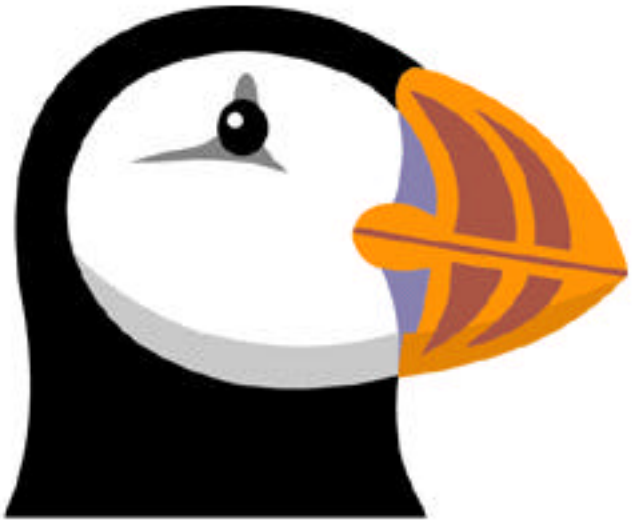


PUFFIN

DESIGNS

Commotion's Essentials

This guide provides a profile of Commotion™'s features and describes basic functions such as opening clips and working with frames once they are open. For more in-depth information please refer to the subsequent reference chapters.

Optimizing Commotion™

Turning off Background Tasks

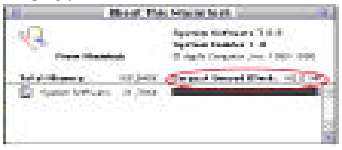
For maximum performance and for highest speed playback of footage, it is advisable to turn off any background tasks that may be running on your Mac. This includes File Sharing, Screen Savers, and any other control panel devices or units that could affect the general responsiveness of your Mac.

Allocating More RAM to Commotion

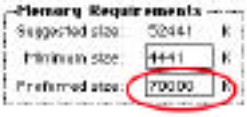
Commotion's™ ability to play back footage at high speeds is dependent on pre-loading clips into RAM, thus bypassing the speed barriers associated with accessing large image files from hard disks. A 720*486 pixel file at millions of colors will take up about 900k per frame; with 100 megs of RAM allocated to Commotion you will be able to load approximately 90 frames. The number of frames that can be played by Commotion's™ is increased by allocating to the application as much available RAM as possible.

Changing Application Memory Size

1. While in the Finder, choose "About This Macintosh" from under the Apple Menu.



2. Refer to the Largest Unused Block value. This values shows the amount of memory currently available. Subtract about 2MB from this value for system use, and note the result.
3. Close window by clicking in the box in the left hand corner.
4. Select the Commotion™ icon but do not launch it.
5. Choose **Get Info** from the **File** menu (Command-I).



6. Set the Preferred Size option to the amount of memory you noted in Step 2.
7. Close the Commotion™ Info window.

Using RAM Efficiently within Commotion

To work more efficiently within Commotion there are several techniques which will allow more frames to be loaded into RAM. Here are hints to increase the number of frames that can be loaded into RAM and to increase the speed of playback of the **live frames.**

To Increase number of frames loaded

These three options are all adjustable while in the load frames dialog box.

- Use smaller images by loading less than 100% scale.
- Use a lower color depth. 256 colors will permit playback at speeds four times faster than millions of colors.
- Load just a SubWindow area. (see Loading Frames)

> Loading a SubWindow will allow just a certain portion of a clip to be opened which will increase the number of frames loadable proportionately to the size of the SubWindow.

Increasing playback speed

These tips are for increasing the speed of playback. You can do them at anytime while the clip window is open.

- Select a section of the image using the Viewer Tool. The Viewer Tool restricts the playback of the footage to the selected area. The Viewer Tool can be used like the Marquee tool to select multiple areas of the image by using the Shift and Command modifiers. (See Viewer Tool)
- Resize the Clip window to just show the area of interest. When the window is resized playback is limited to the visible area of the footage; while playback is occurring, you can use the Hand Tool to move about the footage to monitor different areas.

Video Cards/Built In Video

Playback speed greatly depends on the way your computer processes data to the computer monitor. If you have a Macintosh 8500 or 8600 or any computer with video input built onto the mother board, Commotion will be able to give you real time playback of D1 resolution images. Built in video bypasses the PCI/Nubus bus which results in very fast performance.

If your computer has a Nubus or PCI based video card, playback performance will depend on the quality/speed of that board and its drivers. The Twin Turbo Video Card by IX Micro (formerly IMS) will playback a D1 rez image at greater than 30fps. It is important to make sure you have the latest drivers for the Twin Turbo Card—you can download the drivers from their World Wide Web site at www.ixmicro.com. Other PCI and Nubus videoboards will yield varying results.

If you have more than one monitor connected to your system, make sure to test playback performance out on both monitors to establish which videocard is providing the higher performance.

Quick Start - Animation

Making a Clip and Animate a Crawling Snake

To illustrate how to start a Commotion™ clip on a blank canvas, it is helpful to walk through an example. This section will walk you through the first steps of creating a clip and a simple animation.

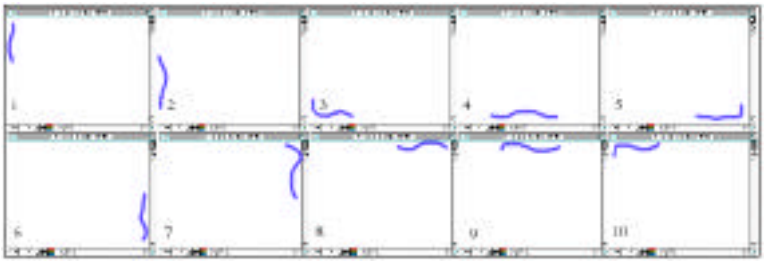
1. Select **New** from the **File** menu. The following dialog box will appear:

2. Type in the size of image desired in x and y pixels. For the example enter 320 for the x value and 240 for the y value.
3. From the pop-up menu select color depth. Leave the color depth at millions of colors for this exercise.

Choosing a lower color depth will allow more frames to be loaded into RAM. Painting can only be done at millions of colors and 256 colors/grays.

4. Type in the number of frames you would like allocated in RAM. Additional frames can be added to the clip later. For this demonstration leave the number at the default value of 10. (After all, more than 10 frames of a crawling snake gets old.)
5. A blank window will appear. You may begin painting on the frame.
6. Select a small brush with soft edges from the brush palette. If it is folded up, click on the triangle in the left hand corner to expand the menu.
7. Click on one of the default colors of your choice from the color swatches palette.
8. Starting on frame 1 paint a small line on the canvas.

9. To advance to the next frame click on the single frame button on the Player window. You can also use the right and left arrow keys to toggle through the frames.
10. Click on the onion skinning icon  at the bottom of the clip window to turn the onion skin on. This will show you a translucent image of the first frame you painted, thus aiding in a more fluid animation.



11. Repeat step 8 for each of the following frames, making sure to draw the line around the canvas to make it look as if it were a snake crawling around.
12. When you reach the end of the ten frames you can either tap the space bar to play/stop the clip back or hit play on the player palette. If you have the onion skinning feature on, it will play with it on too. To see what the clip actually looks like, click on the onion skinning icon to turn off the feature.

Painting Functions

Commotion™ gives you not only the ability to paint over time but as soon as you paint a stroke you can play it back at real time speeds. This eliminates the need to render the clip or export your work to another program.

- Select the type of painting tool desired from the tool palette by either clicking on it or using the keyboard shortcut.
- Select the brush from the brush palette or create your own brush. (See Creating a Brush.)
- Choose the foreground color by clicking on the color in the color palette or by using the color picker. (See Picking a Color) You are now ready to paint.
- To make animation easier turn on the onion skinning feature.

Working with Brushes

Commotion offers a variety of sizes and hardness of brushes. It is possible to choose one of the default brushes by clicking on it or create your own brush.

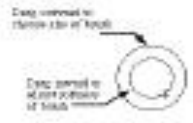
Creating a Brush

When creating a brush there are two options available. You can size the brush on the fly or set brush options using the brush options palette.

Please Note: In this version of Commotion™ the creating a brush on the fly feature only works of you have selected one of the default brushes and then create your own. It will not work if the brush options have been adjusted manually in the brushes palette.

To interactively create a brush while you are painting:

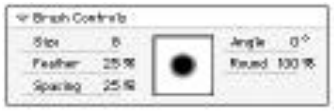
1. Hold down the **command** and **option** keys.
2. Click-drag the mouse to create a custom size brush.
3. To create round brush hold down the **shif**t key, this will lock the aspect ratio.



4. To adjust the softness (feathering) of the brush edges, hold down the **control** key and drag inward. When you are done release the mouse button.

· **To set brush options manually**

1. Under the Brush Controls palette double click on the name of the option to bring a dialog box and manually type in the numeric value.
2. You may also click on each of the five brush characteristics and slide the values left or right to adjust the options.



- **Size** - Controls the diameter of the brush.
- **Feather** - Controls the softness of the edges of the brush.
- **Spacing** - Controls the distance between the brush marks in a stroke.
- **Angle** - Specifies the angle of an elliptical brush against the “canvas”. This creates a chiseled stroke similar to a fountain pen.
- **Round** - Specifies the roundness of a brush. 100% is a circular brush while a value of 0% would be a flat or linear brush.

Saving a Brush

1. If you have created a brush you would like to save, hold down the shift key to access the paintbucket.
2. Click on the open area at the bottom of the brushes palette or on top of another brush to load the brush.

Deleting a Brush

1. Hold down the command key to access to scissors.
2. Click on the brush in the brushes palette you wish to delete.

Picking a Color

Commotion™ has an entire palette of default colors to paint with, however if you should find that you need a custom color there are several options:

- Select one of the default colors from the color palette
- Mix a custom color using the scratch palette
- Double- click on any of the colors in the color palette or on the foreground/background color to access the standard Macintosh color picker.
- Use the eyedropper to sample a color from an image.
- Hold down the option key to quick cut to the eyedropper and click on a color to select it.

Saving and Deleting a Color

1. To save a color hit the shift key to access the paint bucket icon.
2. Go to the empty bottom area of the color palette and click the mouse. You may also replace default colors this way.
3. Hitting command will give you the scissors - click on a color in the palette if you want to delete it.

Onion Skinning

When painting a range of frames it is often useful to be able to see the frame preceding and/or following the one you are currently working on.

There are two ways to activate onion skinning:

- Select **Onion Skinning** from the **Edit Menu**

or

-  Click on the Onion Skinning icon located at the bottom of the clip window.

You can set the opacity of the onion skinning as well as other options under the **Preferences** command located in the **File** menu.

Quick Start - Opening a File

When opening a file in Commotion™ there are three options to fit various formats. For opening a clip in the form of a single file with a single file name use the following instructions.
If you would like to open a clip comprised of sequentially numbered PICTS, while in the open dialog box, click on the PICT you would like to be the first frame in the clip; Commotion™ will scan the rest of the files and open them together as a single clip.
For opening a clip made up of various frames with unnumbered titles, choose the **open random** command from the **File** menu. The standard open dialog box will appear, click on the title of the frames you would like to appear in the order you would like them to appear in your clip. When you are done, hit cancel.

1. Select **Open** from the **File** menu.
2. Select an image file (PICT or Quick Time). After you click OK, Commotion™ will scan the folder to establish the total frame range and size of the file you are loading.

*By default Commotion™ will attempt to load as many frames as possible - the *out* and *total* window will appear with the complete range of frames in the clip whether or not it can load them all.

- When selected the preview button will show the first frame being requested

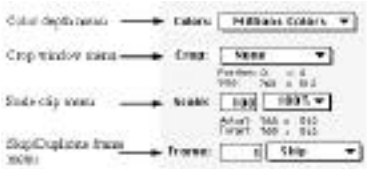
- The first frame if the clip has been entered into the in box as well as the number of frames in the clip and the total number of loadable frames.

3. If the number of frames requested doesn't exceed the number of frames loadable hit OK. If not, change the out value to fewer number of frames.

You can also change which of the frames you load by sliding the Live Frames bar around. The bar can also be expanded and made smaller by click-dragging on the ends of it.

4. The clip window now appears on the screen. These frames are ready to be painted or manipulated.

Options for loading frames

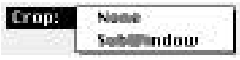


There are several options that can be adjusted while in the Load Frames Window

- **Color Depth** is adjusted from this menu.

Note: Painting frames is limited to Millions and 256 grays/colors. The other modes are for optimizing speed of playback.

- The **Crop Window** command will activate the SubWindow mode so that you can work on only a section of the clip.(See Subwindows)



The SubWindow mode will access the SubWindow dialog box. See Subwindows for more information.

- The **Scale** command will scale the entire clip and the window.

A clip is scaled at a different resolution than the original. You would not want to paint at a resolution different than the source clip unless you want to change the resolution of the entire clip.

- **Skip/Duplicate**- this will allow you to either skip or duplicate frames in the increment indicated.

Skip- this command will skip frames in the numerical increment entered.
Duplicate- this will duplicate frames. A 15 frame clip can be made into a 30 frame clip by entering 2 as the value.

Subwindows

Subwindows is a special feature that allows you to open just a subsection of a clip, manipulate it, and then save it back into its original location in the file. By only loading the area of a clip that you need to work on, you can greatly increase the number of frames that will fit into RAM.

For example, if you were touching up an area in a Hi-Resolution film plate (1800*900) pixels, but only needed to work on a 300*300 area rectangular section of the frame, you could load 18 times more frames into RAM by using a SubWindow.

You can load a section of a file and have it become a new clip by selecting Save As from the File menu.

1. Select **SubWindow** and click **OK**. The following dialog box will appear:

- **Position** - the X,Y position in pixels of the top-left of the SubWindow (which will be the 0,0 coordinate of the clip once loaded).
- **Size** - the X,Y Dimensions of the Subwindow that you have selected.
- **Load Full Size** - when this option is checked, the Subwindow will be displayed inside of a full size window with a representative frame. This is handy to keep a frame of reference of where the Subwindow fits

into the file. The full size frame is only for reference—you will not be able to paint/affect the area outside of the Subwindow.

- **Save / Load** - these buttons will save a crop window setting so that you can load the same crop area for another file.

2. Use the handle in the corner of the outlined box to resize the image. To move the subwindow around, click-drag the mouse. After clicking OK, the values for size, position and number of frames loadable are updated in the load frames dialog box.

Please Note: when you've loaded a SubWindow, certain operations become limited. For example, you would not want to add or delete frames from a clip when working with a Subwindow, as that would affect the timing of the frames when they were saved back into their original files.

Saving

Commotion™ supports PICT and QuickTime formats.

To save a clip:

· Select **Save** from the **File** menu.

The standard Macintosh dialog box will appear with a few special options for Commotion™.

- **Subarea** - This option is only available when the clip you are saving was loaded as a subclip from a file. This option will be on by default, which will save the element back into its original section of the file. If turned off, the clip will be saved as a new file and will subsequently cease to be a Subwindow clip.
- **Save Alpha** - When checked, Commotion will attempt to embed the 8-bit alpha channel into the file format you are saving. If you choose a file format that does not support embedded alphas, the alpha will not be saved.
- **Save QT Layers** - If you are saving as a QuickTime Movie this option allows you to save the QuickTime Layers.

A Save File As pop-up menu also appears in the Save dialogue box, allowing you to select a format for saving the file.

The Player Palette

The Player palette allows you to move through the frames in the loaded clip. You can move to the beginning or end of the clip currently loaded into RAM, play the clip in the normal or reverse direction, or advance a single frame in either direction by pressing the icon buttons in the palette. The a new range of frames can also be loaded into RAM, and the Virtual Frames and Ganging function can be toggled on or off. The frame rate of playback can also be set using a pop-up menu.

Go to Beginning/End


The left-pointing icon moves the display to the first frame in the currently-loaded clip.


The right-pointing icon moves to the last frame in the currently-loaded clip.

Play/Reverse


This icon plays the clip in reverse.


This icon plays the clip forward.

Playback speed will be reduced greatly if there are palettes or other windows on top of the clip window.

Single Frame Advance


This arrow will advance the clip one frame backwards

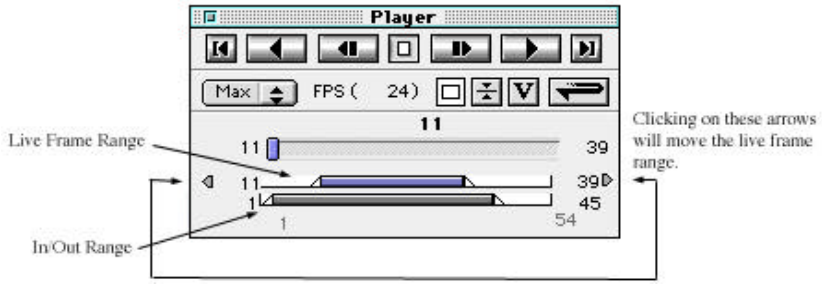

This arrow will advance the clip one frame forward.

Stop


Press the square icon to stop playback.

Rock n' Roll


By clicking on this icon the live frames will play to the end and then play in reverse.



Changing the Range of Live frames

To change the range of **Live Frames,** drag the live frames bar either right or left. The start and end frame numbers will change while the number of frames in RAM remains constant.

The In/Out Frame Range

The in/out frame range is the range of frames on which a filter, calculation or effect will be applied to.

In/Out & Live Frames Lock Together

 By pushing the lock button the in/out range will be set to match the current LIVE FRAMES range.

Frame Rate Pop-up

This pop-up menu allows you to select the target frame rate (in frames per second) for playback. The speed that Commotion will play back your clip is influenced by the limitations of various computers i.e. video card, VRAM, etc. The pop-up menu has the options Max, 30, 24, and Var.

- **Max** plays the clip at the maximum rate possible for the size of the canvas, the configuration of your system, and any limiting factors such as calculations or windows covering the clip window.
- **"30"** plays the clip at 30 fps, the standard US video rate.
- **"24"** plays the clip at 24 fps, the standard film frame rate.

- **Var** brings up a dialogue box requesting a keyboard input for the playback speed; Commotion™ will play back the clip at the speed entered or the closest rate possible.

Auto Spooler

 The Auto Spool Button will turn on and off the loading of Virtual Frames.

- If the button is off the range of frames loaded into RAM will remain constant and loop through only the frames that are in RAM.
- If the button is on when you reach the last frame loaded into RAM, the first frame loaded is cached to a scratch disk and the next frame in the clip is then loaded into RAM. The number of frames in RAM remains constant but with the Auto Spooler on, Commotion™ will continue to add the next frame in the clip into the live frames while caching out the last frame in the range to the scratch disk. This does not occur during playback, only when advancing the frames one at a time.

The Tool Palette

The Tools Palette controls Commotion's™ functions for painting and making selections. You can click on any of the tools to make them active or you can use the keyboard shortcut. In addition to the paint tools that appear in virtually all painting programs – such as paintbrush, airbrush, and marquee – Commotion™ has tools specially designed for painting and editing over time. Most of the tools also have a set of options for customizing your painting; these options appear at the top of the Options palette.

 **The Rectangular Marquee** Tool is used to make rectangular selections**.**

 **The Lasso Tool** is used for drawing free-hand selections**.**

 **The View Window Tool** allows you to draw a subwindow in a clip and to playback just what is inside the window. If you have a selection made the selection will remain.

 **The Pen Tool** is used to draw path shapes and rotosplines. double clicking on the pen tool will bring up the rotospline window..

 **The Magic Wand** selects all neighboring pixels within a preselected color range.

 **The Move Tool** allows you to move a selection within the active clip.

 **The Paintbucket** will fill an area of similarly colored pixels with another color.

 **The Eyedropper** Tool is used for sampling colors.

 **The Airbrush** adds paint with pressure, simulating painting with an airbrush.

 **The Paintbrush** paints brush strokes.

 **The Line Tool** is used to draw straight, solid lines**.**

 **The Gradient Tool** is used to create a variation of color across a selection.

 **The Eraser** is used to erase areas of a drawing**.**

 **The Pencil** tool draws hard edged strokes.

 **The Clone Brush** copies pixels from one area of an image to another**.**

 **The Super Clone Brush** will copy pixels from one frame to another or across clips.

 **The Wire Removal Tool** removes wire or wire-like artifacts by seaming or cloning pixels.

 **The Blur Tool** softens (or blurs) hard lines or edges.

Wire Removal and Clone Brush Tools

Two of Commotion's™ unique paint tools are the wire removal tool and the clone brush tools, shortening the steps between a good start and the finished image.

Clone Brush Tools

A very useful ability for touching-up photorealistic images is the capacity to clone pixels from one area to another. This way subtle variations of color can be maintained. Cloning is also important if you are using footage at allow color depth that has been dithered; simply painting onto a dithered image is very difficult if the images is meant to look at all realistic.

Commotion™ has two clone brushes which paint by copying pixels from a source to a target. The first is like those common in static image editors, and the second is designed to take advantage of the multi-frame and multi-file capabilities of Commotion™. Both allow the moving picture artist to paint out unwanted items such as boom microphones or to remove dirt or blemishes from a shot, resulting in unlimited creative possibilities.

The Clone Brush Tool:

Use this tool if there is a flaw you wish to remove in an area with little detail.

1.  Select the clone brush tool from the floating tool palette.

2. Choose a reference point- this is the area around which pixels are copied. As you begin painting somewhere else in the frame the pixels are copied from the reference point to the new point.

The Super Clone Brush Tool:

This is the tool to use if you want to clone from another frame or even another file. The Super Clone Brush window gives you four settings for clone source. F1 through F4 in the function keys will toggle between the four sources.

1.  Select the Super Clone Brush Tool from the floating tool palette menu. Double click to bring up the Clone Brush Window.

2. The titles of all open clips will appear in the pop-up menu. You can assign up to four separate clips or the same source four times as clone sources. The paint bucket will appear next to the active source for the cloning.
3. Set Relative and Absolute values as necessary. Relative would be a positive or negative number relative to the number of the frame you are cloning to. Absolute is the exact frame number you wish to use as a clone source.
4. If you need the clone source to be offset from the image being cloned to, adjust the x,y offset values.
5. Click-drag around the area you wish to replace.

- Hitting the shift key will show you a transparent image of the clone source.
- Holding down the shift key while click-dragging will allow you to offset the x,y positioning of the clone source.
- Painting while holding down the command key will allow you to paint from undo.

Wire Removal Tool

The wire removal tool is designed for the express purpose of removing wires or scratches on the film. By blending or cloning the pixels on either side of the artifact you are removing, Commotion™ leaves a seamless image with no hint of artifacting.

To use the Wire Removal Tool:

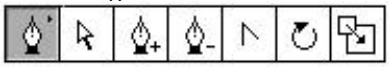
1.  Select the Wire Removal Tool from the floating tool palette.
2. Click drag on a wire or any wire-like artifact. Commotion™ will do the rest.

Rotosplines

Rotosplines are Commotion's™ paths for specifying shapes for mattes. A rotospline - or just a spline - is a series of points connected either by straight lines or by bezier curves. Mattes that are defined by a distinct path, like those made from splines, are a common means of extracting foregrounds and backgrounds of special effect shots. Here is an overview of the spline tools in Commotion.™

Creating a Selection/Path

1.  Select the pen tool from the tool palette menu.
2. Click the mouse to establish straight line points or drag-click to set points with curved segments.



- By selecting the pen tool in the tool box you now have access to the other roto tools.

 To make a point on the path active select it with the direct-selection tool.

-  You can change the points of the curve from straight connecting lines to bezier curves by clicking on them with the convert point tool.
-  You can add points using the pen tool with the plus sign.
-  Points can be subtracted by using the pen tool with the minus sign in the corner.
- Keyframes are automatically added each time you modify the shape.
- You can select all of the points by hitting Command-A on the keyboard or by drawing a box around all of the points with the mouse.

Scaling a Selection/Path

1.  Select the Scale Path tool from the Rotospline palette.
2. Click the vanishing point you would like the path to scale towards.
3. You can now drag-click the mouse around the first point selected to scale the path.

> Holding down the Shift key while scaling the spline will lock the aspect ratio.

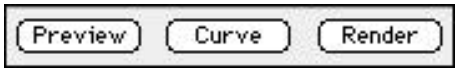
Rotation of a Selection/Path

1.  Select the Rotate Path tool from the Rotospline palette.
2. Click on the point around which you would like to rotate the spline.
3. You can now drag-click the mouse around the first point selected to rotate the selection.

Fill, Feather, Saving, Loading and Creating Splines

-  Either the inside or the outside of each spline shape is filled with either white or black; you specify the side and the color of the fill for each spline by clicking on the fill quality icon.
-  Commotion will feather the matte created from your splines either to the inside, outside, or both sides of your spline, which you specify by clicking on the feather icon. You can set the feather radius in the small number box next to the feather icon.
- You can save or load either single or multiple splines by selecting the desired function from the rotospline pop-up menu on the rotospline palette.
-  You can add or delete a spline by clicking on the respective icons when the desired spline is active in the spline palette.

Preview, Curve, Render



- **Preview** - generates a preview of the alpha channel according to the present splines and their configurations. The preview appears either as a grayscale matte in a new window, as a translucent colored overlay on your original, or as a matte applied to your clip..
- **Curve** will bring up the Path Curve Editor, which allows you to change the interpolation between path keyframes.
- **Render** creates a composition of the present splines and their configurations and places this composition in the alpha channel for the selected clip or in either a new (open) clip or a clip saved to disk. The new alpha is calculated over the in/out frame range.