make your own.

TOOLS

With the A318/A319/A320/A321 there are several tools we provide: The RAAS, that is configured from inside P3D (via the ADDON | RAAS dropdown menu), the Fuel Planner and the Flight Data Recorder can be started from the Windows Start Menu |Aerosoft | Aerosoft A318_A319 Professional.

CONFIGURATOR

The configurator allows you to configure the product before starting it.



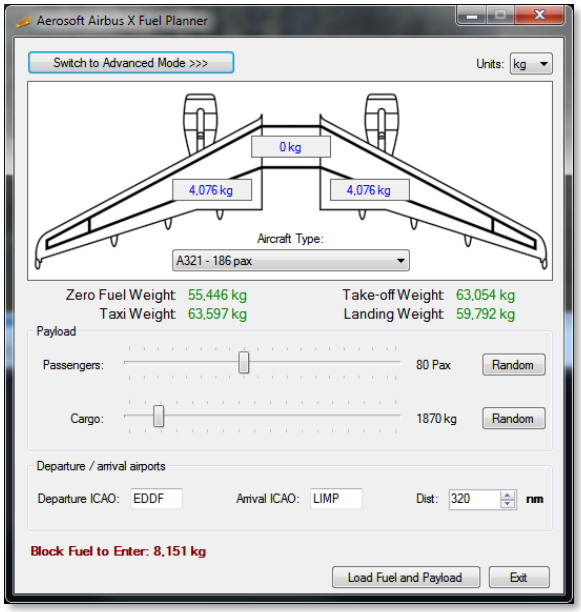
NAVIGATION DATA SOURCE: Allows you to select either NavDataPro (Lufthansa data) or Navigraph if that is installed.
FADEC: Please make sure you select the right configuration here.

LOGGING: Useful for debugging it can affect performance and we suggest keeping it all off unless requested.
Performance: On some hardware (laptops) the ECAMs will not show. Setting this option will move the drawing actions from the GPU to the CPU.
ND (Navigation Display): Offer opportunities to reduce the number of drawn elements.
MCDU: Allows configuration of the MCDU options
FS2CREW: Allows you to activate or FS2Crew (assuming it is installed)

You will find the configurator in the Aerosoft A318-A319 Professional\Configurator folder.

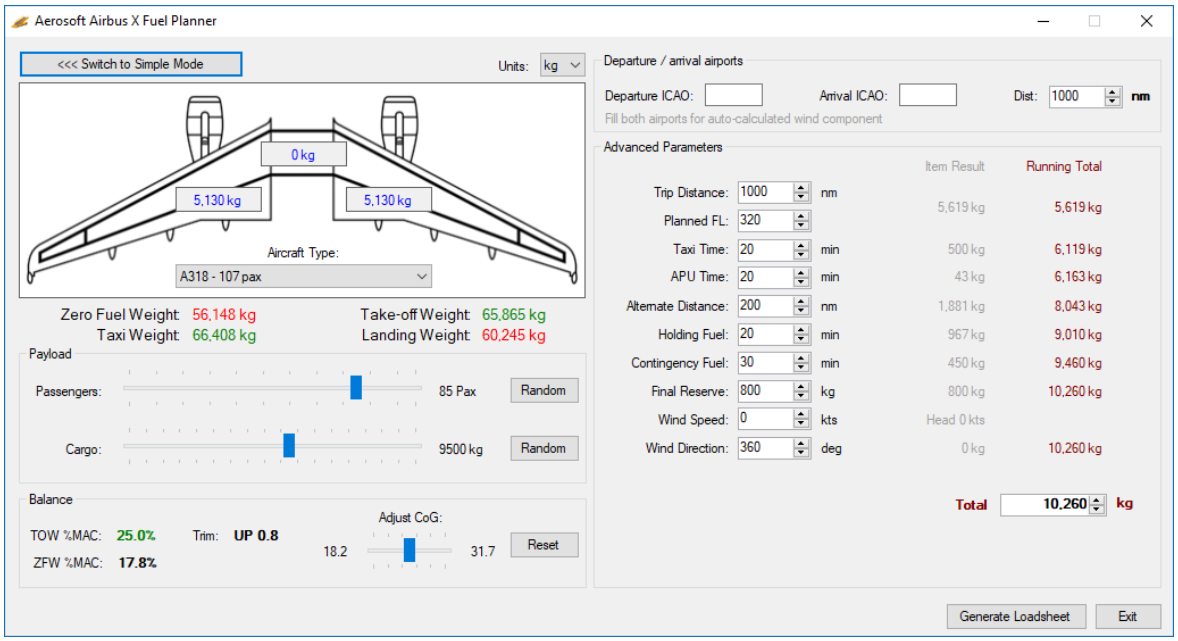
FUEL PLANNER

Included with the product is a fuel planning tool. It does a bit more than that as it also allows you to load passengers and cargo. The tool has two main modes, Simple and Advanced. In the simple mode you can move sliders and set the number of passengers and cargo and set the departure and destination airports.



On normal passenger flights you would most likely not carry a lot of cargo (the luggage of the passengers is calculated in the weight of the passengers). When any of the weights is too high it will show in red meaning you cannot fly like that. You will have to lose passengers or cargo! Keep in mind, that flying with a lighter aircraft is most likely more pleasant.

If you want to do a more detailed fuel planning use the Advanced Mode. Here you have control over far more variables, but things are a lot more complex.



After setting the variables you must push Generate Loadsheet. There are two ways to load the data (passengers, cargo and fuel) to the aircraft. Automatically if “Autoload with aircraft” is ticked or manually using the MCDU2 LOAD/FUEL menu. The fuel will be loaded correctly, so the center tank will only be used when the wing tanks are full, and the balance of the aircraft will be set correctly.

Note that every airline has its own layout of seats and additional equipment and every airline has its own specific rules about fuel load. Even simple things and the Zero Fuel Weight can vary far more than we expected. What we used is an average of many airlines and might not be spot on for your preferred airline.

You will find the fuel planner (Livery Manager A318-A319.exe) in the C:\Users\your name\Documents\Aerosoft\General\A3XX Fuel Planner.

LIVERY MANAGER

There are hundreds of liveries available for the A318/A319/A320/A321 and there is a simple livery manager that will assist you in adding and removing them. You will find the livery manager (Livery Manager A318-A319.exe) in the \Aerosoft A318-A319 Professional\Livery Manager folder. After starting it will ask for the P3D folder.

Installing a livery is as simple as dragging the zip file you downloaded on top of the livery manager. For 90% of the additional liveries this will work. All other livery ZIP files that meet the following conditions will be handled automaticaly (*if this method does not work ask the livery designer to be compliant with our standards*):

- There must be a txt-file ("readme.txt" or different name as long as it's the only txt-file) with the code snippet for the aircraft.cfg included.
- The snippet starts with [FLTSIM.X] and ends with a blank line.
- In this snippet the line "ui-type=*aircraft_type*" must be contained, otherwise the manager doesn't know which plane the livery should be added to.
- Each ZIP-file can only contain **one** livery / alternative versions must be separated into two ZIP files.

- The whole file must be a proper ZIP-file containing the file and folder structure on the first level. So do not zip the folder with the files but only the files themselves.
- Beside the text file there needs to be the texture folder with its extension name, containing a "thumbnail.jpg"

COMPANY ROUTE EDITOR

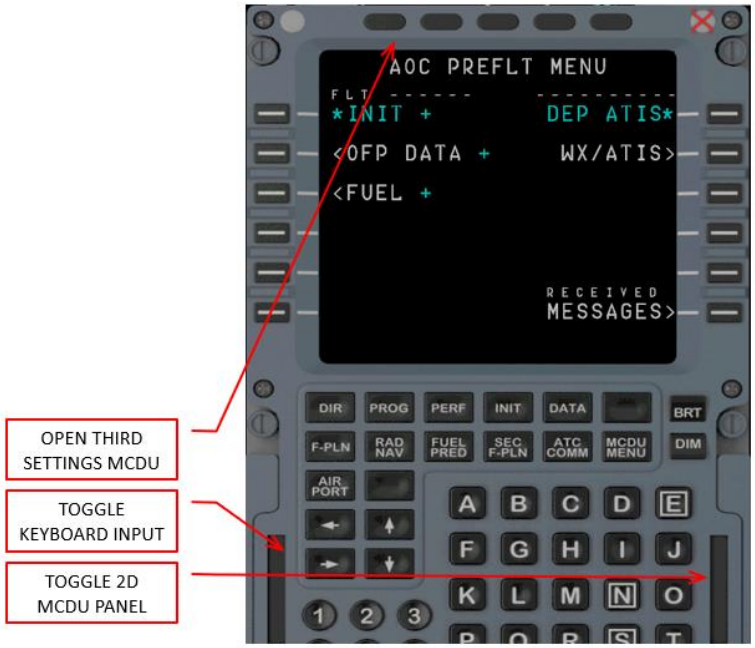
This simple tool makes it possible to edit, create and save company routes that you can call up in the MCDU. It's faster than doing all that in the MCDU! You will find the company route editor in the C:\Users\your name\Documents\Aerosoft\General folder.

MCDU INTERFACES

The MCDU has three hidden click zones. One to toggle keyboard input, one to open the MCDU as a 2D panel and the last one to open the third 'settings' MCDU. This last one contains all the settings of the add-on.

With the keyboard activated you can use your normal keyboard to enter data in the MCDU. Keep in mind that this disables any keyboard command to P3D!

The 2D MCDU panel can be undocked and moved to other displays.



MCDU WEB INTERFACE

Because the MCDU is arguably the most complex instrument in the cockpit it makes sense to allow it to be used as simply as possible. So by using a simple webserver that runs inside P3D (don't worry it hardly uses any resources) you are able to connect any device that has a web browser to the A318/A319/A320/A321 and use the MCDU on that devise. Tablets are ideal because you will not need a mouse.

To use the web interface, start WebInterface.exe that is in \Documents\Aerosoft\General\A3XX Connect Pro. You can do this before starting P3D or later. It will open a small window showing you the iP address and the port, something like this: 123.123.123.123:4040. You can enter this in the address bar of the browser on any device that is connected to the same network. It will open showing a simple information screen. This one is ideal to keep track of your long flights via your smartphone. Click on MCDU and you can use the left MCDU it as you would in the aircraft.

MCDU COMPANY ROUTES

The MCDU allows you to store flight plans as 'company routes'. The saving and loading of company routes is done via the left MCDU. Press the MCDU MENU button to access these options. These company routes are very useful when an aircraft flies the same route day after day. A company route consists of the departure and arrival airport plus the routing. It does not contain the runway and SID/STAR because those can differ (for example because of the wind). The route is made up of waypoints and the airway name between them: AIRPORT > WAYPOINT > ROUTE > WAYPOINT > ROUTE,…., WAYPOINT > AIRPORT

Now an actual flight starts on a runway, then follows a SID (Standard Instrument Departure) before following airways to the destination. Close to the destination you follow a STAR (Standard Terminal Arrival Route) to the runway: RUNWAY > SID > WAYPOINT > ROUTE > WAYPOINT > ROUTE,…., WAYPOINT > STAR > RUNWAY

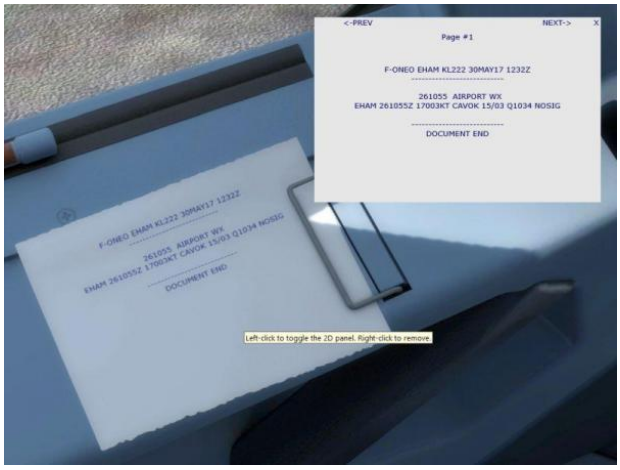
The A318/A319/A320/A321 defaults to the realistic company route format, but if you prefer to save your company routes with the runways and SID/STAR it will allow you to do so by editing a configuration file. Look for the FMGS.ini file in the \Aerosoft A318-A319 Professional\Data folder You will find:
[CoRte]
FullRoute=0
Default this is [0] indicating it will save realistic company routes. Change it to [1] and it will save the complete but slightly less realistic flight routes.

THE MULTIPURPOSE COCKPIT PRINTER

All modern airliners have small (often thermal) multipurpose printers. These are used by the crew to print out 'notes' they can easily refer to without the need to go through menus of the MCDU, for example, the weather on arrival or take-off data. They can also contain information the screw wants to show maintenance staff. Some prints have automatically triggered, others can be triggered by the crew

A lot of the possible print outs are highly technical (and almost never used) and we decided not to include them. Some others are simplified to some degree so they can be understood without having to decode complex abbreviations. But all the prints a normal crew would use on a normal flight are included.

The prints will appear from the printer located on the center console. When something is printed you will hear the printer make a soft squeaky sound. When you left click on the paper in the printer the paper is torn of and placed in the window clipboard on the left side of the cockpit. Here it can be read easily. When you have multiple prints (and you normally will have you can left click the paper and get a 2D representation where you can scroll through all prints.



Please note it is important to note that you will have to select the correct weather source via the 3rd Settings MCDU. (OPTIONS / WEATHER)

- SIM (Default): Weather is read from the sim itself, but the weather can be inserted by 3rd party weather add-ons. All the standard limitations apply, so you will have to be close to the airport to get the weather.
- HOPPIE: The Hoppie network contains world-wide weather.
- VATSIM: Uses the weather the VATSIM servers send out.
- IVAO: Uses the weather the IVAO servers send out.

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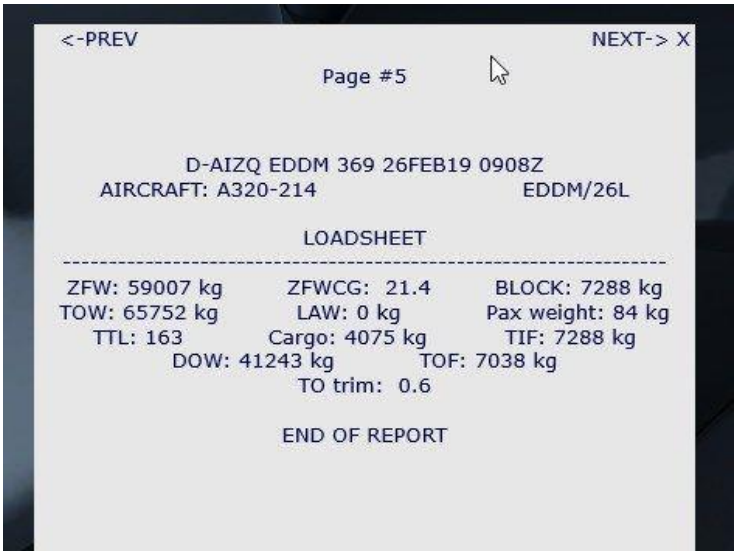
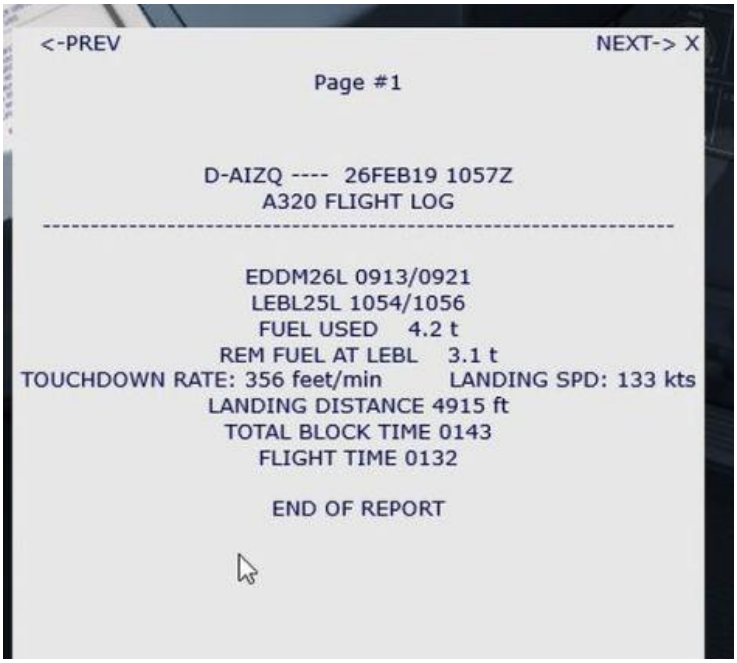
AUTOMATICALLY GENERATED PRINTS

LOADSHEET: This is printed when all the passengers have boarded, and all fuel and cargo have been loaded. It assumes that the INIT B page has been filled and departure airport and runway have been selected.



HARD/SEVERE LANDING: The 'print of shame'. This is triggered when you land with too much G or too much vertical speed. It can say **severe** (> 14 feet per second OR > 2.86 G) or **hard** (10 <> 14 feet per second OR 2.6 <> 2.86 G). It will be printed when the aircraft has slowed to 35 knots. Don't hide it, you are supposed to show it to the maintenance crew.

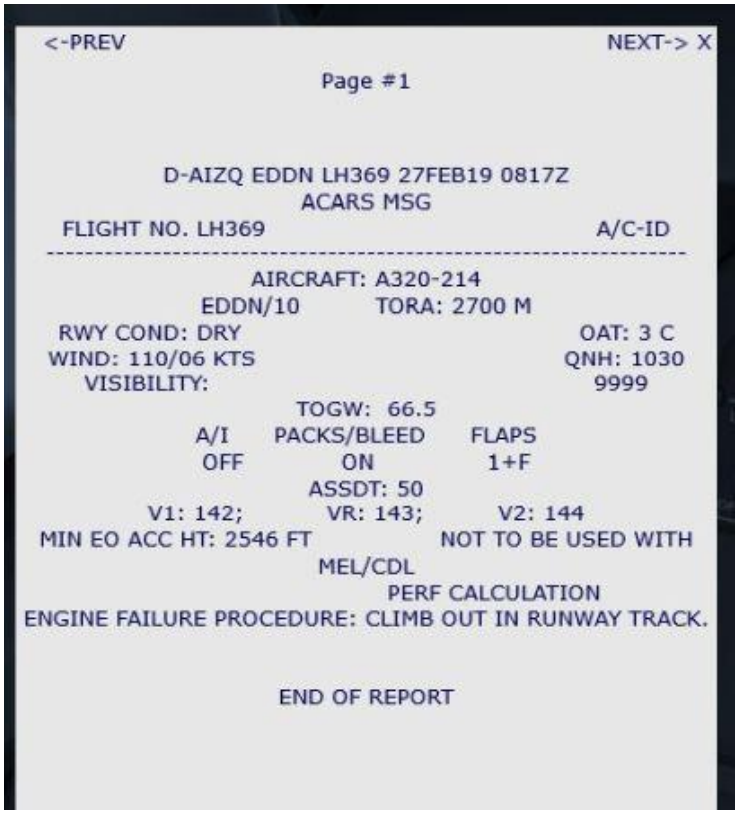
FLIGHT LOG REPORT: This report is automatically printed after the engines are shut down.



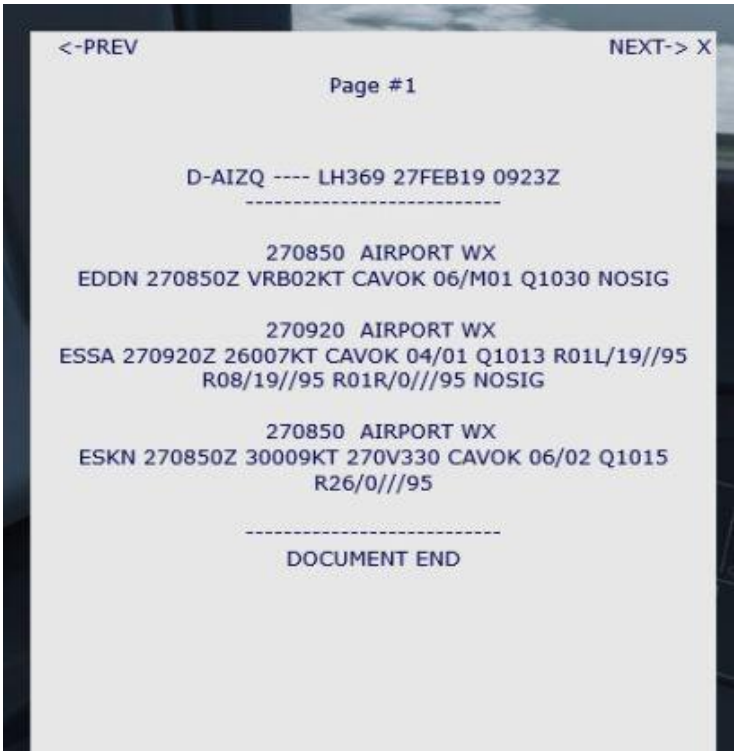
AIDS GENERATED PRINTS

When you press the AIDS (**A**ircraft **I**ntegrated **D**ata **S**ystem) button on the right side of the center console a print will be made depending on the stage of the flight.

TAKEOFF REPORT: Will be printed when the AIDS button is pushed after the aircraft is being pushed back and before take-off. It shows all the major data the crew needs for the takeoff stage.



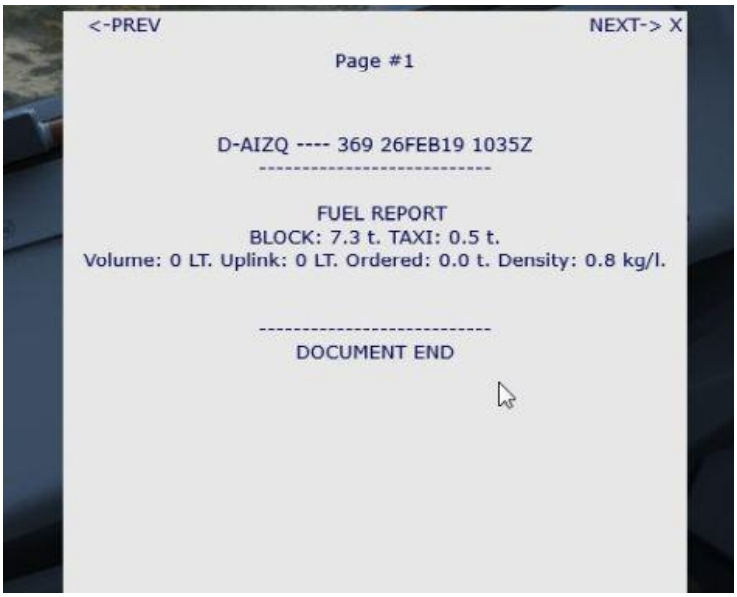
DESTINATION WEATHER REPORT: Available when AIDS button is pushed in the cruise phase. Shows the weather at your destination and alternate airports.



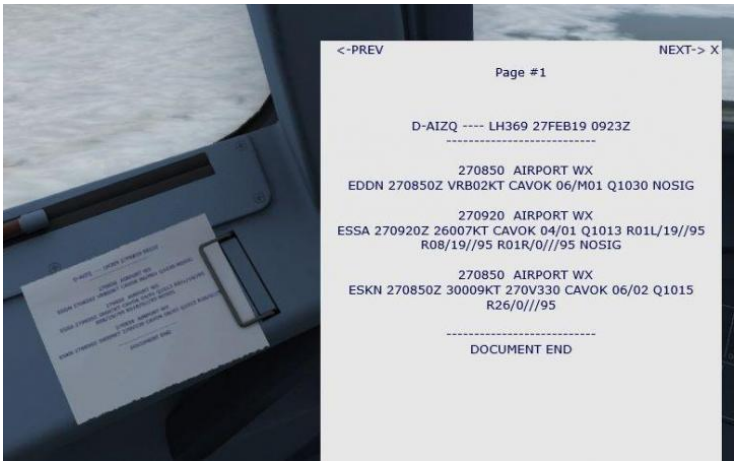
ATSU/AOC GENERATED PRINTS

Using the Left or Right MCDU you can also print information. This section is still somewhat in flux at this moment, for example, because we hope to offer full support for PMDG Global Flight Operations soon.

FUEL REPORT: A quick report on the amount of fuel you currently have. Select FUEL and PRINT to generate it.



WEATHER REPORT: Shows the weather at your departure, arrival and alternative airports. Select RECEIVED MESSAGES and then PRINT ALL.



SETTINGS MCDU

For all the functions that are not part of the actual cockpit we use the third 'Settings' MCDU. This allows you to access all these functions inside the simulator without having to open menu's or pause the simulator. Spending some time here will be well worth the effort as it can unlock a lot of features you might not have expected! The settings MCDU is opened via a hidden click zone on MCDU 1 or 2.

ACFT STATE (AIRCRAFT STATE)

Under this menu you can find several predefined 'states'. A state contains the setting for all the systems in the aircraft. Click the TAKE-OFF STATE and after a few seconds the aircraft is completely configured for take-off. If you like to change a state configure the aircraft as you want and use the SAVE USER STATE button.

ACFT DOORS (AIRCRAFT DOORS)

Here you will find the option to open the doors and hatches of the aircraft. Do note the parking brakes have to be set or chocks must be put in place and the main engines off to be able to open the doors.

GND SERVICES (GROUND SERVICES)

Under this option you can toggle the display of cones under the wingtips and tail (to prevent vehicles driving under the aircraft) and wheel chocks. You can also toggle the display of an External Ground Power Unit and even toggle the external power option (so you can configure the aircraft without having to use batteries or APU). The display of these elements is not advised if you use Airport Enhancement Services or any other tool that shows external objects close to the aircraft.

The various options are only available if the following conditions are met:

- CHOCKS: Parking Brake is set to ON
- CONES: Only if CHOCKS are SET
- EXT POWER: Parking Brake is ON or Chocks are SET

For GSX2 options see the end of this chapter.

OPTIONS

Many options are available under the subpages of the OPTION menu

SOUND

- CABIN CREW: With this option on you will hear the cabin crew communicating with you when that is necessary. We advise you to leave this on.
- FLIGHT CREW: You copilot does make noise. He coughs, opens charts etc. Activating this option will give you some audio feedback on all these things. We advise you to leave this on.
- ATC: Toggling ATC on will according to your flight status add random ATC to the sound environment. This will add some realism if you do not fly online.
- ENH GPWS (ENHANCED GROUND PROXIMITY WARNING SYSTEM): Enabling this feature you will hear various altitude callouts (p. e. 2500, 1000, 500 etc.) during your landing.
- VOLUME: On the volume control page you can adjust your individual background noises and other audio elements. Keep in mind that the cockpit is a noisy environment. In cruise you will hardly hear the engines and wind noise over the noise of the cooling fans that keep the electronics cool! Changes made are kept for your next flight. If you like your own default settings, ask us on the forums and we'll be glad to assist. VIEWS

VIEWS

- VIEW SYSTEM: There is a simple yet effective way to switch your views using small icons in the view bar. You open the view bar by clicking the grey triangle in the upper right (or left) corner. If you do not like this, or you are using another viewing add-on you can disable the whole viewing system here.
- PANEL BAR: Toggles the viewing selection of panel views.
- WINGVIEW BAR: Toggles the viewing selection of wing views.
- VIEW MODE: Here you can select if the panel views should be seen from a realistic angle or a straight on, not very realistic, viewpoint.
- POSITION: Toggles between a horizontal or vertical layout.
- SOUND: There is a small sound effect added to any view changes, you can disable it here.

Please note that if you use another viewing application (like ChasePlane) this will mess up the viewbars and you best de-activate it.

CHECKLIST

- CHECKLIST: You can toggle the complete checklist system on or off here.
- COPILOT: n combination with the CHECKLIST function the "Copilot" works timely aligned with the checklist i.e. performs his duties when the task should be done according to the checklist
- INFO BAR: If you want you can get additional instructions at the top of the screen. Certainly, for beginners we strongly advise this option activated.
- HOTKEYS: Many of the interactions with the checklists can be done with key command if you so desire.
- GSX PUSH: If you own GSX you want to use its advanced push back system. If not, you can use the built in push back.

- APP SPD LMTR (APPRAOCH SPEED LIMITER): If you want the co-pilot to warn you about high speeds on approach activate this option.
- 250 KTS LMTR (250 KNOTS LIMITER): If you like to be warned should you exceed 250 Knots IAS below FL100 activate this option.

FLIGHT

- PAUSE AT TOP (PAUSE AT TOP OF DESCENT: Pauses the simulator app. 10 NM before the point the MCDU switches from cruise to descent mode.
- PAUSE AT NEXT WP (PAUSE AT NEXT WAYPOINT): Will pause the simulator the moment you reach the next waypoint on your flight plan.

AICRAFT

- FLY BY WIRE: Using this menu option it is possible to switch ON and OFF the “FLY BY WIRE” function – OFF maybe necessary for certain video recordings.
- ACFT THRUST BUMP (AIRCRAFT THRUST BUMP): This menu option (set to ON) enables an "unrealistic feature" where users can get additional thrust for takeoff p. e. for “high” airports, at hot temperatures or short runways.
- TILLER: If your system does not have a free axis you can disable the innovative tiller option.
- AUTO RUDDER: If you do not have a rudder control (which we STRONGLY RECOMMEND) you can achieve some of the functionality by setting this option

LOAD/FUEL

- PAX (NUM) (PASSENGER NUMBER): Allows you to set the number of passengers you want to board and to start the boarding process.
- CARGO (MT) (CARGO METRIC TON): Allows you to set the weight of cargo and start loading it.
- FUEL (MT) (FUEL METRIC TON): Allows you to set the fuel amount and start transferring it to (or from) the aircraft.
- TOW (MT) (TAKE OFF WEIGHT): The calculated weight on take-off.
- CG (PCT) (CENTER OF GRAVITY): The center of gravity before or aft the aero dynamical center of the aircraft.
- INIT LOADSHEET: Push the LSK and the data from the Fuelplanner Loadsheet are automatically loaded.
- INSTANT: Loads all fuel, cargo and passengers instantaneously.
- SETUP: Allows you to set the weight per passenger (only if INIT LOADSHEET function is not used). Some airlines use different weights here as on average and American will weigh more than a Japanese person

GSX2 SETTINGS

The aircraft is fully configured to work with GSX2, but you need to make sure some setting are correct. You will find the GSX implementation in the settings MCDU under GROUND SERVICES. Make sure it is set to YES.

NOTE: The GSX jetway power unit will not be used because it conflicts with the build in ground power system.

These GSX Settings are advised and will avoid problems:

- Timings: Messages Interval 30 seconds
- Simulation Parameters: Detect Custom aircraft system refueling ON
- Simulation Parameters: Estimate passenger number OFF

ELECTRONIC FLIGHT BAG

On a modern flight deck, you will often find a tablet computer that holds documents, charts, does calculations etc. It replaces what pilots used to have in their flight bag (hence the name).

> Note: at this moment we only have an EFB on the left side of the cockpit. Depending on the Framerate load we might copy it to the left side or make a fully independent version. We need some experience with customers to make that decision.

Our EFB is designed on web standards making it highly flexible and allows the user to insert documents. It simulates a Microsoft Surface tablet, a choice many airlines make. As the on/off button is very hard to reach (it is on top) you boot the tablet with a simple click on the screen. It will directly open the EFB application full screen.

There is no 'standard' EFB for the A330, every airline selects its own hardware and software. The version we include is designed to look like a cross between the most used versions.

> Note: it is difficult to get the lighting of the EFB correct due to its location and the problems with lighting in P3D v4.3 and up. A low Bloom setting is absolutely needed. Keep in mind that P3D simulates the adaptation of your eyes to the difference in brightness between outside and inside the cockpit, It may take up to 30 seconds before the brightness is correct. Night-mode is almost always preferable.

The EFB is created using the WebSimConnect module create by Marcin Lizer, there is little this module can't do!

POWERED BY WebSimConnect SIMULATION TECHNOLOGY

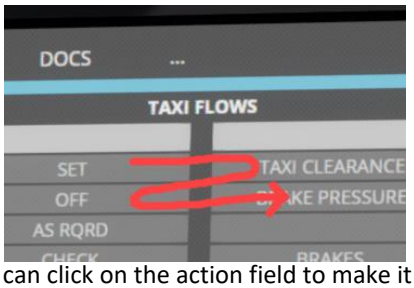
FLOWS / CHECKS

Flows and checks are often confused but they are really very different.

- Flows are actions to be done by the crew
- Checklists are run to make sure safety related items are done

So, a checklist is run after a flow is completed.

Flows get their name from the 'flow' your hands make over the panels. Following flows, you will note that you do things left to right and top to bottom (most of the time). This makes it less likely something is forgotten. It is how almost all airline pilots are trained these days and almost all airlines use them. They also work very well for simulator pilots! Flows differ between airlines, what we use is loosely based on what the major European airlines, such as Lufthansa use.



Of course, flying an airliner is a two men job (flying with one pilot is an automatic emergency), the flows are separated in Pilot Flying (PF) and Pilot Monitoring (PM) or Crew Member 1 (CM1) or Crew Member 2 (CM2). If you fly with a friend on Connected Flight Deck this is usable. If you fly on your own, we advise you to complete a whole line and not a whole column as shown. There are actions you can only do when another action is completed. That is why there are blank sections! If you like you can click on the action field to make it green indicating that you have done that one. This is NOT necessary however and not a function many real EFB's have.

For every flight stage there is a separate flow, some long and some very short. Not all have a checklist at the end. The items shown in *italic* on the Preliminary Cockpit Preparation indicate these items only must be done if the flow is started from a cold and dark aircraft. If the aircraft is between flights these items can be skipped.

CHARTS

Under this tab you will find your flight charts assuming you have an account for NavDataPro (https://www.aerosoft.com/en/search?sSearch=navdatapro+charts) or Navigraph charts. Without this paid access to charts this tab will be empty! Charts are never stored locally and will only work when there is an online connection.

If the aircraft location is somewhere on the chart you will see the aircraft displayed in the right location and heading. Note that not all charts are geo-referenced so this will not work on all charts. In fact, disappointingly few charts are geo-referenced, but we hope more will be in the future.

ADDING YOUR CHART ACCOUNT

For NavDataPro you can insert your account information on the EFB tab of the configurator. As long as you account is valid that is all you have to do.

For Navigraph your web browser will pop up and ask you to insert your account data. This will happen at every session and cannot be avoided. It can also happen that your Navigraph token time out in flight, in that case you will have to sign in using the configurator. This is also an unavoidable security measure set by Navigraph we have no control over.

EFF

The Electronic Flight Folder replaces the day-to-day flight paper documents. This includes the flight plan, weather etc.

FLIGHT PACKAGE

The flight package is basically the document(s) that your flight preparation software prepares. This can be PFPX (https://www.aerosoft.com/en/flight-simulation/flight-simulator-2004/tools-missions/817/professional-flight-planner-x?number=AS12827) or any other tool like simBrief. All of these tools have the option to export a PDF file.

To use this PDF in the EFB rename it to Flightplan.pdf and store it in \Documents\Aerosoft\General\A3XX EFB\A330\assets\usereff\. Some tools have options to automatically do this and we will ask others to do the same.

METAR

To get the metar for any airport, just insert the airport code. This is only functional when the computer is connected to the internet.

SAT EUROPE

Shows the current weather chart for Europe. This is only functional when the computer is connected to the internet. Please note we do not have free sources that can be called up directly for other regions, but we are looking for them.

SAT AFRICA

Shows the current weather chart for Africa. This is only functional when the computer is connected to the internet. Please note we do not have free sources that can be called up directly for other regions, but we are looking for them.

SAT CANADA

Shows the current weather chart for Africa. This is only functional when the computer is connected to the internet.

Please note we do not have free sources that can be called up directly for other regions, but we are looking for them.

DOCS

Under DOCS you find the files you like to have access to in your cockpit. Up to 12 different files can linked here. In principle all files that a browser can open can be used but we advise you to use PDF's. To learn how to add files just check the 'Welcome to your documents' that is automatically loaded when you open the DOCS tab!

LINKS

Under LINKS you will be able to open webpages in your EFB. We have added aa few to start out with, but you can add your own. Please note that only websites that can run in an iframe will load. Often you simple must try to see if something works. In fact, this is the worst possible browser you will ever see, and we are pretty sure it won't be better. Use at your own risk.

To add your own files edit the user-links.txt file you will find in \Documents\Aerosoft\General\A3XX EFB\A330\assets\userlinks\. The format should be self-explanatory.

While using the EFB as a web browser you will need to activate keyboard entry as the onscreen keyboard used for charts will not be available. To activate, click on the top bezel of the EFB. A green led will indicate that all keyboard input is now being sent to the EFB and not to the aircraft. Don't forget to deactivate it!

VIEW SYSTEM

As explained in the section on the right MCDU we included a rather clever view systems that makes it easy to switch your view to a certain part of the cockpit.

However, there is a second way to navigate around the cockpit. We redefined the F9, F10, F11 and F12 keys to show different views of the cockpit (standard, upper mid console, lower console, and overhead). You will see that this often is the quickest way to navigate your view.

We did not add many 2D panels because we feel it is an outdated system and no longer needed. Using dedicated VC views allows you to get realistic views angles while getting realistic lighting and colors. And using the VC system it is not hard to create any view you want. You can even undock them and move it to another monitor.

ST. ELMO'S FIRE

St. Elmo's fire is a spectacular weather effect that is caused by electrostatic discharges that look like small lightning bolts. They can occur on many places (ships masts for example) but they are now best known by pilots. As an aircraft moves through the air it creates friction and that charges the aircraft. When the charge is too high (around 30,000 volts per centimeter of space) the charged object will discharge its electrical energy. In the case of an aircraft this is mostly in the form of a spark from the window frames. It's spectacular and totally harmless.

We have included this effect in the product. You will not see it often but there are conditions that will cause it to appear more often. Being close to a thunderstorm is by far the most obvious, but also heavy rain and being in the tropics will make it more likely.

ANIMATIONS

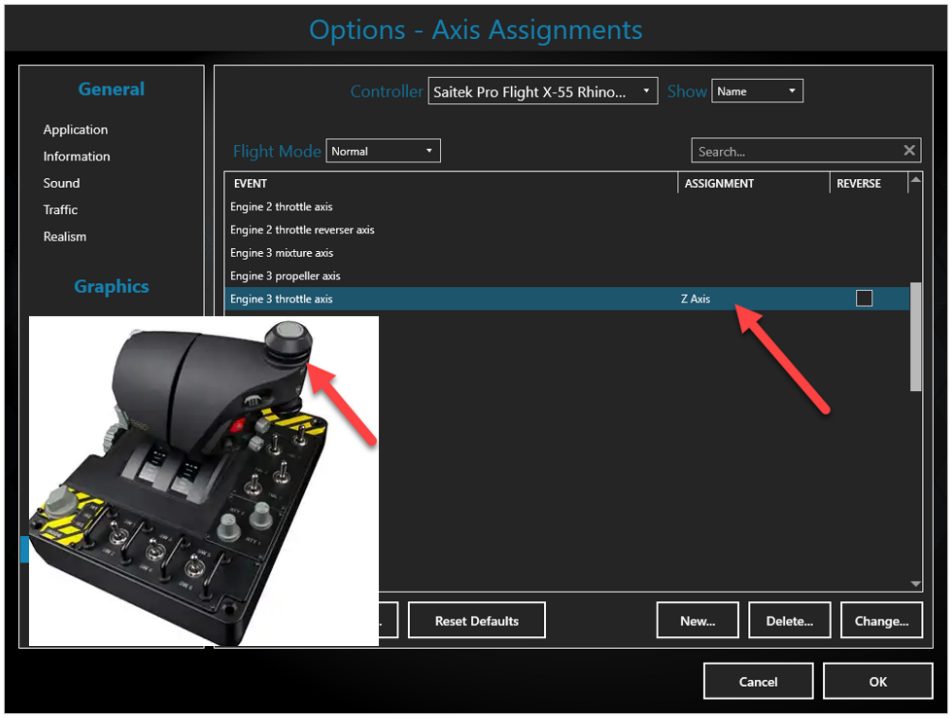
There are many animations in the Virtual cockpit. As with all elements in the cockpit they open with the left mouse button and close with the right mouse button. The areas where you can click are shown in the images. All animations have their own sound effects. Do not be surprised if some animations are driven by events in the cockpit.

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 Settings 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.

MAKING THE TILLER FUNCTIONAL

On the ground (at speeds under 60 knots) you steer the aircraft with the 'tiller'. This function the same as a steering wheel in a car. We tried controlling this with the mouse for additional realism but were not happy with the results. So as with all aircraft you use the rudder to steer the aircraft. However, it is now also possible to use a unused control axis (rotary control) on your steering hardware. The tiller axis is connected to the P3D Engine 3 Throttle axis. You can use the SETTINGS-CONTROLS of P3D to assign one of the controls on your hardware to this axis.

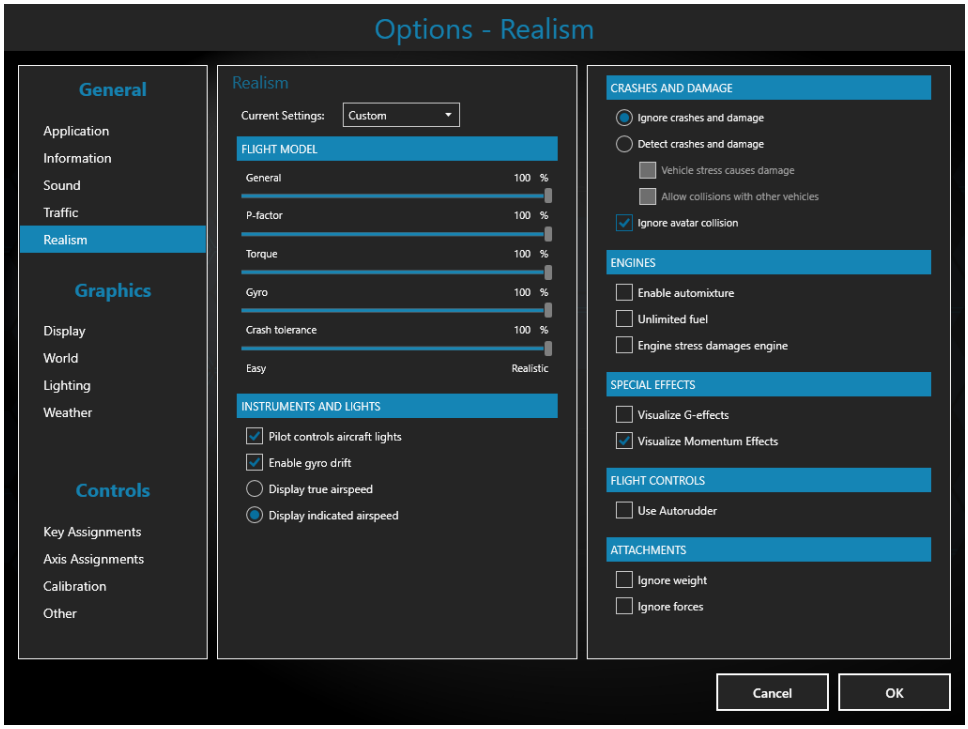
Pressing the center button (marked PEDAL DISC) will disconnect the rudder from the nose wheel. Press it again and the nose wheel will connect to the rudder again.



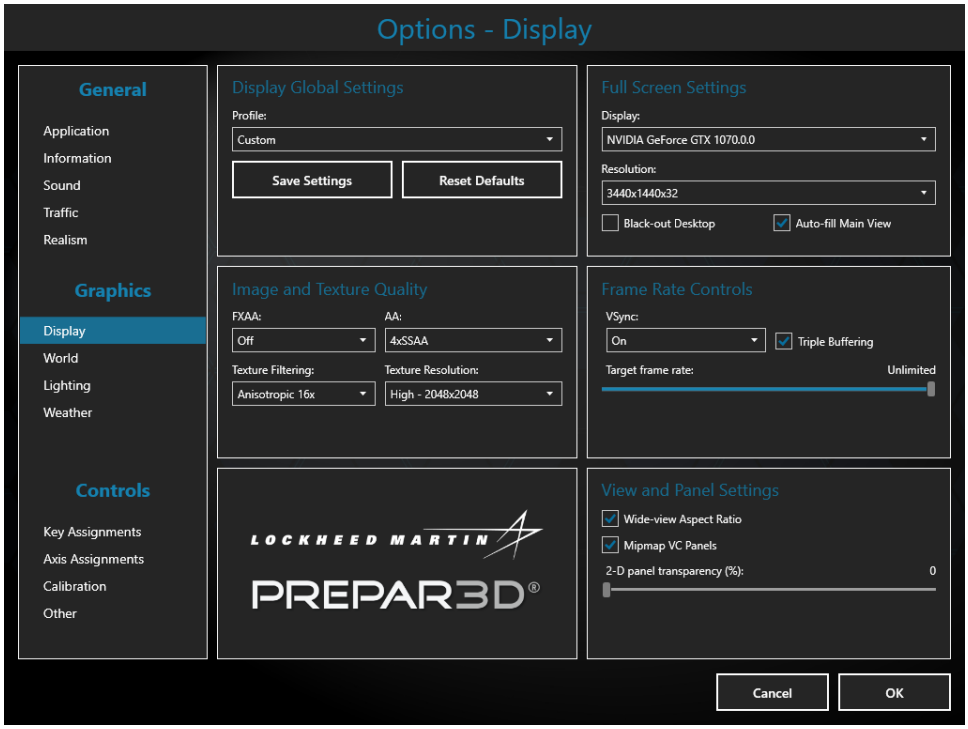
P3D SETTINGS

There are a few settings that influence this aircraft. We advise these settings.

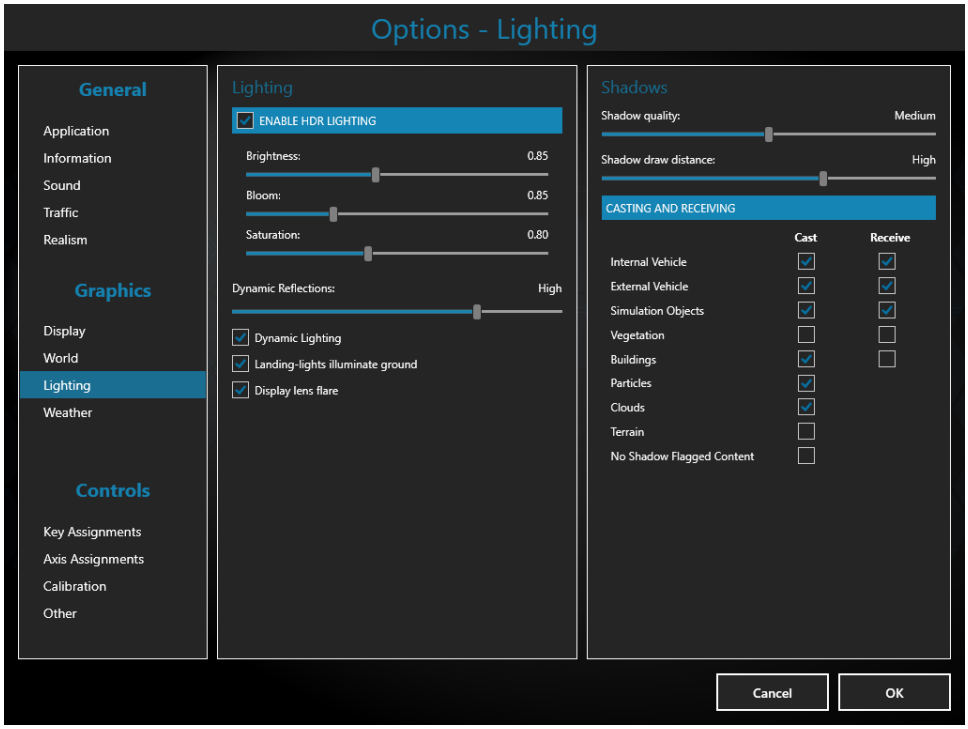
OPTIONS | GENERAL | REALISM



OPTIONS | GRAPHICS | DISPLAY



AIRCRAFT | GRAPHICS | LIGHTING

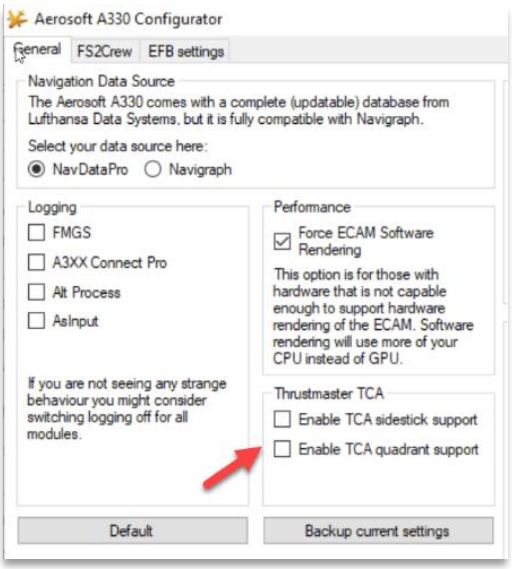


THRUSTMASTER TCA CONTROLS

To be able to use the fantastic Thrustmaster TCA Quadrant (Throttle) controls follow the steps below, they will activate the starter buttons and the thrust reversers.

First, in the Configurator activate the Thrustmaster TCA option.

- If you have both the TCA Sidestick and the TCA Quadrant, only select the throttle!
- If you only have the Sidestick select that one to be able to use the thrust reversers option.



KEY ASSIGNMENT

In the Key Assignment menu of P3D set the following to for the TCA Quadrant:

- ENGINE 1 Master switch on, BUTTON 3: "Hotas generic key (A0)"
- ENGINE 1 Master switch off, BUTTON 3 ON RELEASE: "Hotas generic key (A1)"
- ENGINE 2 Master switch on, BUTTON 4: "Hotas generic key (A2)"
- ENGINE 2 Master switch off, BUTTON 4 ON RELEASE: "Hotas generic key (A3)"
- ENGINE MODE switch in "CRANK" position, BUTTON 7: "Hotas generic key (A4)"
- ENGINE MODE switch in "NORM" position, BUTTON 7 ON RELEASE: "Hotas generic key (A5)"
- ENGINE MODE switch in "IGN/START" position, BUTTON 8: "Hotas generic key (A6)"
- ENGINE MODE switch in "NORM" position, BUTTON 8 ON RELEASE: "Hotas generic key (A7)"

To do so please follow following steps (as an example for ENGINE 1 Master switch):

1. Enter “Hotas" into the search field on the top right of the key assignment menu
2. Click on “Hotas generic key (A0)”, then click “New” at the bottom of the window. The “New Assignment” window opens.
3. Move the ENGINE 1 MASTER switch on your controller into "ON" position, “Button 3” should show up in the text field. Then click OK.
4. Now click on “Hotas generic key (A1)” and again click “New” at the bottom of the window. Again, the “New Assignment” window opens.
5. Move the ENGINE 1 MASTER switch on your controller into "OFF" position, “Button 3” should show up in the text field. Then click OK.
6. Select “On Release”, then click OK.
7. Leave the “Repeat” slider on the left side

For this use, there is no need to configure anything via the Thrustmaster tools or drivers. It is all done inside the simulator.

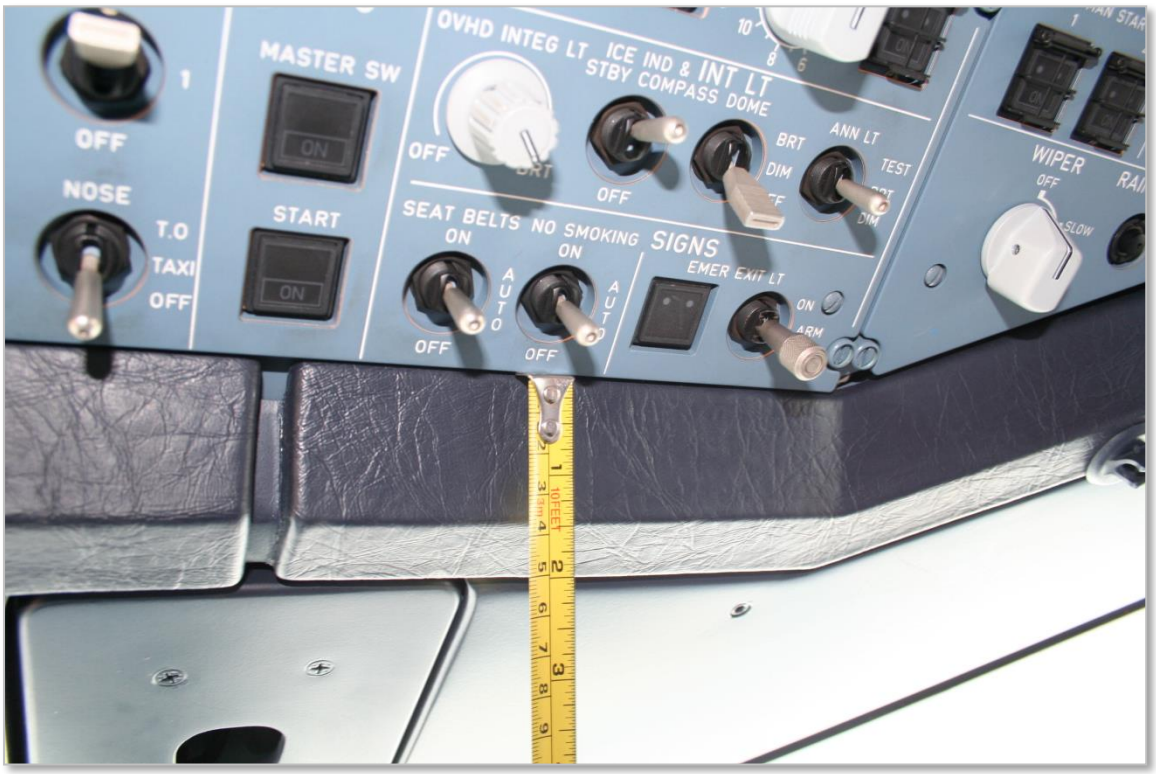
CALIBRATION

You might run into an issue when calibrating the TCA controllers from inside P3D. That is because P3D calls the standard windows game controller calibration dialog. This dialog requests to press a button on the game controller after moving the axis into maximal deflections on both sides. As the detents on the thrust lever do trigger buttons this would immediately end calibration as soon as a detent is hit the first time.

To circumnavigate this problem please proceed as follows, it is important to do this carefully and follow the steps to the letter:

1. On the game controller set at least one of the ENGINE MASTER switches to "ON".
   This sets a button signal to "on" and therefore prevents the dialog to continue as soon as another the button is triggered (e.g. by moving over the thrust lever detents).
2. When asked to set the controller axis to middle position set both thrust levers into the middle position which is the CL detent.
   This will give the best linear the result over the whole thrust lever range.
3. Now use the mouse to click on "continue" on the calibration dialog.
4. Move each thrust lever through full range, from TOGA to MAX REVERSE (by pulling up the reverse lever)!
   This is important to be able to select differently REVERSE power settings later on. If you click on "show raw data" you should see the full range from 0 <> 65535.
6. Now use the mouse to click on "continue" again.
7. When asked to set the controller axis to the middle position do set thrust lever into the middle position (CL detent) again.
8. Use the mouse to click on "continue".
9. Calibration of the now following axis can be ignored by clicking on "continue" multiple times.

APPENDIX A: THE MAKING OF



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