

Velocity Curves in 2.8R

Up until version 2.8Q, velocity curves were composite curves only, that combined x,y, and z values into a single curve. Version 2.8 introduced f-curves and retained the older velocity curves in their original window. In 2.8R, the old-style velocity curves were folded into the f-curve editor. Accessing them takes a couple of steps more now than it did previously, but the editing environment makes the extra steps worth it effort.

So how do you get to the old velocity curves in 2.8R? Let's create a new project.

1. Under File>New create Velocity Curve Project. When asked for a model, say Done.

2. We will create a curve for the Camera, but it works the same way for any object. Open the Project Window using Command-L.

Double-click on the Camera to bring up its Info box. Note in its X-form tab how the Camera (body) and Reference are keyed to be Implicit, by default.

For velocity curves, we will want to leave them at their default, but for true function curves you would need to change the key type to Explicit using the pop-up box.

Close the Camera's Info box.

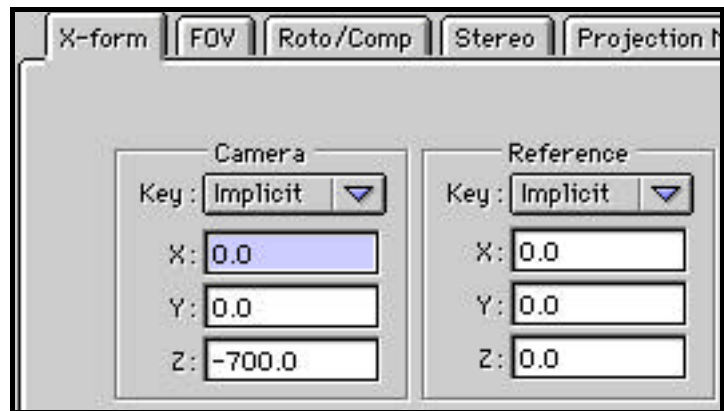


Figure 1

3. Now we will turn the Animation box for the Camera on so that when we move it at different times, we will be setting keyframes and creating velocities.

Open the Project window, using Command-L. Notice the column of boxes to the left of the listed objects (see Figure 5, below). In this column, known as the Object Status panel, are first the Visibility check box, then the Lock box, and lastly the Animation box.

In the Project window, set the grayed out arrow to the right of the lock box to green by clicking on it.



Figure 2



Figure 3

Once green, changes to that object will set keyframes.

As is true of all controls in the Object Status panel, Option-clicking on a status box will set that object and all objects below it to the same condition. Option-Command will set a parent and all children to the toggled condition when viewed by hierarchy, which is the default (see Version 2.7.5 Supplement, p. 2-8).

4. Move the Time Thumb to 5 seconds. In the Top View, drag the Camera's body to the right creating a motion path. Move the time to the end of the animation and drag the Camera again setting another keyframe.

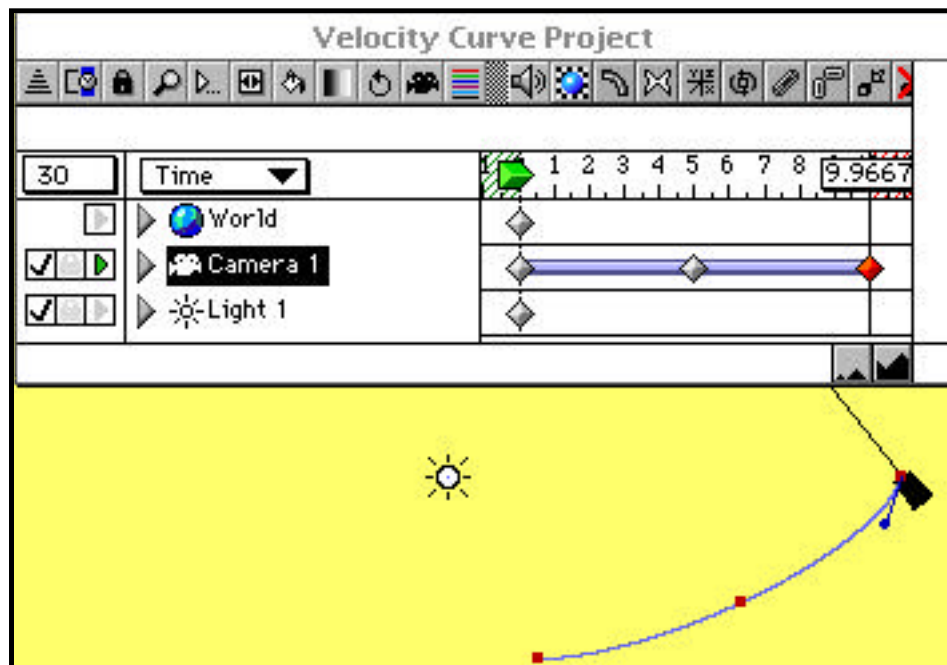


Figure 4

5. Now we will load the velocity of the Camera's Position into the Function Curve Editor. Expand the Project window so that you can see the Camera's parameters when we open its data channels. Click on the arrow to the immediate left of the Camera 1 icon.

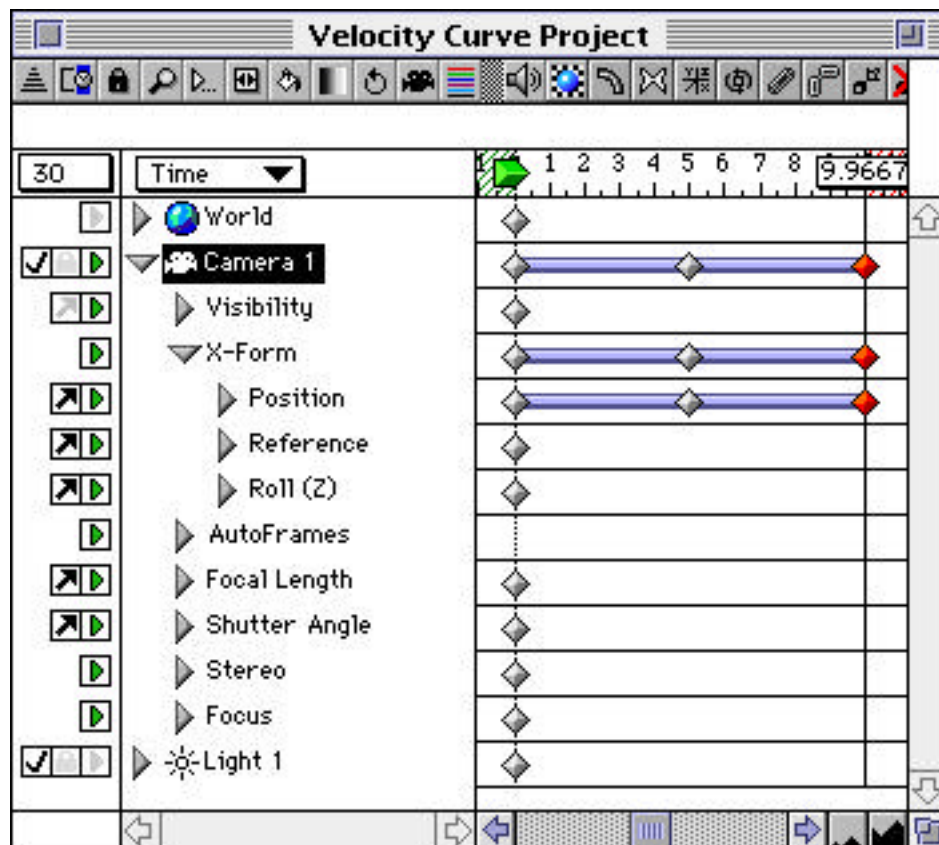


Figure 5

Then double-click on the word X-Form. We will do this to load the curves that control camera transformation.

You will see this:

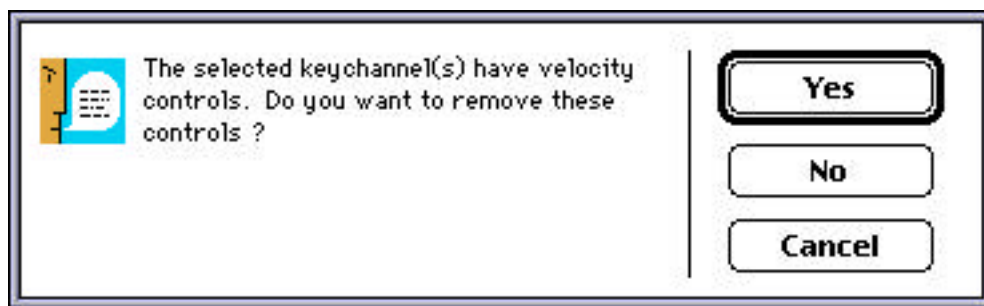


Figure 6

Removing these controls would eliminate the Velocity curves that are the point of this tutorial, so we will say No.

6. Now we will bring up the Function Curve Editor by using Windows>Function Curve Editor (or Command-`). On the left-hand side of this window, are the three curves we've loaded. As you can see in the Project window in Figure 5, above, we've set no keyframes for Reference or Roll, so their curves are flat.

The curves each have a visibility toggle, color swatch and name. The name isn't easily read until you place the cursor over the thick black line, called the Focus Indicator, and click on it to drag it to the right.

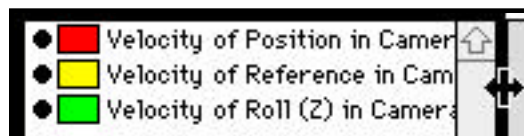


Figure 7

Select the Velocity of Position curve by clicking on any of the words. The only velocity we're interested in is the Position, so we'll turn off the visibility of the other curves.

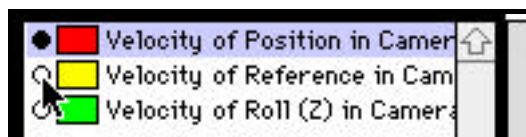


Figure 8

Hold down the Option key and click on the black dot that controls the visibility curve for Reference.

This will turn off not only the curve you clicked on, but all curves below it as well. (In this particular exercise, the visibility of the other curves doesn't matter since they are flat.)

Now we will bring the selected curve into view by using the zoom boxes at the lower right corner of the window. There are two sets of zoom boxes—one for each direction—horizontal or time (just like the timeline in the project window) and vertical or value (velocity).



Figure 9

Holding down the Option key and clicking on the zoom box in either direction allows us to choose Fit Selected.

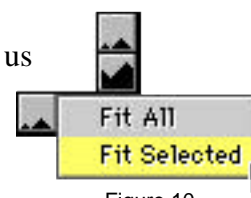


Figure 10

Do the same thing in the other direction. For a better view, you might want to zoom out one click in each direction.

Tip: You can interactively zoom in either direction by clicking and holding a zoom box, then dragging left, to zoom out, or right, to zoom in. This also holds for the Zoom boxes in the Texture window. Very useful.

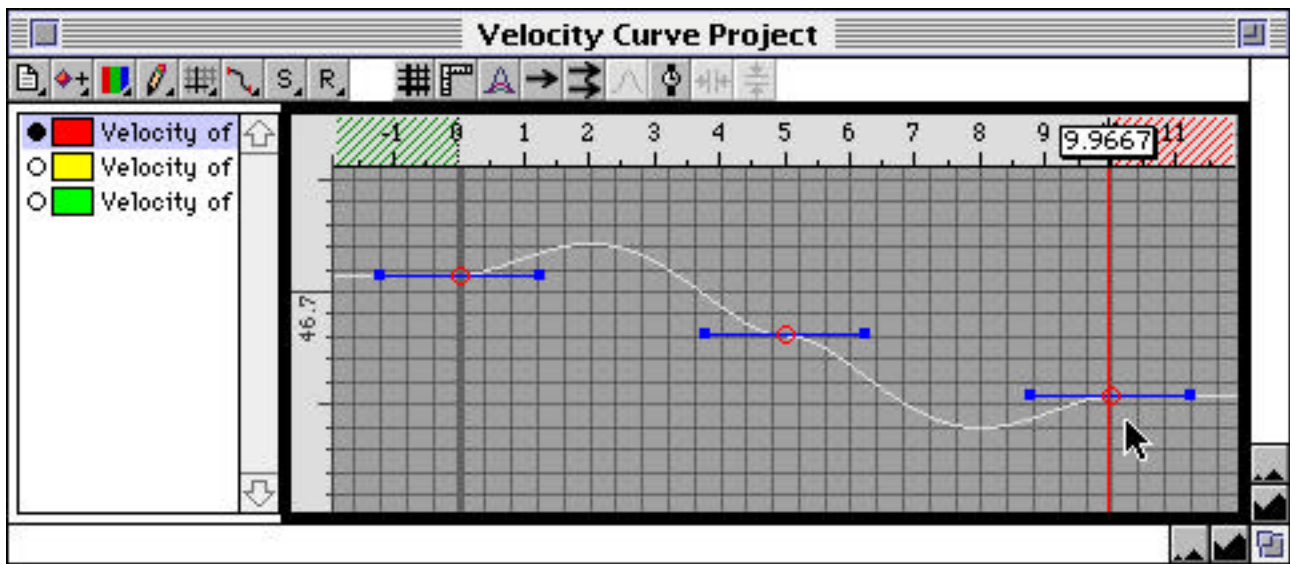


Figure 11

Among the useful differences between the Function Curve Editor and older Velocity window is the ability to constrain your editing to either time or value. Often you wish to change the velocity without changing the time (which would move the keyframe). By hitting the Tab key twice, you can constrain the cursor's movement to the vertical only, thereby ensuring that the time will not be disturbed.

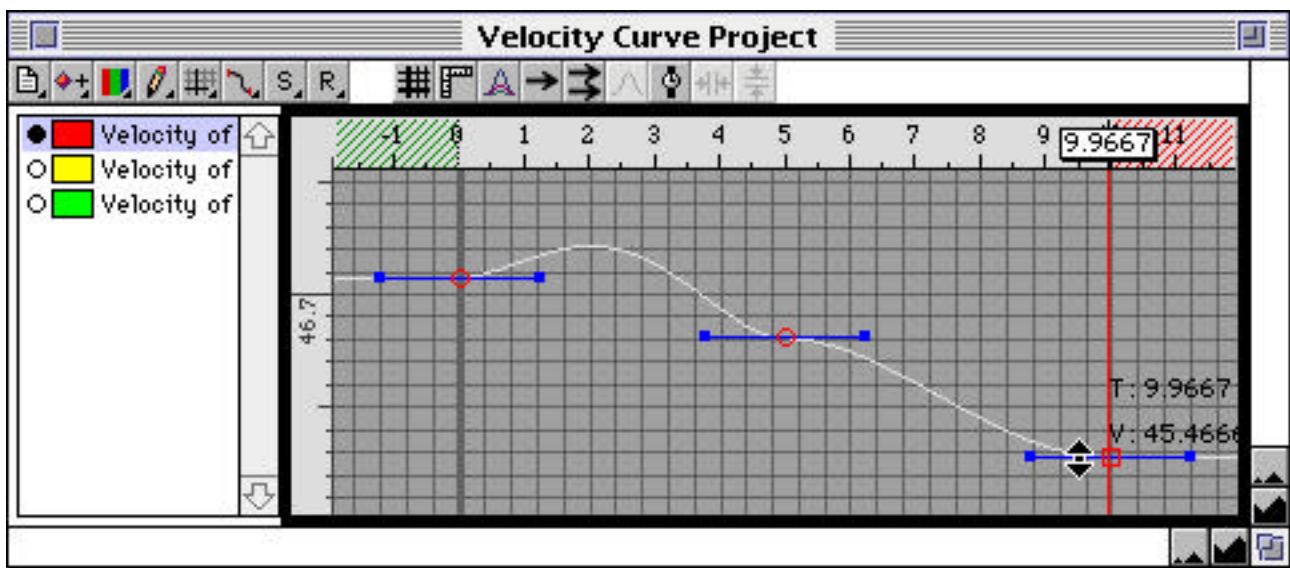


Figure 12

Here we are smoothing the dip in the velocity by decreasing the final velocity, i.e., easing out. To return the cursor to its normal state, hit the Tab key two more times (see 2.7.5 Supplement, page A-14, the Tab key). You can also drag the graph by depressing the spacebar, turning the cursor into a hand (see 2.7.5 Supplement, page A-4, the Spacebar).

So if you missed the old Velocity windows, now you know where they went.

If there are any questions, errors, or if some aspects could be clearer, please let me know so that they can be adjusted in the next version of this document.

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