Noobs guide to Flight Tracker and StreamDeck [Draft]

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The Noobs guide to Flight Tracker and StreamDeck [Draft 0.1]

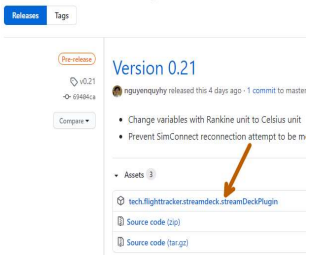
About this guide

Ok so lets assume for the sake of argument you are here because:

- You have a Stream Deck XL
- You have Microsoft Flight Simulator 2020
- You need to work how to install and configure Flight Tracker to make it work with FS2020

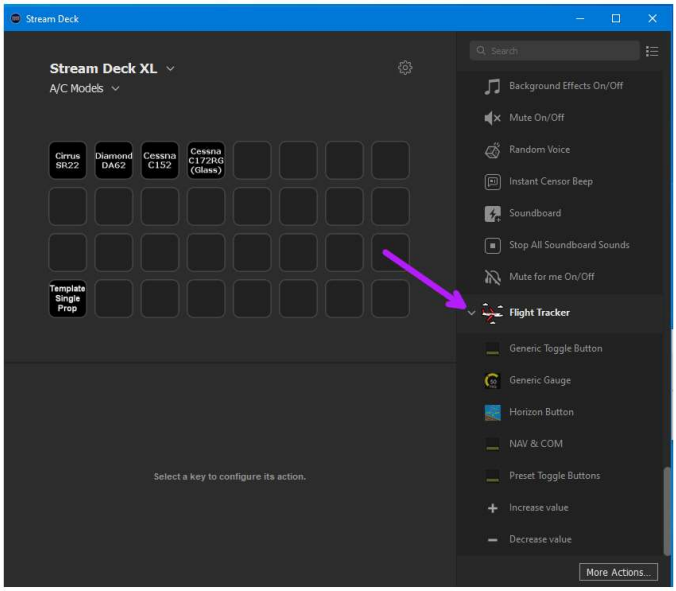
We'll also assume that you have seen what it can do or are curious what others are pretty jazzed about.

Setting up Flight Tracker for Stream Deck

- To get started, you'll need to download the Flight Tracker Plugin from Github. Download and install is an easy process. First go to the link below to download the most current release here:
- https://github.com/nguyenquyhy/Flight-Tracker-StreamDeck/releases
- Click the Release number link on the page you want to use, The latest release will be best for most cases.
- When the page loads, click on the **tech.flighttracker.streamdeck.streamDeckPlugin** file and download it to the computer that is running Stream Deck and FS2020.
- 

- When the file has downloaded, shutdown Stream Deck on your PC if it is running by closing it in the windows notification tray.
- Once StreamDeck is closed, open File explorer in windows and navigate to where you downloaded the plugin from GitHub.
- Double-Click on the plugin you just downloaded and then click **"Install"** the plugin. The Stream Deck app will relaunch and install the plugin.
- A second dialog will popup asking if you want to install the profiles Click **"YES"**. You need the profiles to make use of the numpad for the Comm and Nav radios (one of the very cool and useful Features of Flight Tracker).

- Once the plugin is installed you can find it in the list of plugins on the right of the Stream Deck main window.



The next step is to create a profile using the new plugin items.
There are a few demo profiles already created that are circulating that can be useful to learn the ins and outs of Flight Trackers and as more people make use of and share their magic, more will be available.
See here for a Cessna 172 G1000 Sample profile you can load as a demonstrator.

OK, so lets assume you are ready to get your feet wet and create a button or two in your profile.
Before starting, there a couple of resources I have found to be very useful to gather the information you'll need to create your profile.

1. Download the Structs.cs file, which is part of the Flight Tracker Plugin source-code on GITHUB. Use the Structs.cs file from the same version of the plugin you just installed. The file is being regularly updated with new commands and you want to ensure the file you use has the events and values that you plug-in version knows about.
2. Download, setup and configure **FSUIPC7**. This tool can provide you with info on what Events FS2020 is passing to Simconnect. It can do a lot more, but the console output provides us the information we need.
3. Bookmark a link to SDK info An additional source of information we can use is the Prepar3D SDK to a source of events and variables (look for the Simulation Variables link on the right of the page).

OK so you have downloaded the Structs.cs file, you can open it with a text editor there are two data structures. Toggle Events and Toggle Values.
Think of events as actions that are sent to Flightsim2020 to activate a function such as press a button. These are on off events (Toggle) but some can also work to decrease or increase actions such as Increase altitude or decrease flaps.

For values, these variables these are the names of the variables that simconnect can send back to Flight Tracker to say, show the landing light on or off. Where it gets a bit more interesting is while it can return on off values (1 or 0), it can also return values for use with Gauges such as Altitude, RPM , EGT and Flap Position.

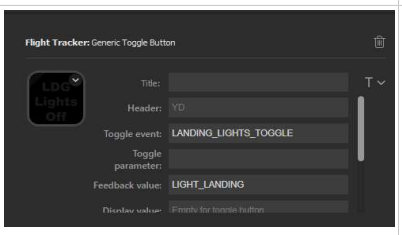
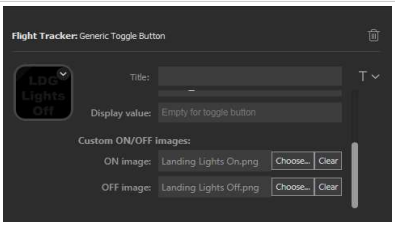
Flight Tracker includes a number of preconfigured buttons, many related to Autopilot. These make it easy to create a set of control to set Heading Altitude, Vertical speed Flight Level Change, There are also complementary increase / decrease buttons that link to each of the previous functions. These are easy enough to setup and well cover them in the next part of this guide.

Right now though, we are going to walk through the process to create a generic button to turn on the landing light for the C172. It will likely work on other aircraft too but lets stick to the script…

First order of business is to fireup FS2020 and setup plane with main battery on. Start FSUIPC7, open the app console, then using the mouse on FS2020 turn on the landing light. When you do the FSUIPC7 console will show the Event that turning on the switch generated. Note that event name.

Next, lets open up the Structs.cs file and do a search for the text that you just copied in FSUIPC7. If you find it, then that tells you the Event is available to be assigned in your new button. We are looking for the event
LANDING_LIGHTS_TOGGLE
To make it easier to find what I am looking for, I created a spreadsheet that has a worksheet for just the Toggle Events structure in the structs file and a worksheet for Toggle values. You can also just search the downloaded structs file for the text.
It's important to match your variable from FSUIPC7 to the Structs file. If there is no match then Flight Tracker will not pass that event back to Simconnect then to FS2020. We need to use the Event name from Structs.cs, to create the button. Often times the name from FSUIPC7 will exactly match the Structs file but sometimes there may be a subtle difference.

Now for the magic. Configuring a Generic Button.
Open Streamdeck create a new empty profile or find a button location that you want to use. Drag Generic Toggle Button item in the Flight Tracker Plugin on the right onto the button you want to assign.
When you do the button will list a number of available fields and well go over them here so you know how they are used. Not all fields need to have values set.

Test	
	

Title
This is the Stream Deck standard button text title. It supports the standard text positioning and formatting options. Depending on your button needs you may or may not need to use this.

Header
Header is the Flight Tracker Button titling option. It does much the same thing as Title except it uses preset formatting and positioning to make look and feel consistent across buttons. It works for basic buttons but is less useful if you are looking for more advanced look and feel of your buttons. You can leave this blank if you plan to create custom Icons.

Toggle Event
This is where the magic begins to happen. You must use the *exact* toggle event listed in Structs.cs here. The developers have done a pretty good job to match Flight Tracker events to the event name that you see generated in FSUIPC7 but very occasionally there may be variation. Also note that there are some events that are present in Structs.cs that are not "wired up" in FS2020 most notably for the G1000. (We hope that will change very soon, but Asobo have not been

specific about what specific fixes and enhancements will come in the promised late Dec 2020 update for G1000 and 3000 support.) The best way to know if an event is wired and outputs to SimConnect is to trigger the event in FS2020 and see if there is an event output into the FSUIPC7 console. If there is, match it up to the Structs.cs file to ensure the event is present there. If it is, you should expect your button to work. If there is a basic control for FS2020 that you need, that is being propagated out to FSUIPC7 but it is not listed in the Structs.cs, then the best course of action is to file an enhancement request for the event on Github. Help the devs out by being as specific as possible about the FS event name from FSUIPC7 and which aircraft you were using. Really good clear info may improve chances of an event being added. Please also remember this is a labor of love for the devs sometimes updates come more quickly sometimes not as frequently. Bear with them, help as best you can. For our sample button we are going to paste in the event name you found in Structs.cs LANDING_LIGHTS_TOGGLE

Toggle Parameter
Many of the events you send do not require a parameter to be passed to make the function work, but some do. This field is where you would enter that value. An example where a parameter is needed is switching between VOR1 and 2 on the G1000. The event you need to trigger is AV_NAV_SELECT_SET and the parameter you pass to the button is either 1 or 2. If the parameter is needed but not included, the button will not work. Not all buttons need or use a parameter passed to FS2020 when the event is triggered,LANDING_LIGHTS_TOGGLE for example just needs the parameter. So far, except for looking up the event in the SDK I haven't found a reliable way to determine if an event needs a parameter. Often times it just comes down to common sense. I'll update this guide with better guidance if and when I find it.

Feedback Value
This is where the current value for the control you are driving comes back to the Flight Tracker button. As a toggle value they are typically 0 or 1. The toggle value is used to determine the on or off button icons that will be displayed. We'll get to shortly. You get the name of the toggle value from the Structs.cs file and they are all collected in the Toggle Values section. It can sometimes be a bit of a challenge to identify the correct value to use as there may be a few likely candidates.

Display Value
If the Control you are working with is not a toggle and instead returns an actual value then this field is where you enter the variable name that returns the numeric value to be displayed. Use the same process to obtain the variable name as for Feedback Value.

The Last two items are the custom ICON files that you can construct yourself for each Button. If you choose not to create custom icons then just use the header value to title the button and Flight Tracker will apply its default background and you are all set. Custom button icon are where you really get to make your panel your own. For my icon library, using the image editor, I created a template file with a standard set of components and layout elements in individual layers. I reuse them to quickly create new buttons. I found I got great results using a 500 X 500 pixel base image and let Stream Deck handle converting it into a native size icon. To design the icons, I use Paint.net from the Windows store to create the images. It handles the layers really well and exports to as a 500X500 .png quickly and produces good results. If you create your own ICONs and you use 500 X 500 as your design size then I recommend allowing a minimum 25 px text margin around all sides so that text doesn't get cut off.

This panel is a mix of Custom icons and a few Flight Tracker Gauges that we'll get into in the next post. The Buttons are all Custom Icons. The Template file and icons themselves can be obtained from GITHub here. The template files are in .PDN format used by Paint.NET which you can get in the Microsoft Store. The profile is also available housing these and other buttons is available on GITHUB Here.

When you enter a value into a field move the cursor off the field to ensure the Field value is saved. If you don't your button may initially not function until the field you just updated loses cursor focus.