

Dolly

Camera Add-on for Microsoft Flight Simulator 2004

OPERATIONS MANUAL

Developed by arwasairl

Version 1.0.0.0
2026-10-25

Preface

Thank you for downloading Dolly for Microsoft Flight Simulator 2004! This manual will give you a rundown of the features for Dolly.

Dolly does not require FSUIPC3 to be installed in order to use the product. The DollyFS9.DLL module hooks into memory addresses of FS9 to provide all functionalities. Please note that some anti-virus software may flag Dolly's usage of hooks as malware, if this is the case, please temporarily disable your AV or add an exclusion rule to your AV for Dolly.

Operating systems as far back as Windows XP is supported. Windows 2000 or non-Windows NT OSs are not supported. Dolly has been tested in Windows XP and Windows 11. If you experience any issues with other operating systems, please contact me at support@arwasairl.com. Please also be aware that support will be given whenever I am able to or whenever convenient, and that support is NOT entitled to users!

This manual was last edited on 2026-10-25.

THIS PRODUCT IS ONLY FOR HOME SIMULATION USAGE ONLY.

USERS OF THIS PRODUCT ARE NOT ENTITLED TO CUSTOMER SUPPORT FOR DOLLY.

Introduction

FEATURES

Dolly includes the following features:

- Smooth translations, rotations and panning of the camera
- Definable camera positions in the interior, exterior, and static views
- Predefined airport cameras read from AFCADs from installed scenery
- Configurable transitions between defined camera viewpoints
- Effects to simulate the human head, each configurable with their own slider
- Smart-effect technology utilizing aircraft size and shape along with ground surface type to produce unique vibrations depending on aircraft type
- Controllable cameras via the keyboard and controller axes
- Importing and exporting camera files for ease of sharing

SYSTEM REQUIREMENTS

- Windows XP SP3 32-bit (SP2 for 64-bit Windows XP)
- Microsoft Flight Simulator 2004 **with 9.1 update**
- Keyboard and mouse or a controller
- 1.0 GHz CPU
- 4GB of RAM
- 8MB 3D-accelerated video card
- 10MB of free disk space

NOTES

On machines running Windows Vista or newer, User Account Control (UAC) is usually enabled by default. The DollyFS9 module requires administrator privileges due to its use of hooking. Without it, the module will not run properly and will fail to launch at startup. Launch FS9 in administrator mode for the DollyFS9 module to launch properly.

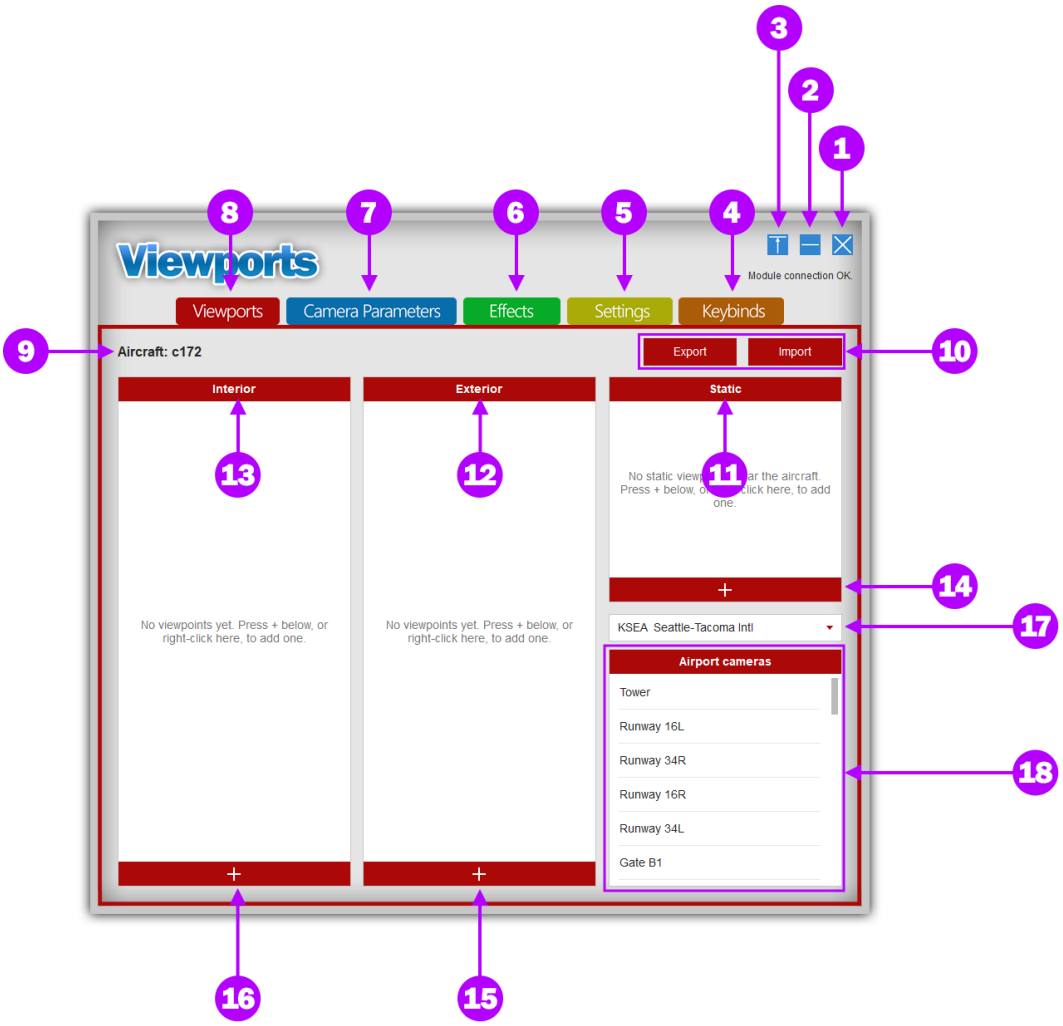
Please note: other camera add-ons such as F1 View, Active Camera, FS Recorder, or other similar camera add-ons are **not supported by Dolly**. Dolly will automatically detect and shut itself off if it finds other camera add-ons installed in FS9. If you wish to use Dolly, you must uninstall all other camera add-ons.

If you encounter a crash due to DollyFS9.DLL, it is most likely due to a separate module or add-on interfering with Dolly's hooks. Please inform me of any possible interference if this occurs.

No support will be given for users who run Dolly through WINE or on Windows for ARM.

Interface (Viewpoints)

Below is the interface diagram for the Viewpoints/Viewports page. Please note that in order for Dolly to display properly, FS9 should be in windowed mode instead of fullscreen mode.



1. Close window
2. Minimize window
3. Always stay on top
4. Keybinds menu
5. Settings menu
6. Effects menu
7. Camera Parameters menu
8. Viewports menu
9. Name of aircraft
10. Export and import a camera set
11. Static view button
12. Exterior view button
13. Interior view button
14. Add new static camera
15. Add new exterior camera
16. Add new interior camera
17. Nearest airport
18. Airport cameras list

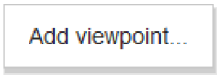
VIEWPORTS

The viewports menu comprises of four columns for each viewpoint category. Interior, exterior, static, and airport cameras.

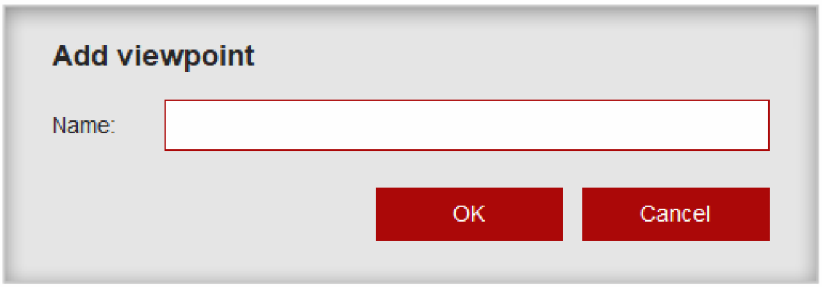
Along the tops of each category are buttons (11), (12), (13); you can click these buttons to instantly switch to this view. By default, if no viewpoints are defined, the interior view will default to the settings set by the aircraft CFG's [VIEW] section. The exterior view will default to either the center of the aircraft or 10 feet behind the empennage. Static cameras default to the same view as exterior views. Airport cameras are predefined and created by Dolly and cannot be edited but can be moved.

Interface (Viewpoints)

To create a new view, either hit the “+” icon at the bottom of each viewpoint’s column (14), (15), (16), or right click an empty space in the viewpoint’s column and click “Add viewpoint…”



A new window will popup asking you to enter a name. Note that you cannot insert an empty name or a name that consists of only spaces. International languages and UNICODE characters can be typed.



New viewpoints will take the current camera’s position and angle. If you wish to change or edit the camera’s position or angle, simply move the camera to your new position and hit the “Save ‘XXXX’” button on the top right. This save button will only appear if a change in the camera has been detected.



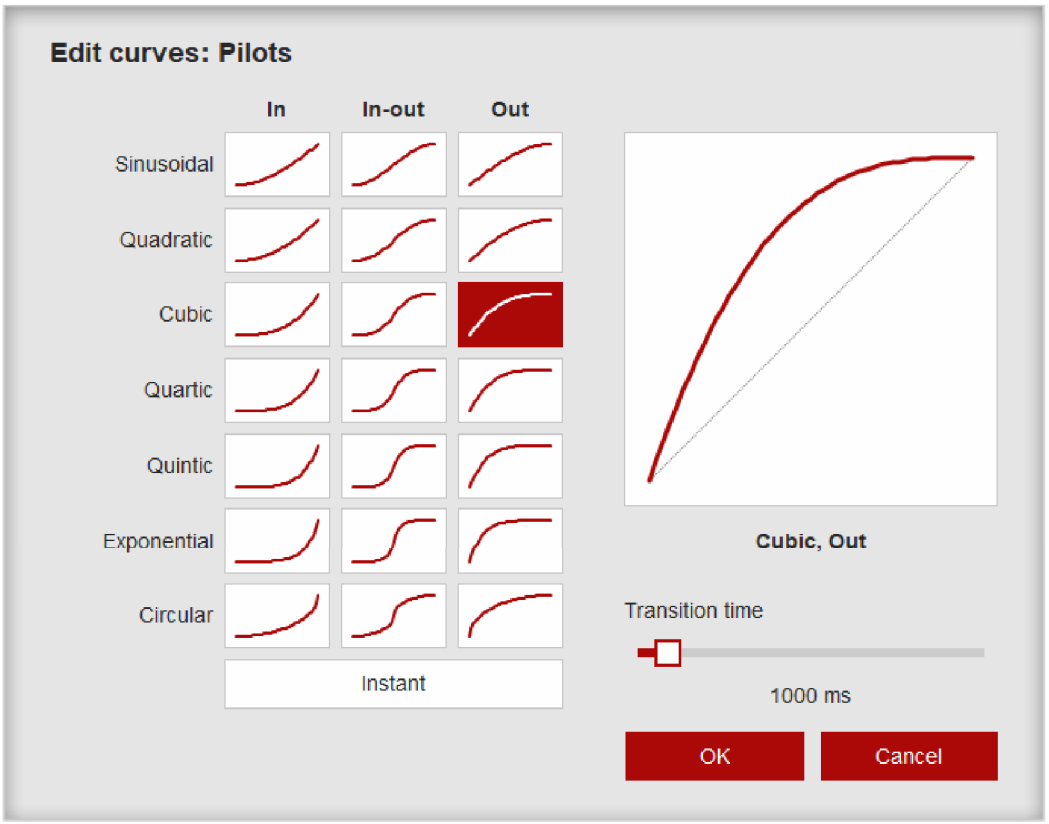
To rename a viewpoint's name, right click the viewpoint and hit "Rename...". The same popup box will appear asking you to enter the desired name.

To a set a key for that specific viewpoint, right click the viewpoint and hit "Set a key...". A popup window will appear waiting for your input. Note that the Dolly window must be focused for it to capture your input. Keyboard inputs can use any key, along with CTRL, SHIFT, or ALT modifiers. Controller buttons can also be assigned to a viewpoint. To remove a key definition, hit "Remove Key". This will clear out **all key definitions** for that viewpoint.

To delete a viewpoint, right click the viewpoint and hit "Delete". Dolly will ask you if you want to delete the viewpoint, hit "Yes" to delete, hit "No" to cancel deletion.

TRANSITIONS

If you want to edit the camera's transition curves when switching to that view, right click the viewpoint and hit "Edit curves...". A new popup window will appear.



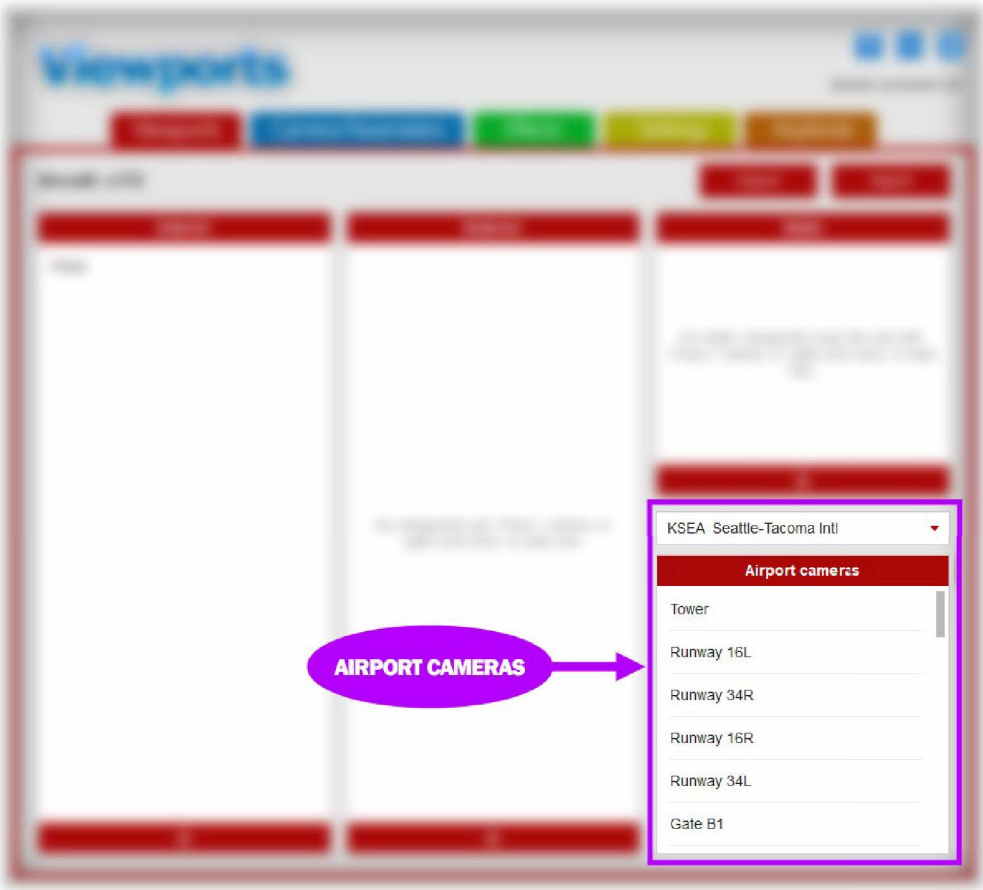
There are 21 total curves for you to select. "In" curves result in movement that are slow at first and end quickly. "Out" curves result in movement that are fast at first and end slowly. "In-out" curves result in slow starting and ending movements but have quicker movements towards the middle.

Transition time changes how long the curve takes to finish its animation. 1000 ms is equal to 1 second.

Alternatively, if no curves are desired at all, the “Instant” button is available. “Instant” will instantly switch views without having a smooth curve or transition.

AIRPORT CAMERAS

Airport cameras are automatically generated cameras that read AFCAD information from installed scenery. This works for both default and add-on scenery provided that the AFCADs are in good quality.



When using Dolly for the first time, the airport cameras feature will be temporarily unavailable as Dolly generates an airport cache. Once completed, you will see a list of generated cameras for that airport.

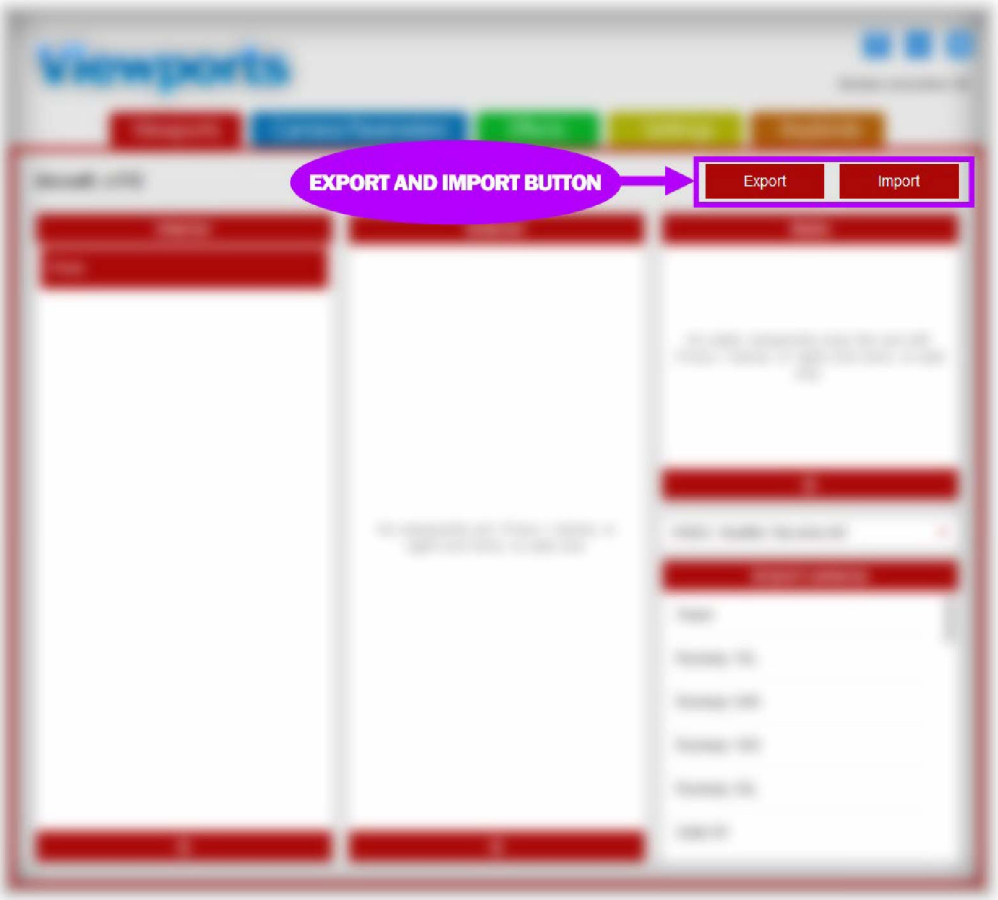
Airport cameras generate cameras at towers, runways, and parking spots. A dropdown list above the airport cameras column is also available if more than one airport is nearby. Click this dropdown to view other airports.

Airport cameras will only populate if the aircraft is within 3000 feet AGL from an airport and 2 nautical miles away. If the aircraft is outside of those bounds, the airports camera list will show “No airports nearby.”

Airport cameras cannot be edited, they cannot have keybinds set to them, nor can their curves be changed. However, they can be moved and panned around like any other camera.

PRESET EXPORT AND IMPORT

To export a preset, click the “Export” button on the upper right-hand corner of the viewports menu.

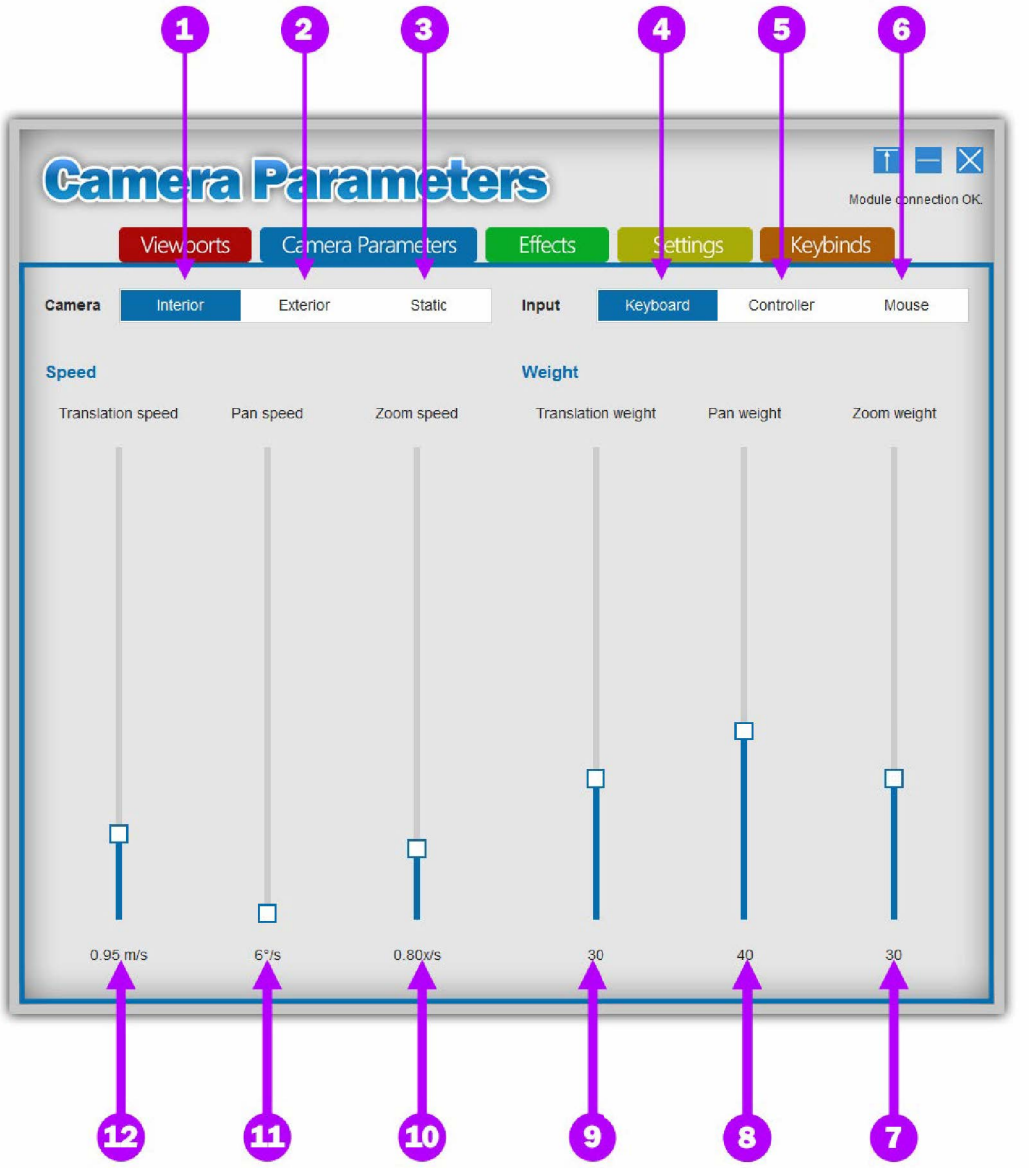


The export button will then open a file explorer window asking you where to save the .cam preset file.

To import a preset, hit the “Import” button to the right of the export button to import a .cam file.

Interface (Camera Parameters)

Below is the interface diagram for the Camera Parameters page.



1. Interior camera selection
2. Exterior camera selection
3. Static camera selection
4. Keyboard input selection
5. Controller input selection
6. Mouse input selection
7. Zoom weight
8. Pan weight
9. Translation weight
10. Zoom speed
11. Pan speed
12. Translation speed

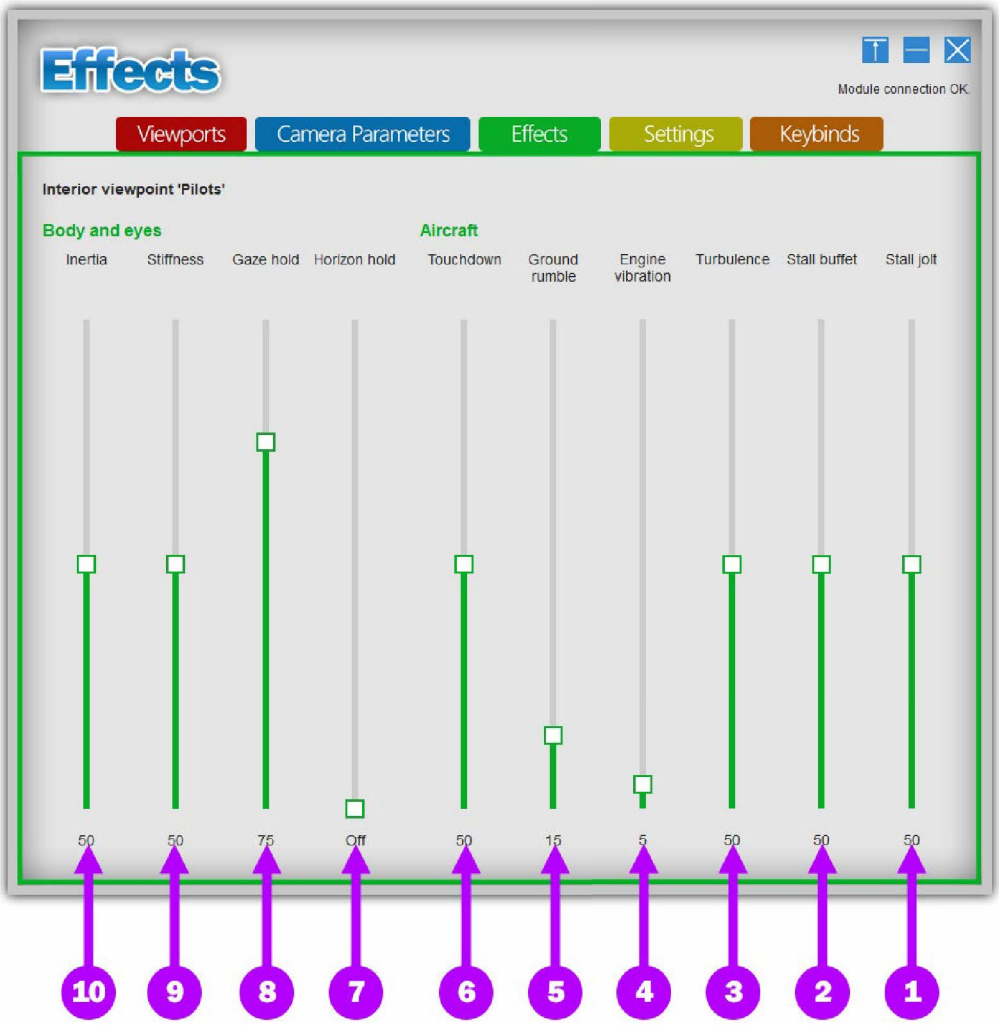
CAMERA PARAMETERS

The camera parameters page allows you to configure speed and weight of the camera for interior, exterior, and static views for the 3 input types.

Note that for the mouse input type, translation speed and weight are not available as translations with the mouse are not supported.

Interface (Effects)

Below is the interface diagram for the Camera Parameters page.



1. Stall jolt effect magnitude
2. Stall buffet effect magnitude
3. Turbulence effect magnitude
4. Engine vibration effect magnitude
5. Ground rumble effect magnitude
6. Touchdown effect magnitude
7. Horizon hold magnitude
8. Gaze hold magnitude
9. Stiffness magnitude
10. Inertia magnitude

EFFECTS

Camera effects are configurable via 10 sliders. These effects are available for both Interior and Exterior cameras but are not available for static or airport cameras.

Effects can be turned off by setting their slider to 0.

INERTIA

Inertia effects change how the camera sways due to aircraft changes. A larger inertia value will simulate a “heavier” body, resulting in inertia changes being slower but larger. Larger inertia values also causes the camera to be more sensitive to aircraft movement.

STIFFNESS

Stiffness affects how the simulated neck behaves. With high stiffness, it behaves similarly to a camera mounted on a rail. With no stiffness, it behaves similarly to a person that has no spine. A stiffness value of 50 is closer to what normal human spines are like.

GAZE HOLD

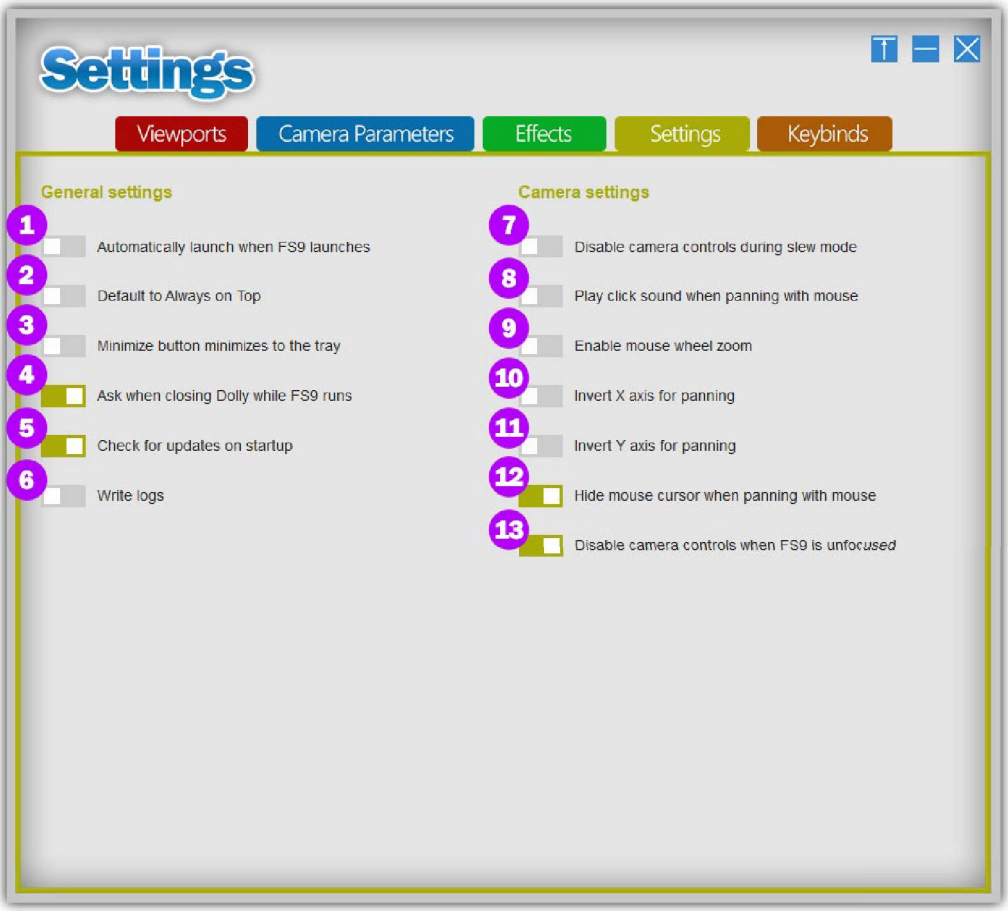
Gaze hold simulates how our heads and eyes tend to stay in one place even during banking or during turbulence shaking. The effect is minimal, but no gaze hold does not sway the camera in place and maximum gaze hold performs similarly to a gimbal.

HORIZON HOLD

Horizon hold will attempt to hold the camera's tilt relative to the horizon. Note that this effect has a maximum tilt limit of 35 degrees in each direction.

Interface (Settings)

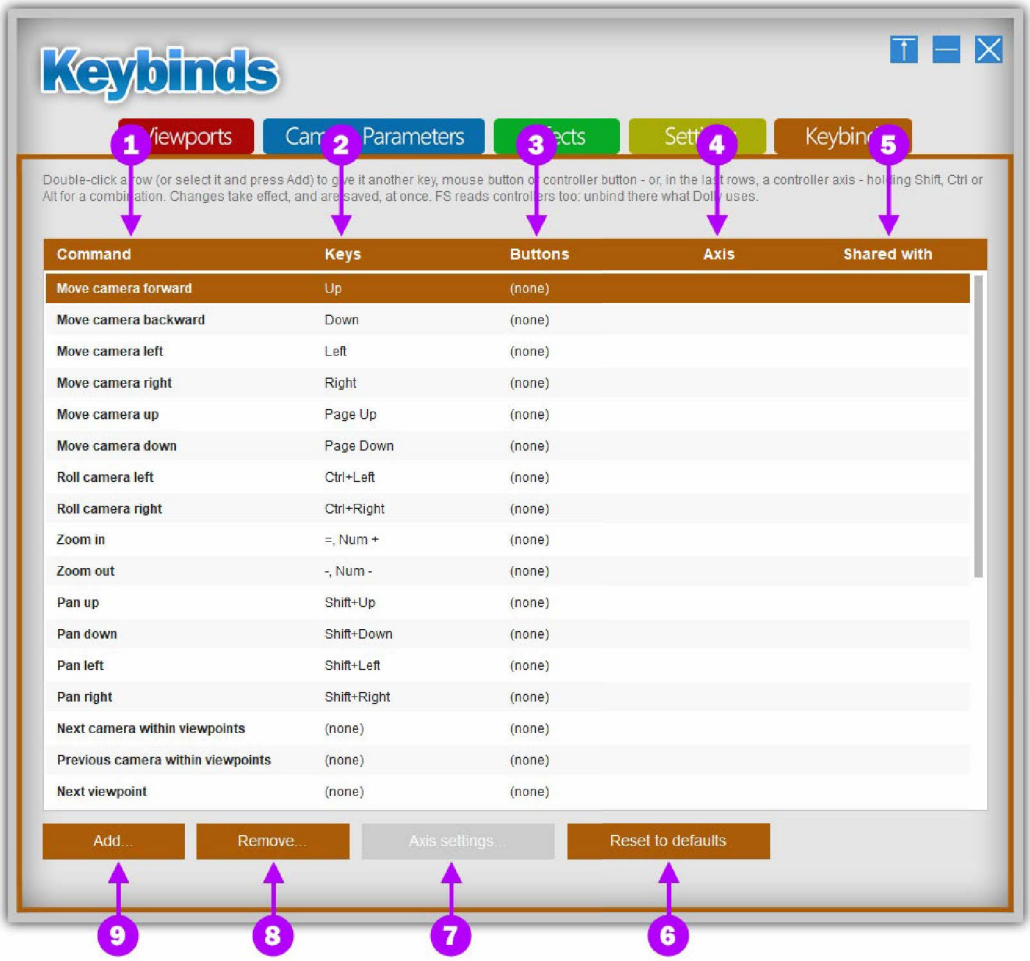
Below is the interface diagram for the Settings page.



1. Automatically launch when FS9 launches. Requires the DollyFS9Module to be installed.
2. Default to Always on Top. This will have “Always on Top” enabled unless you disable it manually.
3. Minimize button minimizes to the tray.
4. Ask when closing Dolly while FS9 runs.
5. Check for updates on startup. Requires internet connection to use.
6. Write logs. Use only if needed for support reasons
7. Disable camera controls during slew mode. This will freeze the camera system until slew mode is exited.
8. Play click sound when panning with mouse. This is the old EzDok/EZCA version 1 middle mouse button click sound.
9. Enable mouse wheel zoom.
10. Invert X axis for panning
11. Invert Y axis for panning
12. Hide mouse cursor when panning with mouse.
13. Disable camera controls when FS9 is unfocused.

Interface (Keybinds)

Below is the interface diagram for the keybinds menu.



1. Command name column
2. Current keybind column
3. Current joystick button bind column
4. Current axis bind column
5. Current conflicting commands column
6. Reset to defaults
7. Axis settings
8. Remove bind button
9. Add bind button

KEYBINDS

The keybinds menu allows you to bind commands to keys using any combination of modifiers (CTRL, SHIFT, or ALT) as well as joystick buttons and axes.

When setting up a new keyboard or joystick button bind, double click any desired command and then a popup will appear asking you to push a key.

Note that Dolly's window must be focused for it to capture a key.



To set an axis, scroll all the way down and assign an axis to any of the following commands:

Move forward/back
Move left/right
Move up/down
Tilt up/down
Tilt left/right
Roll left/right
Zoom in/out

To remove a keybind, hit the “Remove...” button, (8), and click the desired key combination to remove.

If you want to reset settings back to default, press the “Reset to defaults” button, (6).

Troubleshooting

FS9 NOT DETECTED

If FS2004 is installed but was not detected, ensure that the following registry keys exist:
64-bit Windows: HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Microsoft\Microsoft Games\Flight Simulator\9.0
32-bit Windows: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft Games\Flight Simulator\9.0
If the keys exist, ensure that the string value “EXE Path” or “EXEPath” exists in the key. The value of EXE Path will be the directory for FS9 and it must contain fs9.exe.

FS9 NOT UPDATED TO 9.1

If FS2004 is installed but the 9.1 update was not installed, please install the FS9.1 update. If the 9.1 is installed, ensure that the version number of fs9.exe is at least FS9.1.0. If it is not, the 9.1 update was not installed properly.

DOLLY MODULE NOT FOUND

If FS2004 is running but Dolly’s module (DollyFS9.dll) could not be connected to, ensure that the module is installed in FS2004’s Modules folder. If it is not installed, please reinstall Dolly. If it is installed, please e-mail me at support@arwasairl.com and provide log files by enabling the logging feature in Dolly before starting FS2004.

UPDATER CONNECTION NOT ESTABLISHED

If you attempt to update Dolly but the updater could not connect to the server, ensure your internet is enabled. If you have a proper internet connection, your ISP, firewall, DNS server, Router firewall, or VPN could be blocking connections to the update server.

To test connection to the server, connect to www.arwasairl.com in a web browser. If you cannot connect to the website via the browser, your configuration is most likely blocking our servers. In some rare occasions, our web server may have blocked your IP address. If you suspect this to be the case, e-mail me at support@arwasairl.com to resolve the issue.