

Understanding Mask Tracks in Boris Products

Boris FX, Graffiti and Red all offer numerous masking options. A *mask* is a media file with an alpha (transparency) channel, which is used to make areas in another image transparent. Each Shape and Face track contains a Mask track.

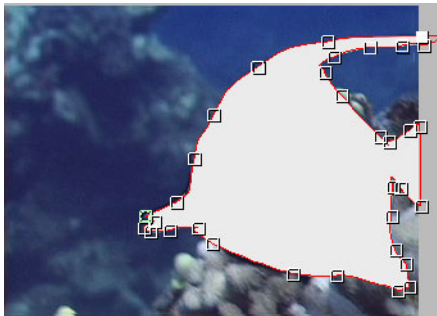
This tutorial uses a *Spline Object* track to create an animating custom mask. This tutorial is designed for the Red Engine, the standalone version of Boris Red or the FX KeyFramer. You can perform the steps in this tutorial within a host application, but host-specific aspects (such as applying) are not covered.



Foreground Image



Background Image



Animating Mask



Final Composed Image

Applying a Custom Mask to a Track

1. Create a new composition or setting:
 - If you are using Boris Red, choose Composition > New Composition.
 - If you are using Boris FX, choose File > New Settings.
2. Press the **Media icon** in the top track, and choose *Movie File* from the menu.

Media icon



3. A dialog box appears. Navigate to the location of a movie file that you want to use for the foreground and click **Open** to import the file into this track.

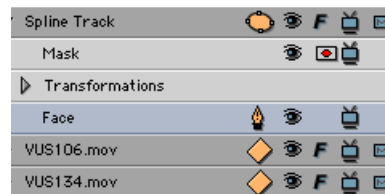
This tutorial uses two underwater scenes that were provided courtesy of Art Beats (www.artbeats.com). You can use any footage that you like.

4. Press the **Media icon** in the bottom track, and choose **Movie File** from the menu. Import the movie that you want to use for the background into this track.
5. Click in the gray area at the bottom of the timeline to deselect both tracks.
6. Create a new 3D Line Art track with Spline Object media by clicking the **Add Spline Object button** in the timeline. Make sure that this track appears at the top of the timeline.



When you finish, your timeline should appear similar to the example at right.

When you create a Spline Object track, the Tool window opens automatically. You can also open the Tool window by choosing Window > Show Tool Window.



7. Make sure that you are not in **Multi-Frame mode**, which creates static spline effects. You toggle in and out of Multi-Frame mode by clicking the **Multi-Frame Mode button** in the Tool window or by choosing Tools > Multi-Frame Mode. A checkmark appears in the menu when this command is selected.



When Multi-Frame is selected, changes are applied globally to each frame in the effect. Since you want to create an animating mask, you want to deselect Multi-Frame.

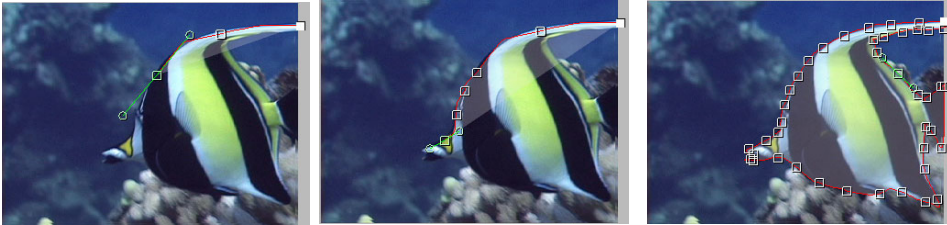
8. With the Spline Object track's Face track selected, in the Fill tab in the Controls window, set **Fill Opacity** to 25. This will make it easier to see the underlying track once you start drawing your mask. It does not matter what color you use for the Fill.
9. You may find it easier to draw your mask if you increase the scale of the display. To do this, press the **Scale button** at the bottom of the Composite window and choose a larger setting.
10. Make sure you are on the first keyframe of your effect. In the Tool window, select the **Pen tool**. The Pen tool creates spline objects by setting control points.



11. You want to create a mask around your foreground object, in this example the angle fish. To begin your spline with the Pen tool, click a point in the Composite window. A single click creates a **cusp point**—a control point without bézier handles. To create a **smooth point**—a point with two bézier handles—click in the Composite window and drag the Pen away from the point before releasing the mouse. To create a **tangent point**—a point with one bézier handle—Option (Macintosh) or Alt (Windows) drag in the Composite window.



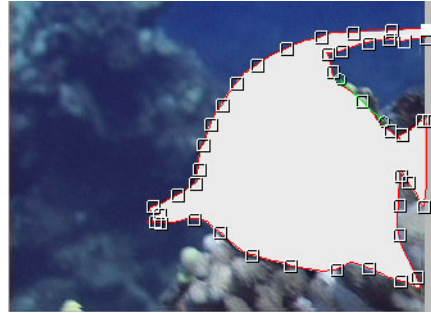
12. To continue the spline, click in the Composite window to create a second control point. The first and second control points are joined automatically. Continue creating control points until the foreground object is outlined, as shown in the following examples.



13. To close the spline, click the initial control point.
14. Move the CTI forward in your timeline until you reach a point where the mask needs adjusting. Make sure that your initial keyframe is deselected. Press Command-N (Macintosh) or Control-N (Windows), to create a new keyframe in the Face track and adjust the control points so that your mask covers the foreground object.
 - To adjust a point's bézier handles, click to select the control point. Bézier handles appear. Drag the handles to adjust the shape and tension of the line.
 - If the point is a smooth point, you can adjust one handle independently by pressing the Alt (Windows) or Option (Macintosh) key while dragging the handle.
 - To convert a cusp or tangent point to a smooth point, select the point, then press the Command (Macintosh) or Control (Windows) key while dragging from the control point. Alternately, select the point and choose Tools > Smooth Points.
 - To convert a cusp point to a tangent point, select the point, then press the Option (Macintosh) or Alt (Windows) key while dragging out from the control point.
 - To remove a bézier handle from a tangent or smooth control point, select the point, then click the handle and drag it back into the control point. You can also convert a smooth or tangent point to a cusp point by selecting the point and choosing Tools > Cusp Points.
 - To reposition a point, click to select the point, then drag it to the desired location. Shift-select to move multiple points simultaneously.
 - To add a control point, Option- (Macintosh) or Alt- (Windows) click the spline.
 - To delete a control point from a spline, select the point, then press the Delete key.
15. Repeat Step 14 for any frame in your effect where the mask requires adjusting.

16. With the Spline Object track's Face track selected, in the Fill tab in the Controls window, set **Fill Opacity** to **100**. Now that you have finished drawing your mask, you want to make sure that it is opaque.

When you apply a mask to an image, the image becomes transparent wherever the mask's alpha channel has a value of 0, and remains opaque wherever the mask's alpha channel's value is 255. Intermediate alpha channel values in the mask produce semi-transparent areas.



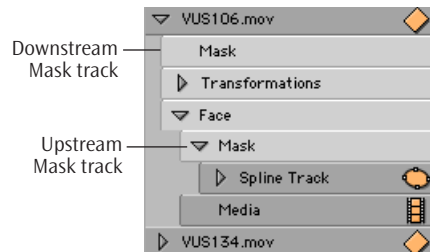
17. Click the disclosure triangle to expand the top track (the foreground that you want to mask).



If you do not see Mask tracks in the timeline, click the **Show Mask Tracks** button to display the Mask tracks. The top button at right shows the mask tracks on (the default), the lower button shows the mask tracks off.



Drag the spline track into the Mask track in the Face track of the top (foreground) track. As you drag the track, a thick line appears as a visual indicator of the new position. When you release the mouse, it moves to the new position. This creates an upstream mask as shown in the example at right.



In the upstream position, the mask is treated as part of the track's media. So, when you move the track, the mask moves with it. In the downstream position, the mask is applied after shape positioning takes place. Because the final composite includes scaled and repositioned versions of the fish, an upstream mask was used.

Now you need to finetune the mask. It will look more realistic if you soften the edges. There are several ways to do this. You could add a soft border or a filter to the spline object track. In this example, you will add a Matte Choker, a tool for the often frustrating task of adjusting mattes that are not quite right.

18. Select the Spline Object track (which is nested inside the Mask track inside the Face track).
19. Choose *Filters > Keys and Matte > Matte Choker*.

A Matte Choker filter appears nested inside the Spline Object track as shown in the example at right.

20. Select the Matte Choker track in the timeline. Use the following parameters in the Basic tab in the Controls window to finetune your mask.
 - Increasing **Blur 1** softens the image's alpha channel.
 - Positive **Choke 1** values tight the edges of the matte around the foreground image. Negative values expand the edges of the matte away from the foreground image.
 - **Gray Soften 1** sets the amount of affect the Choke setting has. At a value of 100, Choke has no affect on the image. If Gray Soften is 0, Choke acts as an alpha extract and produces a purely binary key.

With the example footage, the finished composite appears as shown in the example at right. You could further refine your mask by adding additional filters, such as the BCC Light Wrap which creates a more realistic composite by creating the illusion that light from the background is reflected onto the foreground image. This makes it appear as if the images were shot in the same environment.

In the example at right, the masked track has been duplicated. By scaling and positioning the duplicate tracks, you can easily create the illusion of an entire school of fish. Color correction, shadows and blur filters could further refine this illusion.

