

SCRIPT FOR HOTAS COUGAR OR WARTHOG AND COUGAR MFDS:



SETUP GUIDE

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H/T IVANWFR, NICU AND PETERP FOR CODE AND IDEAS

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Please review this guide for updates after every update of this TARGET Script. Changes from the previous major release will be marked with a bar in the left margin as seen here.

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INTRODUCTION

When I decided to do a DCS World profile, I wanted to do one that would maximize the use of DirectX buttons and DCS in-game modifiers to allow its use across multiple aircraft, all while mimicking the real controller system to the greatest extent possible. Finally, I wanted to create a profile that not only had commonality, but could be switched from one aircraft to another at the push of a button. This is my design philosophy, although I have also added many controller-level routines to do things that just can't be customized from within DCS.

The purpose of the setup guide is to properly setup this profile with your hardware configuration, add the proper settings to the DCS World Options menu, and to provide basic hardware configuration parameters in `DCS_World.tmc`. *While this script supports simulations outside of DCS World (e.g. IL-2 Sturmovik and Elite: Dangerous), you should still use this guide to learn how to configure the script to your hardware and preferences. However, this guide primarily caters to DCS World; for instructions on setting up other simulators, please see their respective Configuration Guides in the HTML documentation included with CTS.*

Setting up this profile for DCS World requires many steps both in and out of DCS World. Be sure to follow this guide at least until you get to the appendices, else you may miss a crucial step.

IMPORTANT: Central Position Trimmer Mode should be disabled on all Helicopters in the DCS World Options menu unless the TARGET Central Position Trimmer function is disabled in this script.

WHAT YOU NEED TO GET STARTED

This script requires some setup to work with your hardware configuration and with DCS World itself. This guide covers the bare minimum you need to set up your profile for DCS, as well as sections that *should* be covered in order to benefit your style of play. Recommended, but not mandatory sections will be identified as “Recommended.” Buttons and database entries in CTS will be shown as **Blue Bold Arial text**, while buttons in other programs will be listed in **Bold** in this guide.

HARDWARE CONFIGURATION AND DCS WORLD.TMC

DOWNLOAD AND INSTALLATION OF THRUSTMASTER DRIVERS AND TARGET SOFTWARE

To properly use this script, the Thrustmaster drivers for both the HOTAS Cougar/Warthog and Cougar MFDs need to be installed. Likewise, the latest version of TARGET should also be installed.

HOTAS COUGAR

As of September 10, 2015, Thrustmaster has stated that the HOTAS Cougar is HID compliant for Windows 7 and above and does not require software to be compatible with TARGET. That said, the HOTAS Cougar as HID Compliant device has not been tested with this profile, and it is assumed that the Cougar Control Panel (CCP) is required for any Cougar Axis reassignment outside of TARGET. Likewise, any references to Foxy and the Cougar Control Panel (CCP) refer to the drivers referenced below.

That said, people may still have the [`2007_HCO_VISTA_64_RC1.EXE`](#) driver package installed (and this file can still be downloaded from the [Thrustmaster support website](#)). This is the 64-bit driver package written for Windows Vista and later, including Windows 7 and 8. However, to properly install these drivers, *you must run the installer in Windows Vista (Service Pack 2) Compatibility Mode*. Should your installation be only partial, refer to Appendix A: Fixing Driver issues with the HOTAS Cougar for troubleshooting solutions.

HOTAS WARTHOG

At the time of this writing, the latest Warthog drivers are the 2018_TMWH_1.exe package, which also includes the 12 firmware update for the stick and the 23 update for the throttle. This file can be found at the [Thrustmaster support website](#).

COUGAR MFDS

The Cougar MFDs are detectable by the Windows operating system. However, Thrustmaster has released drivers for the MFDs included in the file called 2018_FFD_2.EXE, which can be found on the [Thrustmaster support website](#). While these come up as force feedback drivers, the MFD drivers are included, and I have had fewer profile crashes when these drivers were loaded.

TARGET SOFTWARE

Finally, the TARGET software is required to use this script. Go to the [Thrustmaster support website](#), select either the *HOTAS Cougar* or *HOTAS Warthog*, then select Software and download the latest TARGET software version. TARGET v3.0.18.328 or later is required for use with this profile.

INSTALLATION OF TARGET SCRIPT COMPONENTS

This package includes several folders and support files that are not directly part of the TARGET script itself. Since you are reading this document, you have already run the installer and updated to the latest file versions. The updater automatically places the folders in their proper location, nested ideally in the location of your existing TARGET profiles. *You do not want to install this script to the c:\Program Files (x86)\Thrustmaster\TARGET folder.* The default folder for the installer is your Documents\TARGET Profiles folder.

THE CTS UPDATER

The CTS Updater, CTSupdate.exe, is the program that downloads the latest file versions from the server. It was run on initial installation and this guide was in fact part of that download. The Updater can be run independently (as long as CTS is not running), or it can be launched from within CTS by clicking on the download icon in the upper right corner as circled in Figure 1 below.



Figure 1 CTS Title Bar (Updater Icon Circled)

After the Updater installs the latest files, it will report the version comparisons of file groups, it will include a message that details changes in the latest update. This differs from the change log in that it will focus more on specific files (*e.g.* Diff LUAs)¹ that need to be installed to DCS World as well as special instructions as applicable.

As the Updater creates the required folder structure, the following sections just explain the structure so that you can better understand how the script and GUI work.

¹ A table displaying the latest Diff LUA files, as well as controller maps and mod versions, can also be found in the HTML documentation immediately following the Change Log.

“CTS.EXE” AND THE FOLDERS “COMMON,” “DB,” “DOCS,” AND “DCS”

The Updater extracts the CTS.exe (including CTSfs.exe for Fullscreen users) and the Common, DB, Docs, and DCS folders to its location, which should be installed into the folder where you choose to store your TARGET profiles. So long as the Common, DB, Docs, and DCS folders are co-located with CTS.exe as shown in Figure 2, the profile will work². Additionally, if you are updating from a previous version of the script, be sure to leave CTS.dat in place unless otherwise directed by the Updater. This ensures that your personal settings carry over to the new version.

Name	Date modified	Type	Size
Common	2/11/2017 8:38 AM	File folder	
DB	10/16/2017 10:31 ...	File folder	
DCS	10/16/2017 10:31 ...	File folder	
Docs	10/16/2017 10:31 ...	File folder	
HTML			
Profile JPGs			
CTS.exe	10/16/2017 5:22 PM	Application	2,552 KB

Figure 2 Required Folder Layout for the TARGET Script

DOCS\PROFILE JPGS

The full-size JPGs that represent control mappings for each profile are located in the Profile JPGs folder under Docs. This folder should stay exactly where it is to allow for the graphics to display in the HTML files, but these files can be downloaded from within the HTML files by right clicking on the image and selecting **Save Picture As**. Likewise, they can be directly accessed from these folders and printed for personal use. The MFD inserts are intended for print, and should be printed at 100% scaling to properly fit into the Cougar MFDs.

The following folders with leading underscores require placement in DCS World or other supported games³.

_CONTROLLER BINDINGS FOR OTHER SIMS

This folder contains ZipFiles that contain configuration files (namely control binding files) for simulations outside of the DCS World ecosystem. The nomenclature for these files is TARGET <game> Bindings v2.xx.zip. These configuration files don't conform to the diff.lua standard present in DCS World, so installation instructions specific to each game can be found in each game's respective HTML Configuration Guide.

_FOR SAVED GAMES_DCS

The folders nested in _for Saved Games_DCS should be put in your Saved Games\DCS folder (likely c:\users\<your user name>\Saved Games\DCS) as shown in Figure 3 below.

² Figure 2 displays only the files and folders that are present on initial installation. On initial run, CTS.exe will create CTS.dat and run_script.bat, and then will generate DCS_World.tmc and DCS_UserSettings.ttm when building a custom profile with your settings.

³ _Controller Bindings for Other Sims is for simulations other than DCS World.

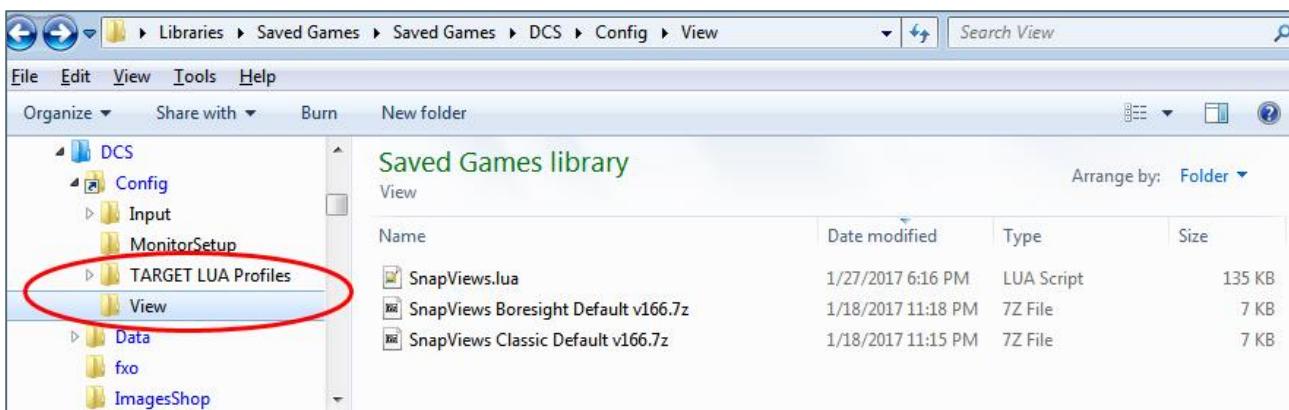


Figure 3 Locations for Controller LUA files and SnapViews

Each nested folder is described below.

TARGET LUA PROFILES

The files in this folder are the DCS `diff.lua` files used to map your *Keyboard* and *Thrustmaster Combined* controllers once the TARGET profile is loaded. You do this through the DCS Options menu and point to these files to load the controller configuration. These files can be located anywhere you choose, but should be easily accessible from the DCS World Options menu. I recommend nesting the TARGET LUA Profiles folder in `Saved Games\DCS\Config` as shown in Figure 3.

CUSTOM SNAPVIEWS

This folder contains two zipped `SnapViews.lua` files, the version of your choice which should be extracted into the `Saved Games\DCS\Config\View` folder as shown in Figure 3. If you're not sure which one to use, select "SnapViews Classic Default". Explanations of the files can be found in the section titled Recommended: Custom SnapViews (Optional: Boresight Views).

VAICOM IMPORT

This folder contains the VAP file to import into VoiceAttack to make this script compatible with VAICOM Pro. See the section titled VAICOM Pro Settings for details.

CUSTOM LUAS FOR DCS WORLD MAIN INSTALL

These files are optional, but recommended changes to the default configuration lua files for these aircraft. They add analog axes for sight intensity and elevation to the Huey as well as NVGs to the F-86 and some of the FC3 aircraft.

These files need to be placed in the DCS World main installation folder (*e.g. C:\Program Files (x86)\Eagle Dynamics\DCS World*), and you should only enable the lua files for the modules you own. For example, if you have the FC3 standalone modules like the A-10A or Su-25, use those; if you have FC3 as a complete module, use that one.

I highly recommend setting these lua files up as JSGME mods so that you don't need to re-copy them after every update of DCS World. The files are properly nested in each zipfile, so all you would need to do is extract them to the folder of your mod name. Instructions on setting up JSGME can be found in Appendix B: Setting Up Generic Mod Enabler for use with DCS World.

INSTALLATION

As with any complex application, this profile requires you to perform several steps in order to be compatible with DCS World. To keep the profile as flexible and modular as possible, I maximized both the use of built in DCS modifiers and the mapping of DirectX buttons in lieu of keystrokes. As such, you will need to add the keyboard and joystick LUA files to each aircraft using the Controller settings in the Options menu of DCS World.

Additionally, you will need to configure your options within the DCS World profile itself. I have simplified this as much as possible while maintaining maximum flexibility, but there is no way around the initial setup.

To setup this profile, follow the instructions below.

COUGAR CONTROL PANEL (CCP) FOR HOTAS COUGAR USERS

Before you even get started, you want to make sure you have the proper settings in the Cougar Control Panel (CCP). Once you start TARGET, you will not be able to use the CCP while the profile is loaded, so it is best to make sure everything is set with your baseline hardware configuration.

Assuming you have rudder pedals attached to the Cougar, your configuration should look something like Figure 4 below. If your rudder has toe brakes, be sure that they are assigned to axes 9 and 10. Unfortunately, there is no way to get around the 8-axis limit within TARGET, so we need to commit to our 8 axes before we even get started with the profile. Also, be sure that “Apply enable/disable Windows axis states” is checked and Emulation Mode is off. **Pay particular attention to the circled items in Figure 4.**

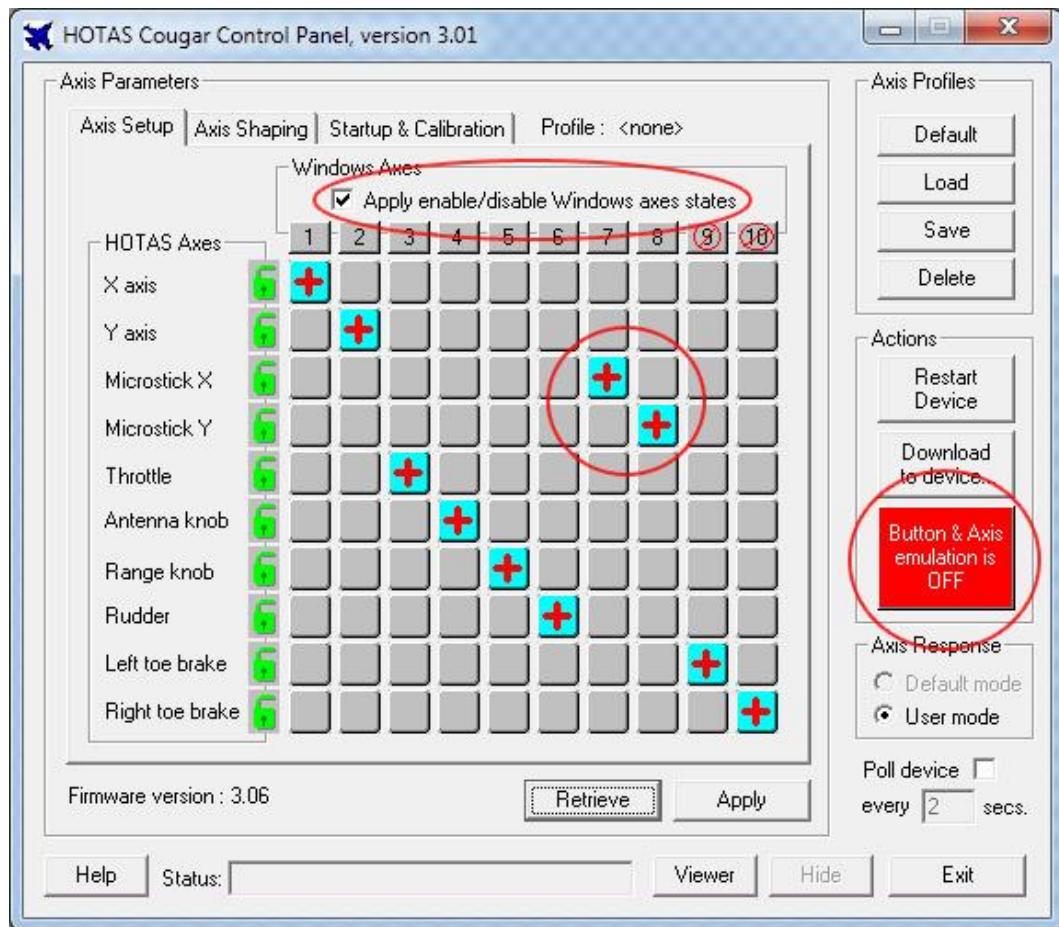


Figure 4 Cougar Control Panel (CCP) for HOTAS Cougar Users

COUGAR CONTROL PANEL (CCP) FOR COMBINED HOTAS WARTHOG AND COUGAR USERS

If you have both the Cougar with rudders+toe brakes and Warthog stick installed and you wish to use the Warthog stick as the default controller, then you can set the X and Y axes on the CCP to the toe brake axes in lieu of the Cougar stick. This allows you to use the analog toe brakes and rudder as a separate controller not covered by the TARGET profile, thereby working around the Windows 8 axis limit for a single controller.

If you use the Warthog, the Cougar (and the gameport rudder) is automatically disabled in the script (i.e. setting it as an independent controller). Figure 5 is a recommended configuration for using the Cougar gameport rudder as an independent controller if it has toe brakes.

Assuming you have rudder pedals attached to the Cougar, your configuration should look something like Figure 5 below. This configuration still allows full TQS functionality as a separate controller while allowing use of the toe brakes (assuming you use the Warthog stick for the primary controller). Be sure that “Apply enable/disable Windows axis states” is checked and Emulation Mode is off.

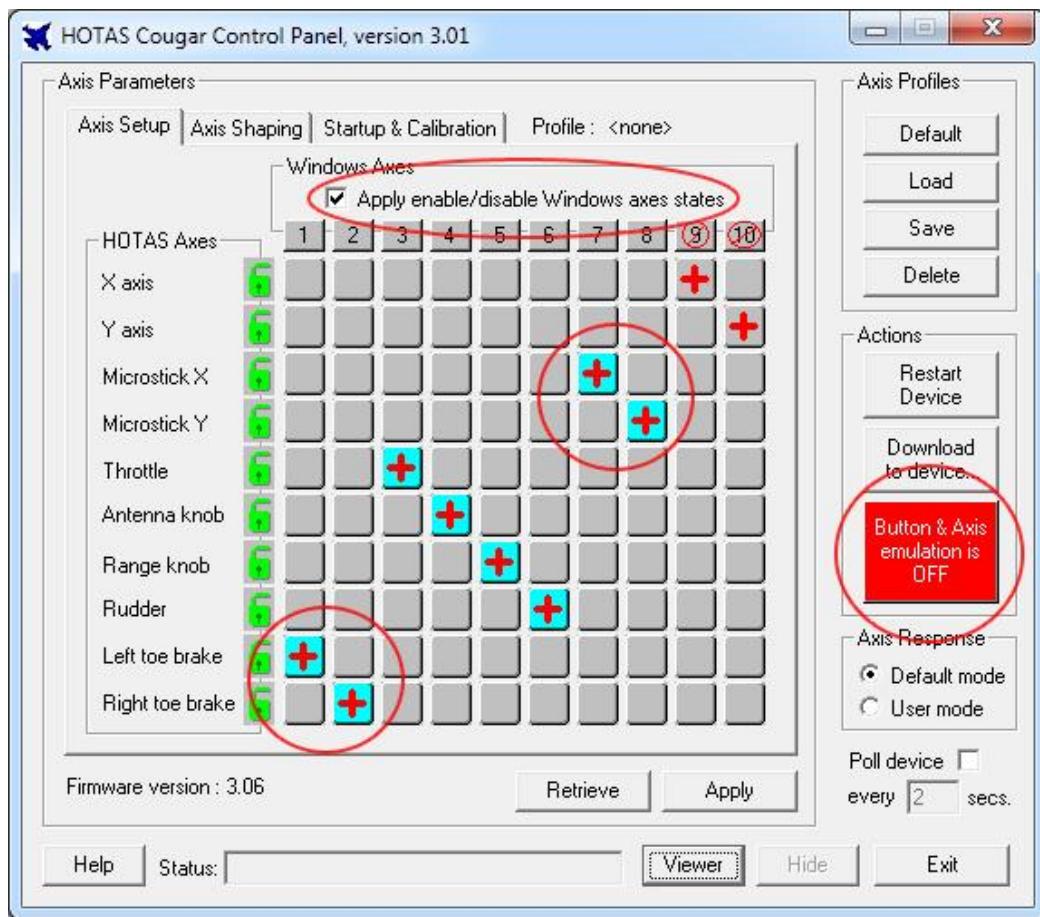


Figure 5 Cougar Control Panel (CCP) for HOTAS Cougar + Warthog Users

Note: CTS version 2.43 introduced the option to use the Cougar TQS (throttle) with a HOTAS Warthog setup for use with the F-16C Viper and JF-17 Thunder. Enabling this option will pull the HOTAS Cougar into the profile, thereby disabling any toe brakes attached to gameport rudders. If you wish to use the TQS for the F-16C or JF-17, a set of USB rudder pedals is recommended.

CONFIGURATOR TARGET SCRIPT (CTS)

Before you even start DCS World, you need to set up the options in your DCS World profile. Launch the CTS.exe application, and on initial launch it will build a settings database (CTS.dat) and a batch file that can launch the DCS World TARGET Script from the command line. Upon loading CTS, the first screen you will see is the Modules page.

Important Note: The introduction of CTS.dat means that your preferences will now be saved between script updates! To update your script to a newer version, simply copy all of the new files into your script folder, allowing overwrites. The next time you run CTS, it will detect a new database version, import your preferences into the new database, then rebuild CTS.dat. Similarly, if you wish to perform a “clean install”, you can still leave only CTS.dat and your preferences will be imported into the new datafile.

FOR 1024X768 USERS

CTS runs at a fixed resolution of 1024x768 to provide compatibility with the minimum specification for DCS World. However, the title bar and borders added by Windows expand the window beyond the 1024x768 screen limitation, thereby cropping the bottom of the screen.

If you run windows with a vertical resolution of 768, you can use CTSfs.exe. This is a version of CTS that runs in Fullscreen mode, but is otherwise identical to its regular counterpart. This Fullscreen operation means that your taskbar is also obscured, preventing that from cropping the display as well. Note that the references page will still be windowed; this is so that you can move it around. You should still be able to read the HTML documents in their entirety.

MODULES PAGE

On the modules page (shown in Figure 6), select the aircraft/modules you have installed, as well as any non-DCS World games such as IL-2 Sturmovik. *To toggle a selection, you must double-click or right-click the checkbox.* This is just the way the database works. Once you have selected your modules, press the **Values** button to move on to the Values page.

Side	Type	Module	Owned
Red	Helicopter	Mi-8MTV2 Magnificent Eight	<input checked="" type="checkbox"/>
Red	Helicopter	Ka-50 Black Shark	<input checked="" type="checkbox"/>
Red	Jet Aircraft	MiG-15bis Fagot	<input checked="" type="checkbox"/>
Red	Jet Aircraft	MiG-21bis Fishbed N	<input checked="" type="checkbox"/>
Red	Jet Aircraft	Su-27 Flanker (FC3)	<input type="checkbox"/>
Red	Jet Aircraft	Su-33 Flanker (FC3)	<input type="checkbox"/>
Red	Jet Aircraft	MiG-29A/C/G Fulcrum (FC3)	<input type="checkbox"/>
Red	Jet Aircraft	L-39C Albatross	<input checked="" type="checkbox"/>
Red	Prop Aircraft	Bf-109K-4 Kurfürst	<input checked="" type="checkbox"/>
Red	Prop Aircraft	Fw190D-9 Dora	<input checked="" type="checkbox"/>
Blue	Helicopter	UH-1H Huey	<input checked="" type="checkbox"/>
Blue	Helicopter	SA-342M Gazelle	<input checked="" type="checkbox"/>
Blue	Jet Aircraft	F-5E-3 Tiger II	<input checked="" type="checkbox"/>
Blue	Jet Aircraft	A-10A Warthog (FC3)	<input type="checkbox"/>
Blue	Jet Aircraft	A-10C Warthog	<input checked="" type="checkbox"/>
Blue	Jet Aircraft	F-15C Eagle (FC3)	<input type="checkbox"/>
Blue	Jet Aircraft	AJS-37 Viggen	<input checked="" type="checkbox"/>
Blue	Jet Aircraft	F-86F Sabre	<input checked="" type="checkbox"/>
Blue	Jet Aircraft	Hawk T.1A	<input checked="" type="checkbox"/>
Blue	Jet Aircraft	M-2000C	<input checked="" type="checkbox"/>

Right Click or Double Click to toggle selection

Figure 6 The Modules page in CTS

VALUES PAGE

The Values Page is the heart of the CTS GUI. The Combo Box on the left side selects either Global values or Values related to modules that you selected on the previous screen. These values are further categorized as shown in Figure 7, which helps in finding specific parameters and allowing you to conveniently perform edits on similar values.

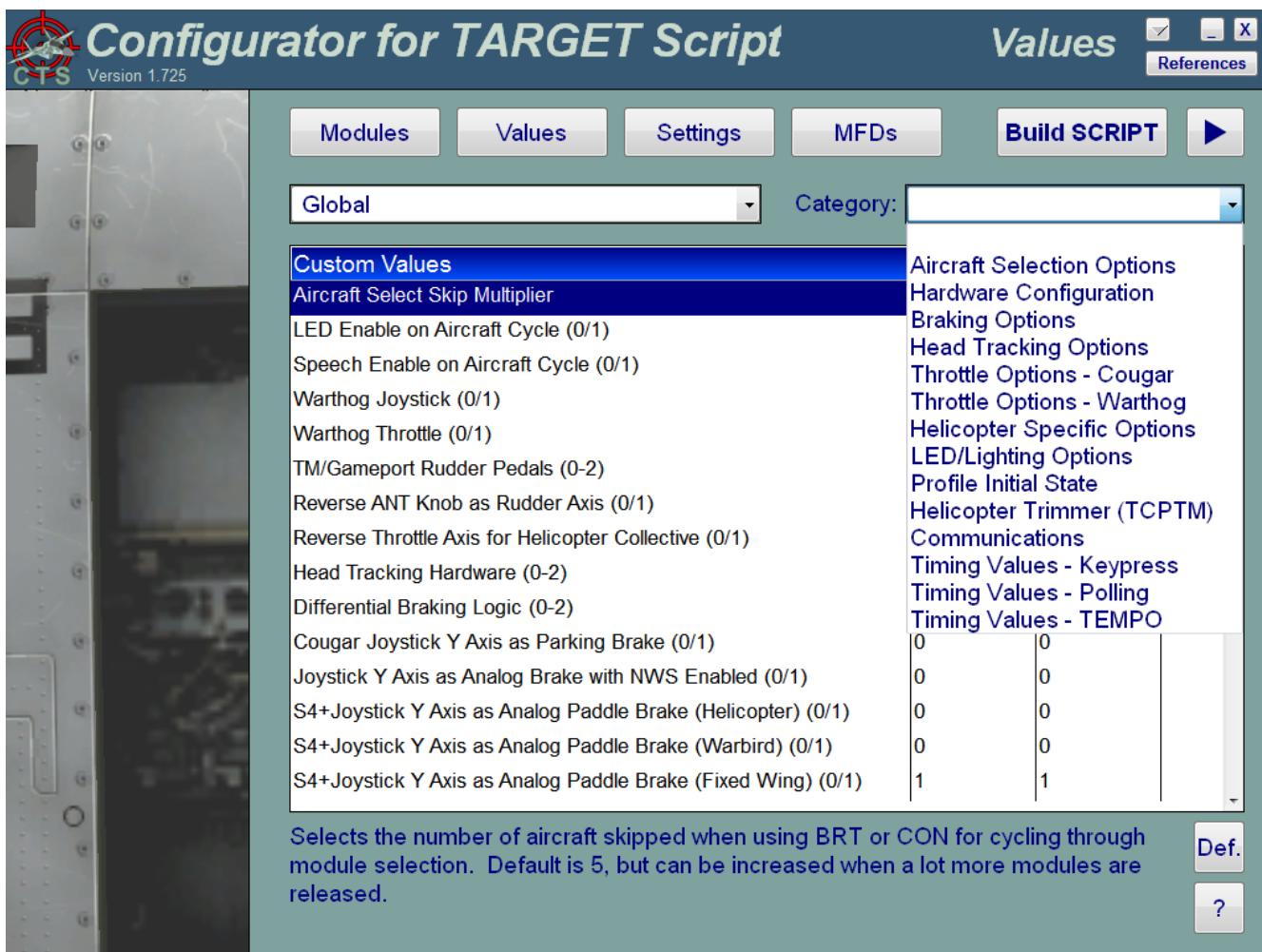


Figure 7 The Values Display in CTS

You may also note the help text at the bottom of the screen. This text pertains to the selected parameter. Additionally, a help (?) button at the lower right corner of the screen is context-sensitive help, which will launch the Advanced Configuration Guide in HTML format with a hyperlink to the section on the selected value. Finally, the **Def** button resets the selected parameter back to its default value.

HARDWARE CONFIGURATION

The Hardware Configuration category of Global Values should be your first stop. This is where you set whether you have a Cougar or Warthog HOTAS installed, how you wish to use your HOTAS, how many MFDs you have attached⁴ (useful for the F/A-18C), and whether you use head tracking. **The hardware values are the cornerstone for the rest of your edits.**

Note: this is an introduction to the Values page, which is extensive. This page allows you many ways to customize this script to your personal preferences, but the vast amount of options can be overwhelming. I recommend going through every category in the Global Values just to see what is available. You can make edits on a trial basis to see if you like something. Worst case, if you don't like a setting, go back into CTS, select that row, and click on **Def.** to reset the parameter to its default value. Other options and variables are covered in the Advanced Configuration Guide which can be accessed via the context sensitive help button or the **References** button on the upper right corner of the screen.

⁴ TARGET only allows for two MFDs to be programmed, so any additional MFDs are mapped as independent controllers to be used in conjunction with the TARGET profile.

SETTINGS PAGE

The Settings page as shown in Figure 8 allows further personalization of the script. The important items on this page for getting started are the Starting Profile and (for Cougar users) the TQS CommSwitch Mapping. This script must initially load an aircraft profile in order to work, so the Starting Profile selects which aircraft profile is loaded by default. You can always switch profiles on the fly by holding **S3** and **LOSB1** (**S3** and **T9/SPDB** for VR users or users without MFDs) for two seconds to enter the profile selection menu. See the User Reference for more details.

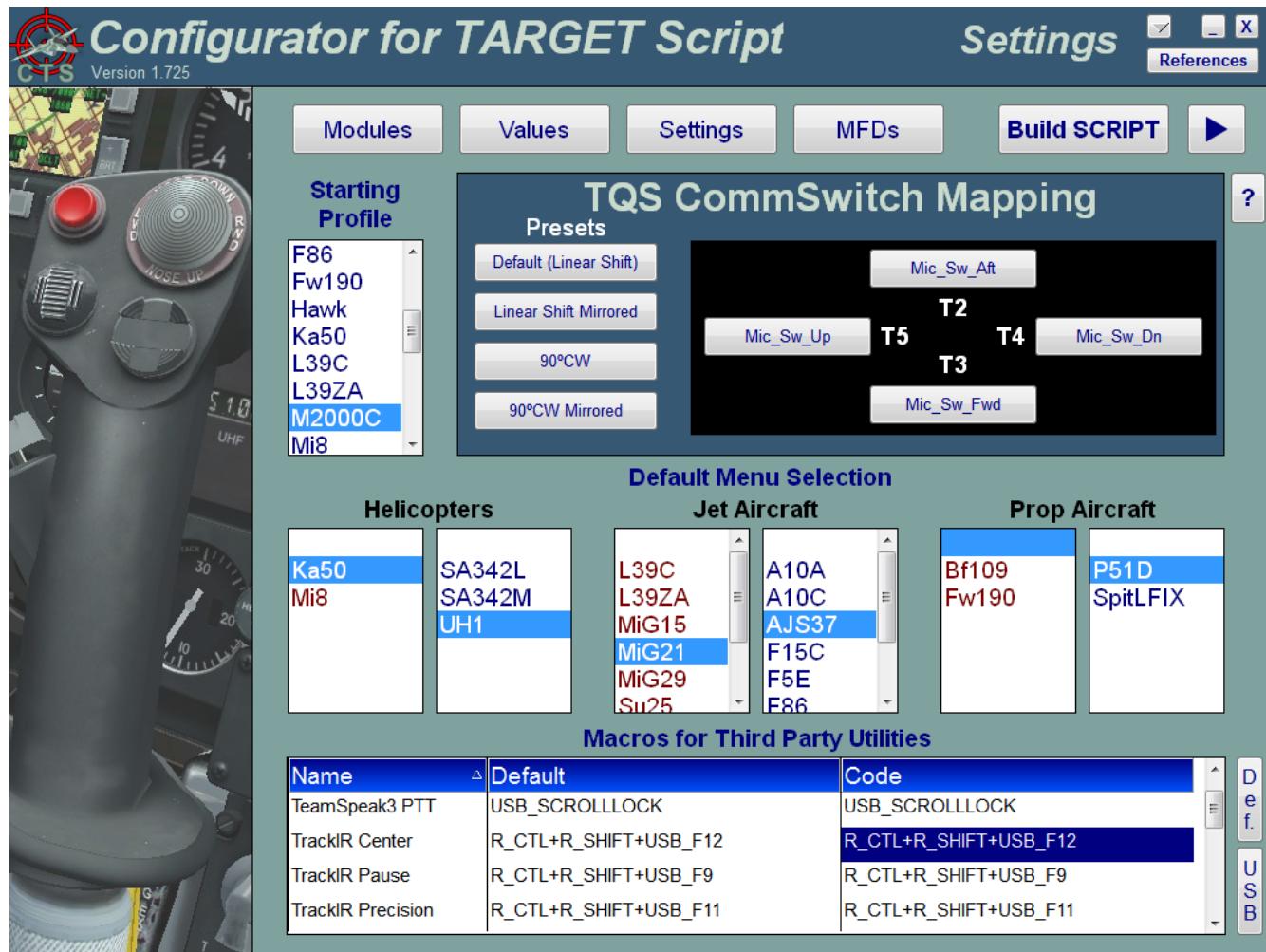


Figure 8 CTS Settings Page

The TQS-Warthog Comm Switch mapping is a personal preference that may require experimentation to find the configuration that works for you. See the Advanced Configuration Guide for more details.

Finally, if you wish to change the default key combinations for third party utilities like Teamspeak or TrackIR, you can change the code at the bottom of the screen. Note that you are using TARGET macros, so you need to be familiar with TARGET programming. Whatever you put in the field is what is being input into the script, so the wrong entry may prevent the script from running. To simplify coding, you can reference the USB keycodes by clicking on the **USB** button. If you find that you bit off more than you could chew, select the row and click **Def.** to return to the default value before you try again. See Appendix C in the Advanced Configuration Guide for instructions on coding these macros.

MFD PRESETS PAGE

The MFD Presets Page allows you to assign each of your forty OSBs to a specific profile, which allows you to map presets to modules you fly a lot. Simply left click the profile you wish to assign from the list box on the left side of the screen, then left click the OSBs to which you would like to assign the profile. To switch between left and right MFDs, click the **L/R** button at the bottom of the screen.

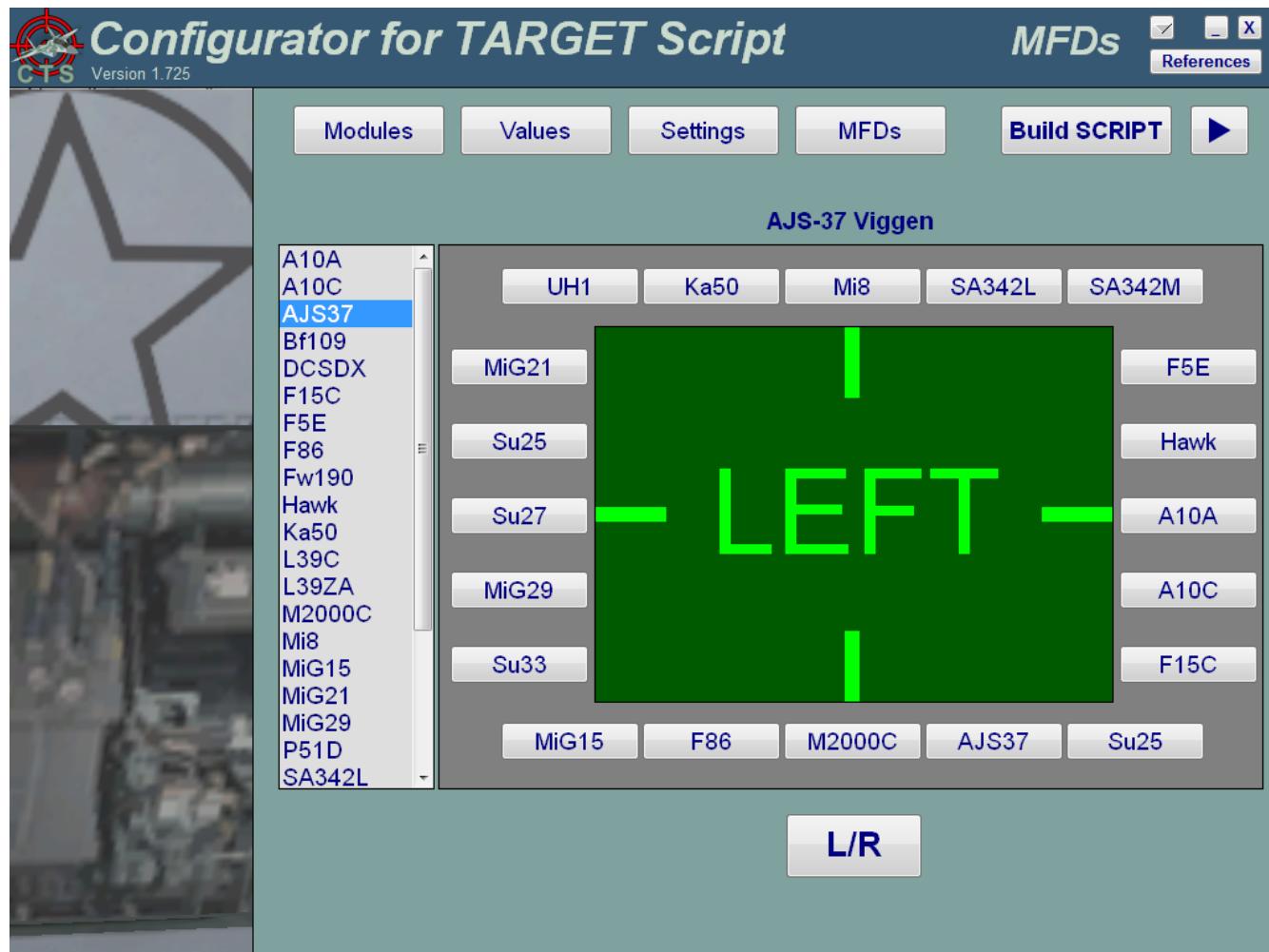


Figure 9 MFD Preset Screen

You can have the same profile in multiple OSBs, but every OSB must have a profile mapped. The initial setting for the script is all LOSBs are preset to the Su-25 and all ROSBs are preset to the P-51D.

BUILDING AND RUNNING THE TARGET SCRIPT

Once you have the script set to your liking, click the **Build SCRIPT** button, and `DCS_World.tmc` and `DCS_UserSettings.ttm` will be automatically generated by CTS. To update your preferences, simply run CTS again and apply your changes.

To run the DCS World TARGET Script, you can press the “Play” button in the upper right corner, execute the `Run_Script.bat` file, assign the script to a shortcut (see Appendix E in the Advanced Configuration Guide for details), or you can still run `DCS_World.tmc` from the TARGET Script Editor.

RECOMMENDED: CUSTOM INPUT DEFAULT LUA PROFILES

The Diff LUA profile format used to save your controller settings is a differential profile that tracks only deviation from the default LUA profile. Therefore, adding custom functionality (such as analog controls for the XM60 pilot sight in the UH-1 or NVGs in FC3 aircraft) requires making changes to the master LUA profiles in the main DCS World install.

In the folder called `_Custom LUAs for DCS World Main Install` you will find archives containing the nested files and folders with enhanced versions of the default input lua files available in DCS World. Archives exist for a number of DCS modules, the full Flaming Cliffs 3 module as well as the standalone A-10A/Su-25A/Su-25T modules. *If you install the LUA files for the full FC3 module (which includes the Su-25T), you should not apply the individual A-10A/Su-25A/Su-25T LUA files.*

You can either extract the folder structure to your DCS World folder (allowing overwrites), or you can create a JSGME/OvGME mod using the existing folder structure (recommended; see Appendix B: Setting Up Generic Mod Enabler for use with DCS World or Appendix C: Setting Up OvGME for use with DCS World). Finally, you can modify the LUA files yourself; see Appendix B in the Advanced Configuration Guide for details.

Important: Be sure to only install LUA files for the modules you own. Adding a folder tree for a module that is not installed will cause DCS World to Crash to Desktop on startup.

Note: you will need to reapply these LUA files each time DCS World is updated. If you use JSGME or OvGME, disable these files before updating, then re-enable them after the update is complete. If you manually copy the files to your DCS World folder, then you will need to either retrieve them from this package, or from the `_backup.xxx` folder.

Note: you do not need to examine the `_Custom LUAs for DCS World Main Install` folder after each update to determine if there is a new version of a custom LUA. The File Version Table in the HTML documentation provides a quick reference to all custom LUAs, Diff LUAs, controller maps, and SnapViews.

RECOMMENDED: CUSTOM SNAPVIEWS (OPTIONAL: BORESIGHT VIEWS)

This script makes use of custom SnapViews for Direct Entry (*e.g.* A-10C CDU, Ka-50 Rubicon) as well as routine use for switch manipulation. While I attempted to keep the SnapViews as close to default as possible, custom SnapViews must be used to achieve the ideal solution.

One decision to make regarding the `Snapview.lua` files is whether to use the “Classic” default view or to opt for the “Boresight” default view. If you like to zoom in on your target prior to firing (*i.e.* TriggerZoom), then the Boresight views will do a much better job of zooming in on the HUD. The side effect is that you will not see as much of your instrument panel in the default view as you would with the “Classic” default view, and so this option is only recommended for TrackIR users. If you don’t wish to use these views, just use the “Classic” SnapView files instead.

You can add the `SnapViews.lua` files from the `_for Saved Games_DCS\Custom Snapviews` folder into `Saved Games\DCS\Config\View`, or you can manually adjust or create your own SnapViews. See the Advanced Configuration Guide supplement for adding Custom SnapViews as recommended.

Note: you do not need to examine the `Custom Snapviews` folder after each update to determine if there are new SnapView files. The Module Version Table in the HTML documentation provides a quick reference to all custom LUAs, Diff LUAs, controller maps, and SnapViews.

OPTIONAL: THRUSTMASTER F/A-18 STICK GRIP ADD-ON

The Thrustmaster F/A-18 Stick Grip is supported for certain profiles as of version 2.35. To enable support for the grip, change the **F/A-18C Hornet Add-On Grip** value (Category: **Hardware Configuration**) in CTS to **1**.

Even with the F/A-18 Stick Grip enabled, the FLCS (*e.g.* Cougar/Warthog) grip is still the default grip. The F/A-18 Grip can be set as default by setting **F/A-18C Hornet Grip Enabled by Default** (Category: **Profile Initial State**) to **1**. The grip can also be changed on the fly while selecting your desired profile as described in the section titled Selecting Profiles on the Fly.

Note: not all profiles directly support the F/A-18 Stick Grip, and profiles that don't directly support the grip will map to the FLCS regardless of the above settings.

OPTIONAL: CONFIGURE VOICE CHAT

CTS profiles assume a Push-to-Talk key of DX21 (Joystick Button 20 in TS3) or Scroll Lock⁵, and all current and future mappings are likely to maintain this assumption. If you enabled **TeamSpeak/Voice Chat Hotkey as DirectX**, then I recommend adding DX21 as another Push to Talk in your voice communication software to maintain compatibility with this script. Besides, DX21 (**T3** on the Cougar TQS) represents an actual HOTAS MIC switch, so this a realistic option for non DCS profiles and aircraft.

DCS World 2.5.5 introduced integrated in-game voice chat. As such, UI Layer Controller Profiles for DCS (*i.e.* diff.lua) have been added to CTS for all users who wish to use the in-game voice chat. These files can be found in the **UI Layer** folder under the **TARGET LUA Profiles** folder. See the section titled **Controller Input Setup** for details on how to use the diff.lua files. VR users will still want to consult Appendix D: Configuring the TARGET Script for Virtual Reality for details on importing the correct diff.lua for the chosen VR configuration.

ISSUES WITH TEAMSTALK 3 AND TARGET

The TeamSpeak Joystick and Gamepad Addon in versions of TeamSpeak 3 later than 3.1.0.1 does not properly recognize TARGET or the virtual Thrustmaster Combined controller. [Curly's explanation on the DCS forum](#) best summarizes the issue. In short, the TS3 plugin prevents Windows from hiding the original controller, leaving phantom buttons. There are three simple workarounds for this issue:

1. Disable the Joystick and Gamepad Addon in TeamSpeak and set **TeamSpeak/Voice Chat Hotkey as DirectX** to 0 in CTS. Note that you will not be able to use TS3, SimpleRadio and VAICOM Pro together in this configuration.
2. Use [Teamspeak Version 3.1.0.1](#) or earlier.
3. Use an alternative Voce Chat program such as [Discord](#).

OPTIONAL: CONFIGURE VOICEATTACK, VAICOM PRO AND DCS-SIMPLERADIO STANDALONE

[VoiceAttack](#) is the premier voice recognition software for flight simulations, in part due to its power and flexibility. Commercial plug-ins like [VAICOM Pro](#) for DCS and [HCS VoicePacks](#) for Elite: Dangerous and Star Citizen have added to the immersion level of many simulations. If you use VoiceAttack for any of the non-DCS supported games in this script, be sure to set the “Joystick Button Recognition” hotkey to your HOTAS Button 23 in VoiceAttack. VAICOM Pro does not require this step, as the radio buttons are integrated into the plug-in. For further details, see the HTML configuration guides for the individual games.

VAICOM Pro, a plugin for VoiceAttack, has been integrated into version 2.10 and later of this script. Its configuration is similar to what has already been in place for [DCS-SimpleRadio Standalone](#) (SRS), which already mimics the radio configuration of the active module. The two programs have been integrated into the script so that they can work together

⁵ This value can be changed on the Settings Page of the CTS GUI.

simultaneously. However, this requires some front-end configuration for consistency within this script as well as within the programs themselves.

To enable VAICOM Pro and/or SRS by default, you must go to the (Global) **Communications** category on the CTS Values page. Here, you see binary entries for enabling VAICOM Pro and SRS, as well as the VAICOM Chatter Pack and whether you use a Common Push-to-Talk (PTT Common) button with SRS.

The assumption is that VAICOM Pro users will not be using a PTT Common button on aircraft with multiple mic switches (e.g. A-10C), and if VAICOM Pro is enabled this feature is disabled with SRS. Therefore, if you use VAICOM in conjunction with SRS, you cannot use PTT Common, except for aircraft with a radio selector (e.g. Ka-50, UH-1).

However, if you only use VAICOM Pro for single player and prefer PTT Common for your SRS multiplayer sessions, you can now enable and disable VAICOM and SRS support using the Right MFD in the module selection mode (i.e. during module hot-switching). See the section titled Selecting Profiles on the Fly for more details.

DCS-SIMPLERADIO STANDALONE SETTINGS

DCS-SimpleRadio Standalone can be used with either DirectX or Keyboard mappings. For DirectX mappings, DX20-23 are used (shown as buttons 19-22 in Figure 10 below. DX20, DX22, and DX23 map to Radios 1 through 3 respectively. Set Intercom to DX21 to intercom. DX30 is no longer required as a modifier to Intercom. Finally, if you use the 2D Window overlay, set Overlay Toggle to DX29 with a DX30 modifier. All required entries are **highlighted** in Figure 10. *Note that PTT Common is no longer supported, and will be removed in a future release.*

CONTROLS

RESCAN INPUT DEVICES					
Device	Button				
Radio 1	Thrustmaster Virtual Game Controller (root)		20	set	clear
Radio 1 Modifier	None		None	set	clear
Radio 2	Thrustmaster Virtual Game Controller (root)		22	set	clear
Radio 2 Modifier	None		None	set	clear
Radio 3	Thrustmaster Virtual Game Controller (root)		23	set	clear
Radio 3 Modifier	None		None	set	clear
Push To Talk - PTT	None	None	set	clear	
Push To Talk - PTT Modifier	None	None	set	clear	
Intercom Select	Thrustmaster Virtual Game Controller (root)		21	set	clear
Intercom Select Modifier	None		None	set	clear
Overlay Toggle	Thrustmaster Virtual Game Controller (root)		29	set	clear
Overlay Toggle Modifier	Thrustmaster Virtual Game Controller (root)		30	set	clear

Figure 10 DCS SimpleRadio DirectX Controller Settings

DirectX is required for SRS to prevent holding down a DCS modifier while talking. *Note that this also allows you to disable administrator privileges for SRS without issues.*

Important: Be sure to have the TARGET script loaded prior to launching SRS. If SRS is loaded prior to the TARGET script, or if the TARGET script crashes, pressing Rescan Input Devices in SRS is necessary once the TARGET script is re-loaded.

ADDITIONAL REQUIREMENTS FOR SPECIFIC MODULES

- **F-14 Tomcat**
 - Follow the directions in the section on F-14 SRS Integration in the User Reference.
- **F/A-18C Hornet**
 - Read the section on SRS MIDS Integration in the User Reference
 - Follow the directions in Appendix G of the Advanced Configuration Guide.
- **AWACS Mode**
 - Follow the directions in Appendix F of the Advanced Configuration Guide.

VAICOM PRO SETTINGS

To assign the proper VAICOM Pro settings, you must first set up the profile properly in VoiceAttack. First, go the VoiceAttack General Options tab, select Joystick Options, then assign Thrustmaster Combined as Joystick 1. Next, import the TARGET DCS PTT Imports v2_xx.vap into your **VAICOM Pro for DCS World** VoiceAttack profile by clicking on the **Edit Profile** button in VoiceAttack (the icon that looks like a pencil and paper), then selecting **Import Commands** in the lower left-hand corner of the menu (as shown in Figure 11 below). When prompted, navigate to the _for Saved Games_DCS\VAICOM Import folder within your CTS folder, select TARGET DCS PTT Imports v2_xx.vap, and allow overwrites. You should now have a screen that looks like Figure 11 below.

It is important to know that in addition to the joystick buttons assigned to the radios, the default keyboard shortcuts for Configuration and Chatter have been changed from their defaults⁶. The VAICOM Pro Configuration shortcut has been remapped to L_CTL+L_ALT+V to deconflict with an existing DCS control mapping, while Chatter has been changed to R_CTL+L_ALT+V to prevent direct entry of numbers from also inadvertently toggling the Chatter function.

⁶ These values can be changed on the Settings Page of the CTS GUI.

Edit a Profile

Profile Name	TARGET DCS PTT Imports	Options	New Command	Edit	Delete
Spoken Command	Shortcut	Button	Description	Category	Actions
Chatter	[Right Ctrl+Left Alt+V]	Joystick 1 Button 2 (joystick disabled)	Chatter ON/OFF	Extension packs	Execute external plugin, 'V...
Configuration (voice disabled)	[Left Ctrl+Left Alt+V]		Open Configuration Wind...	Configuration	Execute external plugin, 'V...
Transmit TX1 press (voice disabled) [1] (shortcut disabled)		Joystick 1 Button 20	TX1 (VHF AM)	Push-To-Talk	Start VoiceAttack listening...
Transmit TX1 release (voice disabled) [1] (shortcut disabled)		Joystick 1 Button 20	TX1 (VHF AM)	Push-To-Talk	Stop VoiceAttack listening...
Transmit TX2 press (voice disabled) [2] (shortcut disabled)		Joystick 1 Button 22	TX2 (UHF)	Push-To-Talk	Start VoiceAttack listening...
Transmit TX2 release (voice disabled) [2] (shortcut disabled)		Joystick 1 Button 22	TX2 (UHF)	Push-To-Talk	Stop VoiceAttack listening...
Transmit TX3 press (voice disabled) [3] (shortcut disabled)		Joystick 1 Button 23	TX3 (VHF FM)	Push-To-Talk	Start VoiceAttack listening...
Transmit TX3 release (voice disabled) [3] (shortcut disabled)		Joystick 1 Button 23	TX3 (VHF FM)	Push-To-Talk	Stop VoiceAttack listening...
Transmit TX4 press (voice disabled) [4] (shortcut disabled)		Joystick 1 Button 21	TX4 (AUTO)	Push-To-Talk	Start VoiceAttack listening...
Transmit TX4 release (voice disabled) [4] (shortcut disabled)		Joystick 1 Button 21	TX4 (AUTO)	Push-To-Talk	Stop VoiceAttack listening...
Transmit TX5 press (voice disabled) [5] (shortcut disabled)		Joystick 1 Button 21 + Joystick 1 Button 30	TX5 (Interphone)	Push-To-Talk	Start VoiceAttack listening...
Transmit TX5 release (voice disabled) [5] (shortcut disabled)		Joystick 1 Button 21 + Joystick 1 Button 30	TX5 (Interphone)	Push-To-Talk	Stop VoiceAttack listening...
Transmit TX6 press (voice disabled) [6] (shortcut disabled)			TX6 (AUX)	Push-To-Talk	Start VoiceAttack listening...
Transmit TX6 release (voice disabled) [6] (shortcut disabled)			TX6 (AUX)	Push-To-Talk	Stop VoiceAttack listening...

Import Commands 14 commands list filter S K M J P X F Apply Done Cancel

Figure 11 VAICOM Pro Required Controller Mappings

Once the keystrokes have been imported, navigate to the VAICOM Pro MP tab and check “SRS PTT Mapping.” Then ensure that TX1-5 on your PTT tab looks like Figure 12 (note that either MULTI or NORM can be selected).

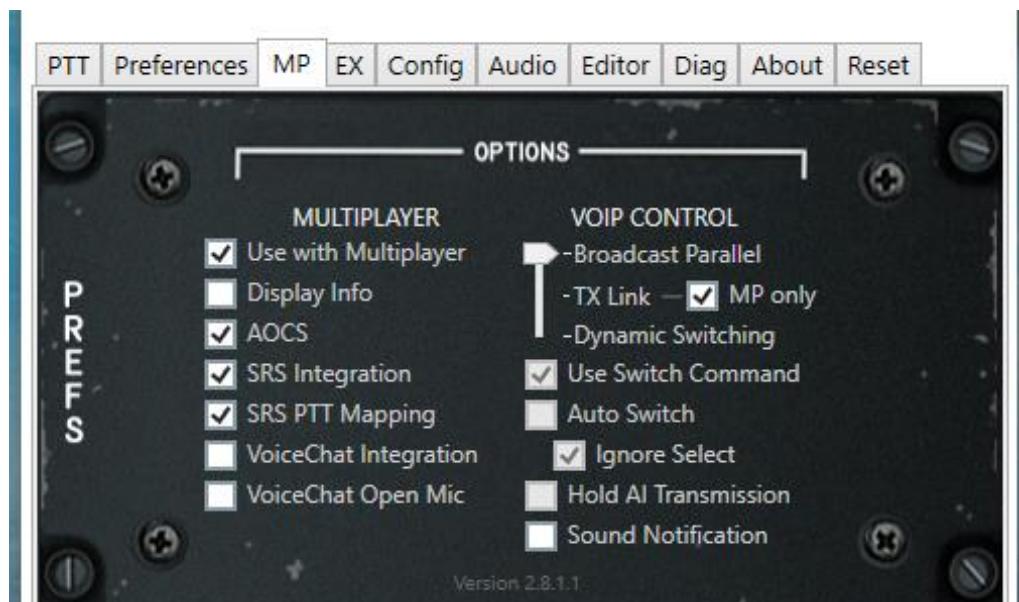


Figure 12 VAICOM Pro PTT Settings

Finally, it is recommended that you go into your DCS Options menu and for each module, delete the joystick mappings (*not keyboard*) for Mic switches mapped to Joy_Btn20-23. *Note: this does not apply to functions other than mic switches.*

If you have AI RIO installed for VAICOM Pro, be sure to follow the AI RIO-specific instructions in the VAICOM Pro manual starting on page 36.

OPTIONAL: CONFIGURE TRACKIR

This script assumes that CTRL+SHIFT+F12 is used to center the TrackIR device (or whichever head tracking software you prefer), and that CTRL+SHIFT+F9 is used to pause the TrackIR. I recommend changing your key commands in your TrackIR profile to match these key combinations, though should you wish to change them to your liking they can be edited on the Settings Page of the CTS GUI. VR users should consult Appendix D: Configuring the TARGET Script for Virtual Reality for configuration details.

RUNNING THE DCS WORLD SCRIPT IN TARGET

In addition to launching the script from within CTS, you have other options available for running the DCS World Script⁷. To run the DCS World Script, make sure it is loaded in the TARGET Script Editor. Then at the top of the screen you will see two tabs: **Edit** and **Tools**. Select the **Tools** tab, then click the **Run** icon (the green “play” arrow).

Alternatively, you can create a desktop shortcut that will run the script directly from the TARGET GUI. See Appendix E in the Advanced Configuration Guide for details.

When you run the DCS World Script you will see text outputs and LED states during initialization that correspond to what the profile is doing. At the end of initialization, you should see the text “main returned 0” and only the LMFD LED 2 enabled (if you have the **Gear Down Indicator Default = 1** and default to an aircraft with retractable landing gear). Now you are ready to start DCS World and complete your setup!

CONFIGURATION WITHIN DCS WORLD

Now that you have your options selected in the profile the next steps are performed in DCS World. **In order for the steps in DCS World to work, the DCS_World.tmc script must be running.**

Note: for simulations other than DCS World, see their respective HTML configuration guides.

CONTROLLER INPUT SETUP

In order to use this script, you must first set up the controls matrix for each module you own. First, go to the Options screen in DCS World, then select the **Controls** tab. Next, select the aircraft you wish to setup. You should see a spreadsheet with the control commands in the left column, with the next columns representing each controller (including the keyboard) attached to your PC. *The idea that each column represents a single controller is an important concept in understanding how importing and exporting controller inputs work in DCS World.*

ADDING MODIFIERS

Before you import any controller setups, you will need to add three modifiers to the existing list of in-game modifiers. Select the **Modifiers** button in the lower left corner of the screen, and then select **Add**. You will then see the dialog box as shown in Figure 13. Be sure to select the **Thrustmaster Combined** controller (it may also be called **Thrustmaster Virtual Game Controller**), and then select JOY_BTN30. *Do not change the Modifier Button Name (i.e. leave it as JOY_BTN30).*

⁷ Even though the script supports other games, its origins as a DCS exclusive script give it the DCS_World.tmc filename.

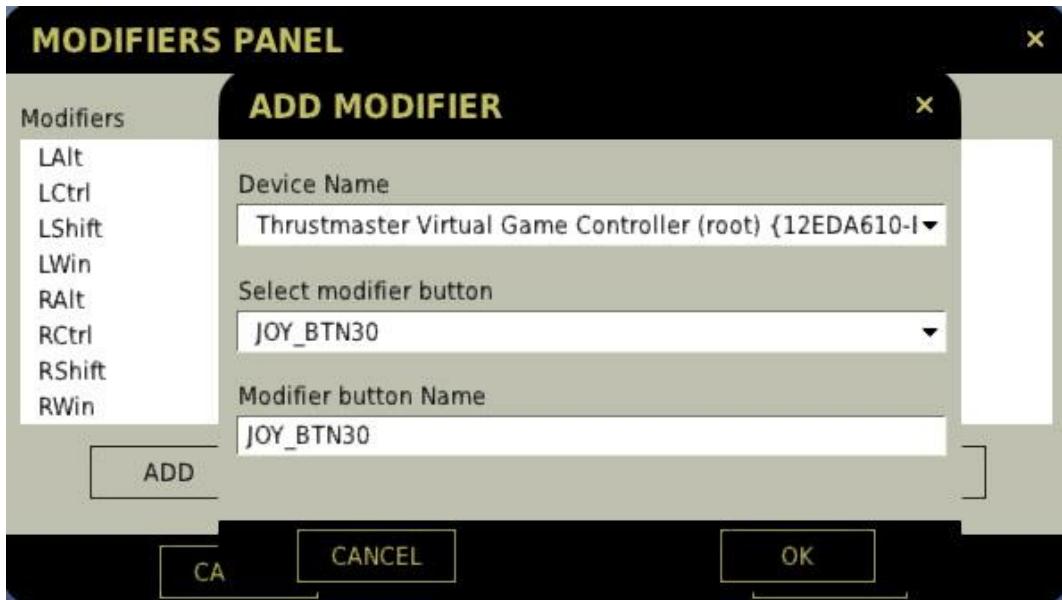


Figure 13 Adding a modifier to DCS World (Device Name may also be “Thrustmaster Combined”)

Repeat this process for JOY_BTN31 and JOY_BTN32.

Note: You will need to add these modifiers for every aircraft/module.

Important: If you use a Non-English version of DCS World, you may need to rename your modifiers to JOY_BTN30-32 to conform with the diff.lua included with this script.

CONTROLLER PROFILE NAMING CONVENTION

This is where the concept of one column per controller really comes into play. Understand that each Controller Profile (referred to as a **diff.lua** for its file extension) applies only to a single controller, and that loading a diff.lua requires that a column (controller) be selected. This includes the keyboard, which is why there are separate diff.lua files for the keyboard and HOTAS setups.

The naming convention for each diff.lua is as follows:

```
TARGET <aircraft> <controller> <script version last updated>.diff.lua
```

where kb is for the Keyboard, hc is for the HOTAS Cougar, and wh is for the HOTAS Warthog. The JF-17 profile introduces the hc2/hc3 and wh2/wh3 designations, where the number corresponds to the number of MFDs you have selected. If you have two or fewer MFDs, use hc2/wh2, whereas you should use hc3/wh3 if you have three or more MFDs attached to your PC⁸. The notation whc is for the combined Warthog/Cougar with gameport rudder and toe brakes configuration, a configuration which is now deprecated in favor of using the Warthog with TARGET and the Cougar as a controller separate from the TARGET script.

For example, the diff.lua that corresponds to the Su-25T Keyboard profile would be

```
TARGET Su25T kb v166.diff.lua
```

and the profile corresponding to the Ka-50 Warthog profile would be

```
TARGET Ka50 wh v171.diff.lua.
```

⁸ For the JF-17, if you have three MFDs and wish to use the third MFD for the JF-17 Center MFCD, be sure to disable the NS430 for the JF-17 in the NS430 Special Options menu in DCS. See the JF-17 section in the User Reference for details.

If you are using a hybrid HOTAS (e.g. Warthog Stick with Cougar TQS), select the diff.lua that matches the throttle (e.g. HC for TQS and WH for Warthog Throttle). This also applies to the use of the TQS with a HOTAS Warthog in the case of the F-16C and JF-17. *Note that with the exception of the TQS use with the F-16C/JF-17, hybrid configurations are enabled, but not supported.*

Multi-crew aircraft with differing keymaps for each crew station (e.g. F-14) have their positions differentiated as part of the aircraft designation. For example, the F-14 crew stations are F14Plt and F14RIO (for Pilot and RIO respectively).

With the release of the F/A-18C and the utility of additional MFDs, MFDx is a controller naming convention for the third (MFD3) or fourth (MFD4) Thrustmaster MFD attached to your PC. TARGET only programs the first two MFDs, so these controller profiles are intended for the independent MFD controllers to be used in conjunction with the TARGET profile.

Another important value to understand is the version number at the end of the file. This is not necessarily the current version of this script, but rather the *most recent version of the script where this diff.lua was updated*. Not every diff.lua is updated for every script update, and this lets you know at a glance if the diff.lua you have loaded is current. For example, if script version 2.00 is released and you see TARGET_Ka50_wh_v171.diff.lua included in the 2.00 package, then you know that nothing with the Ka-50 keyboard mappings have changed since the last update, and you do not need to re-import the diff.lua. Likewise, if you see a diff.lua with that latest version number, then you know you need to re-import that diff.lua if you own that module.

Note: you do not need to examine the _for Saved Games_DCS\TARGET LUA Profiles folders after each update to determine if there are new SnapView files. The Module Version Table in the HTML documentation provides a quick reference to all custom LUAs, Diff LUAs, controller maps, and SnapViews.

IMPORTING CONTROLLER PROFILES TO DCS WORLD

To begin, we will import the keyboard diff.lua. Select the **keyboard** column, select **load profile**, and select the kb profile that corresponds to that aircraft (e.g. for the Su-25T it would be TARGET_Su25T_kb_v2xx.diff.lua).

Next, select the **Thrustmaster Virtual Game Controller / Thrustmaster Combined** column, select **load profile** and select the joystick profile (e.g. TARGET_Su25T_wh_v2xx.diff.lua). *Note that you must import both the keyboard and your HOTAS diff.lua files for that aircraft's profile to work in DCS World.*

Exit the menu (do not cancel) in order to save your progress. You should periodically do this if you are making a lot of changes, as DCS World sometimes gets buggy when you load too many controller profiles at one time.

Repeat this process for every airplane on the list.

***Important Note:** If you ever load the DCS World Options menu and" see lines with the modifiers JOY_BTN30 through JOY_BTN32 in red, immediately Cancel out of the options menu, exit DCS World, and start the TARGET profile. Then you may restart DCS World and go back to the Options menu. Saving any changes while the TARGET profile is not active will remove your TARGET modifiers, and you will have to perform these configuration steps again.*

INVERTED KEYPAD OPTION (SOME MODULES)

If you have the Ka-50 or a western aircraft module with a UFC, you may have noticed that the PVI-800 in the Ka-50 and the numeric keypad on the CDU/UFC of the both have their numeric orientation inverted from the numeric keypad on your keyboard. While the keypad on your keyboard likely starts with 7 8 9 at the top and ends with 1 2 3 near the bottom, the PVI-800 and CDU/UFC keypads start with 1 2 3 at the top and conclude with 7 8 9 at the bottom.

You may also note that there are two keyboard LUA files each for the Ka-50 and the western aircraft: one ending with "N" and one ending with "R" following the number (e.g. TARGET_Ka50_kb_v210N.diff.lua and

TARGET_Ka50_kb_v210R.diff.lua). Quite simply, for the direct entry modes in each profile, this lets you choose whether you want to press the number itself (*e.g.* TARGET_Ka50_kb_v210N), or the key that exists in the same place in-game (*e.g.* TARGET_Ka50_kb_v210R). If you load the N version, then when you press “1” on the numeric keypad, you will press “1” in the game. However, if you load the R version, then when you press “1” (the lower left key on the keypad), you will press “7” in-game (which corresponds to the lower left key on the PVI-800 or CDU). The N version is more useful if you look at your keyboard while entering data, while the R version might be more desirable if you are looking at the screen while performing direct entry (personally, I use R for the Ka-50 and N for the A-10C).

If you’re not sure what you want to do here, just choose the N version (*e.g.* TARGET_Ka50_kb_v210N); at least you’ll know that the number you press is the number you will input.

COMBINED ARMS

Due to the interface-centric nature of Combined Arms (CA), not only do you need to import the CA-specific diff.lua files, but you also need to import the TARGET General kb v2xx.diff.lua file to the General tab of the DCS Controls menu. Importing the diff.lua to the General tab is necessary to slew the JTAC view in-game using the HOTAS.

Additionally, if you use USB rudder pedals, you will want to map the rudder’s JOY_RZ axis to “Turn Left/Right” in the DCS Controls menu for CA.

HELICOPTER OPTIONS CONFIGURATION

If you use this Script to fly any of the helicopters in DCS World, be sure your TARGET Central Position Trimmer Mode (TCPTM) and Rudder Trim options are set correctly in the Special module tab of each helicopter. This script defaults to TCPTM on with Rudder Trimmer engaged, so if you did not change these settings, be sure to disable Central Position Trimmer Mode in the DCS World Options menu.

If you have gameport rudders attached to your HOTAS Cougar, then TCPTM can also apply rudder trim as well. As long as **Rudder Pedals = 1** in CTS, then you should match the **TCPTM Rudder Trim** value *for each module* with the **Rudder Trimmer** setting in the DCS World Options menus for each of your helicopters.

For example, if you wish to use Rudder Trimmer for the Mi-8, then select the Mi-8MTV2 Magnificent Eight module in CTS, then set **TCPTM Rudder Trim** to **1**. Then enable **Rudder Trimmer** on the DCS World Mi-8 Special Options menu.

If **Rudder Pedals = 0**, (*i.e.* USB rudder pedals) then you can set the Rudder Trimmer option in DCS World to whatever you prefer. *Just realize that TARGET cannot compensate for it;* after trimming, your rudder input will effectively be doubled until you re-center your pedals.

If you use the Cougar ANT knob as Rudder (**Rudder Pedals = 2**) for any modules in this script, be sure that Rudder Trimmer is disabled for those modules in the DCS World Options menu. In order to use the TARGET based CPTM, then Central Position Trimmer Mode must be unchecked in DCS World Options. If you disable the TARGET CPTM, you can choose either option to enable or disable Central Position Trimmer Mode in DCS World Options.

SELECTING PROFILES ON THE FLY

One of the most convenient features of this script is the ability to change aircraft profiles on the fly. In order to enable the module selection routine, press your HOTAS “shift” button (**S3**) and then press and hold **LOSBI** *for two seconds*. If you don’t have MFDs or have VR enabled, holding **S3+T9** (Cougar) or **S3+SPDB** (Warthog) for two seconds will enter profile selection mode. In order to enable this feature, be sure to set these options in CTS. If you don’t have MFDs, then in CTS

under **Hardware Configuration** set **Number of Thrustmaster MFDs** to **0**. To enable VR, consult Appendix D: Configuring the TARGET Script for Virtual Reality.

Once you are in the selection routine, there are two ways to select profiles. The first way is using a combination of your Dogfight Switch (Cougar) or Boat Switch (Warthog) and the rocker switches on the Left MFD as shown in Figure 14 below. You can also use your HOTAS stick to select aircraft as shown in Figure 15, which is useful for VR users.

First, the **DF/Boat** switch position determines whether you are cycling through Helicopters (**DF Up/Boat Aft**), Propeller aircraft (**DF Down/Boat Fwd**), or Jets (**DF/Boat Center**). The upper rocker switches cycle through the selected class of aircraft one at a time with the upper left rocker (**GAIN**) or Hat 2 Left and Right (**H2L/R**) cycling through red aircraft and the upper right rocker (**SYM**) or Hat 2 Up and Down (**H2U/D**) cycling through blue aircraft. The selected aircraft is displayed in the TARGET window, and optionally displays the LED combination as well. This method of selection allows for selection among potentially thousands of aircraft.

The second way to select a profile is with MFD presets. You still select **S3+LOSB1 Long** to enter profile selection, but once there you can use any OSB to select an aircraft of your choice. *This method of selection is independent of the Dogfight/Boat switch position* and is set by you in CTS. You can pre-set the aircraft you fly most on the buttons easiest to remember, then use the rocker switches for the less frequently used modules.



Figure 14 Module Selection Using the MFDs

In addition to module selection, the rocker switches on the RMFD allow you to change your communications configuration on the fly. Options include toggling DCS-SimpleRadio Standalone, VAICOM Pro, VAICOM AI RIO, CommState, Stick Grip (FLCS or F/A-18), and whether your Push-To-Talk is DirectX or Keyboard (e.g. Scroll Lock). Note that the status toggle happens instantaneously, but you may need to re-activate your selected profile by pressing **S2** to have the new configuration take effect with the controller mapping. Finally, some special options (station and throttle selection) can be selected by **H4P** (Warthog Stick) or by the TEMPO'd use of MFD presets. See the User Reference for more details.

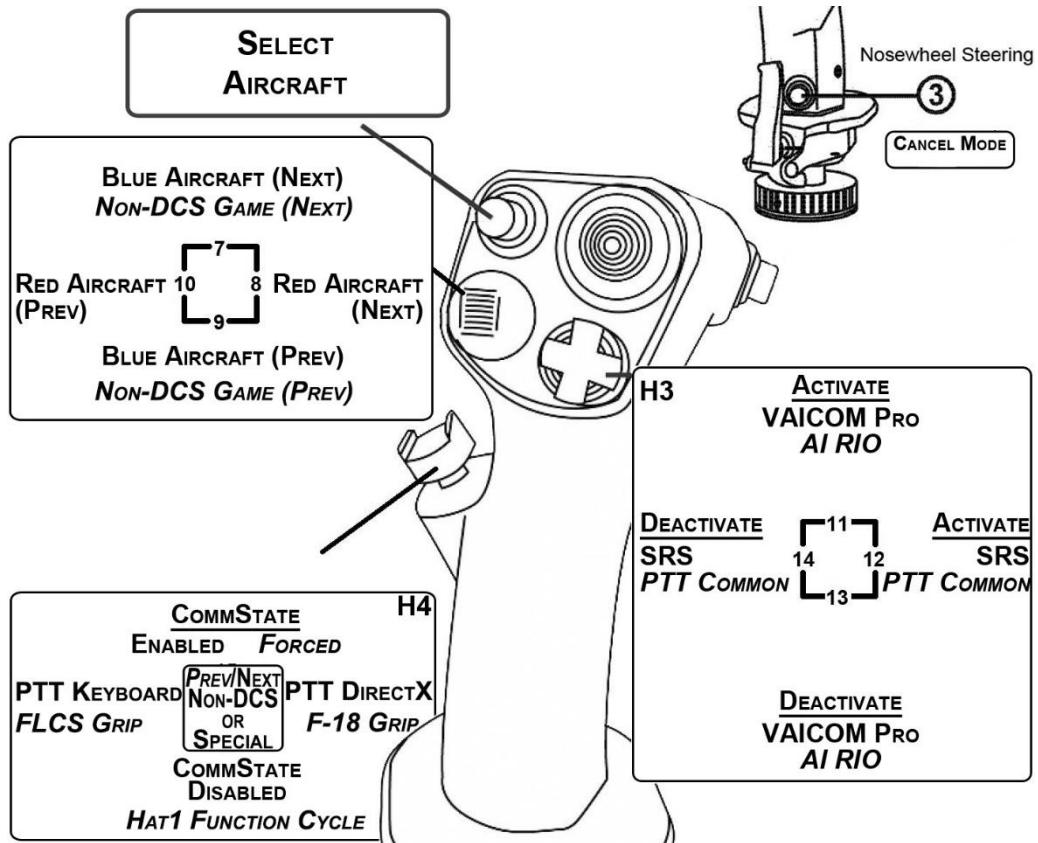


Figure 15 Module Selection Using the Stick

Once you have your desired profile selected, simply press and release the pickle button (**S2**). You should hear Microsoft Anna say the name of the active profile followed by “selected.” To cancel out of profile selection, press and quickly release the **S3** button (“shift” button, *i.e.* nosewheel steering or “pinky button”). Microsoft Anna should say “cancelled.”

Congratulations. Now enjoy flying!

APPENDIX A: FIXING DRIVER ISSUES WITH THE HOTAS COUGAR

If you are having driver issues with the HOTAS Cougar Data In and Data Out drivers not being found, and running the installer in Vista SP2 Compatibility mode doesn't work, then try the following steps (H/T [Lancelot on SimHQ](#)):

- 1- Unplug your HOTAS Cougar.
- 2- Install 2007_HCO_VISTA_64_RC1 drivers (the Windows Vista 64 bit version).
- 3- Plug in the HOTAS Cougar when prompted to do so. At this point you should get the **Data In** and **Data Out** driver problem.
- 4- Go to **Control Panel -> View Devices and Printers**.
- 5- Right click on **Thrustmaster HOTAS Cougar** and select **Properties**.
- 6- Go to **Hardware**, select **Data In**, select **Properties**.
- 7- Go to **Driver In** and click on the **Update Driver** button.
- 8- Select **Browse my Computer for Driver Software**.
- 9- Go to C:\Program Files (x86)\HOTAS using the **Browse** button and click **Next**.
- 10- Windows finds the **Data In** drivers
- 11- Repeat step 6 to 10 but with **Driver Out**.
- 12- Done! Now the **Driver In** and **Driver Out** drivers should be installed and working properly.

APPENDIX B: SETTING UP GENERIC MOD ENABLER FOR USE WITH DCS WORLD

Note: Support for JSGME is deprecated in favor of OvGME (see Appendix C). Mods included with this script should still be fully compatible.

Special thanks to ArtMan_NL for writing and providing screenshots for this appendix.

Since the release of DCS World 1.2.8, modification of LUA files in the original DCS World install folder is necessary for full functionality of the profile. The use of a mod manager such as Jonesoft Generic Mod Enabler (known as both JSGME and GME) is highly recommended, as it allows you to overwrite files while keeping the original file archived and intact.

MODS AND DCS WORLD AUTO-UPDATE

When working with mods for DCS it is important to be aware of the auto update function and its effect on modded files. *The simple solution is to disable all GME mods prior to updating DCS World.* Simply put, if you update your copy of DCS World while your mods are loaded, you will then need to disable all mods and then run a Repair of DCS World, or else your install will be corrupted.

Please keep in mind that you always follow these steps before updating DCS:

1. Disable all mods.
2. Update DCS World.
3. Enable your mods with JSGME, in particular your applicable LUA mods associated with this profile.

There are two ways to approach this problem. The first way is to disable the auto-update feature. The second way is to select “no” when prompted to update, then run the update after disabling your mods.

MANUAL UPDATE (DISABLE AUTO-UPDATE FEATURE)

This is the safer of the two approaches, and ensures that no auto-update will overwrite your mods. However, you will need to regularly check the ED Forums for information on updates.

First, copy your existing DCS World shortcut and rename it something like “DCS World (Updater)”. Next, go to your original DCS World shortcut, right click, and select “Properties” (as shown in Figure 16).

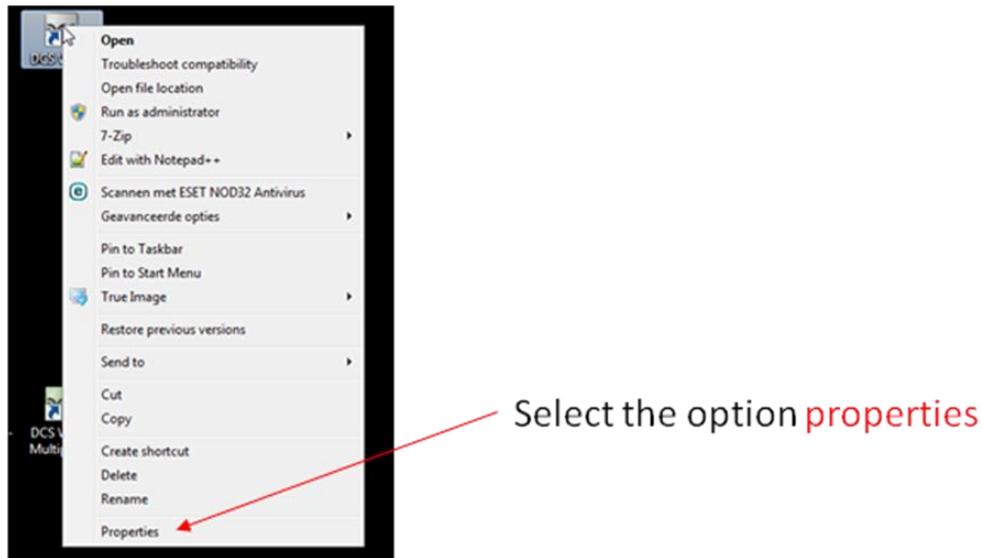


Figure 16 Properties menu

From here, you get the following dialog box. Follow the instructions in Figure 17 **except you will want to replace DCS_updater.exe with DCS.exe**.

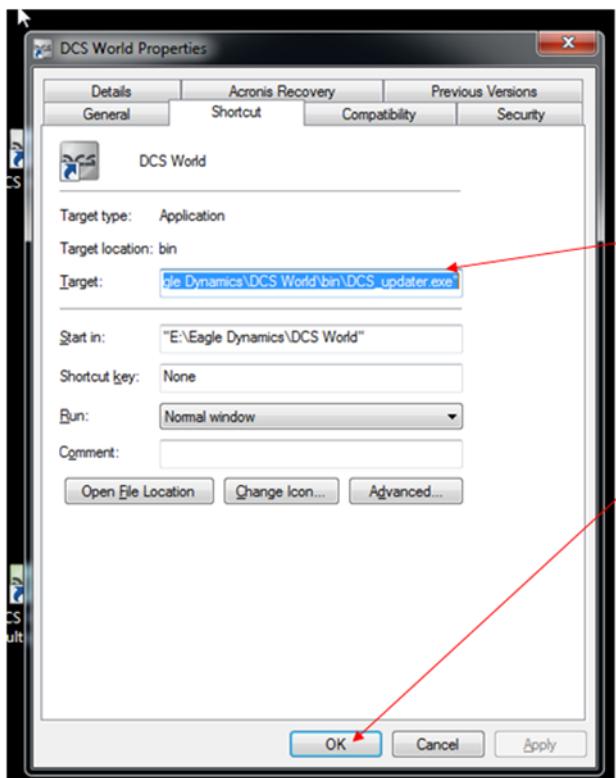


Figure 17 Disabling Auto-update

Just use this shortcut to run DCS World, and use the Updater shortcut for a new update *only after you have disabled all of your mods in GME*.

“JUST SAY NO” (FORCE-UPDATE)

The other option is for people who want to be informed of the latest updates, and are disciplined enough to always disable mods prior to updating DCS World.

Copy your DCS World shortcut and name the copy “Force DCS Update”. Next, right click on your “Force DCS Update” shortcut and select “Properties” (Figure 16), but instead of changing the file to launcher.exe, follow the instructions in Figure 18:

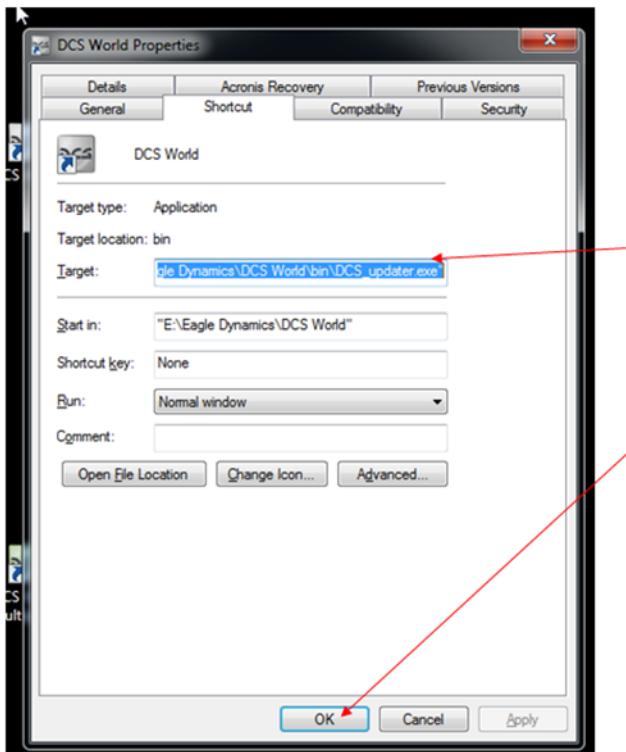


Figure 18 Creating Force Update shortcut

Now whenever you get the update prompt, be sure to decline the update (“just say no”). Then disable all of your mods. Once you have disabled your mods, run the “Force DCS Update” shortcut, which will override the 24 hour delay between update checks.

SETTING UP JSGME FOR THE FIRST TIME

First, uninstall all of your mods in DCS World (if you have manually added files like textures or are using another manager such as ModMan). Next, install JSGME. You can find it at these links:

- <http://www.gamefront.com/files/21681483>
- <http://www41.zippyshare.com/view.jsp..hu&key=2423962>

Unzip to the folder of your choice, such as D:\JSGME. *Note: you do not need to install the actual JSGME.exe to your DCS World folder.*

Next, set up the shortcut on your desktop. The shortcut is important because this is how you can use the same JSGME.exe to manage multiple games (Figure 19).

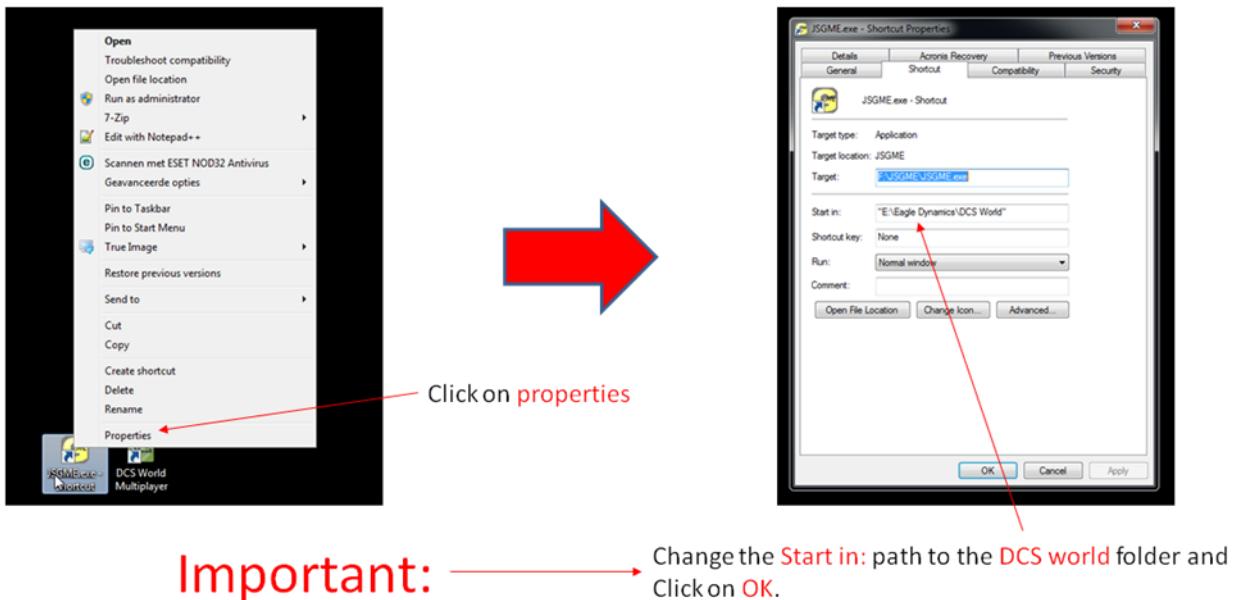
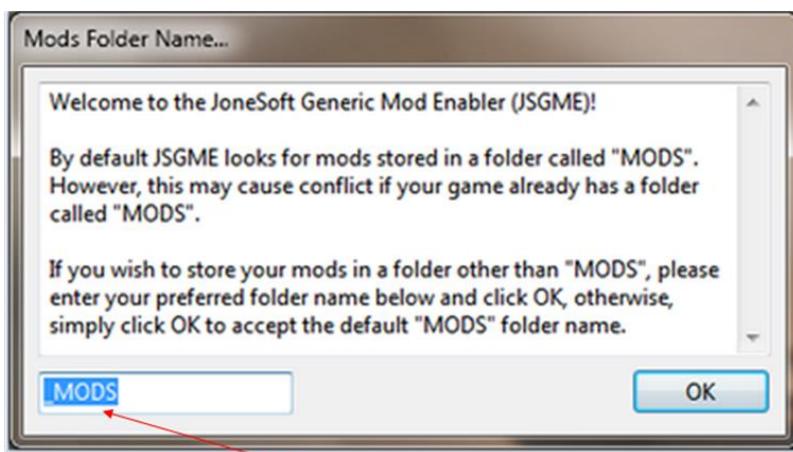


Figure 19 Setting up JSGME for use with DCS World

Open JSGME for the first time, and you will be prompted to create a folder for your mods. Be sure you don't use the default, but instead chose something different, like _MODS



Add _MODS here and click on the **OK** button.

Figure 20 Creating "_MODS" folder (Running JSGME for the first time)

IMPORTANT: JSGME defaults to a folder called “MODS”. DCS World already uses the “Mods” folder for modules, so you must name the JSGME Mod folder something else. This is why _MODS is used in this example.

JSGME will then create _MODS within your DCS World folder (Figure 21). You do not need to do anything else in the DCS World directory; all future changes will take place within the _MODS folder.

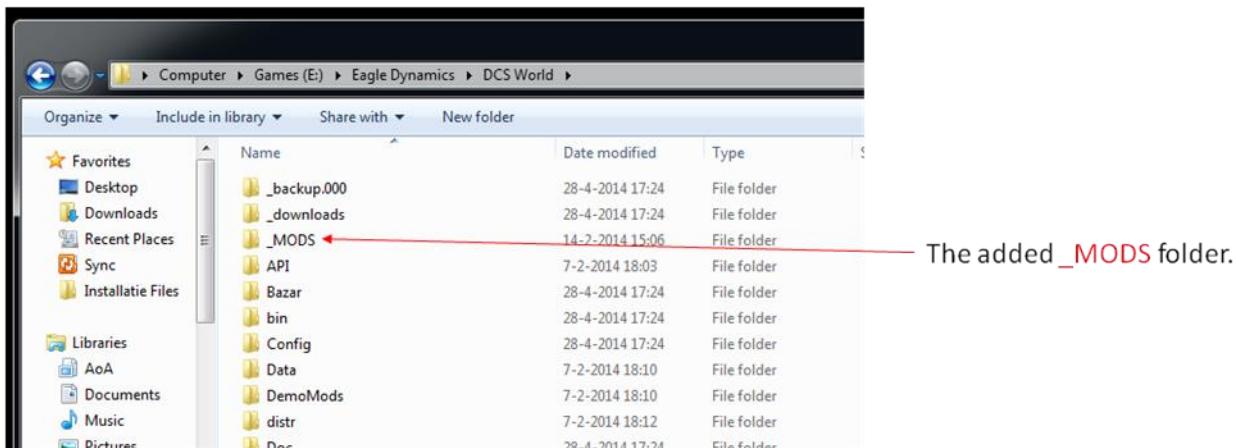


Figure 21 The "_MODS" folder in your DCS World folder

Next, JSGME will run and you will see a screen similar to the next figure (though there will be nothing in the right column). The first thing you should do is create a snapshot of your default DCS World folder (as seen in Figure 22). This will allow JSGME to see what your virgin DCS World file/folder structure looks like.

Note: you should take a snapshot before enabling mods whenever you perform an update. Additionally, backing up the old snapshot before taking a new one allows you to compare files that have changed between versions.

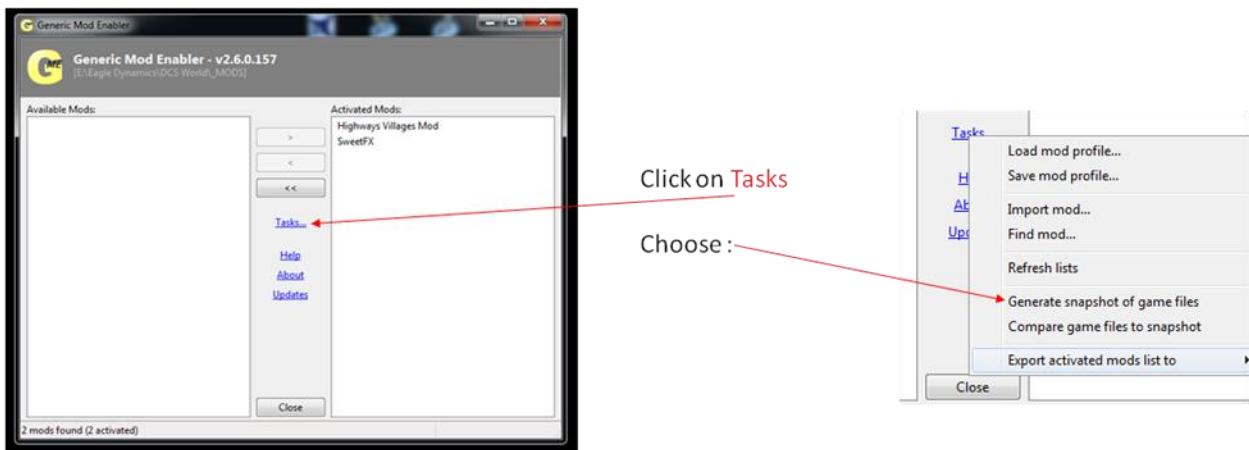


Figure 22 Creating a snapshot (prior to installing mods)

When you add mods to the _MODS folder, they will show up in the left column. Just select the mod and click the right arrow to enable the mod. Likewise, you can choose a mod on the right side and click the left arrow to disable the mod. Clicking on the double left arrow disables all mods; this is what you need to do prior to updating DCS World.

YOUR FIRST MOD: INSTALLING THE COUGAR LUA FILES

The folder structure of the TARGET profile archive looks similar to Figure 23.

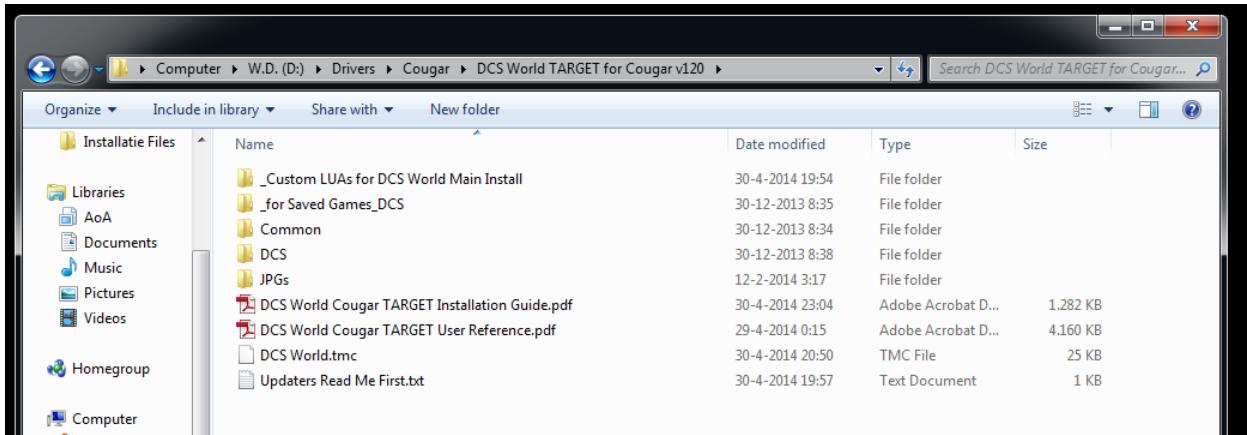


Figure 23 The TARGET Profile folder structure

In the _Custom LUAs for DCS World Main Install folder, you will see archives of different modules or combinations of modules, as seen in Figure 24. *Be sure to install the LUAs for only the modules that you have installed, or else you are likely to Crash to Desktop (CTD) when running DCS World.* If you have Flaming Cliffs 3, you should not install the A-10/Su-25 LUA files.

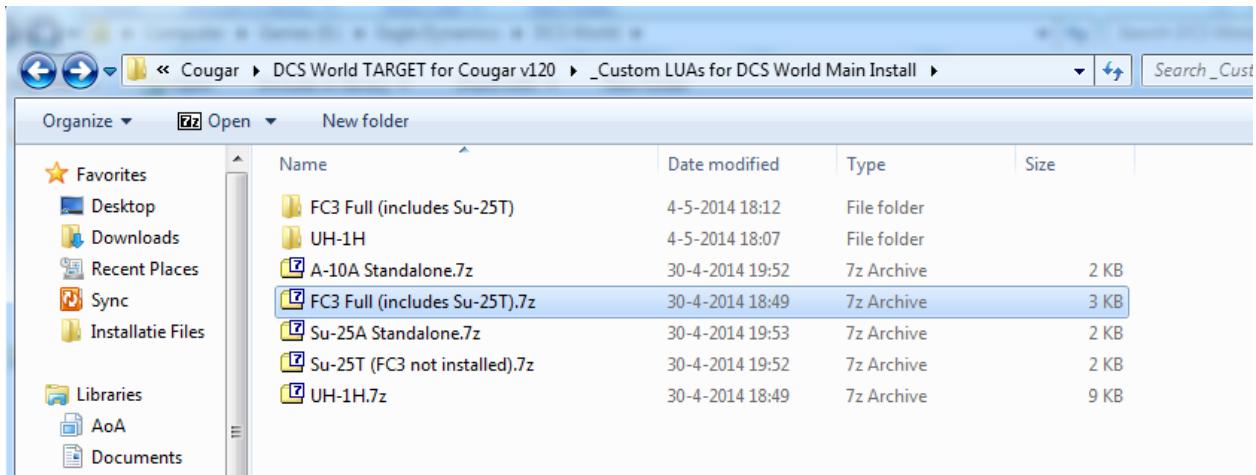


Figure 24 Custom LUAs for DCS World (in JSGME format)

In your **_MODS** folder make the new folders from the modules you purchased from DCS. In this example I made those 2 Custom Lua folders.

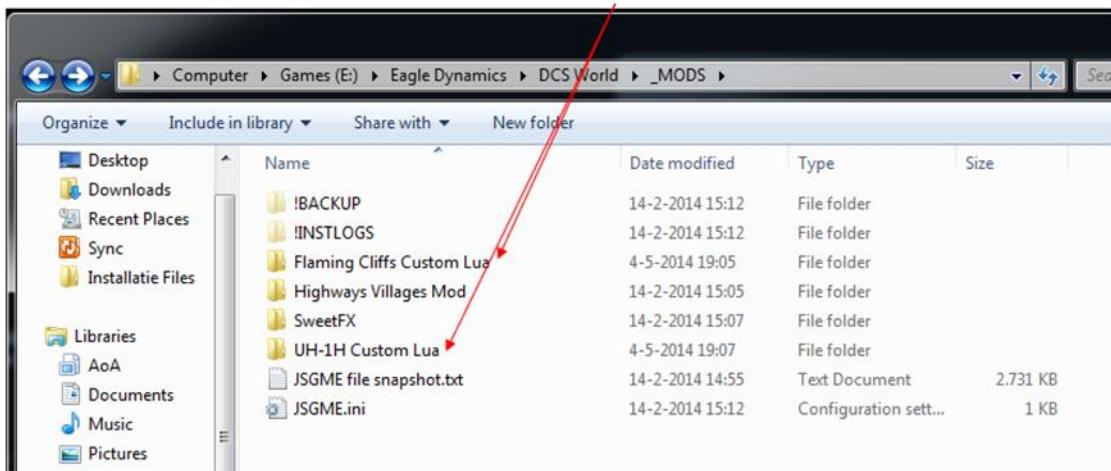
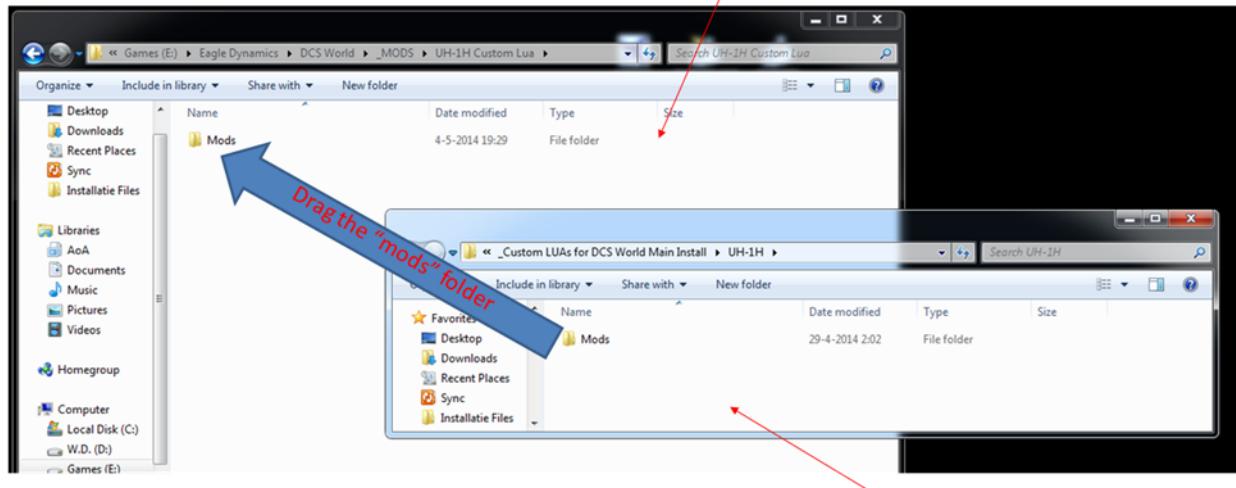


Figure 25 Creating mod folders

Within the newly created folders (as shown in Figure 25), *create the exact structure of the required folders*. For example, if you have created the UH-1H Custom LUA folder, then drag the contents of the UH-1H.7z file to your UH-1H Custom LUA folder, as shown in Figure 26.

This is the “**_MODS\UH-1H Custom Lua**” folder you created before.



This is your “**_Custom LUAs for DCS World Main Install\UH-1H**” folder which you have extracted before.

Figure 26 Installing the UH-1H Custom LUA mod

Perform the same operation with your other new mod folders using the proper 7zip files.

More information on using JSGME with DCS World can be found at the following link on the ED forums:
<http://forums.eagle.ru/showthread.php?t=98607>

APPENDIX C: SETTING UP OVGME FOR USE WITH DCS WORLD

Since Jonesoft Generic Mod Enabler is no longer updated and distributed, a more recent mod enabler is useful to bring 64 bit compatibility, allow a more streamlined interface, and allow both shared mod repositories and backup folders that need not be located in the game's root folder. [OvGME by sedenion](#) brings all of this to the table, including version control and the ability to store mods in Zip format.

This appendix describes how to set up OvGME for use with DCS World, as well as how to import the Custom Master Controller LUA Mods into OvGME⁹.

IMPORTANT: for details on maintaining your mods with DCS World updates, be sure to read the section called Mods and DCS World Auto-Update in Appendix B (the previous section).

SETTING UP DCS WORLD WITH OVGME

First, uninstall all of your mods in DCS World, whether this be manually or via JSGME. If you are updating from JSGME, you will also want to read the section titled OvGME and JSGME in the OvGME Help.

Next, install OvGME. OvGME will install to a default location, and running it will prompt you to create profiles for individual games. You can create your DCS World profile like the example in Figure 27.

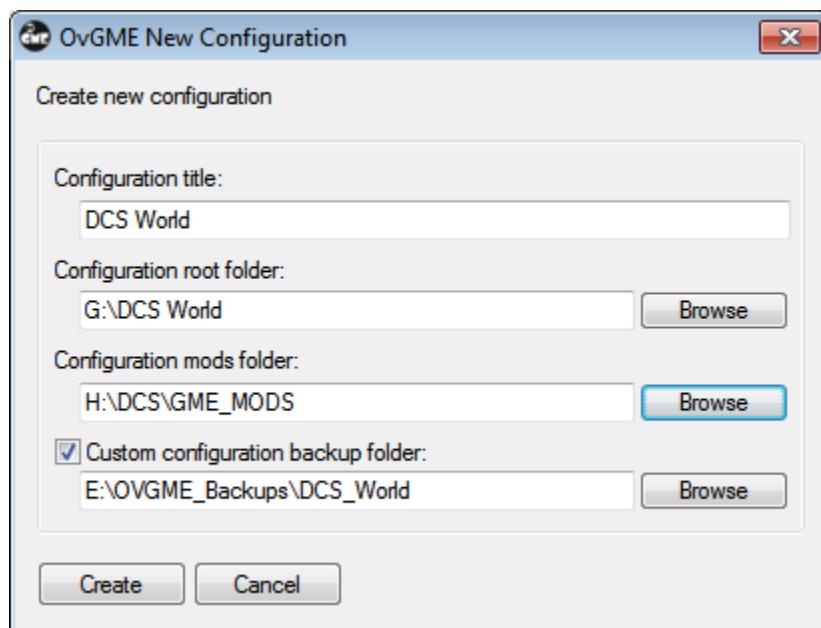


Figure 27 Setting Up a DCS World Profile in OvGME

Note in Figure 27 above that unlike JSGME, you don't need to keep your Mod folder nested in your DCS World root folder. You can store your mods on a separate drive, and you can also optionally store your backup original files in a separate folder as well. *This is especially great for people who keep DCS World on a SSD!* Of course, if you are upgrading from JSGME, you can still use your original _MODS folder with OvGME, and the folder structure is fully compatible.

⁹ As of version 2.05 of this script, all Custom Master Controller LUA mods are OvGME compatible Zips.

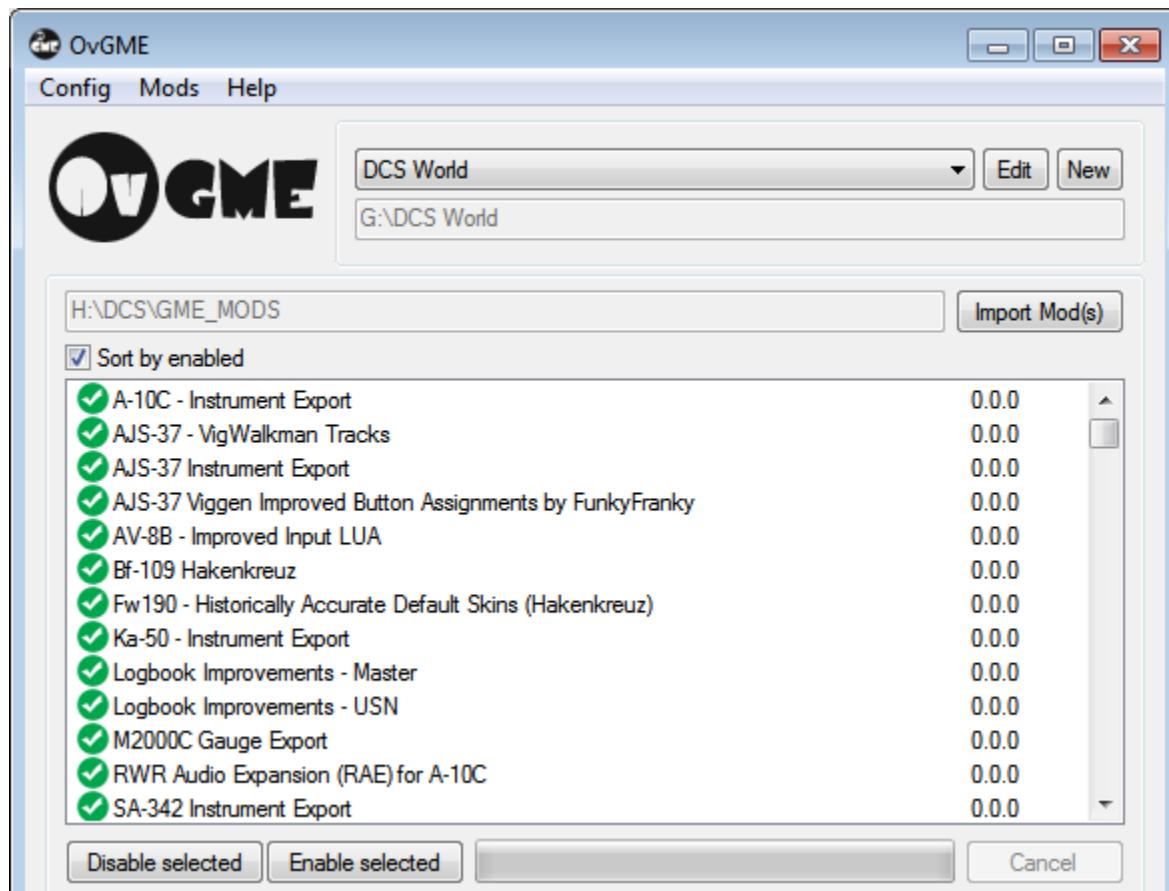


Figure 28 OvGME Main Screen (Cropped)

Once you create the new configuration, then if your Configuration mods folder already has mods in it, OvGME should look something like Figure 28. Now all you need to do is double-click a mod to toggle it, or select a group of mods and batch enable or disable them. See the OvGME Help for more details, or [this post on the ED Forum](#) for instructions on building an OvGME compatible Zip.

ADDING CUSTOM CONTROLLER LUA MODS TO OVGME

Any mods included with this TARGET script that require installation in the DCS World root installation are located in the folder titled `_Custom LUAs for DCS World Main Install`, which is located wherever you installed CTS.

If you are a first-time user, you should Import the Mods by using the “Import Mod(s)” button on the right side of the OvGME screen. Navigate to the `_Custom LUAs for DCS World Main Install` folder, then shift-select all zipfiles in the folder and click “Open.” All mods will then be transferred to your OvGME Mod folder in Zip format

APPENDIX D: CONFIGURING THE TARGET SCRIPT FOR VIRTUAL REALITY

This script has basic VR capability, with mouse button commands and **VR Zoom Toggle** replacing POV and padlock commands on Hat1. As the author does not use VR and relies on inputs from others, any recommendations for implementation are greatly appreciated.

CTS CONFIGURATION

To enable VR, you must first launch CTS and go to the Values screen. From there, filter by **Global** values and select the **Hardware Configuration** category as shown in Figure 29. Next, set **Head Tracking Hardware = 2**, which will enable the VR commands and (for Warthog users) replace the Throttle Friction Lever functionality from **Field of View (FOV) Zoom** to a module-specific function like Radar Antenna Elevation.



Figure 29 Configuring Head Tracking Hardware

Next, select the category **Head Tracking Options** as shown in Figure 30. Now you must decide whether you want **Hat1** to default to the mouse commands with trim functions while shifted, or vice versa. Mouse commands are **H1L** for left mouse button (LMB), **H1R** for right mouse button (RMB), **H1U** for mousewheel up (MWU) and **H1D** for mousewheel down (MWD). Double-tapping **H1U** engages VR Zoom, and single-tapping **H1U** releases zoom. Changing seats is performed with a double-tap left or right (shift function for seats exceeding 2, e.g. flight engineer or door gunner). If you want functionality to default to the mouse, set **Default POV Hat function in VR** to **0**. Otherwise, set **Default POV Hat function in VR** to **1**, and trim will be the default hat function and mouse functions will be shifted.

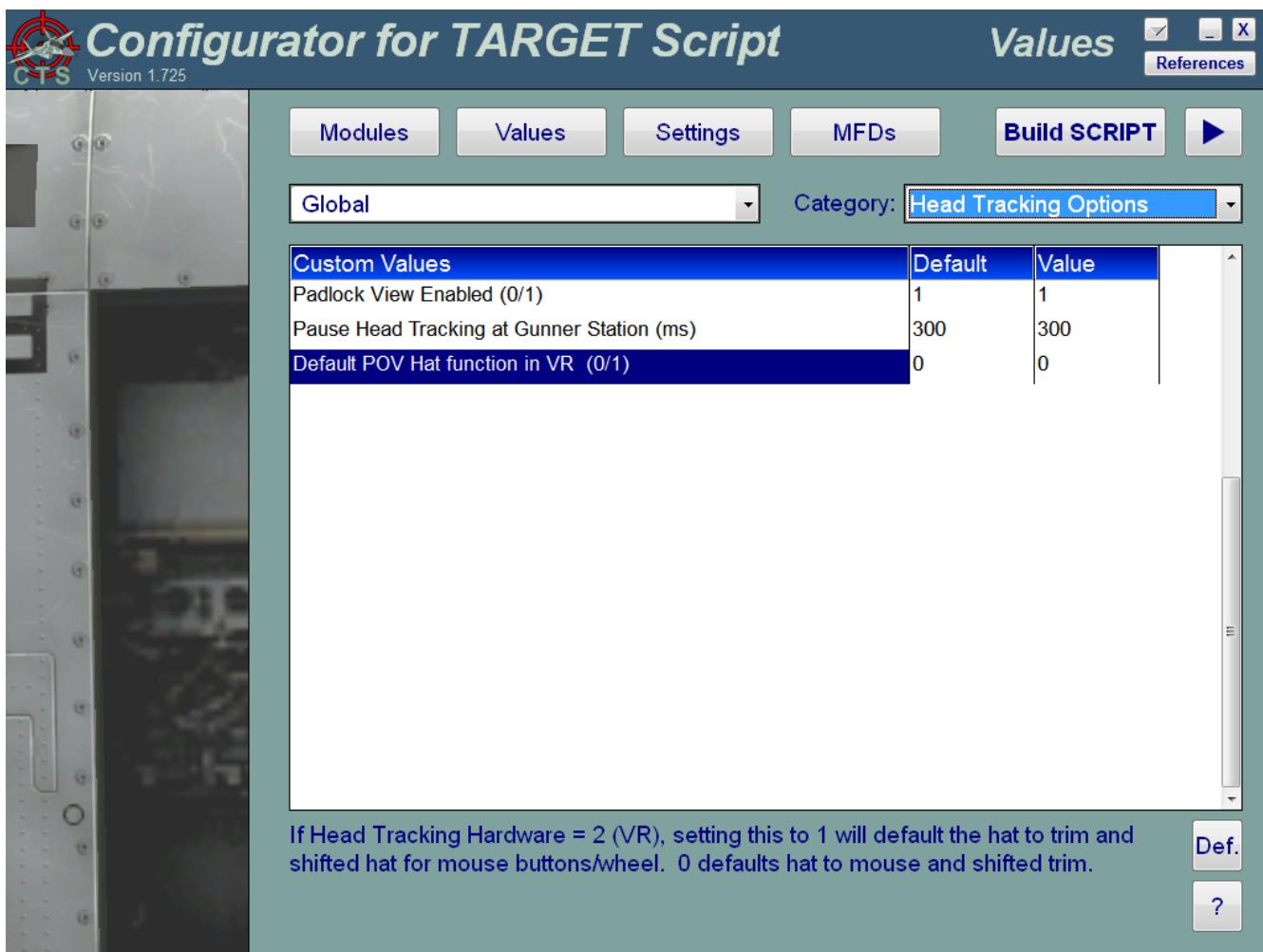


Figure 30 Head Tracking Options

Additionally, it is recommended that you set **Pause Head Tracking at Gunner Station** to **0**, which will disable the feature for aircraft with door gunners. Also, select the **Timing Values – Polling** category and set **TriggerZoom Length** to **0** for the time being, as the routine is not yet properly integrated with VR. Finally, you can change the **Polling Interval for Repeating VR Scroll Wheel** in the **Timing Values – Polling** category to adjust the repeat rate of the mousewheel function, with a lower value corresponding to a faster repeat rate.

Note: at any time, you can use the context sensitive help to launch the Advanced Configuration Guide in HTML format, with hyperlinking to the section on the currently selected value.

UI LAYER SETUP IN DCS WORLD

Once you have made the proper entries to the script files as described in the previous section, it is time to import the proper button settings to DCS World. Following the steps outlined in the section titled Controller Input Setup, go to UI Layer in the Options->Controls menu. Just as with other modules, you must make sure you have JOY_BTN30-32 set as modifiers, then load both joystick and keyboard diff.luas (H/T TWC_Alamo).

REMOVAL OF LEGACY COMMANDS (OBSOLETE)

As of CTS version 2.44, there is no longer a requirement to delete DirectX commands from individual modules.

Congratulations. You should now be ready to use your HOTAS as a mouse within DCS.

APPENDIX E: POSSIBLE CONTROLLER ISSUES WITH WINDOWS 8/10

Windows versions after 7 have an unholy pair of features that can cause frustration for people with complicated controller setups. First, Windows 8 and above defaults HID devices to be subject to power management in that items that are not providing feedback to the PC (like the Cougar MFDs) are automatically shut down by Windows. Additionally, devices that are unplugged and plugged in (even in the same port) are assigned different Device IDs by Windows; this is even the case for devices that were put to sleep by Windows power management. Finally, Windows 10 often does not hide the actual device when a virtual device directly supersedes it (as TARGET does with your Cougar/Warthog HOTAS and MFDs).

INVALID MAPPINGS (RED ROWS IN DCS OPTIONS MENU)

The TARGET profile alleviates the power management issue to a certain extent, but since the Thrustmaster FAST middleware creates a virtual device every time you load a TARGET script, the Device ID issue may be even more prevalent than the issue of simply cycling USB hardware. The extent of the issue is currently unknown, but its instance in DCS World has been seen on multiple occasions with keyboard mappings to the Sensor Select Switch (SSw) Up and Left keys on the AV-8B Harrier module.

OBSERVED BEHAVIOR

This issue appears to be limited to the AV-8B module, and specifically the SSw mappings. While most often the default SSw Up and Left mappings show incompatibilities (displayed by red lines as shown in Figure 31 below), this issue may present itself in other instances.

SYSTEM		CONTROLS	GAMEPLAY	AUDIO	MISC.	SPECIAL	VR
AV8BNA	HOTAS			Reset category to default	Clear category	Save profile as	Load profile
Action		Category	Keyboard	Mad Catz Pro Flight Co	F16 MFD 1 {63777C20	F16 MFD 2 {63777C20	H
Sensor Select AFT: DMT: LST/TV	HOTAS		LShift + RShift + J				
Sensor Select DOWN: HUD Scene Reject/TGP	HOTAS		LShift + RShift + N; JC				
Sensor Select FWD: INS, IRMV/EOMV	HOTAS		LShift + RShift + U				
Sensor Select LEFT: MAP Center/Decenter	HOTAS		LShift + RShift + Y				
Sensor Select RIGHT: FLR/HUD-BH/WH	HOTAS		LShift + RShift + I				
TDC Action/No Action Toggle	HOTAS		Insert; JOY_BTN30 + Ir				
Modifiers		Add	Clear	Default	Axis Assign	Axis Tune	FF Tune
							Make HTML

Figure 31 Errors due to Conflicting Device IDs

While Figure 31 shows a single line and a non-default keymapping, the problem exists for default keymappings as well. The problem likely exists because DCS has assigned the mapping of this particular controller to a different Device ID than Windows currently has assigned to the peripheral (*e.g.* keyboard).

RECOMMENDED WORK-AROUND

Note: the following solution assumes that only the keyboard Device ID is causing issues. If you experience this issue with other devices, please follow these steps for those devices as well.

Since the issue is that DCS World has saved a diff.lua for a Device ID that is no longer valid, the solution is to remove the existing diff.lua, then re-import the profile's diff.lua back into DCS World. The procedure is detailed in the following steps, using the AV-8B Keyboard as an example:

1. Navigate to your Saved Games\DCS\Config\Input\AV8BNA\keyboard folder.
2. Delete keyboard.diff.lua.
3. Launch DCS World, navigate to the **Options -> Controllers** menu, and select the AV8BNA module.
4. Ensure there are no red rows denoting incompatibilities like those shown in Figure 31.

5. Select the Keyboard column, select Load Profile, and load the keyboard `diff.lua` for the TARGET AV-8B profile.
6. Save and exit from the Options menu.

If the incompatibilities involve the Thrustmaster Combined virtual device, you will need to make the following adjustments to the profile:

1. Navigate to `Saved Games\DCS\Config\Input\AV8BNA\joystick`.
2. Delete `Thrustmaster Virtual Game Controller (root) {Device ID}.diff.lua` or `Thrustmaster Combined {Device ID}.diff.lua`.
3. Launch DCS World, navigate to the **Options -> Controllers** menu, and select the AV8BNA module.
4. Ensure there are no red rows denoting incompatibilities like those shown in Figure 31.
5. Load the Cougar or Warthog `diff.lua` for the TARGET AV-8B profile.
6. Re-apply the JOY_BTN30 through JOY_BTN32 as described in the Adding Modifiers section.
7. Save and exit from the Options menu.

ORIGINAL DEVICES NOT HIDDEN WITH VIRTUAL DEVICE ACTIVE

Ideally, adding a virtual device is supposed to suppress the original device that is represented in the virtual device. For example, running this profile with TARGET should create a virtual device called Thrustmaster Combined, and the Cougar or Warthog HOTAS controllers and the first two Cougar MFDs should be hidden to programs such as DCS and SRS. In Windows 10, when a virtual device is created, the original devices are often not suppressed. This can lead to conflicts in execution and addresses.

This conflict is apparently caused by the Microsoft Windows Store in Windows 10. The simplest workaround is to disable the Microsoft Windows Store in the Settings App. Open the Settings App, select Privacy → Background Apps, then disable the Windows Store as shown in Figure 32 below ([H/T Lorthirk for this solution](#)).

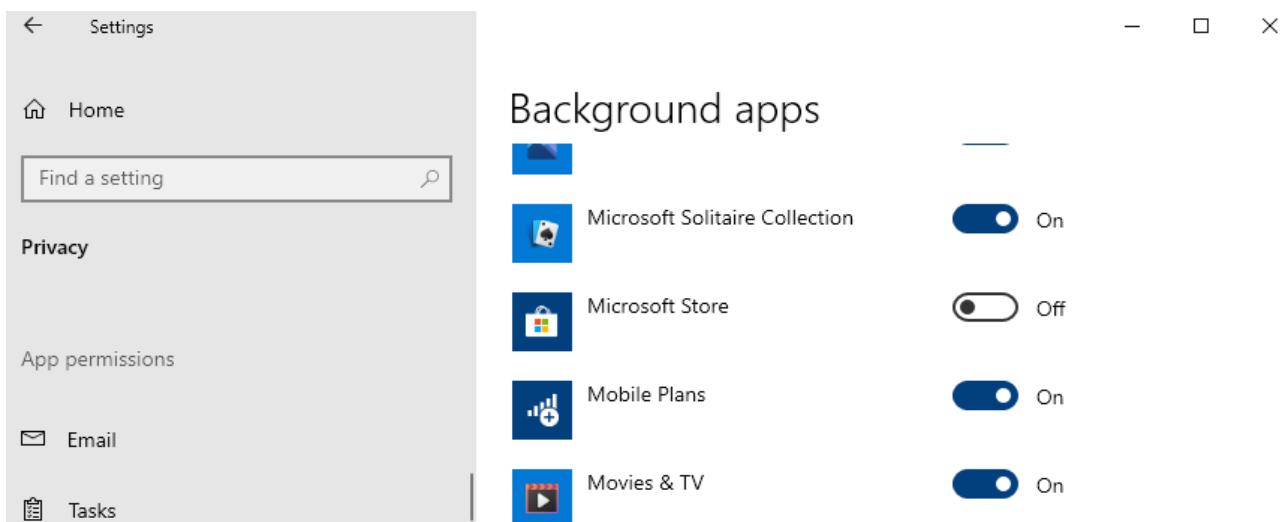


Figure 32 Disabling Microsoft Store in Windows 10

The following is a workaround for SRS.

SIMPLERADIO STANDALONE WORK-AROUND

Special thanks to [flyingflatfour](#) for contributing this section.

When encountering the situation where Windows 10 does not let TARGET hide away the physical devices, SRS may not detect the Thrustmaster Virtual Device in the Controls menu but your physical device instead. To correct this, follow the following steps:

1. Run SRS client at least once, with the option "Allow More Input Devices" turned ON, then close the application.
2. Navigate to SRS installation folder, locate and open the clientlog.txt file.
3. Scroll down to the bottom of the file and locate the line that says¹⁰:

```
Found Device ID:0400044f-0000-0000-0000-504944564944 HOTAS Cougar Joystick  
Usage: Generic Type: FirstPerson
```

4. Copy and paste your conflicting device ID (just the string as highlighted in bold above) to a new, blank text file and save it in the same folder named `blacklist.txt`
5. Start SRS Client, this time turn OFF the option "Allow More Input Devices"
6. You should be able to bind your controls normally now.

Final remarks: if more input devices are connected and are still conflicting, follow the same procedure for those extra devices, or add the one device you want to be recognized (Thrustmaster Virtual Device) in a `whitelist.txt` file.

IL-2 STURMOVIK GREAT BATTLES DEVICES.TXT ISSUE AND WORK-AROUND

Special thanks to Dr. Jester for contributing to this section.

Problems with Windows 10 not hiding devices that are integrated into the Thrustmaster Virtual Controller are exacerbated in IL-2 Sturmovik in that `devices.txt` within the `IL-2 Sturmovik Battle of Stalingrad\data\input` folder becomes corrupted with a null entry between the desired devices and the devices that should remain hidden.

For example, assuming no other controllers are attached, a HOTAS Warthog with TFRP Rudders (which are deliberately excluded from the profile) should show the following in `devices.txt` if IL-2 is loaded while TARGET is active:

```
0,%22228cba50-c8d8-11e9-0000545345440280%22,Thrustmaster%20Combined|  
1,%223e661f00-c26b-11e9-0000545345440d80%22,Flight%20Rudder%20Pedals|
```

However, if the Warthog Stick and Throttle remain unhidden in Windows, then loading IL-2 could cause `devices.txt` to be written as follows (with issues highlighted in italics):

```
0,%22228cba50-c8d8-11e9-0000545345440280%22,Thrustmaster%20Combined|  
1,%223e661f00-c26b-11e9-0000545345440d80%22,Flight%20Rudder%20Pedals|  
0,,  
2,%223e63ae00-c26b-11e9-0000545345440880%22,Joystick%20-%20HOTAS%20Warthog|  
3,%223e5ef310-c26b-11e9-0000545345440180%22,Throttle%20-%20HOTAS%20Warthog
```

Note that the “0,,” entry on row 3 corrupts the file. If you experience difficulty with this issue, open `devices.txt` in Notepad, delete the line “0,,” and all following lines, then save the file and try running IL-2 again.

Note: Setting `devices.txt` to Read Only can help to alleviate this problem, though this possible workaround is only recommended if you keep a consistent set of controllers attached to your PC.

¹⁰ The example listed is for the HOTAS Cougar device. The Warthog Stick and Throttle will differ in Device ID, though the steps should remain the same.

ADDITIONAL INFORMATION

Additional information on these Windows issues can be found in the following forums:

<https://riseofflight.com/forum/topic/46889-joystick-assignment-problem-windows-10/>

<https://forum.il2sturmovik.com/topic/11261-please-fix-joystick-id-issue/>

<https://www.reddit.com/r/starcitizen/comments/55dgne/help please windows 10 bizarre and evil/>

<https://forums.eagle.ru/showthread.php?t=232737&page=3>

If you can expand upon either the problem or the solution, or provide additional workarounds, [please post your comment to the Eagle Dynamics forums.](#)