HONEYCOMB
AERONAUTICAL

ALPHA FLIGHT CONTROLS

MANUAL

Manufactured by: Honeycomb Aeronautical

Manual: Aerosoft

Honeycomb Aeronautical

Alpha Flight Controls

Manual

Content

Advanced Functions

The Honeycomb Alpha Flight Controls can easily be used with the different flight simulators. The default functions for each simulator are pre-assigned to the control elements of the device.

Use in X-Plane

In X-Plane 11 the default assignments for axes and switches are already included. You can customize these assignments in the X-Plane menu according to your wishes.
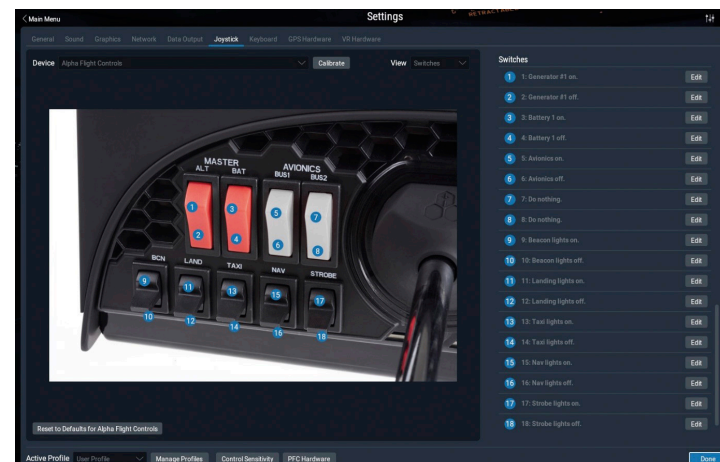
Use in Microsoft Flight Simulator X and in Lockheed Martin Prepar3D

Using the Honeycomb Alpha Flight Controls with these two flight simulators is also rather simple as long as you limit yourself to the default functions of the simulator. From the settings menu you can assign the axes and functions to the yoke and the various switches.

However, many add-on aircrafts extend the feature range. The developers have invested a lot of effort in order to include additional functions, thus making operating the respective aircraft even more realistic. For such aircrafts it is usually a bit more complicated to realistically map their additional functions to an external device like our Honeycomb Alpha Flight Controls.

A Short Explanation

If you look at the settings of your flight simulator, be it FSX or P3D, you will notice it only gives you the option to assign a switch with a so-called toggle function. Even that only works if you use simple push buttons. You assign a toggle function to a button that then, depending on the state of the function, reverses it. To give an example, if the landing gear is extended and you push the button, the simulator will retract the landing gear.

Some buttons can be used this way in the simulator for the Honeycomb yoke as well. All buttons located right at the horn of the yoke. Things are different for the switch panel. The switch panel consists of actual on/off switches. While these can be assigned a toggle function, this does not make much sense in most cases since you never really know the current state. To circumvent this problem, we came up with a solution that switches the corresponding variables right in the flight simulator. Within the flight simulator we have the possibility to address far more functions than would be accessible from the usual settings.

So far so good, but there is another problem in the flight simulator before we can come to the actual solution. Many (not all) add-ons use their own logic and custom variables to switch default features like taxi lights. This can make sense, for example when you want to

programme custom behaviour like defects or monitoring of power supply. If you would use the default settings and their functions, in the worst case nothing would happen at all. Luckily, almost all developers of add-on aircrafts offer lists with variables or SDKs (SDK = Software Development Kit) which you can use to switch their functions. This is also what home cockpit builders often use.

Our Solution

Our solution is the AFC_Bridge.dll.
The AFC_Bridge.dll is registered in the flight simulator, monitors the switch inputs from the Honeycomb Yoke and upon operating a switch executes an execute_calculator_code function that gets its values from the YokeConfig.json. Actually, it's pretty simple.

If that was a bit too fast or you do not want to get into programming, here is a more detailed explanation.

We have written a programme that monitors the switch inputs while the simulator is running and acts accordingly. What this programme is supposed to do for a specific switch can be controlled using a configuration programme.

The Configuration Programme

On the desktop you should find a shortcut ("YokeInput") which starts the configuration programme. If no such shortcut exists, open Explorer, navigate to the installation directory, start the "YokeInput. exe" found within the "bin" folder.

You should see your Honeycomb yoke. When you operate a switch at the yoke the corresponding image should appear in the middle, allowing you to read the corresponding switch numbers.

At the right side you can select the desired switch and enter the variable and value you wish. You can give the switch a function that will be executed when it is pushed and one when it is released again. This is suitable for a push to talk button (activate when pressed and deactivate again when released). You can however also leave the release event empty and only define the press event.

When you define something, make sure the variable is entered correctly.

Example:

We want to turn on the strobe light in the Aerosoft Airbus. To do this we need to switch the variable "`AB_VC_OVH_ExtLight_Strobe_Sw`". Since this is a local variable, we need to enter the following in the "Variable" field:

`>L:AB_VC_OVH_ExtLight_Strobe_Sw`

As "Value" below we simply enter "`1`" in this case. If we want to use another switch to turn the strobe lights off again, we simply enter the same variable and the value "`0`".

Once we have completed the profile we want, we can save it via File->Save. All saved profiles can be found in the folder "[installation folder]\bin\UserProfiles". When saving you will be asked whether you

want to activate the profile. If you confirm with "Yes", the newly created profile will not only be saved in the UserProfiles folder, but also als YokeConfig.json in the "bin" directory where the AFC_Bridge.dll can load and use the file.

In the flight simulator menu Add-ons -> Honeycomb you can reload the new profile while the simulator is running so you can test it and try it out immediately.
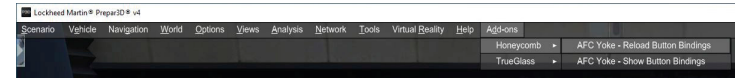
Since this way will be too difficult for some users, we have implemented a template feature.

All templates are stored in the "[installation folder]\bin\Templates" folder. In the YokeInput programme you can load your desired template from File -> Load Template, then save and activate it as described above.
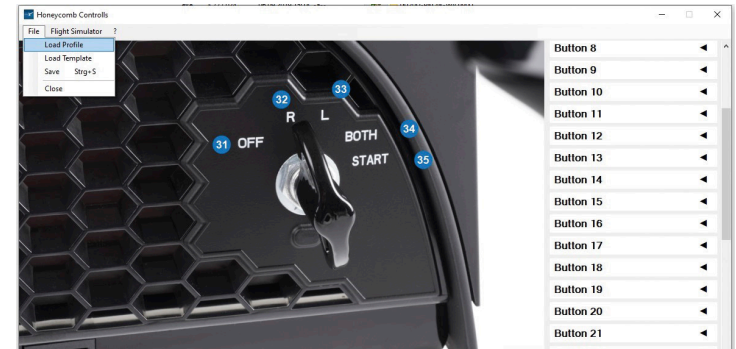
Templates are pre-configured profiles for various aircraft types which will be expanded over time. If the right template is missing you can either write it yourself and copy it into the template folder or contact us. We will try to add it as part of the next update.

Default Assignments

Usually the flight simulator assigns a default assignment to the switches and axes which will not make much sense in most cases, especially for switches, and only distract us. Using the YokeInput

programme you can delete the default assignments for the switches. To do so, simply click on "Flight Simulator", then the corresponding simulator in the menu, and the programme will remove them for you. Note that this only deletes the switch assignments. Assignments for the axes and hat switches (to look around in the cockpit) will remain and will still be managed by the flight simulator.

The configuration programme will be improved and extended over time, and the included templates will be expanded as well. For this the Aerosoft Updater will be installed so you have an easy way to keep the programme up to date. If you have defined a template for a specific aircraft and want to share it with others, you can of course send it to us so we can include it with the next update.

Links

Below you can find some links that help you search for variables.

P3D Learning Center (all default variables)

http://www.prepar3d.com/SDKv4/LearningCenter.php

All variables for the QualityWings 787

http://qualitywingssim.com/files/ultimate_787_collection/docs/QualityWings%20-%20Ultimate%20787%20Sim%20Builders%20Kit.pdf

All variables for the Airbus X Extended

https://forum.aerosoft.com/index.php?/topic/64255-airbus-x-extended-sdk-variables/

Doug Dawson's website offers many small helper tools, among them the Gauge p3_xml_vars_x64 that displays the current local variables.

https://douglassdawson.ca/

Used Software

SharpDX (http://sharpdx.org/)

Newtonsoft (https://www.newtonsoft.com/json)

SDL2 (https://www.libsdl.org/)