

# Gebruik van Cameras in FSX

**Harm Meertens**

**LaMaMa 27 mei 2013**

**Werkgroep Flight Simulator**

**hcc groningen**



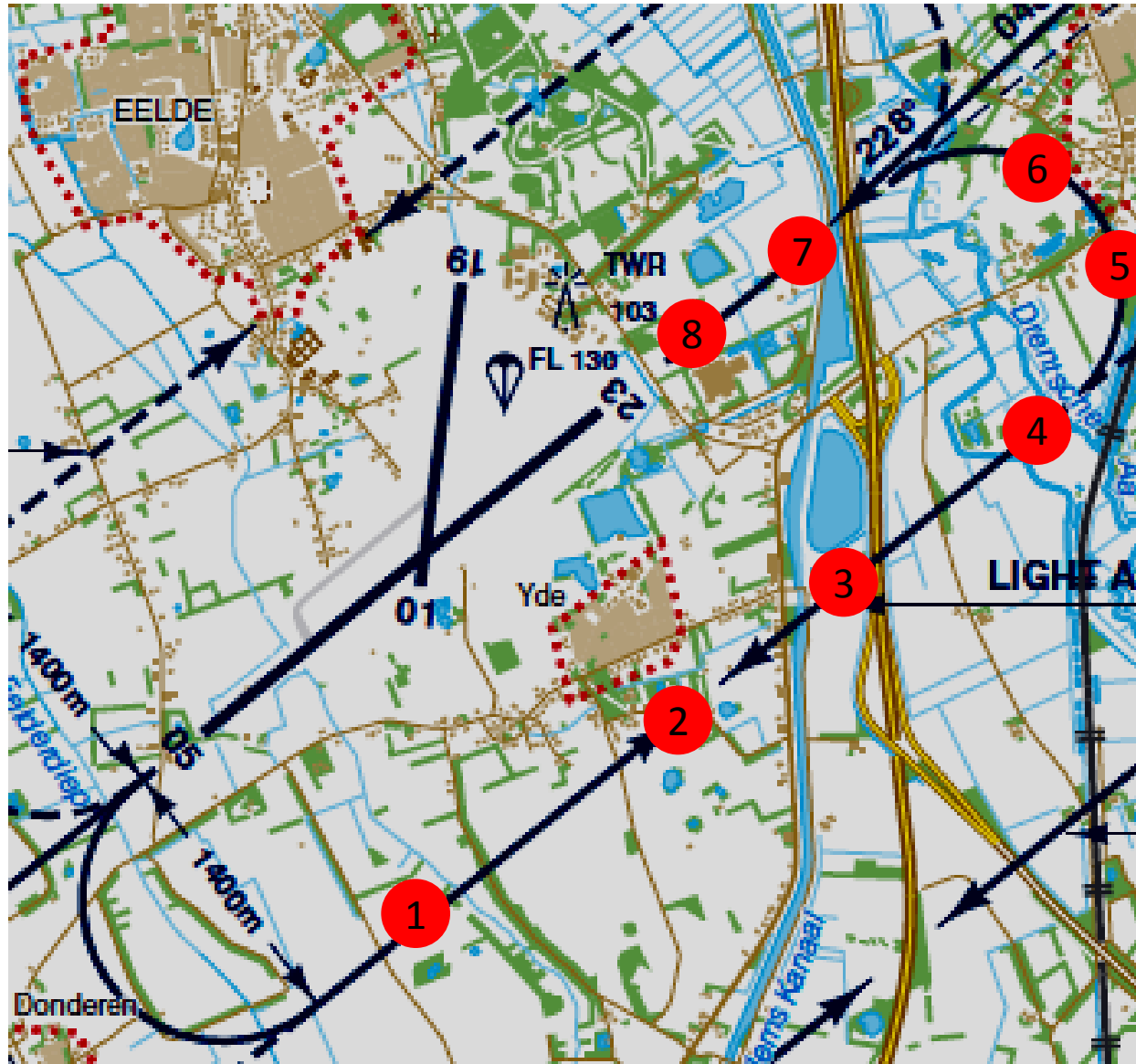
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## Indeling presentatie

- Vliegen in de virtuele cockpit**
- Wat is een Camera View**
- Cameras in FSX**
- Cameras toevoegen**
- Bepalen en instellen camera parameters**
- EZdok Camera addon**
- Samenvatting**

# Vliegen in de Virtuele Cockpit

## Circuit van RW23



# Vliegen in de Virtuele Cockpit Circuit van Eelde RW23



1

**Downwind**      **Virtuele Cockpit View**      **vooruitkijken**



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



1

**Downwind**

**Locked Spot**

**Vliegveld**

# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



**Downwind**

**Left View**

**Vliegveld**



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



2

**Crosswind**

**Left View**

**Yde**

**End runway**



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



**Downwind**

**Left View**

**A28 en plas**



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



**Downwind**

**Left View**

**Drentsche A en spoor**

# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



**Turn Base**

**Left View**

**Drentsche A**



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



6

**Turn Base**

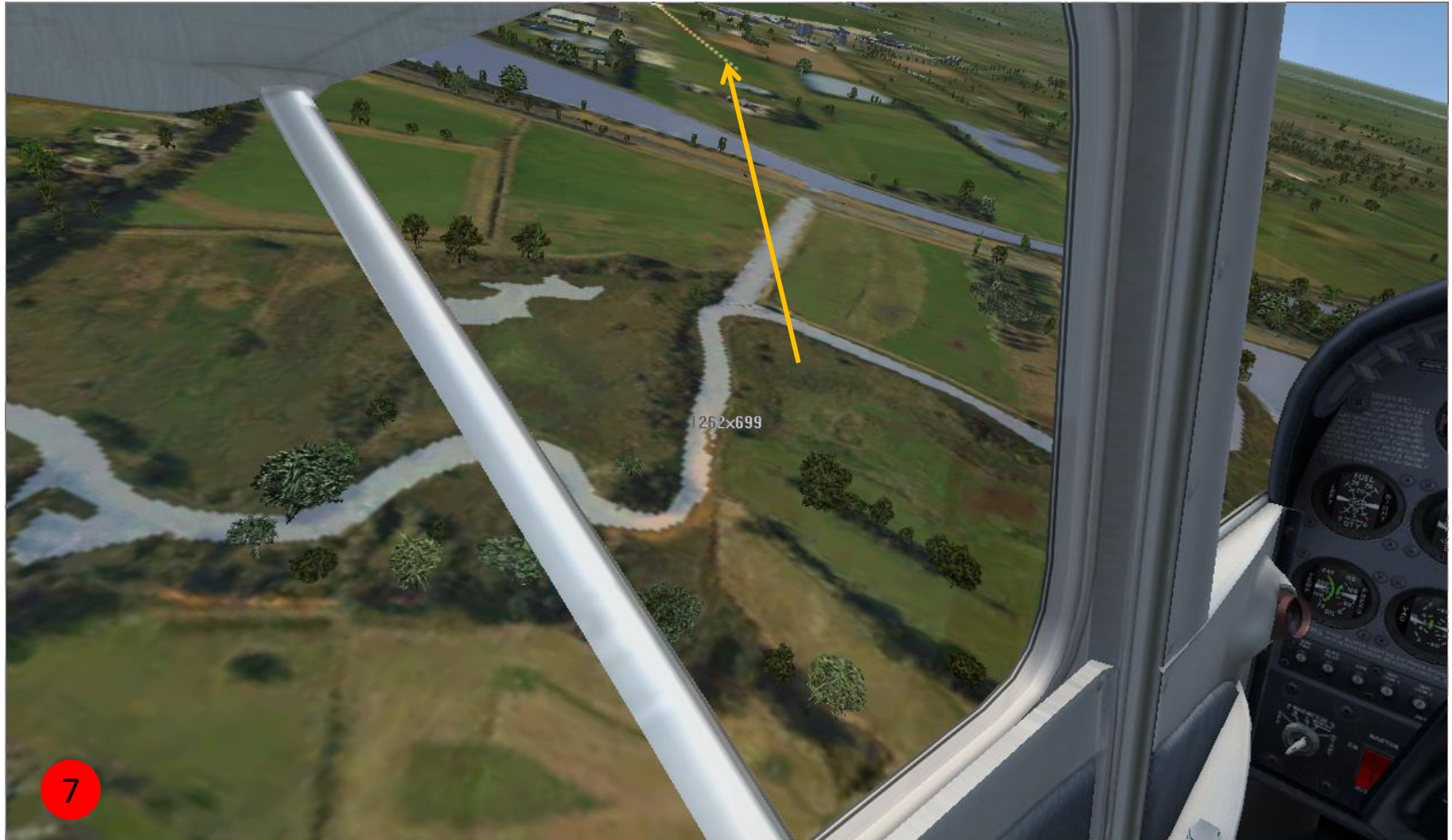
**Virtual Cockpit**

**Paterswoldse meer**



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



7

**Turn Final**

**Left View**

**End RW23**

# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



7

**Turn Final**

**Left View**

**End RW23**



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



7

Turn Final

Virtual Cockpit

End RW23



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



8

**Final**      **Virtual Cockpit**      **End RW23**

# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



8

**Final** Virtual Cockpit RW23



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



**Final** Left View Veilinghallen



# Vliegen in de Virtuele Cockpit

## Circuit van Eelde RW23



# Camera View



## Camera Configuration

This document describes the camera extensibility features of *Flight Simulator X*.

## Table of Contents

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- [What is new for end users](#)
- [What is new for developers](#)
- [Camera Configuration File Format](#)
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Informatie over Camera's in  
FSX Software Development Kit (SDK)

## Overview

# Camera View

Het **gezichtsveld** is het beeld dat bekeken kan worden zonder hoofd of ogen te bewegen.

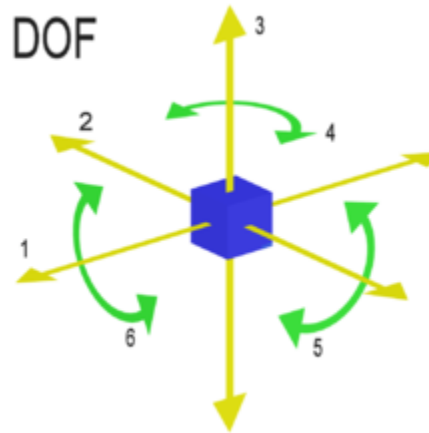
3 coördinaat-assen x, y, z

translaties langs 3 assen

- links / rechts
- omhoog / omlaag
- voren/ achteren

rotaties om 3 assen

- voorover / achterover (pitch)
- links / rechts (heading)
- linksom / rechtsom (bank)





# Camera View



**Zeer bekende View: Virtuele Cockpit**

## Camera View



**Nog een bekende View: Locked Spot**



# Camera View




**Nieuwe View: Magneto, Master en lichtschakelaars**

# Camera categorie

FSX kent het concept van camera categorieen.

Cameras met overeenkomstige karakteristieken worden gegroepeerd in categorieen.

- Cockpit, 
- Tower,
- Outside,
- Custom,
- Aircraft,
- Runway,
- Traffic,
- Multiplayer.

Het FSX camera systeem houdt bij welke camera het laatst was geselecteerd door de gebruiker.



# Camera categorie



Menu Views

# Camera categorie



Expanded cycling

FSX maakt het mogelijk om te rouleren door:

- de laatste actieve camera in elke category
- alle cameras *in* een category

S en SHIFT + S

A en SHIFT + A

Menu Views



# Twée typen cameras

## Global cameras

Zijn altijd aanwezig

**[CameraDefinition.001] t/m [CameraDefinition.011]**

Deze camera's is te vinden in:

**D:\FSX\cameras.cfg**

## Contextual cameras

Specifiek voor een bepaald vliegtuig, vlucht of missie.

Deze cameras zijn uitsluitend beschikbaar wanneer de gegeven situatie zich voordoet, bijvoorbeeld voor een Cessna Skyhawk 172SP.

Deze camera's is te vinden in:

**D:\FSX\SimObjects\Airplanes\C172\aircraft.cfg**

# Omschrijving Camera van de CS172

## Virtual Cockpit (Global Camera)

[CameraDefinition.002]

Title = Virtual Cockpit

Guid = {C95EAB58-9E4A-4E2A-A34C-D8D9D948F078}

Description = This is the description of the virtual cockpit view.

Origin = Virtual Cockpit

MomentumEffect = Yes

SnapPbhAdjust = Swivel

SnapPbhReturn = False

PanPbhAdjust = Swivel

PanPbhReturn = False

Track = None

ShowAxis = YES

AllowZoom = TRUE

InitialZoom = 0.7

SmoothZoomTime = 2.0

ZoomPanScalar = 1.0

ShowWeather = Yes

XyzAdjust = TRUE

ShowLensFlare=FALSE

Category = Cockpit

PitchPanRate=30

HeadingPanRate=75

PanAcceleratorTime=0

HotKeySelect=1



# Omschrijving Camera van de CS172

## Virtual Cockpit (Global Camera)

[CameraDefinition.002] ←

Title = Virtual Cockpit ←

Guid = {C95EAB58-9E4A-4E2A-A34C-D8D9D948F078} ←

Description = This is the description of the virtual cockpit view.

Origin = Virtual Cockpit ←

MomentumEffect = Yes

SnapPbhAdjust = Swivel

SnapPbhReturn = False

PanPbhAdjust = Swivel

PanPbhReturn = False

Track = None

ShowAxis = YES

AllowZoom = TRUE

InitialZoom = 0.7 ←

SmoothZoomTime = 2.0

ZoomPanScalar = 1.0

ShowWeather = Yes

XyzAdjust = TRUE

ShowLensFlare=FALSE

Category = Cockpit ←

PitchPanRate=30

HeadingPanRate=75

PanAcceleratorTime=0

HotKeySelect=1 ←

# Omschrijving Virtuel Cockpit Camera van de CS172

[CameraDefinition.002]

Title = Virtual Cockpit

Guid = {C95EAB58-9E4A-4E2A-A34C-D8D9D948F078}

Origin = Virtual Cockpit

Globally Unique Identifier

Category = Cockpit

InitialZoom = 0.7

HotkeySelect=1

[CameraDefinition.20]

Title = **Sjabloon**

Guid = {C95EAB58-9E4A-4E2A-A34C-D8D9D94**6**F078}

Origin = Virtual Cockpit

Category = Cockpit

InitialZoom = 0.7

HotkeySelect=**8**

HotkeySelect 1,2,3 en 4 voor global cameras FSX

# Omschrijving Virtuel Cockpit Camera van de CS172

[CameraDefinition.20]

Title = **Sjabloon**

Guid = {C95EAB58-9E4A-4E2A-A34C-D8D9D946F078}

Origin = Virtual Cockpit

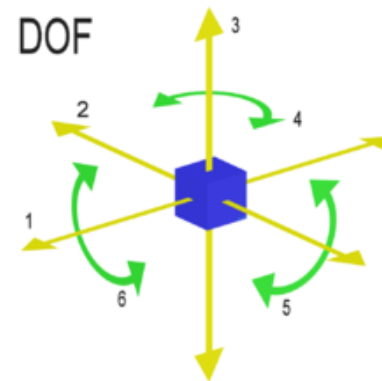
Category = Cockpit

InitialZoom = 0.7

HotkeySelect= **8**

InitialXYZ= 0.0, 0.0, 0.0

InitialPbh= 0, 0, 0

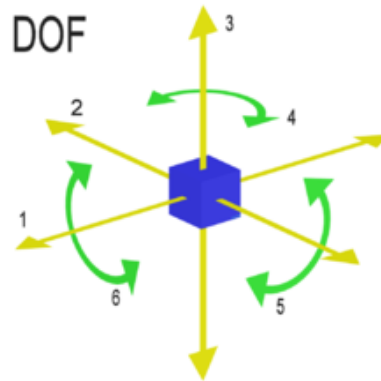




# Omschrijving Virtuel Cockpit Camera van de CS172

## Origin

Elke camera omschrijving moet een oorsprong hebben die het punt aangeeft waar de camera is geplaatst:



- ❑ Virtual Cockpit
  - de camera is geplaatst in het oogpunt dat is gedefinieerd in de [aircraft.cfg](#) van betreffend vliegtuig.
  
- ❑ Center
  - Uitwendige (spot plane) camera die wijst naar het centrum van het visuele model van het vliegtuig.

# Omschrijving Virtuel Cockpit Camera van de CS172

## InitialXyz

XYZ positie is de offset vanaf de default locatie.

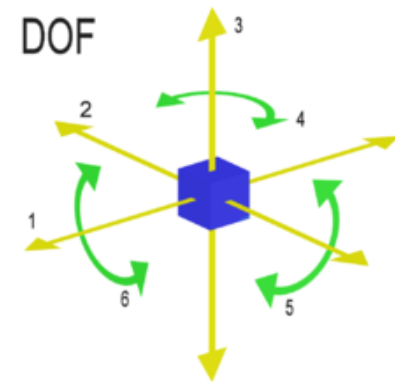
- X -500.0 to 500.0 meters
- Y -500.0 to 500.0 meters
- Z -500.0 to 500.0 meters

Defaults: 0.0

“XYZ” value types denote a set of three numeric values expressed as a comma-separated string in the configuration file.

(voorbeeld: InitialXyz=0.125, 0.234, -0.125).

Elke waarde kan positief of negatief zijn en er moet *spatie* tussen elke comma en de volgende waarde.



# Omschrijving Virtuel Cockpit Camera van de CS172

## InitialPbh

Pitch, bank en heading zijn de offset in orientatie van de default.

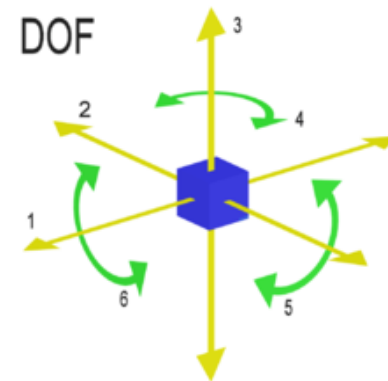
- ❑ - 90 tot 90.0 graden (pitch)
- ❑ -180 tot 180.0 graden (bank)
- ❑ -180 tot 180.0 graden (heading)

Defaults: 0.0

(voorbeeld: InitialPbh=0, 10, -40).

Positive pitches geeft een downward view.

Positive headings gaan naar rechts.





# Omschrijving Virtuel Cockpit Camera van de CS172

## HotkeySelect

HotkeySelect is een getal van 1 tot 10

Koppelt de Camera aan een van de **10** voorgedefinieerde Key Commands  
Met een Key Command kun je een camera activeren

Virtual Cockpit	(actie: <b>HotKeySelect=1</b>	Key Command: F9)
Spot	(actie: <b>HotKeySelect=2</b>	Key Command: F10)
Nearest Tower	(actie: <b>HotKeySelect=3</b>	Key Command: F11)
Top Down	(actie: <b>HotKeySelect=4</b>	Key Command: F12)

HotkeySelect nummers 0, 5, 6, 7, 8, en 9

nog beschikbaar voor andere vliegtuig specifieke cameras

# Toetsenbord commando's voor FSX acties

## FSX KEYBOARD COMMANDS



**NOTE:** MAKE SURE NUM LOCK IS OFF BEFORE USING NUM PAD COMMANDS.

TO ADD OR CUSTOMIZE KEYBOARD COMMANDS, ON THE OPTIONS MENU, POINT TO CONTROLS, THEN CLICK BUTTONS/KEYS. TO LEARN MORE, SEE THE USING THE KEYBOARD ARTICLE IN THE LEARNING CENTER

### SIMULATOR

Pause	P or BREAK
Full Screen Mode	ALT + ENTER
Menus (display/hide)	ALT
ATC Menu (display/hide)	ACCENT or SCROLL LOCK
Kneebboard (display/hide)	SHIFT+F10
Sound (on/off)	Q
Reset Current Flight	CTRL+; (SEMICOLON)
Save Flight	; (SEMICOLON)
Exit Flight Simulator	CTRL+C
Exit Flight Simulator Immediately	CTRL+BREAK
Joystick (on/off)	CTRL+K
Cycle Coordinates/Frame Rate	SHIFT+Z
Select Item 1	1
Select Item 2	2
Select Item 3	3
Select Item 4	4
Select Time Compression	R
Drop Objects	SHIFT+D
Fuel Truck (request)	SHIFT+F
Aircraft Labels (display/hide)	CTRL+SHIFT+L
Flying Tips (display/hide)	CTRL+SHIFT+X
Increase Selection	= (EQUAL SIGN)
Increase Selection Slightly	SHIFT+= (EQUAL SIGN)
Decrease Selection Slightly	SHIFT+- (MINUS SIGN)
Decrease Selection	- (MINUS SIGN)
Capture Screenshot	V
Jetway (attach/detach)	CTRL+J
End Flight	ESC

### CONTROL SURFACE

Ailerons (bank left)	Num Pad 4
Ailerons (bank right)	Num Pad 6
Aileron Trim (left)	CTRL+Num Pad 4
Aileron Trim (right)	CTRL+Num Pad 6
Rudder (yaw left)	Num Pad 0
Rudder (yaw right)	Num Pad ENTER
Rudder Trim (left)	CTRL+ Num Pad 0
Rudder Trim (right)	CTRL+Num Pad ENTER
Center Ailerons and Rudder	Num Pad 5
Pitch Down (elevator)	Num Pad 8
Pitch Up (elevator)	Num Pad 2
Elevator Trim Down	Num Pad 7
Elevator Trim Up	Num Pad 1
Flaps (retract fully)	F5
Flaps (retract incrementally)	F6
Flaps (extend incrementally)	F7
Flaps (extend fully)	F8
Extend/Retract Spoilers/Airbrakes	/ (FORWARD SLASH)
Arm Spoilers	SHIFT+ / (FORWARD SLASH)
Water Rudder Up/Down	CTRL+W

### GENERAL

Brake (set parking)	CTRL+. (PERIOD)
Pushback (start/stop)	SHIFT+P (then press 1 or 2 to turn tail right/left)
Brakes (apply/release)	. (PERIOD)
Brakes (apply left brake)	Num Pad + (PLUS)
Brakes (apply right brake)	Num Pad - (MINUS)
Landing Gear (extend/retract)	G
Tail wheel (lock/unlock)	SHIFT+G
Landing Gear (extend manually)	CTRL+G
Fuel Dump (on/off)	CTRL+SHIFT+D
Subpanels (display/hide)	SHIFT + 1 through 9
Smoke System ((on/off))	I
Cowl Flaps (open incrementally)	CTRL+SHIFT+V
Cowl Flaps (close incrementally)	CTRL+SHIFT+C
Tow Plane (call)	CTRL+SHIFT+Y
Tow Rope (release)	SHIFT+Y
Doors (select)	SHIFT+E

### ENGINE

On multiengine aircraft, engine commands affect all engines unless you first select an engine.

Select Engine	E+engine number (1-4)
Select All Engines	E+1+2+3+4
Engine Autostart	CTRL+E
Throttle (cut)	F1
Reverse Thrust (turboprops/jets)	F2 (press and hold)
Throttle (decrease)	F2 or Num Pad 3
Throttle (increase)	F3 or Num Pad 9
Throttle (full)	F4
Propeller (low RPM)	CTRL+F1
Propeller (decrease RPM)	CTRL+F2
Propeller (increase RPM)	CTRL+F3
Propeller (high RPM)	CTRL+F4
Mixture (idle cutoff)	CTRL+SHIFT+F1
Mixture (lean quickly)	CTRL+SHIFT+F2
Mixture (enrich)	CTRL+SHIFT+F3
Mixture (full rich)	CTRL+SHIFT+F4
Carb Heat/Engine Anti-ice ((on/off))	H
Magnetos (select)	M
Master Battery/Alternator (select)	SHIFT+M
Jet Starter (select)	J
Helicopter Rotor Clutch ((on/off))	SHIFT+. (PERIOD)
Helicopter Rotor Governor ((on/off))	SHIFT+, (COMMA)
Helicopter Rotor Brake ((on/off))	SHIFT+B
Increase Selection	= (EQUAL SIGN)
Increase Selection Slightly	SHIFT+= (EQUAL SIGN)
Decrease Selection Slightly	SHIFT+- (MINUS SIGN)
Decrease Selection	- (MINUS SIGN)

### MISSION COMMANDS

Compass/Pointer (on/off)	U
Compass Objective (next)	K
Compass Objective (previous)	SHIFT+K

### LIGHTS

Lights - all (on/off)	L
Strobe Lights (on/off)	O
Panel Lights (on/off)	SHIFT+L
Landing Lights (on/off)	CTRL+L
Landing Light (tilt down)	CTRL+SHIFT+Num Pad 2
Landing Light (tilt left)	CTRL+SHIFT+Num Pad 4
Landing Light (tilt right)	CTRL+SHIFT+Num Pad 6
Landing Light (tilt up)	CTRL+SHIFT+Num Pad 8
Landing Light (center)	CTRL+SHIFT+Num Pad 5

### RADIO

ATC Window (display/hide)	ACCENT or SCROLL LOCK
VOR 1 Ident (on/off)	CTRL+1
VOR 2 Ident (on/off)	CTRL+2
MKR Ident (on/off)	CTRL+3
DME Ident (on/off)	CTRL+4
ADF Ident (on/off)	CTRL+5
Standby Frequency (swap)	X
COM Radio (select)	C
NAV Radio (select)	N
OBS indicator (select)	SHIFT+V
ADF (select)	CTRL+SHIFT+A
DME (select)	F
Transponder (select)	T
Increase Selection	= (EQUAL SIGN)
Increase Selection Slightly	SHIFT+= (EQUAL SIGN)
Decrease Selection Slightly	SHIFT+- (MINUS SIGN)
Decrease Selection	- (MINUS SIGN)

### AUTOPILOT

Master (on/off)	Z
Flight Director (on/off)	CTRL+F
Wing Leveler (on/off)	CTRL+V
Yaw Damper (on/off)	CTRL+D
Altitude Hold (on/off)	CTRL+ Z
Altitude Bug (select)	CTRL+SHIFT+Z
Heading Hold (on/off)	CTRL+H
Heading Bug (select)	CTRL+SHIFT+H
Airspeed Hold (on/off)	CTRL+R
Mach Hold (on/off)	CTRL+M
Autothrottle (arm)	SHIFT+R
Autothrottle engage (TOGA)	CTRL+SHIFT+G
Nav 1 Hold (on/off)	CTRL+N
Approach Mode (on/off)	CTRL+A
Back Course Mode (on/off)	CTRL+B
Localizer Hold (on/off)	CTRL+O
Attitude Hold (on/off)	CTRL+T
Increase Selection	= (EQUAL SIGN)
Increase Selection Slightly	SHIFT+= (EQUAL SIGN)
Decrease Selection Slightly	SHIFT+- (MINUS SIGN)
Decrease Selection	- (MINUS SIGN)

### INSTRUMENTS

Heading Indicator (reset)	D
Altimeter (reset)	B
Pitot Heat (on/off)	SHIFT+H
Increase Selection	= (EQUAL SIGN)
Increase Selection Slightly	SHIFT+= (EQUAL SIGN)
Decrease Selection Slightly	SHIFT+- (MINUS SIGN)
Decrease Selection	- (MINUS SIGN)

### VIEWS

2-D Cockpit (cycle panels)	W
Snap to Panel View	SHIFT+Num Pad 0
View (next category)	S
View (previous category)	SHIFT+S
View (next view in category)	A
View (previous view in category)	SHIFT+A
View (previous view toggle)	CTRL+S
View (default zoom)	BACKSPACE
Look (snap)	Num Pad
Look (pan)	Hat switch or thumbstick
Look (reset to forward view)	SHIFT+Num Pad DEL
Look Using Mouse (on)	Hold SPACEBAR
Look Using Mouse (on/off)	SHIFT+O
View (open new window)	[ (LEFT BRACKET)
View (close selected window)	] (RIGHT BRACKET)
View (open new top-down window)	SHIFT+] (RIGHT BRACKET)
Virtual Cockpit	F9
2-D Cockpit	F10
Locked Spot View	F11
Top-Down View	F12
2-D Panel Transparency	CTRL+SHIFT+T (+ or -)
Window (bring selected to front)	' (APOSTROPHE)
Zoom In	= (EQUAL SIGN)
Zoom Out	- (HYPHEN)
View (next window)	CTRL+TAB
View (previous window)	CTRL+SHIFT+TAB
Eye point (move back)	CTRL+ENTER
Eye point (move down)	SHIFT+BACKSPACE
Eye point (move forward)	CTRL+BACKSPACE
Eye point (move left)	CTRL+SHIFT+BACKSPACE
Eye point (move right)	CTRL+SHIFT+ENTER
Eye point (move up)	SHIFT+ENTER
Eye point (reset)	CTRL+SPACE

### MULTIPLAYER

Chat Window (display/hide)	CTRL+SHIFT+]
Chat Window (make active)	ENTER
Voice (start transmit)	CAPS LOCK
Voice (stop transmit)	^CAPS LOCK
Voice (start transmit to all)	SHIFT+CAPS LOCK
Voice (stop transmit to all)	^SHIFT+CAPS LOCK
Transfer/Accept Control	SHIFT+T
Follow Other Player	CTRL+SHIFT+F



## VIEWS **Action** **Command**

2-D Cockpit (cycle panels)	W
Snap to Panel View	SHIFT+Num Pad 0
View (next category)	S
View (previous category)	SHIFT+S
View (next view in category)	A
View (previous view in category)	SHIFT+A
View (previous view toggle)	CTRL+S
View (default zoom)	BACKSPACE
Look (snap)	Num Pad
Look (pan)	Hat switch or thumbstick
Look (reset to forward view)	SHIFT+Num Pad DEL
Look Using Mouse (on)	Hold SPACEBAR
Look Using Mouse (on/off)	SHIFT+O
View (open new window)	[ (LEFT BRACKET)
View (close selected window)	] (RIGHT BRACKET)
View (open new top-down window)	SHIFT+] (RIGHT BRACKET)
Virtual Cockpit	F9
2-D Cockpit	F10
Locked Spot View	F11
Top-Down View	F12
2-D Panel Transparency	CTRL+SHIFT+T (+ or -)
Window (bring selected to front)	' (APOSTROPHE)
Zoom In	= (EQUAL SIGN)
Zoom Out	- (HYPHEN)
View (next window)	CTRL+TAB
View (previous window)	CTRL+SHIFT+TAB
Eyepoint (move back)	CTRL+ENTER
Eyepoint (move down)	SHIFT+BACKSPACE
Eyepoint (move forward)	CTRL+BACKSPACE
Eyepoint (move left)	CTRL+SHIFT+BACKSPACE
Eyepoint (move right)	CTRL+SHIFT+ENTER
Eyepoint (move up)	SHIFT+ENTER
Eyepoint (reset)	CTRL+SPACE

Akties die te maken hebben met een **View**

keuze van camera

rotatie van view

pitch

bank

heading

keuze van camera

vergroten/verkleinen view

verplaatsing oogpunt

naar links / rechts

naar boven / beneden

naar voren / achter



# Settings Controls

## SETTINGS - CONTROLS

CALIBRATION

**BUTTONS / KEYS**

CONTROL AXES

Controller type:

BU0836X Interface

Event category:

All events

Flight mode

Normal

Slew

Assignment list:

Event	Keyboard	Joystick	Repeat
Eyepoint (move back)	CTRL + ENTER		
Eyepoint (move down)	SHIFT + BACKSPACE		
Eyepoint (move forward)	CTRL + BACKSPACE		
Eyepoint (move left)	CTRL + SHIFT + BACKSPACE		
Eyepoint (move right)	CTRL + SHIFT + ENTER		
Eyepoint (move up)	SHIFT + ENTER		
Eyepoint reset	CTRL + SPACE		
Flaps (extend fully)	F8		
Flaps (extend incrementally)			
Flaps (retract fully)	F5		

**Eyepoint**

New Assignment...

Delete Key Assignment

Change Assignment...

Delete Joystick Assignment

Reset Defaults

HELP

CANCEL

OK

# Settings Controls

Command: POV1

Action: eyepoint left  
eyepoint right  
eyepoint up  
eyepoint down

Command: POV2  
Action: Look Pan

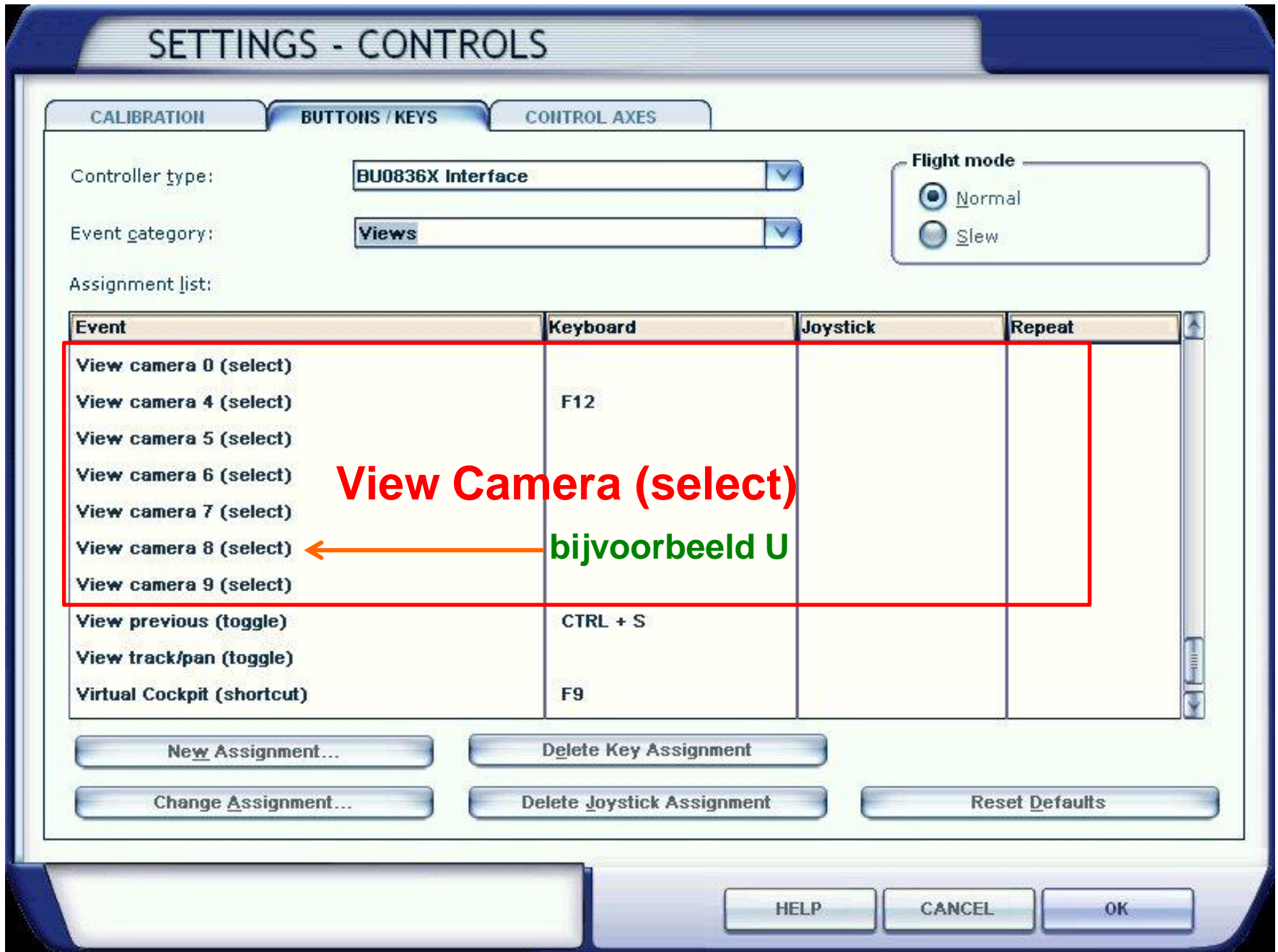


Command: Button 8  
Action: reload user aircraft

Command: Throttle Hat  
Action: eyepoint forward  
eyepoint backward

**Saitek X52 Pro Flight Control System  
USB Joystick**

# Settings Controls





# Settings Controls



<b>Left Seat</b>	<b>Cockpit</b>	<b>Right Seat</b>
<b>Left View</b>		<b>Radio Stack</b>
<b>Light Switches</b>	<b>Pedestal</b>	
<b>Virtual Cockpit</b>	<b>Locked Spot</b>	<b>Top-Down</b>
<b>Zoom In</b>	<b>Eyepoint Reset Zoom 1x</b>	<b>Zoom Out</b>

**Kastje met 16 schakelaars**

# Stappen voor maken van een nieuwe camera (1)

- ❑ maak een copie van de default **cameras.cfg** file (D:\FSX\cameras.cfg) en open deze in **kladblok**
  
- ❑ maak een copie van **[CameraDefinition.002]** en plak copie in een nieuw kladblok
  
- ❑ voeg de volgende regels toe
  - InitialXyz= 0, 0, 0
  - InitialPbh= 0, 0, 0
  
- ❑ verander van de camera
  - nummer               bijvoorbeeld[CameraDefinition.20]
  - naam                   bijvoorbeeld "Sjabloon"
  - GUID                   verander enkele digits van de bestaande Guid
  
- ❑ sla deze camera setting als **CameraBasic** file op

## Stappen voor maken van een nieuwe camera (2)

- kies een vliegtuig waar je een camera aan wilt toevoegen
- maak een copie van de **aircraft.cfg** file  
(D:\FSX\SimObjects\Airplanes\C172\ aircraft.cfg)
- open de **aircraft.cfg** file
- zoek de plaats waar de camera's staan [CameraDefinition.\*\*\*]
- plak de tekst van de CameraBasic file [CameraDefinition.20] na de laatste camera



## Stappen voor maken van een nieuwe camera (3)

- ❑ maak een koppeling tussen actie “View Camera 8 (Select) ” en
  - een joystick-knop of
  - een toets van het toetsenbord (bijvoorbeeld toets U)
  
- ❑ gebruik hiervoor
  - Setting Controls in FSX of
  - FSUIPC
  
- ❑ kies met joystick-knop of met toets U, de actie View Camera 8 (is Left View)
  
- ❑ stel de gewenste camera positie en kijk-richting in met
  - eyepoint (move up/down, left/right, back/forward)
  - view pan (HAT switch)
  
- ❑ sla de vlucht op, bijvoorbeeld als “Present” flight  
C:\Users\Pilot\Documents\Flight Simulator Files\Present.FLT)

## Stappen voor maken van een nieuwe camera (4)

- ❑ open `aircraft.cfg`
- ❑ open `Present flight.FLT`
- ❑ zoek naar tekst “CurrentCamera”

`CurrentCamera={.....}`

- ❑ kopieer deze GUID en plaats die in bewerken/zoeken en zoek de GUID.
- ❑ De Zoom, Translation en Rotation die bij de current GUID horen, geven de gewenste instelling van de FSX camera
  - Zoom=                      overnemen naar    `InitialZoom=`
  - Translation=              overnemen naar    `InitialXYZ=`
  - Rotation=                  overnemen naar    `InitialPbh=`

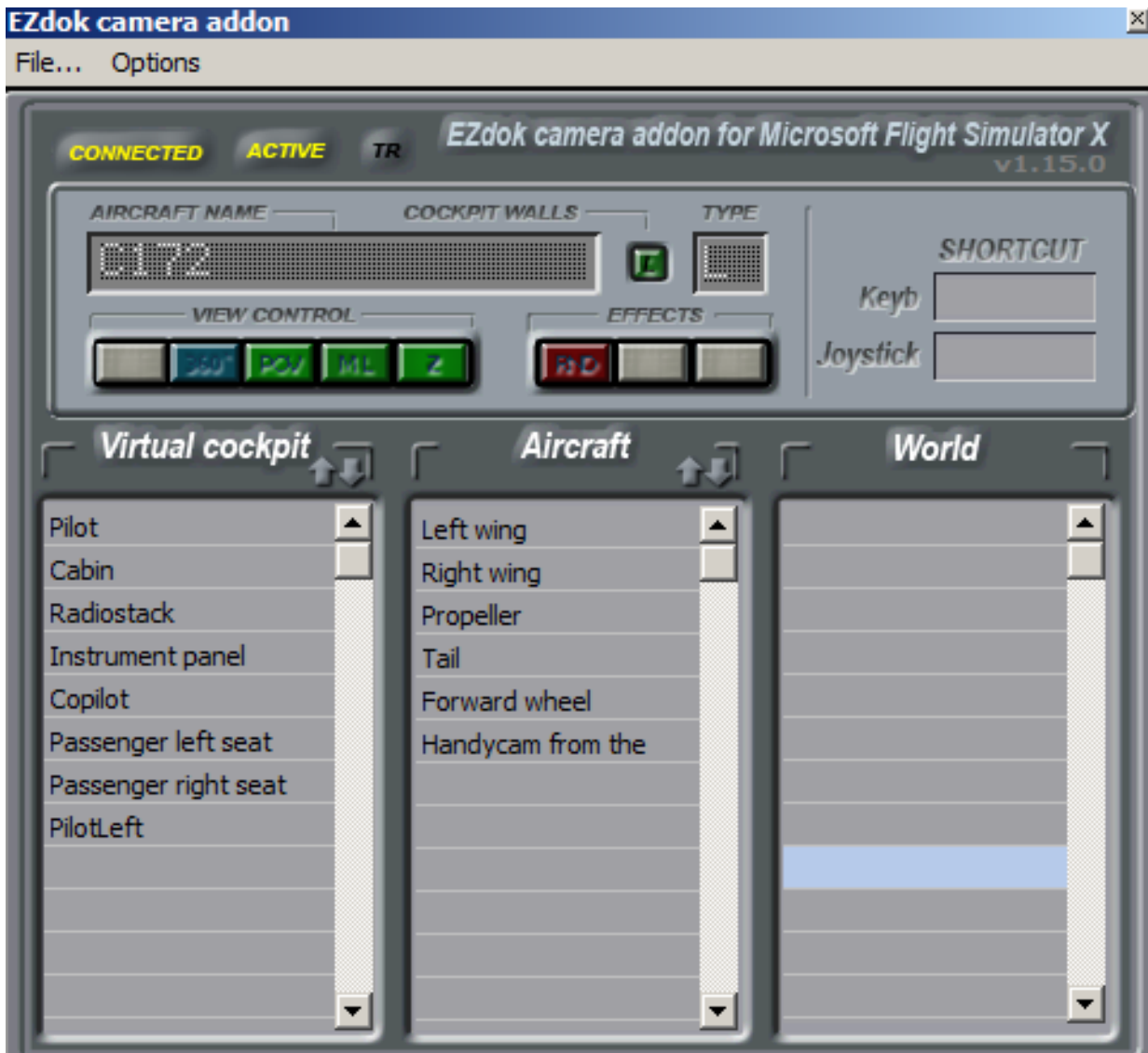
NB Rotation geeft `pitch, heading, banking` en InitialPbh geeft `pitch, banking, heading`

## Stappen voor maken van een nieuwe camera (5)

- ❑ gevonden Guid in file **Present.FLT** ziet er bijvoorbeeld uit als:  
[Camera.1.3]  
Guid={C95EAB58-9E4A-4E2A-A34C-D8D9D945F078}  
Zoom=0.5  
Translation=-0.056264366954565048, 0.046780422329902649, 0  
Rotation=15.436355590820313, 0, 0
  
- ❑ Neem voor betreffende camera in file **aircraft.cfg** nu over:  
Zoom=0.5  
Translation=-0.056, 0.046, 0      (uitgedrukt in meters)  
Rotation=15.4, 0, 0      (uitgedrukt in graden)
  
- ❑ Save **aircraft.cfg** file
  
- ❑ action: reload user aircraft (of action: select aircraft voor zelfde vliegtuig)
  
- ❑ select de camera in FSX (button of letter **U**)
  
- ❑ controleer dat de View van de camera is als gepland



# EZdok Camera Addon



**Biedt uitgebreide mogelijkheden voor instelling van allerlei Cameras**

# EZdok Camera Addon

The image shows two configuration windows from the EZdok Camera Addon. The top window is titled "EZCA VIEW SYSTEM" and has two columns: "Keyboard" and "Joystick". The "Keyboard" column lists actions like Forward, Backward, Left, Right, Up, Down, Acceleration 1, Acceleration 2, Global enable, Edit mode, and Show main form, each with a corresponding keyboard key or combination. The "Joystick" column lists actions like J2 Btn 16, J2 Btn 17, J2 Btn 20, J2 Btn 12, J2 Btn 13, J2 Btn 19, and J1 Btn 32. An orange arrow points from the text "verplaatsen oorsprong" to the "J2 Btn 20" entry. Below the keyboard and joystick columns are "Emulate MM button" fields and a "Mode" selector with radio buttons for "T" and "H". The bottom window is titled "DEFAULT VIEW SYSTEM" and also has "Keyboard" and "Joystick" columns. The "Keyboard" column lists actions like Next in current category, Prev. in current category, Next category, and Prev. category, with keys A, Sht+ A, S, and Sht+ S. The "Joystick" column lists J1 Btn 5. An orange arrow points from the text "Rotaties Pitch, banking, heading veranderen richting" to the "J1 Btn 5" entry.

EZCA VIEW SYSTEM	
Keyboard	Joystick
Forward	J2 Btn 16
Backward	J2 Btn 17
Left	J2 Btn 20
Right	J2 Btn 12
Up	J2 Btn 13
Down	J2 Btn 19
Acceleration 1	Num 1
Acceleration 2	Num 4
Global enable	Num 3
Edit mode	Num 2
Show main form	Sht+ D
Emulate MM button	
Mode <input type="radio"/> T <input type="radio"/> H	

DEFAULT VIEW SYSTEM	
Keyboard	Joystick
Next in current category	J1 Btn 5
Prev. in current category	
Next category	
Prev. category	

**Translaties**  
**x, y, z**  
**verplaatsen oorsprong**

**Rotaties**  
**Pitch, banking, heading**  
**veranderen richting**

The "Configure joysticks" window shows three joystick configurations. Each configuration has a dropdown menu for the joystick name, a checkbox for "Joystick button for inverse", and a text field for "HAT-switch as button". The first joystick is "Saitek X52 Pro Flight Controller", the second is "BU0836X Interface", and the third is "USB Joystick". An orange arrow points from the text "Rotaties Pitch, banking, heading veranderen richting" to the "USB Joystick" dropdown.

Configure joysticks		
	Joystick button for inverse	HAT-switch as button
J1 Saitek X52 Pro Flight Controller	<input type="checkbox"/>	
J2 BU0836X Interface	<input type="checkbox"/>	
J3 USB Joystick	<input type="checkbox"/>	

# Samenvatting

- Vliegen in de virtuele cockpit**  
goed om je heen kunnen kijken is essentieel
- Wat is een Camera View**  
wat zie ik
- Cameras in FSX**  
fraai opgezet
- Cameras toevoegen**  
geen probleem, snelle toegang , helaas beperkt tot 10 hotkeys
- Bepalen en instellen camera parameters**  
oefening baart kunst, niet bang zijn
- EZdok Camera addon**  
nuttige addon om gemakkelijk te oriënteren  
groot aantal cameras mogelijk