

21. Some Basic Effect Techniques

The intention of this chapter is to present in an informal manner a number of basic techniques for effect creation. In all the examples, keep your attention on how easy it is to replace material or effects by other clips. You can always group and save a setup and reuse it in any other production, with different material.

Of course, different material, especially where keys are involved, may require slightly different parameter settings. You are always encouraged to play with the parameters proposed here to achieve other effects, or to adapt the effect to the image material you use.

21.1 Using External Mattes

External mattes is a frequently used term for alpha information that is not stored in the same “video layer” but in a separate one. As video recordings generally do not have alpha information, it is a very common situation that images from one recording need to receive mask information from another set of images.

In Jaleo, this can be achieved very easily using the Key Color function. Key Color in principle is a Key generator function that creates a key based on distance from a single selected color. This color, by default, is black, degenerating the Key Color to a luminance key. That is, when you use Key Color with one input, without changing any parameters it will produce a key that is equivalent to a black and white version of the image, i.e. that is its luminance map. A further feature of Key Color is that it can be used with two input channels. In this case, it generates the mask not from the first input, but from the second - that is, it combines the image information from the first input with the alpha information generated from the second input. And this is, as the default parameter set for Key Color creates a luminance mask (or black and white version) of the input, exactly what you want for using external mattes.

Shown as a Flow Monitor diagram, the setting looks like this:

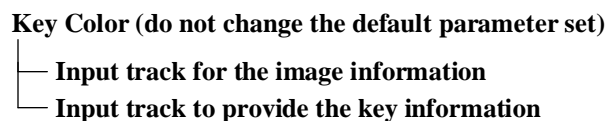


FIGURE 61. External Mattes with Key Color

The Flow Monitor creates a hierarchical drawing of a multilayer setup. The example above refers to two image clips, one above the other, and on top of them a Key Color effect whose effect scope (the red bar under the clip icon) has been dragged to encompass the two image clips.

Note that as always you can apply any filtering or effect to both of the inputs, that is, the inputs themselves can be the result of any stacking of effects. A simple example might be a color filtering or suppression in the image channel to be used for the key.

21.2 External Mattes Used for Compositing

Using the Key Color effect, doing a composite with an external matte becomes straightforward. The setting looks like this, and works without setting any effect parameters:

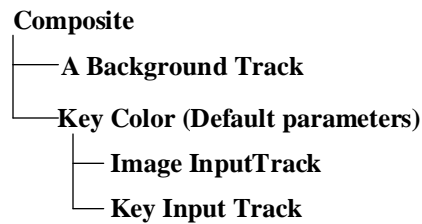


FIGURE 62. Compositing with External Matte

Note that compositings can be done with any number of input channels. You could thus use multiple Key Color entries, or even use images that already have an alpha, or, of course, use any of the other key generation functions. The compositing effect provides a mix parameter that can be used to fade in the foreground tracks.

21.3 Creating a Special Effect Wipe with Key Color

Another interesting application of the Key Color function is to create a wipe based on either the luminance of the image itself or any other input track. We will start with the simple (and not too spectacular) case: A wipe based on the luminance of the image itself. This looks like this:

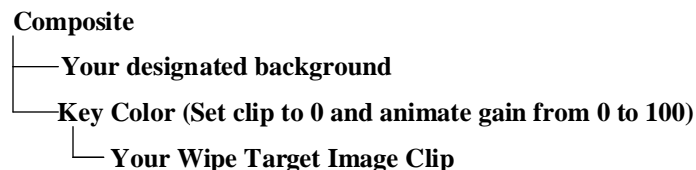


FIGURE 63. A Luminance Wipe

One more time a quick explanation of the Flow Monitor diagram: You have an image clip at the bottom. On top of it a Key Color effect, with its effect scope dragged to encompass the image clip. On top of that, you place the background clip. On top, finally, the Composite effect, whose effect scope must encompass the background clip and the Key Color effect. That is, the Wipe Target is an input to Key Color, and the Key Color and the background make the inputs for the Composite effect.

We are now ready to generalize: In the Flow Monitor notation, indentation always means that a clip must be encompassed in the effect scope of the effect one indentation level above.

Just as a reminder, if Key Color does have a single input, it generates a color distance key from this single input. As the default color is black, this is a luminance key. So why does this example create a wipe?

Please recall the introductory section to the Key functions and the explanations given for Clip and Gain. When you lower clip, you actually reduce the transition area between black and white values in the mask of all the key functions. That is, with a clip of 0, your mask is definitely black and white with hard edges. All values are either forced to be black or white, depending on if they are higher or lower than the Gain value. The default value, 100, gives a key that potentially includes all grey values. Watch the output of the Key Color effect in a monitor switched to Show Alpha mode while you lower the clip. After lowering clip to 0, raise gain to 50 just to see the effect and then set a linear animation from 0 to 100.

You can improve the effect by making non linear curves and by also animating clip from 0 to 50 back to 0 during the course of the effect.

As the luminance pattern of the image is generally not the most spectacular “driver” for a wipe, let us use another source for the wipe pattern: A noise generator. This can be done, as explained in the sections above, by using a second input to Key Color for an external matte. The setting looks like this:

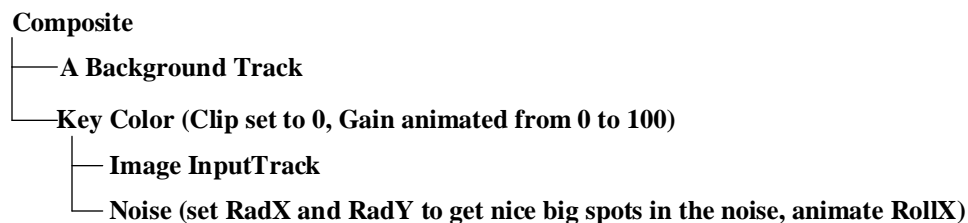


FIGURE 64. A Wipe driven by a Noise Pattern

The Noise effect has a large set of parameters. For our purpose, it is enough to make the “speckles” in the noise much larger and to animate the noise so that it moves. To adjust the speckles put a monitor cursor over the noise so that you see the result in the monitor. Now raise the RadX and RadY parameters until you have good sized speckles. To animate the noise, animate the Roll X parameter from 0 to something like 100 or 160, or whatever you like. To explain the Roll parameters: Imagine the noise pattern was painted on the surface of a sphere. You could then rotate the sphere, located behind the monitor window, about its x, y and z axis to make the noise move.

To understand the effect, first look at the output of Key Color with the Show Key option of the monitor. You will see now the moving wipe pattern. Now watch the output of the composite for the final effect.

Of course, you can replace the noise with any image or pattern generator you like. Try for example patterns from the wipe library (these are equivalent to the Strip Pattern effect in FX > Utilities if used without an input) or any other image, preferably without too many fine features. Do not delete the noise, but just move it aside; we are going to reuse it in the next example.

21.4 Adding Embossing to a Noise Wipe

Now, lets add some embossing to the wipe. Just select your Composite effect and your background with the mouse rubberband and drag them up one layer. Now add a Bump effect, like this:

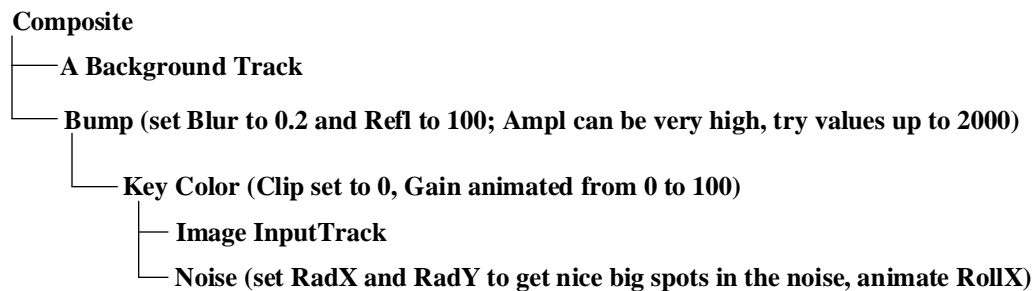


FIGURE 65. An Embossed Wipe driven by a Noise Pattern

The bump effect uses the alpha channel of its input to create an “embossment” along the edges of the alpha. As it pipes through the alpha unmodified, we can still use it for a composite. And as our wipe pattern and the Key Color effect are still setup for the wipe animation, we get an embossed wipe.

Again, try other pattern for the wipe. Very nice, for example, can be a Wave Pattern or the patterns from the Wipe Library.

21.5 Embossing with a Luminance Wipe

To come back to the luminance driven wipe we started from, let us try now to use the luminance again as a wipe pattern, but “spiced up” with the emboss. Just remove the noise pattern from the layer setup:

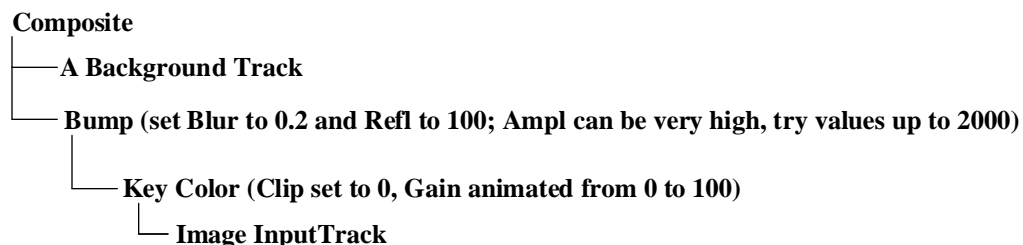


FIGURE 66. An Embossed Wipe driven by a Luminance Mask

Recall that the Key Color function with one input creates a mask from this one input, and that this mask is a luminance mask by default.

21.6 Distortion

You can use the wave pattern (or any other image) to distort an image:

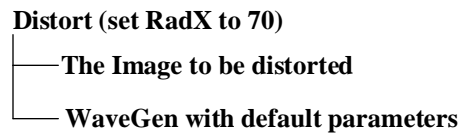


FIGURE 67. A Wave Distortion

Distort uses the red component of the image to warp in X and the green component to warp in Y. We are now using a black and white image, so principally distortion in both directions would be the same, and anyway, with the parameter settings given in the figure, only distortion in X is activated. Play with other inputs and parameters.

21.7 Distortion with a Transition

Now, use the distortion setting with a composite:

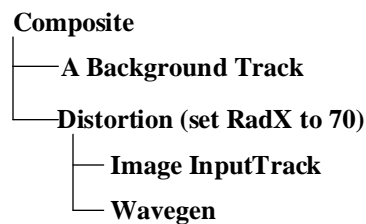


FIGURE 68. A Distortion/Ring Wipe

And, just “as usual”, add a bump:

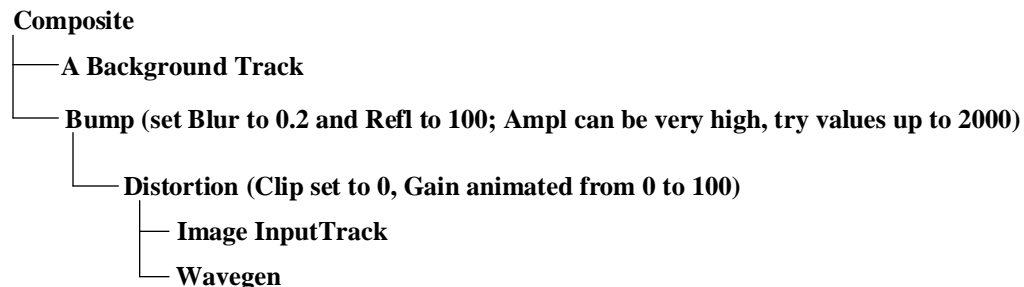


FIGURE 69. An Embossed Distorted Wipe

21.8 “Moving Edges” with Subtract

To try out the following example, you need a shot with a foreground moving in front of a background as static as possible. A bluescreen shot for example. Try this:

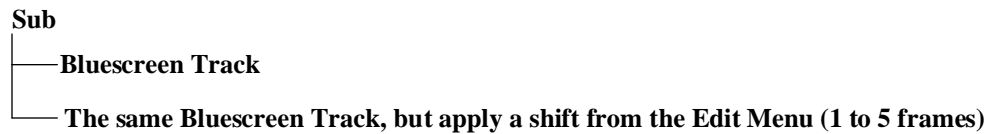


FIGURE 70. “Moving Edges”

The resulting image is actually the difference between the two images.

21.9 Some Hints for Choosing Keys

When you want to create a chroma key from a blue or greenscreen shot, you typically first try the Fast Key function, as it provides suitable keys in many situation without too many parameter adjustments. There are two important points to note though:

- You must adjust the Clip and Gain parameters as described in the introductory section of the Key chapter (see “Introduction To Key Functions” on page 159)
- You typically must use a Suppress Blue effect on top of the Fast Key to remove blue spills.

If you have a separate clean background shot, you can also add this background shot as a second input to Fast Key, improving the quality considerably.

Also note that Jaleo offers more keying techniques to choose from. It is worth exploring the Pick Color/Chroma key functions - these allow you to pick a set of colors prior to histogram adjustment, while the Fast Key function works more automatically. Pick Color/Chroma can also be used to create masks from arbitrary color selections, for example to drive or limit an effect.

If you need to take into account shadows and transparencies, the Color Difference key may be your choice. It requires a clean background shot, but Jaleo also provides tools to reconstruct such a background shot (see “Background Build” on page 187) in case none is available. Reconstructing a color background has certain advantages: It works in cases where a bluebox shot needs to be done with camera movements and zooms, and no motion control equipment is available.

21.10 A Concluding Example

Now, a lot of the elements from the sections before, all together.

First, create a bump using a bluescreen shot and Fast Key. The Key without any additional parameter settings will create something that is not very suitable for a chroma key, but very nice

for an “AutoBump”, i.e. an image bumped by itself. Check the key generated with a monitor set to Show Key:

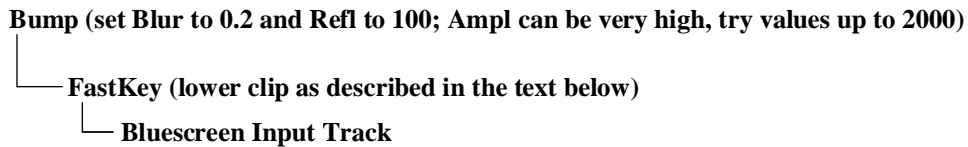


FIGURE 71. An “AutoBump”

To create a real chroma key, you would use the Histogram tool from the Pick Editor to set up a good key, and you probably would want to remove blue spills using Suppress Blue. In this case, however, the default result is probably fine for us:

The FastKey effect has a default Clip value of 30. This value will probably serve for our purpose, but please play a bit with the clip value by changing it to 100 and to other values.

Unless you have used an artificial chroma key shot, i.e. a computer generated image with perfect blue, there always will be some noise in the bluescreen, causing the background to receive a bump texture as well. As we do not want this for now, lower the clip parameter while monitoring the bump effect until the bluescreen background is more or less “unbumped”. Small disturbances do not matter a lot for our purpose.

Now, we create a difference image to our Bluescreen track:

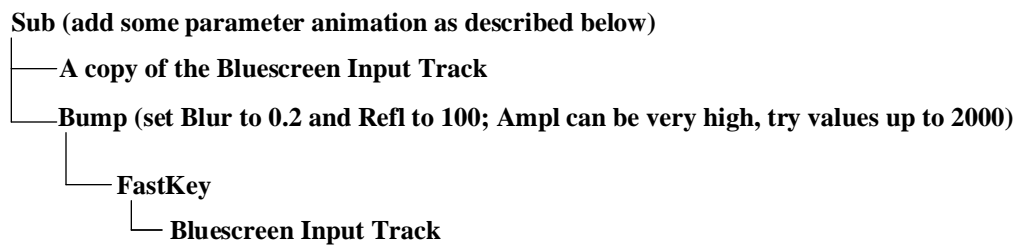


FIGURE 72. Difference of “AutoBump”

You now get a featureless silhouette of the foreground of your bluescreen shot. As it is a bit dark by default, you should raise the red, green and blue constant of the Sub effect to a value of maybe 50 each. After you have viewed the effect, animate the color constants from 0 to 100 each.

Now, we composite the result with another track. Use this setup:

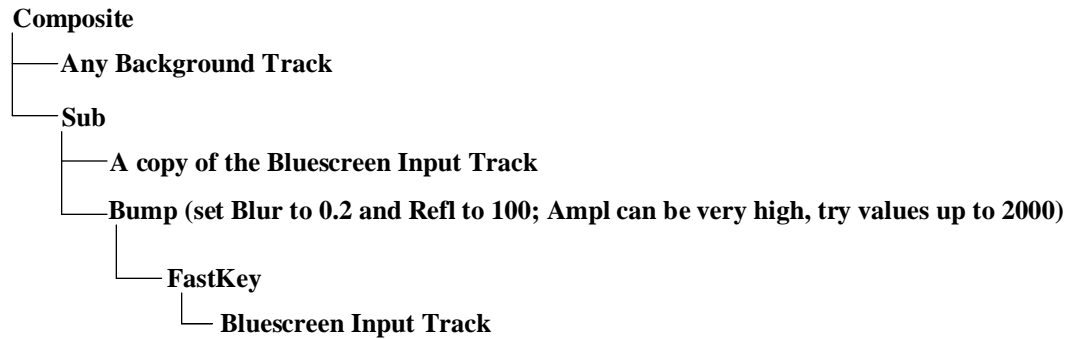


FIGURE 73. A Composite

The background track will only appear inside of the difference shape. Now, why does the background track of the composite appear inside and not outside? Watch the key on all levels of this composite. You will notice that the subtract function, as we have used it, has inverted the mask channel, because the default alpha of the original track is white (opaque), and subtracting a mask (as created by the Fast Key) from an opaque (white) mask is equivalent to inverting it.

You can now play with the parameters of some effects: Try to animate the clip parameter of the Fast Key. Try to animate the alpha constant of the Sub effect, for example from -50 to 0.

21.11 Four Point Motion Tracking

If you use a motion tracking effect with a single input, it will only compute motion curves. You can now use the copy and paste functionality to copy the generated motion curves to any other effect. If you only want to do a DVE, this does probably not make too much sense, as this can be done directly with the motion tracking effect if used with two inputs.

However, if you do a motion tracking without rotation, and you do it not once, but with four independent motion tracking effects applied to the same input, you can copy the resulting curves to the corner motions of a corner pin effect, and, as a result, have a four-point motion tracking. In this case, you do not really need to maintain the motion tracking effects once you have a result - once you have the basic curves in the corner pin effect, you can manipulate them there as well. If you need to redo the tracking, you can always reopen a tracking effect for the corner you want to redo.