

Pilot View Plugin User Guide

Introduction

The PilotView plugin, PV plugin for short allows you position the pilot's head when in 3D cockpit mode.

The PV plugin is not designed to work in a 2D cockpit.

It allows for 8 positions to be stored, these are called presets.

This is done through the PV Control panel, which is described in a later section.

The PV plugin also has effects that can be enable or disabled.

These consist of G forces that are applied to the X, Y and Z axes.

This not the same as the G force blackout that you get in Xplane.

There is also the effect of engine vibration which can be enabled or disabled.

These are described in a later section.

As of V1.70 External Data can be used with the plugin.

This is described in a later section.

If you are using the windows version of the plugin and have a TrackIR device, you can use it to move the pilots head around.

This is described in a later section.

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Installation

The zip file below contains a FAT plugin that has the 32 and 64 bit plugins for Windows, OS X, and Linux

<http://www.xpluginsdk.org/downloads/PilotView.zip>

Unzip the archive so that there is a PilotView folder under the plugins folder.

e.g.

/X-Plane/Resources/plugins/PilotView

The files and folders that should be there are listed below.

This layout will work in X-Plane V9, V10 32 bit and V10 64 bit.

PilotView

- PilotView.ini

- lin.xpl

- mac.xpl

- win.xpl

- 32

 - lin.xpl

 - mac.xpl

 - win.xpl

- 64

 - lin.xpl

 - mac.xpl

 - win.xpl

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PV Menu

The menu has the following sub menu options.



Enable

This will enable the PV plugin.

Disable

This will disable the PV plugin.

Control Panel

This will display the PV Control Panel, which is described in a later section.

Data Display

This will display the PV Data Display, which is described in a later section.

Forces Effects Panel

This will display the PV Forces Effects Panel, which is described in a later section.

TrackIR Enable

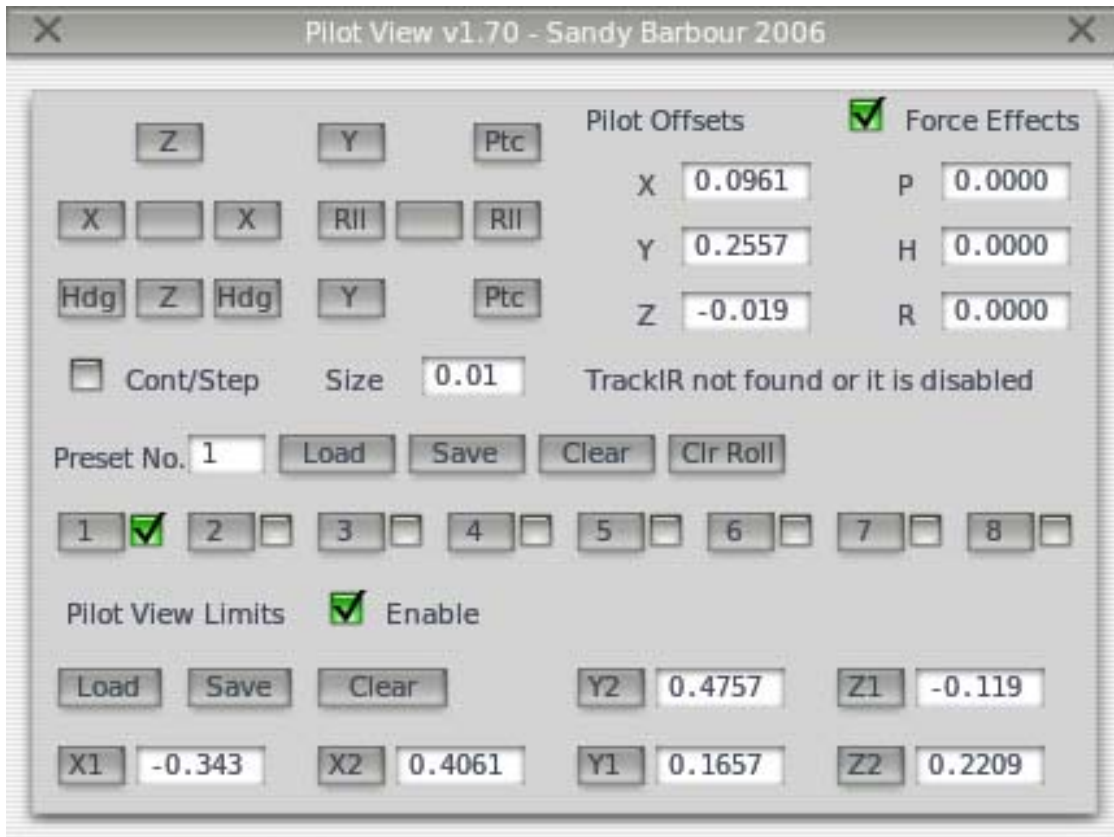
This will enable the TrackIR device.

TrackIR Disable

These will disable the TrackIR device.

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PV Control Panel



The control panel has these features

X, Z, Y, Ptc (Pitch), Rll (Roll) and Hdg (Heading) buttons.

These are used to move the pilot's head around the 3D cockpit. The blank buttons are used to stop the pilot's head from moving, only used in continuous mode.

Cont/Step checkbox.

When unchecked a button click will move the pilot's head by the amount specified in the size box, it will only move by that amount and stop. When checked it will continuously move the pilot's head until the blank (stop) buttons are pressed.

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Clr (Clear) Roll Button

This clears any roll offset, this is required because the data for roll is not the same as the data for the other axes for the pilot's head.

See the description, in a later section, for the **ResetRollOffsetOnStartup** INI file setting for an explanation why this is required.

Presets

These are described below.

Preset No. Textbox

This shows you the preset that is currently active.

Load Button

Load the position data from the PilotView.dat file, this file is stored per aircraft so that you can have different position presets for each aircraft.

Save Button

Save the position data to the PilotView.dat file in the current user aircraft folder. If the file does not exist a new file will be created.

Clear Button

This will clear all presets and automatically store the current position into Preset 1.

Buttons 1 to 8

These buttons when clicked will move the pilot's head to that preset position.

Only a preset that has the checkbox checked will move the pilot's head.

If the checkbox for a button is unchecked, clicking on the button will store the current pilot's head position into that preset.

Once a preset has been stored, clicking on the movement buttons will always update the pilot's head position.

So if you click on another stored preset button and back to the previous button, the pilot's head will go back to last position of that button.

Once you are happy with the presets, click on the Save Button so that your presets will be written to the PilotView.dat file.

The Clr Roll button will be explained later on.

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Limits

These are used to stop the pilot's head from moving past a certain limit in any of the axes that it can move in.

You can, for example, use this to restrict the pilot's head from moving out of the 3D cockpit.

These consist of the following.

Enable Checkbox

This turns the limits on or off, checkbox on means enable, off means disabled.

Load Button

Load the limits data from the PilotViewLimits.dat file, this file is stored per aircraft so that you can have different limits for each aircraft.

Save Button

Save the limits data to the PilotViewLimits.dat file in the current user aircraft folder. If the file does not exist a new file will be created.

Clear Button

This will clear all limit data.

X1, X2, Y1, Y2, Z1 and Z2 Buttons

These are used to set the limit in that axis to a certain value.

They are arranged to indicate the following

X1 is left limit and X2 is right limit.

Y1 is bottom limit and Y2 is top limit.

Z1 is forward limit and Z2 is backward limit.

They are use as follows.

Move the pilot's head to the limit that you want to set for that axis.

Press the relevant button to set that as the limit.

For example, move the pilot's head to the left limit and then click on the X1 button.

Once you have set all your limits then click on the limits Save button.

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Pilot Offsets

These indicate the offset that has been applied for the active preset.
This is the offset from the default pilot's head position used by Xplane.

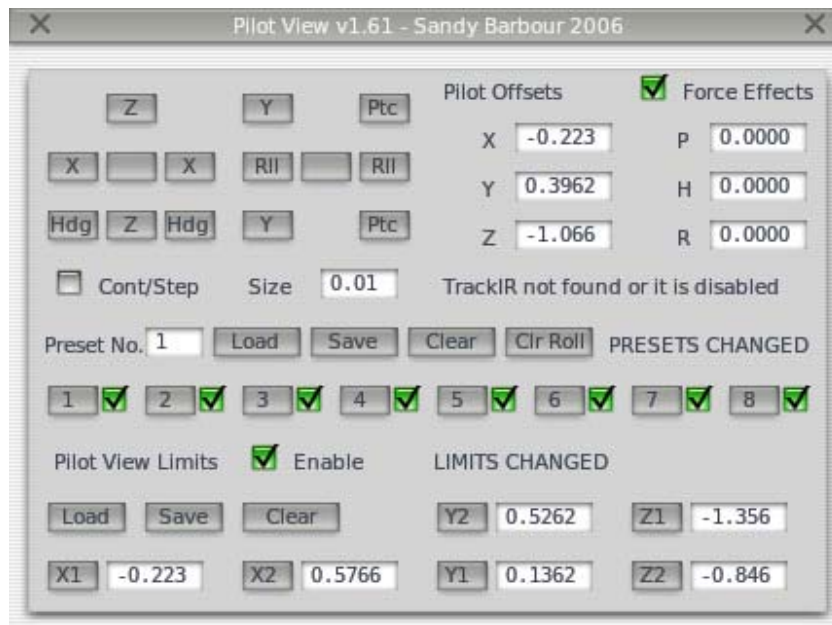
Force Effects Checkbox

This will enable or disable the PV Effects, checked means on, unchecked means off.
These will be described below in the Effects Panel section.

Preset and Limit Data Change Warning

Both the Presets and Limits will display a warning in the Control Panel when preset data or limits data has been changed.

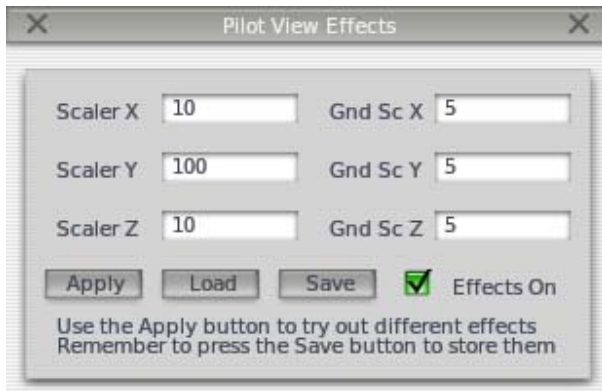
This is shown below.



These will be cleared on a Load or Save.

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PV Effects Panel



The panel above has the following features.

Apply Button

Allow the user to try the setting before saving it.

Load Button

Load the effects data from the PilotViewEffects.dat file, this file is stored per aircraft so that you can have different effects for each aircraft.

Save Button

Save the effects data to the PilotViewEffects.dat file in the current user aircraft folder. If the file does not exist a new file will be created.

Effects On Checkbox

This will enable or disable the PV Effects, checked means on, unchecked means off. This has the same function as the Force Effects Checkbox described earlier.

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Scaler X

This is applied to the X axis to move the pilot's head based on the G value.

Scaler Y

This is applied to the Y axis to move the pilot's head based on the G value.

Scaler Z

This is applied to the Y axis to move the pilot's head based on the G value.

For all the above a larger value decreases the effect of G.

Gnd Sc X (Ground Scaler X)

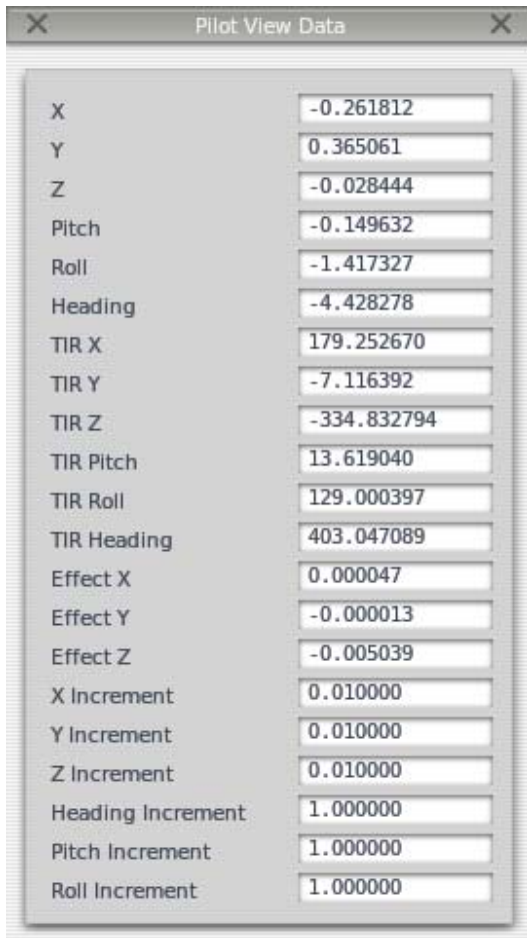
Gnd Sc Y (Ground Scaler Y)

Gnd Sc Z (Ground Scaler Z)

These are used to modify the G effect depending on whether the aircraft is on the ground. If it is not on the ground it also effects the G below a certain altitude.

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PV Data Display



The screenshot shows a window titled "Pilot View Data" with a list of parameters and their corresponding values. The parameters are listed on the left, and the values are shown in text boxes on the right.

Parameter	Value
X	-0.261812
Y	0.365061
Z	-0.028444
Pitch	-0.149632
Roll	-1.417327
Heading	-4.428278
TIR X	179.252670
TIR Y	-7.116392
TIR Z	-334.832794
TIR Pitch	13.619040
TIR Roll	129.000397
TIR Heading	403.047089
Effect X	0.000047
Effect Y	-0.000013
Effect Z	-0.005039
X Increment	0.010000
Y Increment	0.010000
Z Increment	0.010000
Heading Increment	1.000000
Pitch Increment	1.000000
Roll Increment	1.000000

This displays the data that is used by the PV plugin.

These are the X, Y, Z position data and the Pitch, Roll, Heading attitude offsets that are currently being used

The position and attitude data coming from the TrackIR.

The current effects data that is being applied.

The X, Y, Z, Heading, Pitch, Roll Increment.

These are used by the head movement commands to determine how far the head will move.

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TrackIR

On Windows there are 2 extra menu options, TrackIR Enable and TrackIR Disable.



If the PV Control Panel is not visible.

Select the Plugins Menu and click on the PilotView menu.

Now click on the Control Panel sub menu.

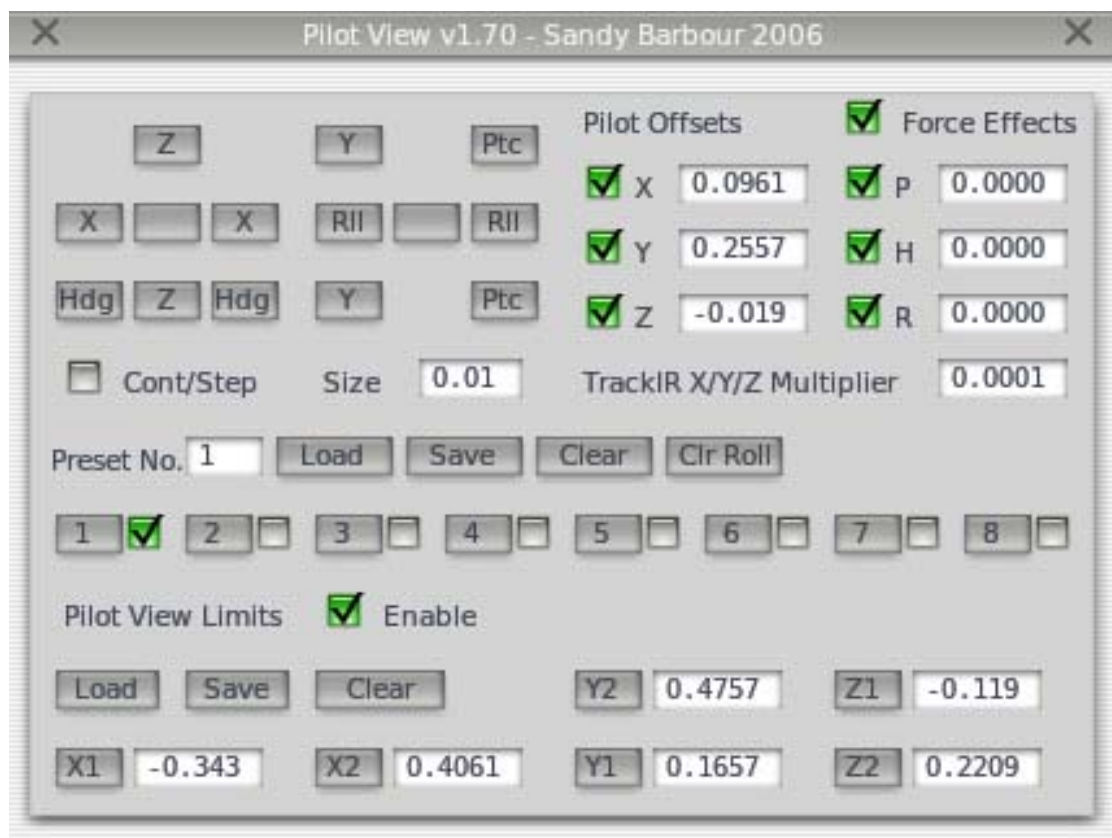
Select the Plugins Menu and click on the PilotView menu.

Now click on the TrackIR Enable sub menu.

The PV Control Panel will be modified as shown below.

It adds a check box beside the X, Y, Z, P, H and R text fields.

It also adds a Multiplier text field.



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When a check box is enabled the TrackIR data is used to update that field.
This allows 1 to 6 Degrees of Freedom.

The example above shows that the X, Y, Z, Pitch, Heading and Roll are being updated from the TrackIR data.

The TrackIR multiplier is applied to the X, Y, and X fields only.
This allows for fine control of the X, Y and Z pilot's head movement.

On non windows systems or if TrackIR is disabled the TrackIR Multiplier text is replaced with the "TrackIR not found or it is disabled" text.

On windows I have coded the plugin startup to do the following.

If I can't find a TrackIR installation then I disable the TrackIR menu options.
If I find a TrackIR installation then I enable the TrackIR menu options.

The reason for this is described below.

If you forget to start the TrackIR Application then I get an error when I am trying to enable the TrackIR on plugin startup.

Rather than disabling the TrackIR menu options which would require an Xplane restart I leave them enabled.

If you try to Enable the TrackIR it will fail and the PV Control panel will not be modified with the TrackIR controls.

An error will be also be written to the XPlane log.txt file.

This allows you to start the TrackIR application without exiting XPlane.
Once you have done this just select the TrackIR Enable menu option again.
This time the PV Control panel will be modified with the TrackIR controls.

Once the TrackIR is successfully enabled, the TrackIR Enable menu is disabled and the TrackIR Disable menu is enabled.

This is an interlock so that you can't try to Enable the TrackIR when it is already enabled.

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Using the PilotView.ini text file

The PilotView.ini file has various settings which are described below.

The format of this file is shown below.

Use ; for a comment line

Do not use comments in a definition line.

See the section on External Data at the end of the User Guide for information on the EnableExternalData setting.

[CONFIG]

EnableExternalData = 0

AutoStart = 0

EngineVibration = 1

AxisXIncrement = 0.01

AxisYIncrement = 0.01

AxisZIncrement = 0.01

[PV_TOGGLE]

HotKey = F1

HotKeyModifiers = Shift+Down

[PRESET1]

HotKey = F1

HotKeyModifiers = Control+Shift+Down

[PRESET2]

HotKey = F2

HotKeyModifiers = Control+Shift+Down

etc.

If the PilotView.ini file cannot be found the PV plugin will report a warning in the Log.txt file.

The PV plugin will use its own defaults when the file is not found.

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PilotView.ini file settings.

AutoStart

Set to 1 PV will be enabled on startup, set to 0 for no auto start.
Default is 0

EngineVibration

Set to 1 to enable Engine Vibration, set to 0 for no Engine Vibration.
Default is 1

TrackIRDisableOnAutoStart

Set to 1 so that the TrackIR device is disabled on Auto Startup, set to 0 so that the TrackIR device is enabled on Auto Startup.
Only effective if AutoStart is set to 1.
Default is 0

EffectsDisableOnAutoStart

Set to 1 so that the Effects are disabled on Auto Startup, set to 0 so that the Effects are enabled on Auto Startup.
Only effective if AutoStart is set to 1.
Default is 0

EngineVibrationOffInFlight

Set to 1 so that when the aircraft is in the air there is no Engine Vibration, set to 0 so that Engine Vibration is on when the aircraft is in the air.
Default is 0

EngineVibrationScalerX

EngineVibrationScalerY

EngineVibrationScalerZ

These set the amount of Engine Vibration.
Setting them to 0 will turn off engine vibration for that axis.
Defaults are 1.0

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TrackIREnableXAxis

TrackIREnableYAxis

TrackIREnableZAxis

TrackIREnablePitchAxis

TrackIREnableHeadingAxis

TrackIREnableRollAxis

These can be used to turn off an axis that you don't want to use. They save you having to do this in the PilotView control panel every time. Setting them to zero as shown below will turn off all the checkboxes.

TrackIREnableXAxis = 0

TrackIREnableYAxis = 0

TrackIREnableZAxis = 0

TrackIREnablePitchAxis = 0

TrackIREnableHeadingAxis = 0

TrackIREnableRollAxis = 0

Setting them to one will turn on respective checkbox.
Defaults are 0

ResetRollOffsetOnStartup

This will always set the roll dataref to zero on startup.

This is required because the dataref I am using for roll is not same as the other Pilot Head datarefs.

So if the user has a roll offset and does not disable PV before they exit Xplane this dataref will still have the value and will show the offset even in the 2D cockpit mode.

Default is 1

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AxisXIncrement
AxisYIncrement
AxisZIncrement

These all determine how fast the pilots head moves for the X, Y and Z axes respectively.
Defaults are 0.01

AxisPitchIncrement
AxisHeadingIncrement
AxisRollIncrement

These all determine how fast the pilots head moves for the Pitch, Heading and Role axes respectively.
Defaults are 1.0

AxisIncrementChange

This is used by the following commands :-
sandybarbour/pilotview/axis_increment_increase
sandybarbour/pilotview/axis_increment_decrease

These commands increase or decrease the increments that control how far the pilot's head will move.

Default is 0

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These are all the hotkeys that the PV plugin supports.
The format for a hotkey is this.

[PV_TOGGLE]
HotKey = F1
HotKeyModifiers = Shift+Down

[PRESET1]
HotKey = F1
HotKeyModifiers = Control+Shift+Down

[PV_TOGGLE]

Toggle whether the plugin functionality is enabled or disabled
This is not the same as Enable and Disable in Plugin Admin.

[TRACKIR_TOGGLE]

Toggle whether the TrackIR is enabled or disabled.

[EFFECTS_TOGGLE]

Toggle whether the G effect is enabled or disabled.

[CONTROL_PANEL_TOGGLE]

Toggle whether the control panel is shown or not.

[DATA_PANEL_TOGGLE]

Toggle whether the data display panel is shown or not.

[EFFECTS_PANEL_TOGGLE]

Toggle whether the effects panel is shown or not.

[VIBRATION_EFFECT_TOGGLE]

Toggle whether the vibration effect is enabled or disabled.

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[PRESET1]

Selects preset 1.

[PRESET2]

Selects preset 2.

[PRESET3]

Selects preset 3.

[PRESET4]

Selects preset 4.

[PRESET5]

Selects preset 5.

[PRESET6]

Selects preset 6.

[PRESET7]

Selects preset 7.

[PRESET8]

Selects preset 8.

The Example PilotView.ini file section shows how these settings are used.

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Example PilotView.ini file.

```
[CONFIG]
EnableExternalData = 0
AutoStart = 0
EngineVibration = 1
TrackIRDisableOnAutoStart = 0
EffectsDisableOnAutoStart = 0
EngineVibrationOffInFlight = 0
EngineVibrationScalerX = 1.0
EngineVibrationScalerY = 1.0
EngineVibrationScalerZ = 1.0
;TrackIREnableXAxis = 0
;TrackIREnableYAxis = 0
;TrackIREnableZAxis = 0
;TrackIREnablePitchAxis = 0
;TrackIREnableHeadingAxis = 0
;TrackIREnableRollAxis = 0
;ResetRollOffsetOnStartup = 1
AxisXIncrement = 0.01
AxisYIncrement = 0.01
AxisZIncrement = 0.01
AxisHeadingIncrement = 1.0
AxisPitchIncrement = 1.0
AxisRollIncrement = 1.0
AxisIncrementChange = 0.1
```

```
[PV_TOGGLE]
HotKey = F1
HotKeyModifiers = Shift+Down
```

```
[TRACKIR_TOGGLE]
HotKey = F2
HotKeyModifiers = Shift+Down
```

```
[EFFECTS_TOGGLE]
HotKey = F3
HotKeyModifiers = Shift+Down
```

```
[CONTROL_PANEL_TOGGLE]
HotKey = F4
HotKeyModifiers = Shift+Down
```

```
[DATA_PANEL_TOGGLE]
HotKey = F5
HotKeyModifiers = Shift+Down
```

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[EFFECTS_PANEL_TOGGLE]

HotKey = F6

HotKeyModifiers = Shift+Down

[VIBRATION_EFFECT_TOGGLE]

HotKey = F7

HotKeyModifiers = Shift+Down

[PRESET1]

HotKey = F1

HotKeyModifiers = Control+Shift+Down

[PRESET2]

HotKey = F2

HotKeyModifiers = Control+Shift+Down

[PRESET3]

HotKey = F3

HotKeyModifiers = Control+Shift+Down

[PRESET4]

HotKey = F4

HotKeyModifiers = Control+Shift+Down

[PRESET5]

HotKey = F5

HotKeyModifiers = Control+Shift+Down

[PRESET6]

HotKey = F6

HotKeyModifiers = Control+Shift+Down

[PRESET7]

HotKey = F7

HotKeyModifiers = Control+Shift+Down

[PRESET8]

HotKey = F8

HotKeyModifiers = Control+Shift+Down

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PilotView Commands

These commands can be used in XPlane V9, they will not work in versions prior to V9 as they did not support XPlane Comands

sandybarbour/pilotview/enable_toggle
sandybarbour/pilotview/trackir_toggle
sandybarbour/pilotview/effects_toggle
sandybarbour/pilotview/control_panel_toggle
sandybarbour/pilotview/data_panel_toggle
sandybarbour/pilotview/effects_panel_toggle
sandybarbour/pilotview/limits_toggle
sandybarbour/pilotview/vibration_effect_toggle
sandybarbour/pilotview/preset1
sandybarbour/pilotview/preset2
sandybarbour/pilotview/preset3
sandybarbour/pilotview/preset4
sandybarbour/pilotview/preset5
sandybarbour/pilotview/preset6
sandybarbour/pilotview/preset7
sandybarbour/pilotview/preset8

These do the same as the original hotkeys that have always been in the plugin.

sandybarbour/pilotview/previous_preset
sandybarbour/pilotview/next_preset

These allow the presets to be selected in sequence.

sandybarbour/pilotview/load_presets
sandybarbour/pilotview/save_presets
sandybarbour/pilotview/clear_presets
sandybarbour/pilotview/load_effects
sandybarbour/pilotview/save_effects
sandybarbour/pilotview/load_limits
sandybarbour/pilotview/save_limits
sandybarbour/pilotview/clear_limits

These just mimic the buttons on the PV control panel and effects panel

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sandybarbour/pilotview/axis_x_left
sandybarbour/pilotview/axis_x_right
sandybarbour/pilotview/axis_y_up
sandybarbour/pilotview/axis_y_down
sandybarbour/pilotview/axis_z_in
sandybarbour/pilotview/axis_z_out
sandybarbour/pilotview/axis_heading_left
sandybarbour/pilotview/axis_heading_right
sandybarbour/pilotview/axis_pitch_up
sandybarbour/pilotview/axis_pitch_down
sandybarbour/pilotview/axis_roll_left
sandybarbour/pilotview/axis_roll_right

These can be used in the Xplane joystick button advanced screen to set your joystick buttons to move the pilots head.

sandybarbour/pilotview/axis_clear_roll_offset

This can be used to clear the roll offset, this does the same as the Mentioned above in the INI additions.

sandybarbour/pilotview/axis_increment_increase
sandybarbour/pilotview/axis_increment_decrease
sandybarbour/pilotview/axis_increment_reset

These can be used in the Xplane joystick button advanced screen to set your joystick buttons to change the increments that are used by the movement commands above.

sim/general/up (Y axis)
sim/general/down (Y axis)
sim/general/left (X axis)
sim/general/right (X axis)
sim/general/zoom_in (Z axis)
sim/general/zoom_out (Z axis)
sim/view/pan_up (Pitch axis)
sim/view/pan_down (Pitch axis)
sim/view/pan_left (Heading axis)
sim/view/pan_right (Heading axis)

These are also used to move the pilots head.
They are Xplane commands and nothing to do with the PV plugin.
Note, there is no Xplane command for roll.

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IMPORTANT NOTES ON USING EXTERNAL DATA.

1.

It is up to the provider of the external data to handle any calibration with respect to their data.

The PilotView plugin does not and will not handle calibration of the external data.

2.

If a user is using external data from a provider, then any problems should be sent to the provider of the external data first and foremost as I will not be supporting the usage of external data.

That is because the data that is sent is out with my control.

The provider can get in touch with me directly to discuss the data they are sending.

If a user does email me about it then I will refer them to the provider of the external data.

I don't think I am being unreasonable here as I do not want to get bogged down with problems that may not be related to the PilotView plugin.

3.

When using External Data, the effects will work as normal.

If the provider provides their own effects, then the PilotView effects can be turned off in the PilotView Effects Control panel and then saved.

This will save that on a per aircraft basis

NOTE.

Turning off the effects is something that has always been in the PilotView plugin and is not something that has been added for the External Data.

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Using External Data with the PilotView Plugin.

To use external data with the plugin you need to add the line below to the PilotView.ini file.

EnableExternalData = 1

When the above line is in the PilotView.ini file TrackIR is not used.

The PilotView plugin will then use the custom datarefs below for its tracker data. These datarefs will show in DataRefEditor which is a handy plugin for testing that the custom datarefs are being updated properly.

EnableExternalData = 0

When the above setting is in the PilotView.ini file the plugin works with the TrackIR (if present) and the behaviour is the same as the original PilotView plugin.

If the above option is missing from the PilotView.ini file the plugin works with the TrackIR (if present) and the behaviour is the same as the original PilotView plugin.

Custom Datarefs

sandybarbour/pilotview/external_enabled

If this is set to 1 then the plugin will move the pilots head using the custom datarefs below.

If it is set to 0 (zero) then the pilots head will not be moved.

sandybarbour/pilotview/external_x

sandybarbour/pilotview/external_y

sandybarbour/pilotview/external_z

These are used to position the pilots head in the x, y, and z axes.

The units for these are the same as the plugin SDK pilots head dataref s which are cockpit metres.

If the PilotView Effects are on then this data will changed accordingly.

sandybarbour/pilotview/external_pitch

sandybarbour/pilotview/external_heading

sandybarbour/pilotview/external_roll

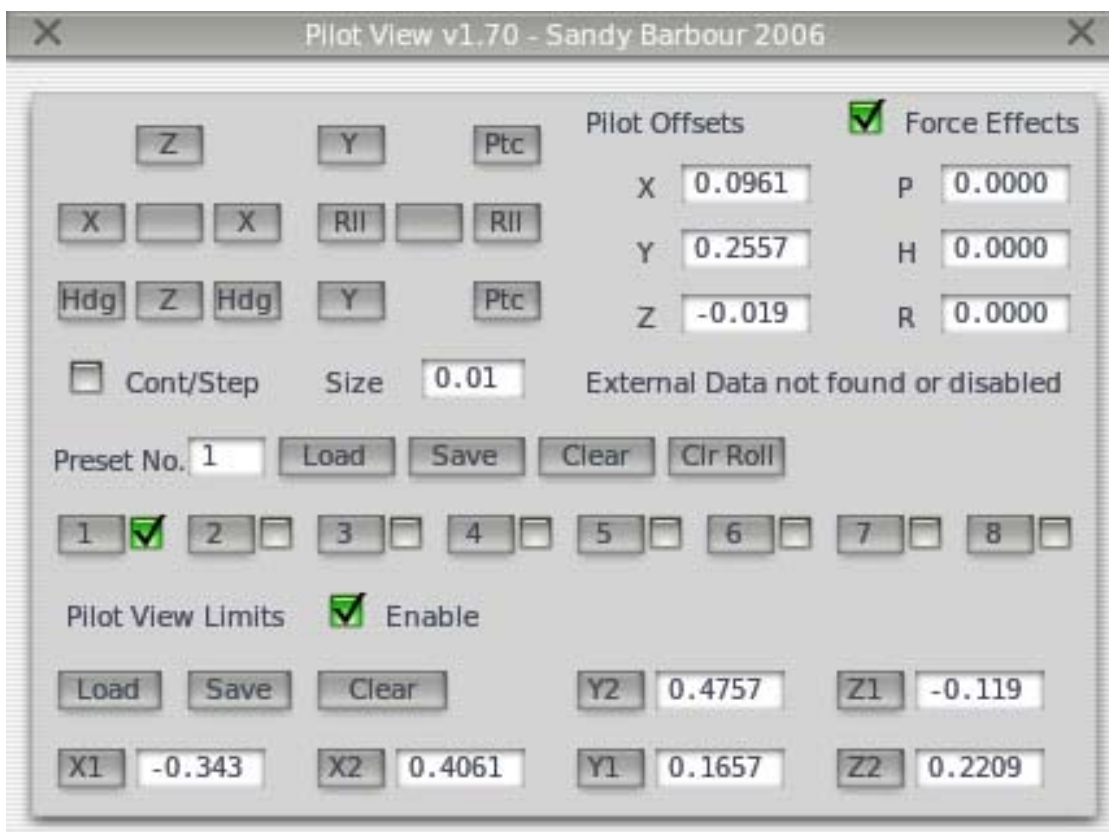
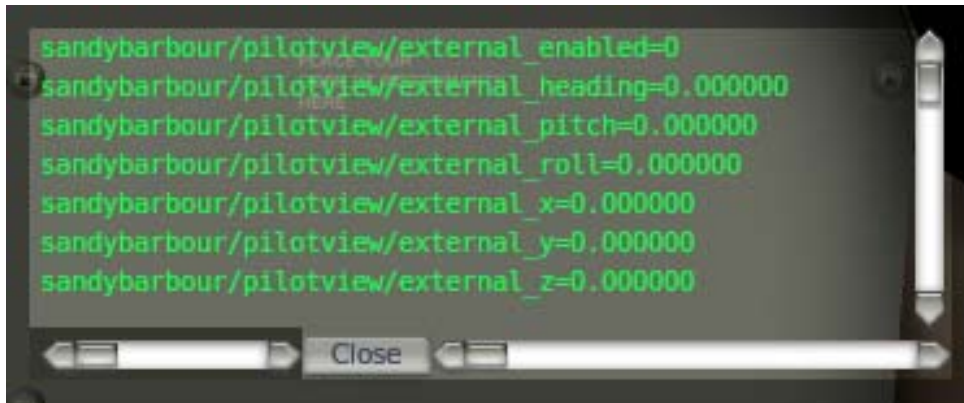
These are used to change the pilots head in the pitch, heading and roll axes.

The units for these are the same as the plugin SDK pilots head datarefs which are degrees..

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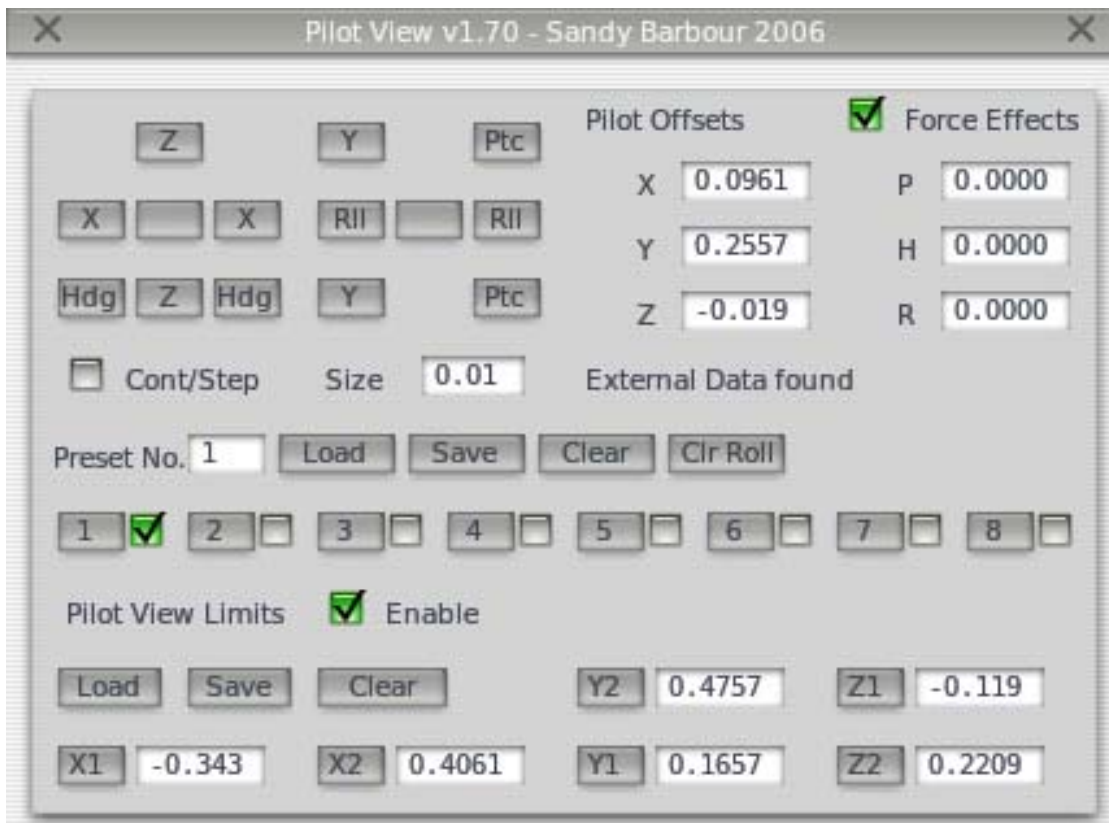
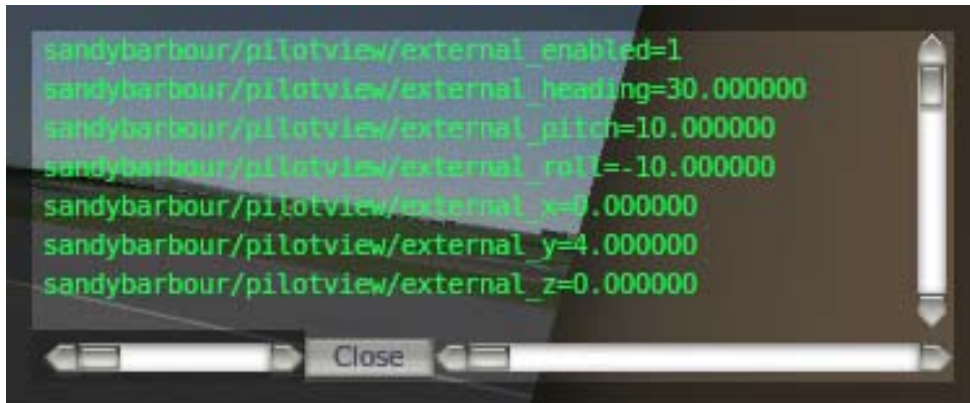


Custom Datarefs, Menu Items and Control Panel when no External Data present.

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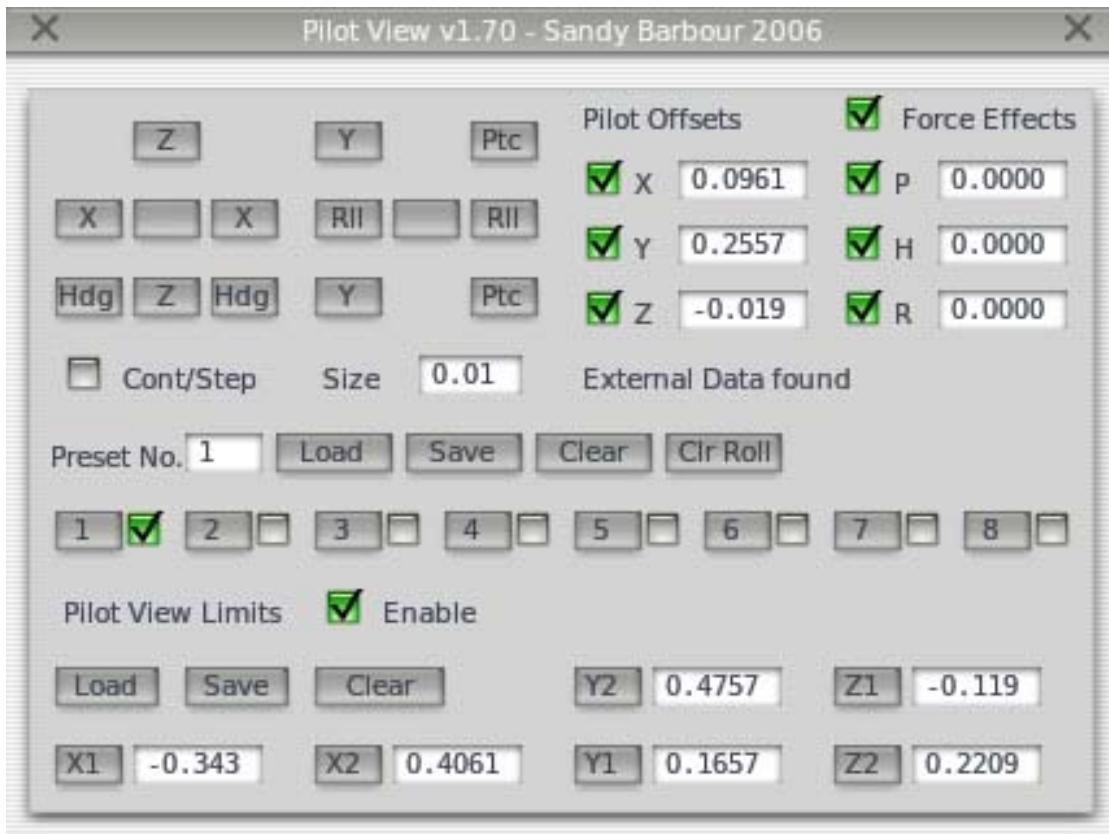
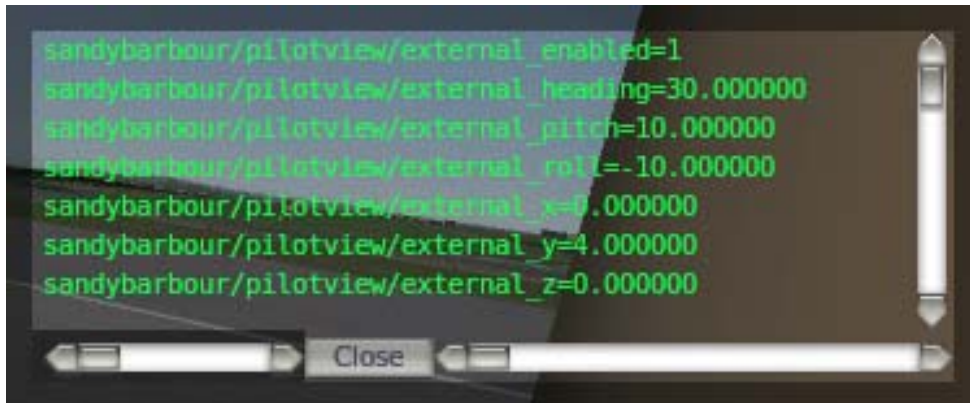


Custom Datarefs indicate External Data present , Menu Items and Control Panel indicate that External Data has been disabled by the plugin menu.

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Pilot View Plugin User Guide



Custom Datarefs indicate External Data present , Menu Items and Control Panel indicate that External Data has been enabled by the plugin menu.

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