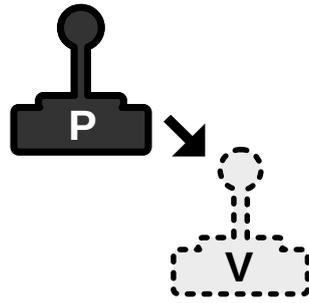


Joy2vJoy



Disclaimer

This software cannot run without the virtual joystick driver **vJoy** being installed and configured. Unfortunately the development of vJoy came to an end December 2018, and some users have reported problems installing vJoy on newer versions of Windows 10. I can sadly not offer any support if you run into these problems. If any of you knows of any alternatives to vJoy which are still being actively maintained, and without these issues please get in contact with me.

Outline

Setting up my controller for the various DCS modules (aircraft) it has always annoyed me that I cannot set an action to be performed when one of the 2- or 3-way switches on the Thrustmaster Warthog Throttle are moved to their off-position (it works out of the box with the DCS A10C, however you cannot make such profiles yourself).

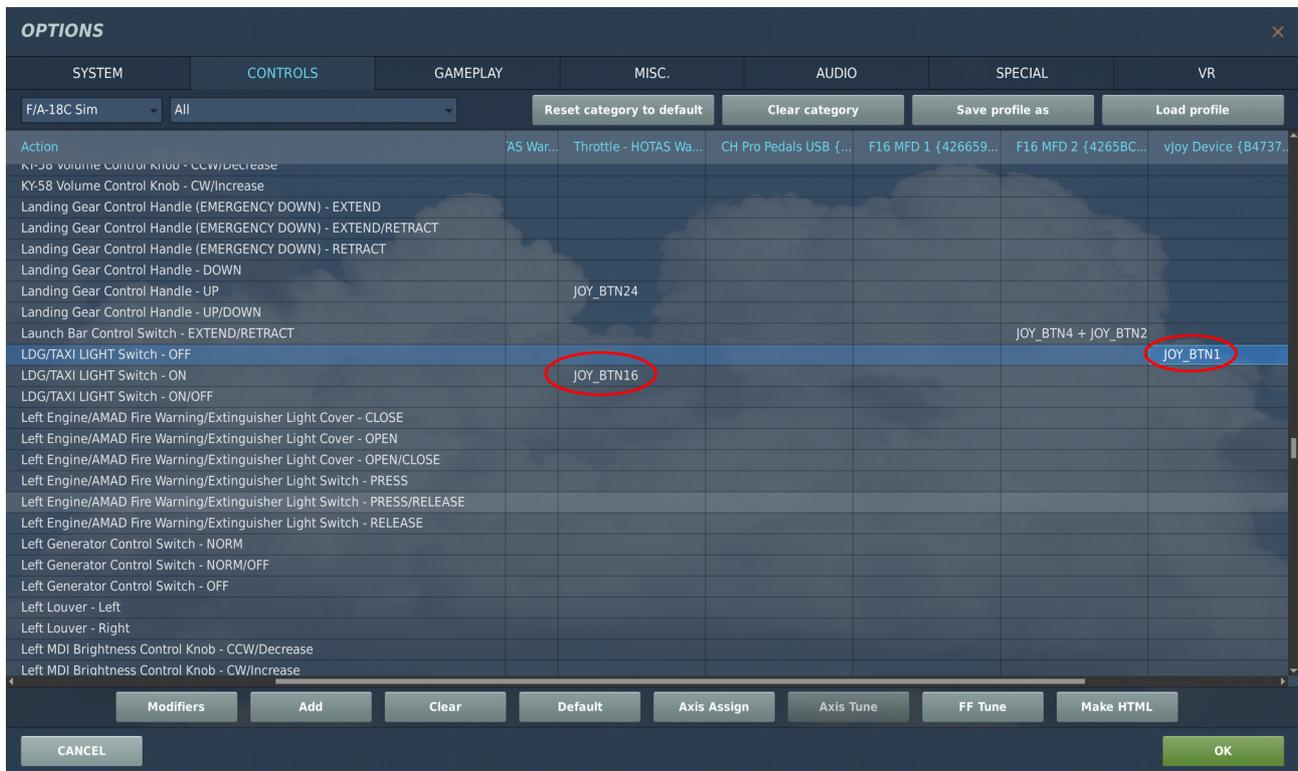
You can however solve this with Target (Thrustmasters scripting tool). I come from a CH-products background before moping on the the Thrustmaster Warthog-combo (stick and throttle). In the past with CH-products I would always make a profile for each simulator/aircraft, and I liked the fact that my profiles would (could) present themselves as multiple virtual devices (e.g. a virtual joystick, a virtual throttle, and a virtual device with additional buttons). However when you make a profile with Target it boils down to a single virtual device with a maximum of 32 buttons, meaning many of the buttons have to send keyboard-combinations to DCS (or whatever simulator). For this single reason I have avoided using Target.

I recently found out I could accomplish what I wanted using either VoiceAttack or JoyToKey. Both can be setup to send a user-defined keyboard-combination when a particular joystick/throttle-button is changed from its ON- to its OFF-position. However going down this path, you have to configure DCS to react to these additional keyboard-commands with the downsides that will introduce.

I knew about vJoy but had never used it. Anyhow it gave me the idea that a program could be made that would monitor the status of the buttons/switches on the physical throttle, and

based on what these changed from/to (e.g. a button that was previously ON, but now it switched to OFF), I could use vJoy to set a virtual button to either ON or OFF. E.g. when button 16 changes its state (from ON to OFF or vice versa) the state of the virtual button changes to the opposite value (when button 16 on the physical throttle goes to OFF, the virtual button 1 changes to ON, and vice versa).

This following screenshot shows how to set it up in DCS. In this example we are going to configure the 2-way switch on the throttle labeled (ENG L) to control the Landing/Taxi-light of the F18. When this 2-way switch is moved up, it will switch ON button 16 on the physical throttle. With Joy2vJoy running (activated) in the background, it will monitor when button 16 is moved to its OFF position, and when it does it will trigger that button 1 on the virtual vJoy device is set to ON, which is why the Landing/Taxi-light is set to switch off when virtual button 1 is ON:



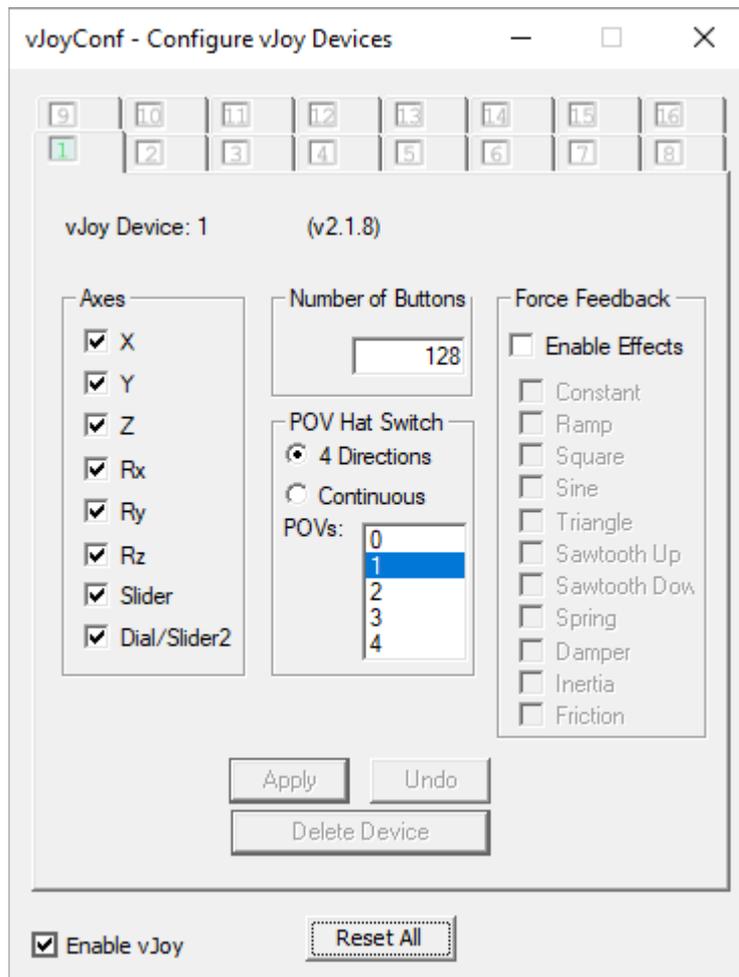
Installation/Configuration of vJoy

If you don't have vJoy installed you first have to do that. vJoy can be downloaded from the vJoy site: [HTTP://vjoystick.sourceforge.net/site/](http://vjoystick.sourceforge.net/site/)

Except as listed in the disclaimer (some users cannot install vJoy) the installation of vJoy is straight forward (as I recall you don't even need to reboot the PC after installation). To configure vJoy you have to run "Configure vJoy". Simply press-and-hold left WIN-key and then press the Q-key. A search window appears, and here you simply start typing "Configure vJoy" until you see the app, which you then start.

When the vJoy program starts you see 16 tab-sheets in the top of the screen (one for each of 16 possible virtual devices). We only need one, so you click the 1st (labeled "1"). If you

see a button labeled "Add Device" click it. In my case I have configured the 1st device with all 8 axis, 128 buttons, 1 hat-switch and no Force Feedback. When you make any changes the "Apply" button becomes active, so press it:



That is all the configuration you have to do. vJoy is now installed as a driver, and we have configured vJoy device-1 with 128 buttons. In my case (as visible in the screen-shot) the device was also configured with 8 axis, and a single POV-hat, however these are currently not being used, so you can disable them if you want to. As vJoy is installed as a driver (and the settings are saved) there is no need to run the vJoy application after a reboot.

If you want to verify your vJoy installation you can use the Win+Q combination to start "Monitor vJoy" and "vJoy Feeder (Demo)". Clicking the buttons in the vJoy Feeder app, you can see them "light up" in vJoy Monitor. Be sure to shut-down at least the Feeder app before proceeding, as 2 apps cannot acquire the same vJoy virtual device at the same time (if the virtual device is acquired by the vJoy Feeder app, it cannot be acquired by Joy2vJoy).

IMPORTANT: If you, like I have in the screen-shot, configured your vJoy device to have axis, its important that you disable these in DCS, as DCS will automatically hook up these axes to their common uses (e.g. X for Roll, Y for Pitch and so on). m

Installing Joy2vJoy

Until you are able to install/configure vJoy and verify the installation/configuration using vJoy Feeder and vJoy Monitor there is no need to proceed, as Joy2vJoy will not work if vJoy Feeder/Monitor is not working. As listed in the disclaimer the development of vJoy came to an end late 2018, and I can't offer any support if it will not install/run on your windows installation.

By running the installation bundled with this Zip, you will install Joy2vJoy along with all the libraries it need (it will default to install into "C:\Program Files (x86)\Joy2vJoy"), and will put an icon on the desktop.

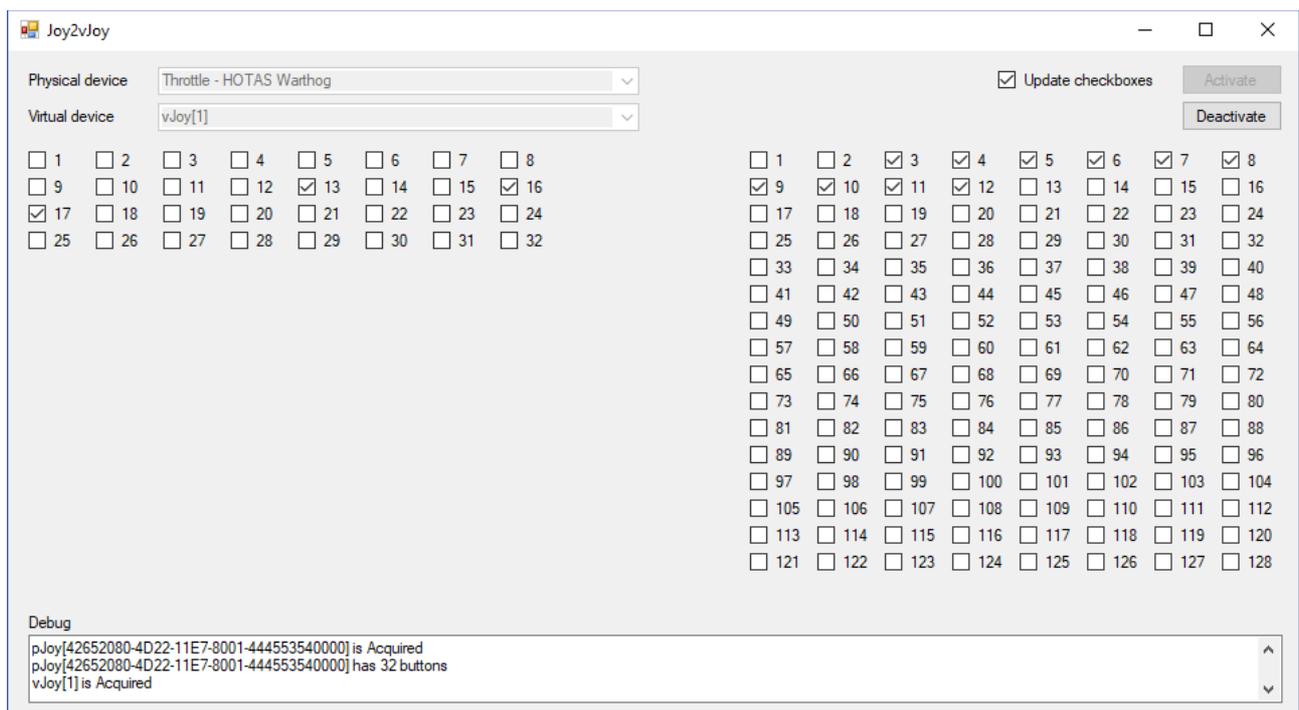
Be sure to close vJoy Feeder BEFORE starting Joy2Vjoy. In its current form Joy2vJoy is hard coded to only function with a Thrustmaster Warthog Throttle and the 1st vJoy device, hence there is no configuration.

Running Joy2vJoy

When you start Joy2vJoy it will look for the Thrustmaster Warthog Throttle and the vJoy device. If found, these will populate the two combo-boxes in the top of the screen (the combo-boxes will only list these devices, you cannot choose anything else).

It's not enough that you run Joy2vJoy, to have it work you have to click the "Activate" button. Likewise after a reboot, if you want to use Joy2vJoy, you have to start the program and hit the activate button, after which you can start DCS and use the input from the vJoy virtual device.

Once Joy2vJoy have been activated you can choose to check the "Update check-boxes" checkbox. Once checked, the check-boxes below can be used to monitor both the output from the physical Thrustmaster Warthog Throttle (on the left) and what is being output to the vJoy device (on the right).



Once you have found out how it works I suggest you unchecked the "Update check-boxes" checkbox, so it will not affect performance while you run DCS.

Joy2vJoy needs to be running and be activate while you run DCS (or what other simulator you might be using). So be sure to only minimize that app, and not close it, until you don't need it.

Please note that the vJoy buttons (as visible through the check-boxes on the right) will only be updated when the program detects a physical button (as visible through the check-boxes on the left) changes their value. So if it is important for you that all vJoy buttons has the "correct value" before starting your sim, you should cycle all buttons on the physical throttle after having activate Joy2vJoy (however I can't imagine this should be necessary in any case).

Using Joy2vJoy in DCS (or other simulators)

Joy2vJoy will not affect the normal output from the Thrustmaster Warthog Throttle. Hence all buttons (moved to their various ON-positions) will still send their button-presses to DCS (or whatever) as they have always done.

When configuring your controls in DCS you have a column for each attached/detected device, so beside having a column for your Warthog Throttle, -Stick, Rudder-pedals, or wherever else you might have connected, you will also see a column for the vJoy device. It will be using this column you will attach Actions to the virtual buttons (just as you attach actions to the physical buttons).

This following table will show which physical buttons will affect which virtual buttons. In case with the 2-way switches only a single physical button will affect a single virtual button. However when it comes to the 3-way switches, they have a physical button in the "up" position and another physical button in the "down" position. When either of these goes from "ON" to "OFF" they will trigger the same virtual button to go OFF. Likewise if either goes "ON" the virtual will go "OFF" (the virtual will only be on when both of the physical are "OFF").

Regarding the 2 motor (3-way) switches I was very much in doubt how I wanted to set it up. Had it been "a normal" 3-way switch I would hadmade the center (off-position) going active when moving out of the down- or the up-position. However as the up position is only momentary (it will not stay in the up position, it will return to off when you let go of the switch). I decided that going into/out-of the up position will not affect the virtual button.

Virtual #	Physical #	Physical Name	Remark (V=Virtual/P=Physical)
1	16	Eng L	V1-ON = P16-OFF
2	17	Eng R	V2-ON = P17-OFF
3	18	Motor L	V3-ON = P18-OFF
4	19	Motor R	V4-ON = P19-OFF
5	20	APU	V5-ON = P20-OFF
6	24	EAC	V6-ON = P24-OFF

7	25	RDR ALTM	V7-ON = P25-OFF
8	27+28	AUTOPILOT	V8-ON = (P25-OFF and P26-OFF)
9	22+23	Flaps	V9-ON = (P22-OFF and P23-OFF)
10	7+8	Speed-brake	V10-ON = (P7-OFF and P8-OFF)
11	9+10	Boat-switch	V11-ON = (P9-OFF and P10-OFF)
12	11+12	China-hat	V12-ON = (P11-OFF and P12-OFF)
13	13+14	Pinky (ext.light)	V13-ON = (P13-OFF and P14-OFF)
14	29	Left (throttle) OFF	V14-ON =P29-OFF
15	30	Right (throttle) OFF	V15-ON =P30-OFF
16	1	TDC-press	V16-ON =P1-OFF
17	2	Mic-switch (press)	V17-ON =P2-OFF
18	15	Left throttle button	V18-ON =P15-OFF
19	21	L/G warn	V19-ON =P21-OFF
20	26	AP engage/disengage	V20-ON =P26-OFF
21	3+4+5+6	Mic-switch (4 directions)	V21-ON =P3-,P4-,P5- and P6-OFF

Ideas how to use some of the “Off-positions”

Its obvious to use the 2-way switches for things like Landing/Taxi-light (on/off), Landing gear (up/down), Master Arm (arm/safe) and so on for which there are 2 actions.

Regarding the 2 (3-way) motor switches I decided to handle these in a special way as they cannot stay in the up-position. So for instance The left engine switch will trigger physical button 18 when it goes down, and virtual button 3 when it goes to off (middle position). However moving the switch to/from its up position (physical button 31) will NOT change the value of virtual button 3 (it will stay on, until moving the switch to its down position). One way to use this switch could be to use the down/mid position to control hook down/up, and use the up position to toggle the launchbar (as the lurchbar only have toggle action in DCS).

Alternatively you can use the momentary up positions of these switches to Crank your Left/Right engine, and then use the fixed down positions for Fire-test A and B (you just leave either switch in the down-position while the Fire-test is running). Also you could use the down/middle position to switch between A-A and A-G mode, and use the momentary up-position to toggle Master Arm (arm/safe), or use the left switch (middle/down-position) for A-A/A-G and the right for master arm Arm/Safe, and then use the 2 momentary up-positions for something else ... they choices are ... almost ... endless. Personally I think I will use the autopilot 3-way switch for A-A/A-G in its up/down position

As of now I fly either by myself or with my friend with whom we have our own TS server. As we are the only 2 on this TS server we normally don't fly with PTT, but I recently started using VAICOM with my VoiceAttack. VAICOM regards the 4 position of the MIC-switch as 4 different radio buttons (basically 4 different PTT buttons). I am sure my friend don't want

to hear me speaking to VIACOM, so I can set up virtual button 21 as my TS PTT button. Virtual button 21 will go OFF when I move the MIC-switch to either of the 4 positions (to speak with VIACOM), and go back to ON as soon as I release it.

If you instead use the MIC-Switch press (physical button 2) as your TS PTT, as soon as you release physical button 2, virtual button 17 will go active. So if you at the same time want to use VoiceAttack, you can setup VoiceAttack to use virtual button 17 as its PTT button. Doing so VoiceAttack will only listen to your voice when you are NOT speaking on TS.

E.g. flying any of the Flaming Cliff aircraft, you can setup physical "button" 29 and 30 (moving left/right throttle to the cut-off position), to shut down the left/right engine. When 29 and 30 goes to their OFF-position (moving the left/right throttle out of cut-off position) virtual buttons 14 and 15 will go ON, and you can use this to start-up the left/right engine.

I've setup the program so it will also generate virtual button-presses when you release the push-buttons on the physical throttle (e.g.: left throttle button, TDC press, L/G-Warn and Autopilot-Engage/Disengage). I am not sure if it will be useful for anyone, but at least it's now possible :-)

DCS will not handle the virtual buttons different than other buttons, so in DCS you can configure these with modifiers just like all other buttons (in case you need to). Don't forget you don't NEED TO configure an action for all of the virtual buttons ;-)

Future of Joy2vJoy

I'm sad that the development of vJoy have come to an end, and some users are having problem installing/running the vJoy driver, but sadly I can't do anything about it. As of now Joy2vJoy is hard coded to the Thrustmaster Warthog Throttle. It was my intention to add support for other devices, and introduce user-configurable settings, but as of now these intentions are on the back-burner until I see how many might run into trouble using vJoy. Hopefully an alternative will present itself down the line.

It's naturally optional, but if you like this program, and want to show your appreciation through a **Donation** go here: [HTTP://www.liljendal.dk/](http://www.liljendal.dk/)