FS Recorder for FS2004 version 1.32
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Introduction

FS Recorder is an addon module for FS2004, which can record flights, save them to files and play them back similar to the FS instant replay and flight video recorder, but with a lot more features. **This version only works with FS2004 and was only tested with the 9.1 update installed!**
The Recorder does NOT record video files (like .avi), it records data like aircraft position, speed, etc., so the recordings can only be played inside FS. This allows watching your recordings from different views.

List of main features:
- recording flights of unlimited length
- replay the last minutes, even if no recording was started
- recording and playback of AI traffic
- playback of one or more recordings as (AI) traffic
- recording a new flight during playback as traffic (e.g. for formation flights)
- jumping/searching forward/backward during playback
- playback control via keyboard or control window
- stop playback at any position to continue manually
- loop part of a recording
- change playback speed
- custom keyboard controls
- recorded data is customizable

Furthermore the module includes advanced features for the tower, spot plane and VC views:
- multiple tower/spot/VC views, which can be selected via the menu or keyboard
- optional manual panning of the view direction in tower/spot views
- automatic zooming
- saving/loading sets of tower/spot/VC views

If you have problems using the Recorder, found a bug, want to suggest improvements or have any other comments, visit the support forums at www.fs-recorder.net. Refer to the support chapter at the end of this document for more details.

Installation

<u>Automatic Installation</u>
First extract the zip file to a directory of you choice. Then start the included Windows Installer file *Setup.msi* and follow the instructions. FS2004 has to be installed on your system, otherwise the installer will not run. If you have a previous version of FS Recorder for FS2004 installed, you have to uninstall it first.
The module itself will be installed into the FS2004 Modules folder. The documentation will be installed into the directory you enter in the installation wizard.

<u>Manual installation</u>
Copy the file *Recorder.dll* into the *Modules* subfolder of your FS2004 main directory. That's it.

Uninstalling

If you used the installer for installation, select the *Uninstall* shortcut under *Start > Programs > FS Recorder for FS2004*. Or you open the Windows control panel and select *Software*, find *FS Recorder for FS2004* in the list and select *Remove*.

If you did a manual installation, just remove the file *Recorder.dll* from your FS2004 Modules folder.

Using FS Recorder

The Recorder is used via the *Recorder* entry in the FS2004 main menu and via keyboard shortcuts.

Recording a flight

To start recording select *Record* from the *Recorder* menu or press the key combination assigned to *Record* in the keyboard controls dialog. The following dialog window shows up (if *No recording dialogs* is enabled in the settings dialog, recording starts immediately):
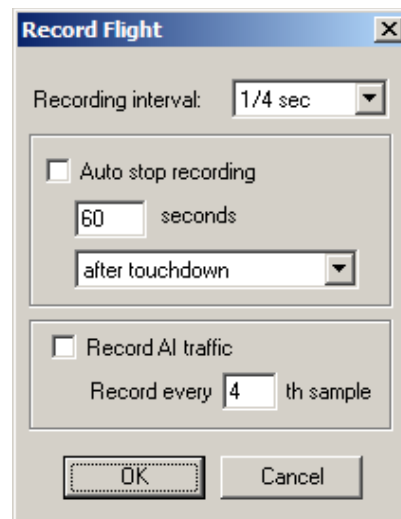
You can select one of five recording intervals, 1/8, 1/4, 1/2, 1, or 2 seconds. Smaller intervals will result in a larger size of the recorded file, but also in a more accurate and smooth playback of the flight.

The option *Auto stop recording* allows to automatically stop recording a certain time after touchdown, engine shutdown or start of recording.

If you also want to record the AI traffic, enable the *Record AI traffic* option. To reduce the size of the recorded file, the recording interval for AI aircraft can be increased by a factor, which is entered in the field *Record every* n-*th sample* (e.g. if you enter 1, AI traffic will be recorded at the same interval as your aircraft; if you choose a recording interval of 1/4 sec, and enter a value of 8 here, AI traffic will be recorded at an interval of 2 seconds, etc.). You can also limit the number of recorded AI aircraft in the settings dialog, to reduce file size and memory demand. **Note that recording lots of AI traffic at short intervals can result in very large files!**

Pressing the *OK* button starts recording. If the *Display recording* option is checked in the settings dialog, *RECORDING* will be displayed in the lower right corner during recording, together with the number of recorded seconds.

To stop recording select *Stop recording* from the *Recorder* menu or press the key assigned to *Stop recording/playback* in the keyboard controls dialog (default: ESC). When recording is stopped either manually or automatically, and *No recording dialogs* is not enabled in the settings dialog, a standard file selection dialog appears. Entering a file name and pressing the *Save* button will save the flight to the file and stop recording. If you press the *Cancel* button, you will be asked, if you want to continue recording. Choosing *No* discards all recorded data, while *Yes* continues recording until you select *Stop recording* again.

If the *No recording dialogs* option is enabled in the settings dialog, you will not be asked for a filename, and the recording will automatically be saved into the folder *Recordings* under your FS main folder. The file will be named *Rec_* followed by the FS date and time at the end of the recording.

Playing back a recorded flight

To play back a flight recorded with FS Recorder, select *Play* from the *Recorder* menu or press the key combination assigned to *Play* in the keyboard controls dialog. This opens a standard file selection dialog. Select the recording you want to play and press the *Open* button to start playback (it is possible to select more than one file here, for details see playback of multiple recordings). If the *Display playback/replay* option is checked in the settings dialog, *PLAYBACK* will be displayed in the lower right corner, together with the number of played and total seconds.
If you enabled the *Show window during playback* option in the settings dialog (disabled by default), the playback control window will show up:
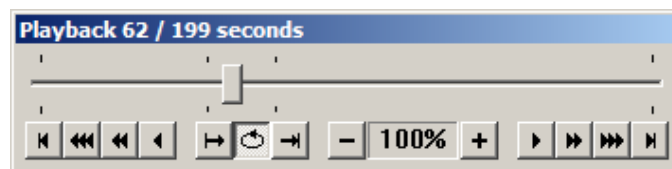
You can move this window to any position you like, FS Recorder will remember that position, when it's shown the next time.
The playback control window can cause a drop of frame rate on your system, if FS is running in fullscreen mode (maybe also in windowed mode?). If you experience bad frame rates during playback, try to disable the playback control window.

Slider

The slider shows the current playback position. If looping is active, the loop start and end points are shown as ticks. The slider can be moved by clicking or dragging with the mouse to search within the recording.

<u>Jump/search buttons</u>

You can jump or search forward or backward through the recording using the following buttons or keys:

Button	Default key	Function
⏮	Home	Jump to beginning
⏪	Page Up	Jump/search backwards 3
◀◀	Up Arrow	Jump/search backwards 2
◀	Left Arrow	Jump/search backwards 1
▶	Right Arrow	Jump/search forward 1
▶▶	Down Arrow	Jump/search forward 2
⏩	Page Down	Jump/search forward 3
⏭	End	Jump to end

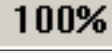The three jump/search modes and speeds can be set in the <u>settings dialog</u>.

<u>Looping</u>

You can loop a part of the recording using the following buttons or keys:

Button	Default key	Function
⊢	Numeric /	Set loop start point
↺	Delete	Toggle looping on/off
→|	Numeric *	Set loop end point and start looping

Turning on looping without setting start and end points before will loop the whole recording. The start and end points of the loop are shown as ticks on the slider.

<u>Changing playback speed</u>

You can change the playback speed using the following buttons or keys:

Button	Default key	Function
−	Numeric -	Decrease speed
100%	Insert	Reset speed to 100%
+	Numeric +	Increase speed

The following speeds can be selected: 10%, 20%, 33%, 50%, 100%, 200%, 300%, 500%, 1000%.

<u>Stopping playback</u>

To stop playback, select *Stop playback* from the *Recorder* menu, press the key assigned to *Stop recording/playback* in the <u>keyboard controls dialog</u> (default: ESC), or turn off looping and press the *jump to end* button or key. The last second of the recording will always be played before playback stops. At the end of the recording playback will automatically stop and FS will pause, if *Pause at end is* turned on in the <u>settings dialog</u>.

If you want to stop playback without jumping to the end of the recording, to continue the flight manually from the current position, press the key assigned to *Stop playback at current position* in the <u>keyboard controls dialog</u> (default: Shift+ESC). **As not all data is recorded by the Recorder, this does not always work as expected and can result in a (plane) crash, if the aircraft is not set up correctly at the moment where you abort playback!**

<u>Playback using a different aircraft model</u>

When playing back a recorded flight, the same aircraft, which was used during recording, should be used. In some cases, however, this might not be possible, e.g. if you want to play a recording, which somebody else made with a commercial addon aircraft, which you don't own. Of course it should be at least a similar aircraft, it doesn't make any sense to play back a B747 flight with a Cessna.

However, even if you use just a different model of the same aircraft (e.g. a freeware 767 to play a flight made with a payware 767), there is the problem, that the height of the reference point of both models usually is different, which would result in the wheels floating above or sinking into the ground. To avoid this, since version 0.8 the Recorder saves the height of the reference point together with the recording, and corrects the recorded altitude data during playback. In case this doesn't work perfectly, you can also fine tune the correction using the *Increase/decrease height correction* keyboard shortcuts defined in the <u>keyboard controls dialog</u>. The default key combinations are:

-   Shift + (Numeric +):   increase height correction
-   Shift + (Numeric -):   decrease height correction

Play as traffic

This feature allows you to play back one or more flights you recorded with FS Recorder as (AI) traffic. To use it, select *Play as traffic* from the *Recorder* menu and choose a recorded flight in the file selection dialog (it is possible to select more than one file here, for details see playback of multiple recordings).

One or more AI aircraft will be created and will fly the recorded flight(s). The aircraft type(s) will be the same as used for recording the flight (if the recording was made with a version of FS Recorder before 1.3, the currently loaded user aircraft will be used). If no aircraft with that title is installed (because you uninstalled it or the recording was made on another system), the respective flight cannot be played. If the *Display playback/replay* option is checked in the settings dialog, *TRAFFIC PLAYBACK* will be displayed in the lower right corner, together with the number of played and total seconds. At the end of playback the aircraft will be deleted.

During traffic playback you can continue flying with your aircraft, and you can even record a new flight (see recording during traffic playback).

Replaying the last minutes of your flight

If replay is enabled in the settings dialog, you can always play back the last minutes of your flight, even if you didn't start a recording before. To replay the last minutes of your flight select *Replay* from the *Recorder* menu. The following dialog opens:
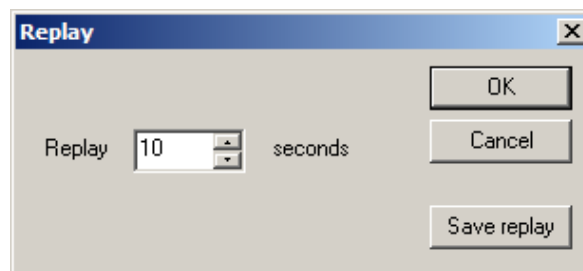
Enter the number of seconds you want to replay and press the *OK* button to start replay. If the *Display playback/replay* option is turned on in the settings dialog, *REPLAY* will be displayed in the lower right corner, together with the number of seconds remaining. During replay the same features as described in playing back a recorded flight are available.

Using the *Save replay* button in the replay dialog you can save the entered number of seconds to a file for later playback.

The maximum available replay time depends on the buffer size and the replay interval set in the settings dialog.

All replay data is cleared, when you record a flight, play back a saved recording, or change settings in the settings dialog. If *Clear data on flight or aircraft change* is checked in the settings dialog, replay data is also cleared when you select/reset a flight or select a different aircraft.

Recording during traffic playback

While you are playing back one or more recordings as (AI) traffic using the *Play as traffic* feature, it is possible to record a new flight. To do that, simply start traffic playback, as described under play as traffic and then select *Record* from the *Recorder* menu, or use the assigned key combination. For more details about recording see recording a flight.
If one of the *Display recording* or *Display playback/replay* options is enabled in the settings dialog, *RECORDING + TRAFFIC PLAYBACK* will be shown in the lower right corner during recording.
If you stop recording, before traffic playback ends, playback will continue. If playback ends, before you stop recording, recording will continue in normal recording mode. During recording + traffic playback no playback controls are available.
This feature is especially useful for creating formation flights: You can record flight A, then play it back as traffic and at the same time record flight B, then play back flights A and B while recording flight C, etc.

Playback of multiple recordings

When you use the *Play* or *Play as traffic* features, you can select more than one recording from the file selection dialog (press Shift or Ctrl to select multiple files). This will result in all selected flights being played back simultaneously. This is useful, if you recorded a flight, while playing back another one as traffic, see recording during traffic playback.
For normal playback (i.e. not traffic playback) of course only one of the selected recordings can be assigned to the user aircraft. This will be the file, which has the focus, when you leave the file selection dialog (usually this is the last file you selected), while all other selected recordings will be played as (AI) traffic. Example: After selecting *Play* you choose file A.frc in the file selection dialog, then you add B.frc and C.frc by pressing the Ctrl key. After pressing the *Open* button, all three recordings will be played, where C.frc will be played using your aircraft, while all others will be played using AI aircraft.

About Synchronization

Each recorded file contains a timecode. If you record a flight using normal recording (i.e. not during traffic playback), the timecode will start at zero. If you play back multiple such recordings together, they will all start at the same time.
However, if you record a flight during traffic playback, the timecode of the playing file will also be used for the recorded file. That way it is possible to play back both flights afterwards without losing synchronization.
Here is an example for better understanding: You record a flight A. Afterwards you record another flight B independent of A. Then you start playback of flight A as traffic, and after ten seconds start recording of flight C. This will result in timecodes of A and B starting at zero, while the timecode of C starts at ten seconds. If you play back all three flights together as traffic, playback of A and B will start immediately, while C will start ten seconds later.

<u>Settings dialog</u>

To access the settings dialog select *Settings* from the *Recorder* menu:
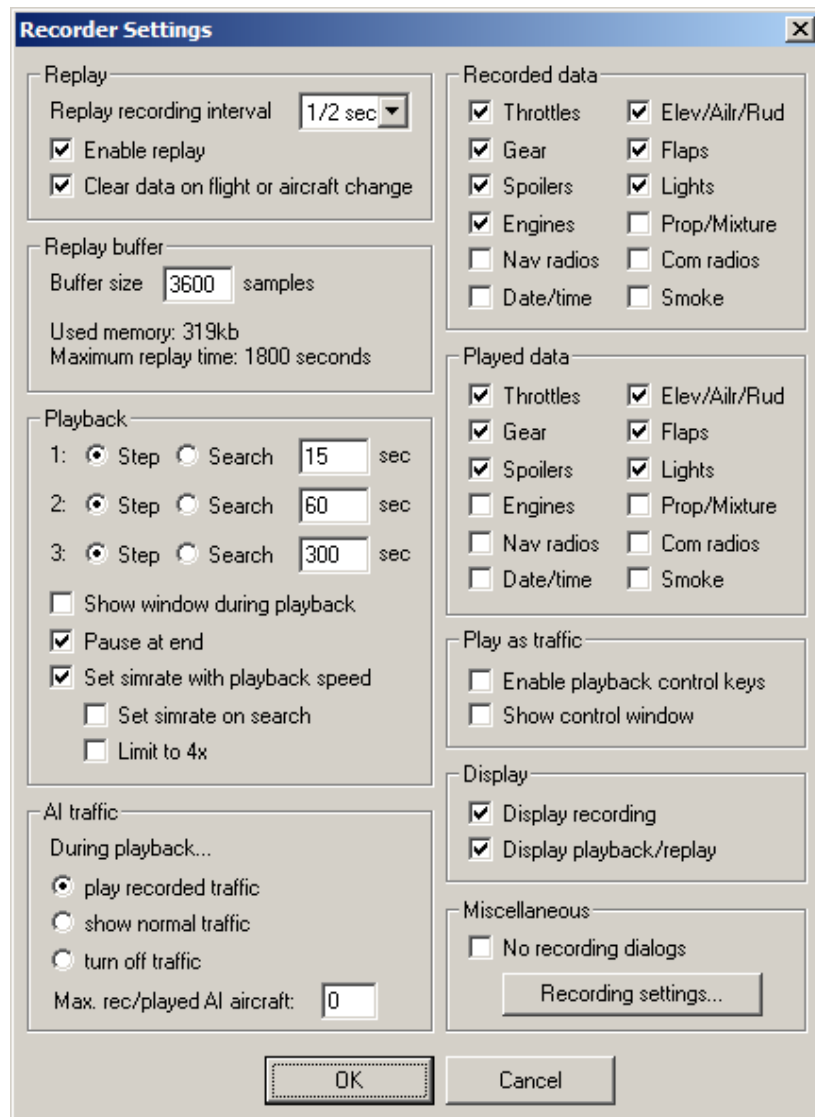
The following options can be set in that dialog:

<u>Replay - Replay recording interval</u>
Select the time interval for replay recording here. Shorter intervals result in a more accurate playback, but require more memory, which shortens the maximum available replay time.

<u>Replay - Enable replay</u>
This option has to be checked, if you want to use the replay feature. If it is checked, the Recorder will always record replay data, except when recording or playing back a file.

<u>Replay - Clear data on flight or aircraft change</u>
If this option is checked, all replay data will be cleared, if you load a different aircraft, or load a new/reset the current flight.

Replay buffer - Buffer size
Recorded data for replay is written to a memory buffer. When the buffer is full, the oldest data is overwritten. You can enter the size of the buffer here. Using small values requires less memory, but shortens the maximum time available for replay. The required memory and the approximate maximum replay time for the entered value are shown below the field. The maximum replay time also depends on the replay recording interval. Required memory also depends on recorded data settings.
If you are not sure, what value to enter, you can just keep the default of 3600.

Playback - Step/Search 1/2/3
Here you can configure the modes and step sizes/speeds, for the different jump/search buttons/keys described under playing back a recorded flight. If you select the *Step* mode, playback will jump by the entered number of seconds each time you press the appropriate button/key, while in the *Search* mode playback speed will be increased by the entered factor while you keep the button/key pressed.

Playback - Show window during playback
If this option is checked, the playback control window will be shown during playback and replay. **The playback control window can cause a drop of frame rate on your system, if FS is running in fullscreen mode (maybe also in windowed mode?). If you experience bad frame rates during playback, try to disable the playback control window.**

Playback - Pause at end
If this option is checked, FS will pause when playback ends.

Playback - Set sim rate with playback speed
If this option is enabled, the simulation rate will be set to the same factor as the playback speed. When you change the playback speed, this option has the advantage, that flaps, gear, AI traffic, etc. will move with the correct speed.

Playback - Set sim rate on search
If enabled, the simulation rate will also be increased during searching.

Playback - Limit to 4x
If the simulation rate is set to more than 4x, FS will disable the AI traffic. To prevent frequent disappearing and reloading of AI traffic, when searching or changing playback speed and *Set sim rate with playback speed* is enabled, this option limits the adjustment of the sim rate to a maximum of 4x.

AI traffic - During playback…
There are three options for AI traffic during playback:
- play recorded traffic: turns off the FS generated AI traffic and plays back recorded AI traffic (if it was recorded with the flight).
- show normal traffic: does not play back any recorded AI traffic, the FS generated traffic will continue.
- turn off traffic: no AI traffic will be shown during playback.

AI traffic - Max. rec/played AI aircraft
Here you can define the maximum number of simultaneous recorded/played back AI aircraft, to reduce the size of recorded files and the memory demand. If you enter zero, there will be no limit.

Recorded data
Here you can choose, which FS variables should be recorded. The more options you check, the larger the recorded files will become. The single options are described in the chapter recorded data.

Played data
With these options you can select, which of the recorded variables should be used during playback. The single options are described in the chapter recorded data.

Play as traffic - Enable playback control keys
If this option is enabled, the playback control key combinations can be used during playback as traffic.

Play as traffic - Show control window
If this option is enabled, the playback control window will be shown during playback as traffic.

Display - Display recording
If this option is checked, *RECORDING* will be displayed in the lower right corner during recording, together with the number of recorded seconds.

Display - Display playback/replay
If this option is checked, *PLAYBACK, TRAFFIC PLAYBACK* or *REPLAY* will be displayed during playback/replay in the lower right corner, together with the number of seconds played/remaining and loop and speed info.

Miscellaneous - No recording dialogs
This option allows you to start and stop recoding without interruption by dialogs (useful e.g. for recording during online flying). If it is enabled, the *Record flight* and save file dialogs will not be shown. To set the recording parameters use the *Record settings* button. Recordings will be saved to the directory *Recordings* under your FS main folder, and the file name will start with *Rec_*, followed by the FS date and time at the end of the recording.

All settings are saved to the file *Recorder.ini* in the *Modules* folder of your FS2004 directory. It is not recommended to edit this file! If you delete the file, the Recorder will use default settings and create a new file the next time FS is started.

Recorded data

The following data is always recorded, and set during playback, by FS Recorder:

- aircraft latitude, longitude and altitude
- aircraft pitch, bank and heading
- aircraft X, Y, and Z velocities
- aircraft on ground flag
- parking brake

In the settings dialog you can define, which of the following data should be recorded and set during playback:

- Throttles: throttles 1 to 4
- Elev/Ailr/Rud: elevators, ailerons, rudder
- Gear: gear handle
- Flaps: flap handle
- Spoilers: spoilers/speedbrake handle
- Lights: all default aircraft lights
- Engines: engines 1 to 4 on/off
- Prop/Mixture: propellers and mixtures 1 to 4
- Nav radios: VOR 1 and 2 frequency and course, ADF frequency
- Com radios: COM 1 and 2 frequencies, transponder code
- Date/time: zulu date and time
- Smoke: smoke on/off

Advanced views

FS Recorder for FS2004 includes advanced features for the tower, spot plane and virtual cockpit (VC) view modes, which give you more freedom for viewing your recorded flights.

Managing advanced views

Creating, deleting, switching, loading and saving advanced views is done in the same way for tower, spot and VC views. Therefore this is described for all three view modes in a common chapter.
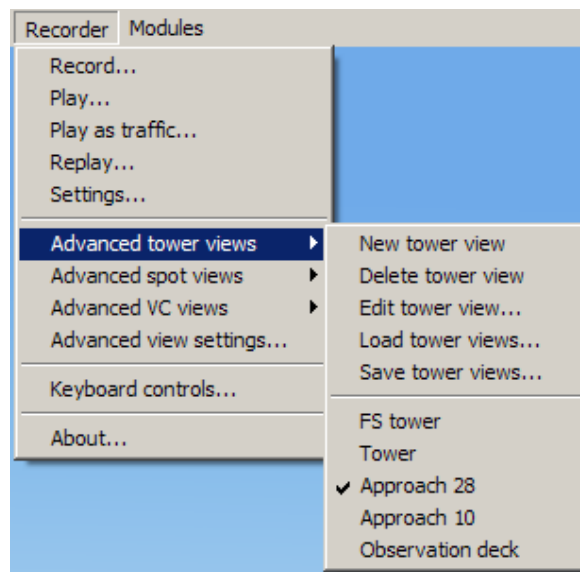
Creating new advanced views

To use the advanced view features, you first have to create a new advanced tower/spot/VC view. To do this select *Advanced tower/spot/VC views>New tower/spot/VC view* from the *Recorder* menu, or change to the respective view mode and press the key combination assigned to *New advanced view* in the keyboard controls dialog (default: Ctrl+V). This will create and select a copy of the currently active tower/spot/VC view.

Deleting advanced views

To delete the currently active advanced view select *Advanced tower/spot/VC views>Delete tower/spot/VC view* from the *Recorder* menu, or change to the respective view and press the key combination assigned to *Delete advanced view* in the keyboard controls dialog (default: Shift+Ctrl+V).

Switching between advanced views

To select a different advanced tower/spot/VC view, select the view from the list in the *Advanced tower/spot/VC views* submenu. The first entry in the list is always "FS tower", "FS spot plane" or "Default VC" respectively, which selects the default FS view for the respective view mode.

You can also use the key combinations assigned to *Next advanced view* and *Previous advanced view* in the <u>keyboard controls dialog</u> to cycle through all advanced views of the respective view mode (default: V and Shift+V).

When changing to a different advanced view, it's title will be shown on top of the window for three seconds, if the *Show view title on change* option is enabled in the <u>advanced view settings dialog</u>.

<u>Loading advanced views</u>

To load a set of saved advanced tower/spot/VC views from a file, select *Advanved tower/spot/VC views>Load tower/spot/VC views* from the *Recorder* menu and choose a file in the file selection dialog. **All current advanced views of the respective view mode will be deleted!**
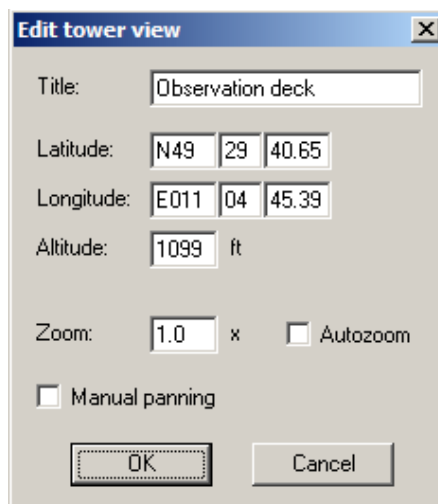
<u>Saving advanced views</u>

To save the current set of advanced tower/spot/VC views to a file, select *Advanced tower/spot/VC views>Save tower/spot/VC views* from the *Recorder* menu and enter a filename in the file selection dialog.

Advanced tower views

<u>Editing tower views</u>

To edit the properties of the current tower view, select *Advanced tower views>Edit tower view* from the *Recorder* menu to open the following dialog:

<u>Title</u>
The title entered in this field identifies the tower view in the *Advanced tower views* menu and will be displayed for three seconds when switching to this view.

Latitude/Longitude

Here you can change the position of the viewpoint. If you enter something here, make sure to use the correct format. In the first field you have to enter an integer, preceded by an optional 'N' or 'S' for the latitude and 'E' or 'W' for the longitude. Entering any other characters here will evaluate to zero!

Altitude

The altitude of the viewpoint in feet. To set it on the ground you can enter a value of zero.

Zoom

The zoom factor for the view. Valid values range from 0.0625 to 512.

Autozoom

If this option is enabled, the zoom factor will be automatically adjusted with the distance of the aircraft. This will keep the current size of the aircraft on the screen constant, regardless of the aircraft's distance. This feature can also be toggled on/off by the key combination assigned to *Autozoom* in the keyboard controls dialog (default: Ctrl+Z). Autozoom is not available in manual panning mode (see below). Using the FS reset zoom control will disable autozoom.

Manual panning

If this option is disabled, the tower view will always be directed to the center of the aircraft, like in the default FS tower view. With manual panning enabled, you can pan around manually, using the standard FS panning controls (including joystick controls). This option can also be toggled on/off using the FS pan reset control.

Moving and panning controls

The following FS controls can be used to move the viewpoint and pan the view direction while an advanced tower view is active. They are assigned in the FS controls assignments dialog:

FS control	Function
Move eyepoint up/down/left/right/forward/back	Move view point by step size 1
Look forward/forward right/right/back right/back/back left/left/forward left/up/down	Move view point by step size 2
Look forward up/forward right up/right up/back right up/back up/back left up/left up/forward left up	Move view point by step size 3
Pan up/up right/right/down right/down/down left/left/up left/tilt left/tilt right/pan	Pan view direction (automatically enables manual panning)
Pan reset	Toggle manual panning on/off
Cycle chase view forward/backward	Select aircraft to follow

The three step sizes for moving the view point and the panning speed can be changed in the advanced view settings dialog.

Advanced spot views

Editing spot views

To edit the properties of the current spot view, select *Advanced spot views>Edit spot view* from the *Recorder* menu to open the following dialog:
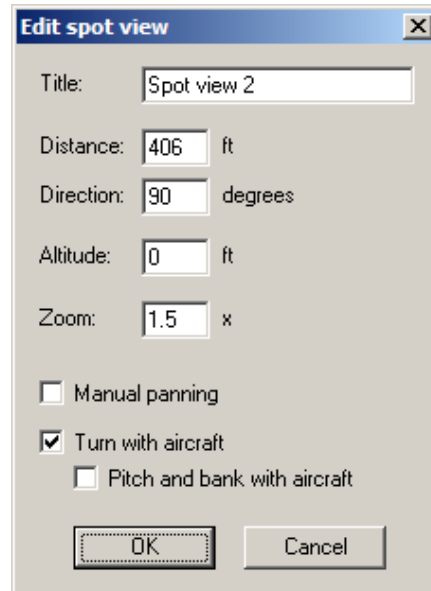
Title
The title entered in this field identifies the spot view in the *Advanced spot views* submenu and will be displayed for three seconds when switching to this spot view.

Distance
The distance of the viewpoint to the aircraft in feet in horizontal direction.

Direction
The direction of the viewpoint from the aircraft position in degrees. If *Turn with aircraft* is enabled (see below), the direction is set relative to the aircraft (0=front, 90=right, etc.). If *Turn with aircraft* is disabled, the direction is set as heading.

Altitude
The altitude of the viewpoint above the aircraft in feet.

Zoom
The zoom factor for the view. Valid values range from 0.0625 to 512.

Manual panning
If this option is disabled, the view will always be directed to the center of the aircraft and the panning controls will move the viewpoint around the aircraft, like in the default FS spot plane view. With manual panning enabled, you can pan around manually, using the standard FS panning controls and move the viewpoint using the FS move eyepoint controls. This option can also be toggled using the FS pan reset control.

Turn with aircraft

If this option is enabled, the viewpoint will turn with the aircraft, i.e. if the viewpoint is set left of the aircraft, it will always stay left of it. If the option is disabled, the viewpoint will not turn with the aircraft, i.e. if the viewpoint is set south of the aircraft, it will always stay south of it.

Pitch and bank with aircraft

If this option is enabled, the viewpoint will move with the pitch and bank of the aircraft. This is useful for simulating a camera mounted somewhere on the aicraft. It probably only makes sense with manual panning enabled.

Moving and panning controls

The following FS controls can be used to move the viewpoint and pan the view direction while an advanced spot view is active. They are assigned in the FS controls assignments dialog:

FS control	Function (auto panning)	Function (manual panning)
Move eyepoint up/down/left/right/forward/back	Move viewpoint around aircraft	Move viewpoint
Look forward/forward right/right/back right/back/back left/left/forward left/up/down	Set viewpoint forward/forward right/right/back right/back/back left/left/forward left/up/down of aircraft	
Look forward up/forward right up/right up/back right up/back up/back left up/left up/forward left up	Set viewpoint forward up/forward right up/right up/back right up/back up/back left up/left up/forward left up of aircraft	
Pan up/up right/right/down right/down/down left/left/up left/tilt left/tilt right/pan	Move viewpoint around aircraft	Pan view direction
Pan reset	Toggle manual panning on/off	
Cycle chase view forward/backward	Select aircraft to follow	

The step size for moving the view point and the panning speed can be changed in the advanced view settings dialog.

Advanced VC views

Editing VC views

To edit the properties of the current VC view, select *Advanced VC views>Edit VC view* from the *Recorder* menu to open the following dialog:
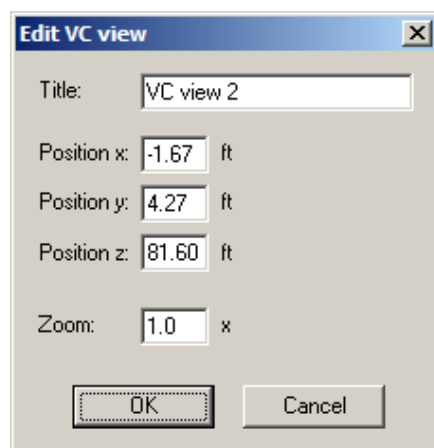
Title
The title entered in this field identifies the VC view in the *Advanced VC views* submenu and will be displayed for three seconds when switching to this VC view.

Position x/y/z
The position of the viewpoint relative to the aircraft reference point in feet.

Zoom
The zoom factor for the view. Valid values range from 0.0625 to 512.

Moving and panning controls

The following FS controls can be used to move the viewpoint and pan the view direction while an advanced VC view is active. They are assigned in the FS controls assignment dialog:

FS control	Function
Move eyepoint up/down/left/right/forward/back	Move viewpoint up/down/left/right/forward/back
Look forward/forward right/right/back right/back/back left/left/forward left/up/down	Set view direction forward/forward right/right/back right/back/back left/left/forward left/up/down
Look forward up/forward right up/right up/back right up/back up/back left up/left up/forward left up/up	Set view direction forward up/forward right up/right up/back right up/back up/back left up/left up/forward left up/up
Pan up/up right/right/down right/down/down left/left/up left/tilt left/tilt right/pan	Pan view direction
Cycle chase view forward/backward	Select AI aircraft to track
Pan reset	Turn off tracking of AI aircraft

The step size for moving the view point and the panning speed can be changed in the advanced view settings dialog.

Advanced view settings

To open the Advanced view settings dialog select *Advanced view settings* from the *Recorder* menu:
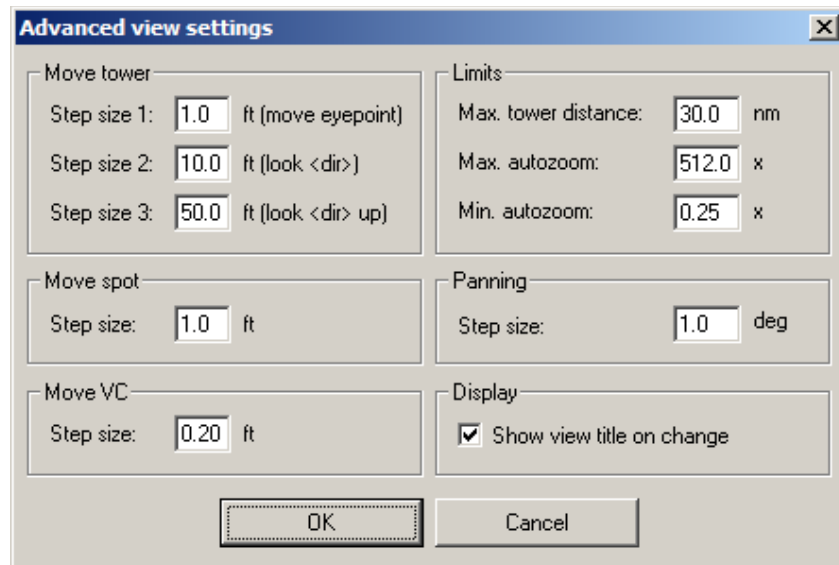
Move tower – Step size 1/2/3
Here you can set the step sizes for moving the viewpoint in the advanced tower views in feet. Step size 1 is assigned to the FS move eyepoint controls, step size 2 to the look <direction> controls, step size 3 to the look <direction> up controls (see moving and panning controls in the advanced towers chapter).

Limits – Max. tower distance
Sets the maximum distance of the viewpoint to the aircraft for the advanced tower views in nautical miles. If the distance of the aircraft from the tower position exceeds this value, the viewpoint will follow the aircraft.

Limits – Max./Min. autozoom
Sets the maximum and minimum zoom factors used in the autozoom mode.

Move spot – Step size
Here you can set the step size for moving the viewpoint in the advanced spot views in feet.

Move VC – Step size
Here you can set the step size for moving the viewpoint in the advanced VC views in feet.

Panning – Step size
Here you can set the step size for panning the view direction in the advanced views in degrees.

Display – Show view title on change
If this option is enabled, the title of the advanced view will be shown on top of the window for three seconds, when switching to a different advanced view.

Custom keyboard controls

To customize the keyboard shortcuts to control the Recorder, select *Keyboard controls* from the *Recorder* menu. The following dialog will appear:
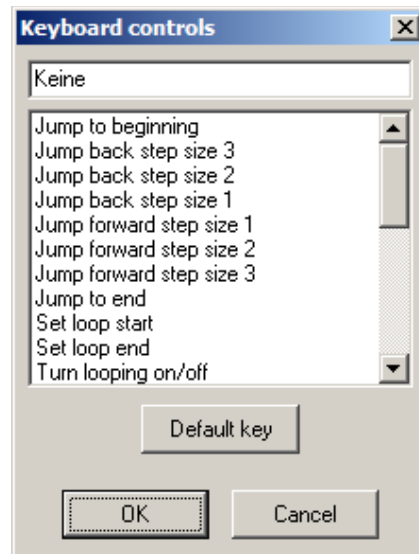
If you select a command from the list, the currently assigned key combination will be shown in the hotkey field above. To change it, just press the key combination you want to assign (the focus has to be on the hotkey field!)
By pressing the *Default key* button, you can reset the default key combination for the selected command.

Known problems and limitations

- **The playback control window can cause a drop in frame rate, at least when running FS in fullscreen mode. Try to disable the playback control window, if you experience bad frame rates during playback.**
- **For certain addon aircraft using custom programmed systems, recording/playback of certain variables may not work correctly.**
- **Enabling playback of date and time can cause problems on some system configurations due to the frequent modification of the clock. Try to disable this option if you experience problems during playback.**
- **The *Play as traffic* feature does not work with most helicopters and certain addon aircraft. Using *Play as traffic* with those aircraft results in a crash to desktop.**
- **Two users reported, that FS crashes when starting playback with certain aircraft. A workaround for this problem is to switch to outside (tower or spot plane) view before starting playback; when playback is running you can switch back to cockpit view.**
- **If during playback the smoke system is used on multiple instances of the same aircraft (same model and variation), the smoke will stay on forever on some of these aircraft. This is a problem of FS, and the only workaround is, to use a different variation for each aircraft.**

History

Version 1.32
- fixed problem caused by too many open temp files

Version 1.31
- fixed the save replay feature (was broken in 1.3)
- added installer

Version 1.3
- added playback of multiple recordings
- added recording during traffic playback
- added recording and playback of AI traffic
- added option for recording without dialog interruption
- added options for keyboard controls and playback window during traffic playback
- made key shortcuts for stop recording/playback customizable
- added advanced VC views
- added option to disable title display for advanced views

Version 1.21
- some timing changes to get smoother aircraft movement during playback

Version 1.2
- added "play as traffic" feature
- added advanced tower and spot views
- added optional adjustment of sim rate with playback speed
- increasing sim rate during recording will no longer result in too fast playback
- display recording/playback in lower right corner (instead of green bar on top)

Version 1.05
- added search mode
- all lights of the LevelD 767 are now recorded and played
- changed method for setting flaps during playback to work with the PMDG 747
- some changes which might reduce stutters during playback

Version 1.01
- during playback/replay the gradual transition of the spot plane view is automatically disabled to avoid stuttering

Version 1.0
- added warning when enabling date/time playback in settings dialog
- increased maximum buffer size
- added some notes to this manual and a txt version of the manual

Version 0.8 beta
- made recorded data customizable
- added recording of prop/mixture, nav and com radios, date/time and smoke
- added option to turn off AI traffic during playback
- added options to display recording/playback/replay
- added customizable keyboard controls
- added feature to automatically stop recording

- added height correction for playback with different aircraft
- fixed fullscreen dialog problem

Version 0.72 beta
- solved exterior and VC light problems reported by some users
- added option to clear replay data on flight or aircraft change
- added pause at end option
- added 1/8 sec recording interval
- added feature to stop playback at current position (without jumping to the end)

Version 0.7 beta
First public beta release

Support

If you need support, found a bug, have suggestions for improvements, or any other comments on the FS Recorder, visit the support forums at http://www.fs-recorder.net.

To contact the author directly, send an email to support@fs-recorder.net.

Please report all bugs you find, so that they can be fixed.

Before contacting me for support in case of problems, first read this manual, especially the known problems and limitations section and search the support forum for a solution to your problem! Also check if you have the newest version, which can be found in the downloads section of http://www.fs-recorder.net.

Donations

If you want to support the development of FS Recorder, you can make a donation via PayPal directly using this link, or go to the PayPal website and use donations@fs-recorder.net as recipient's email.

I hope you enjoy my product.

Matthias Neusinger