

## VFX Tutorial #3 version 1 – Multiple Emitters and Lighting

This tutorial assumes you have read Tutorial #1 and #2 and are now familiar with using the time lines to adjust values over time. You can download the final effect from Tutorial #2 from the social site if you need it to continue with Tutorial #3.

### Where there's smoke:

Our fire is missing 2 more elements to be complete, smoke and lighting.

First we will add the smoke. Right click on the effect Root and select "Insert > Insert Emitter". You will see a second emitter appear on top of the first one.

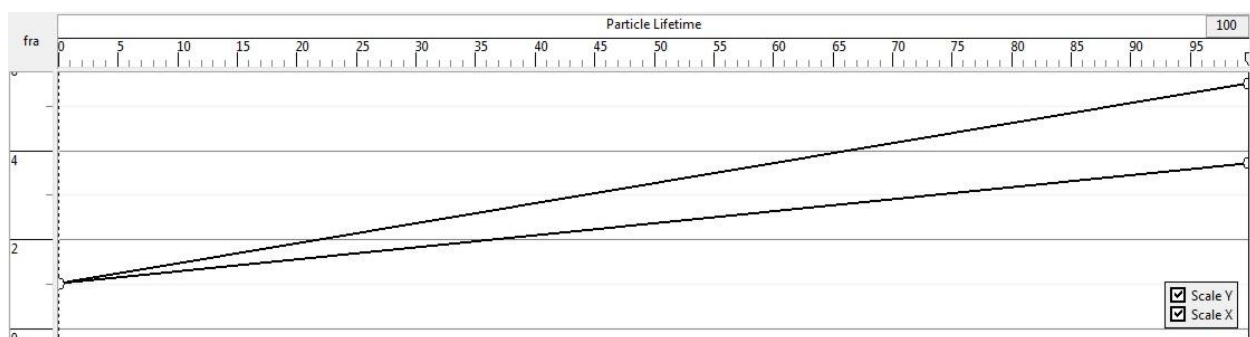
Select the new emitter and in the Object Inspector properties, change its name to Smoke. For Material Library, select fx\_smoke\_vol. For Material Object select fx\_smoke\_vol\_blend.

In the First tutorial we talked about the Flipbook Type: Contact Sheet. For this effect we will be using the Flipbook Type: Volume. This works similar to the Contact Sheet type except that the Flipbook Rows is the number of layers, usually 2 or 4. The Flipbook Columns should always be 1 and the Frame per second is a factor of the 2, i.e. Rows x Columns. Set these to 2, 1, and 2 respectively.

In the Age map, set the colors R, G, B to 0.5 and Color A to 0.7. Our smoke should now look more like smoke, but we have a ways to go yet.

Smoke usually bellows upwards and spreads out as it rises. We can simulate this with a combination of the Scale and Scale Multiplier time lines.

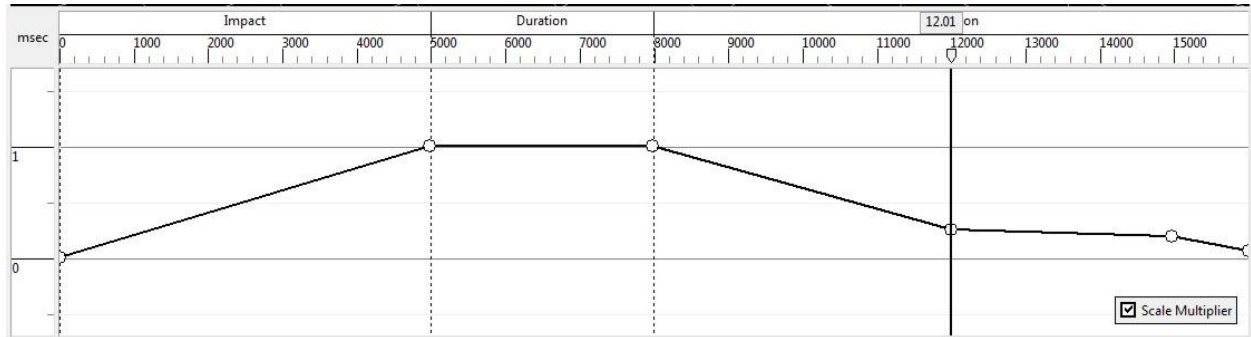
Select the smoke emitter and the Scale time line from the top right drop down menu. We want the smoke to grow in size both in the X and Y directions, but more so in the X direction.



Both X and Y should start at 1 and X should end around 5.5 and Y should end around 3.5 over the life of the particle. This will give us a funnel shape.

Now select the Scale Multiplier time line. We can use this line to make the smoke grow in proportion to the flame during it's impact, duration, and cessation times.

Start out at a 0 multiplier and raise it to 1 at the start and during the duration time, then taper it back down to 0 during the Cessation time. Notice that at around 12000, the flame is gone and we are only left with smoke for the last 4 seconds of the effect.



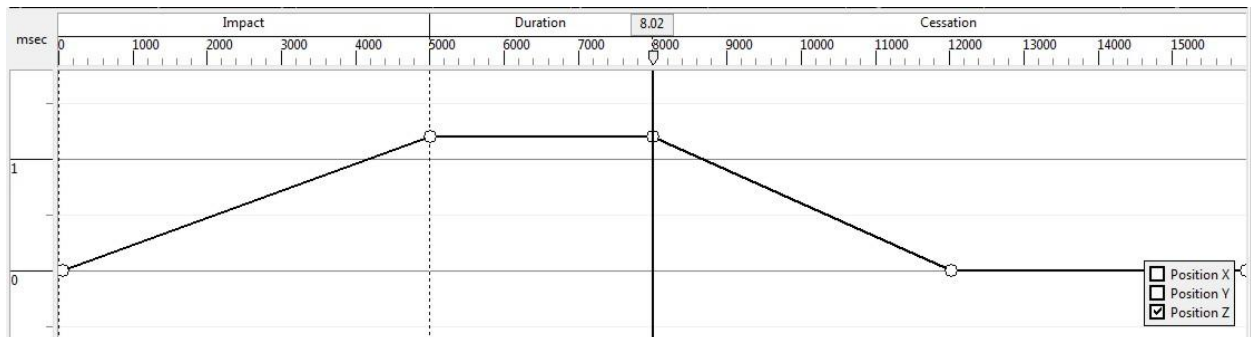
Now we need to change a few of the Emissions. Set the Birth rate to 3, Life Expectancy to 2.5 and Life Expectancy +/- to 0.5. If you recall from previous tutorials the +/- will give us a variance on how long the particle last. As we did with the flame, we want the smoke to also waver from left to right and forward and back, set the Spawn Spread X (Deg) and Spawn Spread Y (Deg) to 10.

### Changing Position:

By now you may have noticed that when you play the effect in full, the smoke stays at ground level. Smoke naturally rises from the top of the flame, not from the base. This is OK during the Impact and cessation phase as the fire is small and near the ground level. However, we need the smoke to rise to the top of the flame during the Duration phase. To do this we will use the position time line to make the smoke rise, and lower as the flame grows.

With the smoke emitter selected, select the Position Time Line. Unselect the X and Y position time lines so only the Z line is visible. Add a control point at the start and end of the Duration time. Also add a control point at around 12000 and one at the end of the effect time.

Raise the control points at the start and end of the duration to about 1.2, so it looks like the pic below.

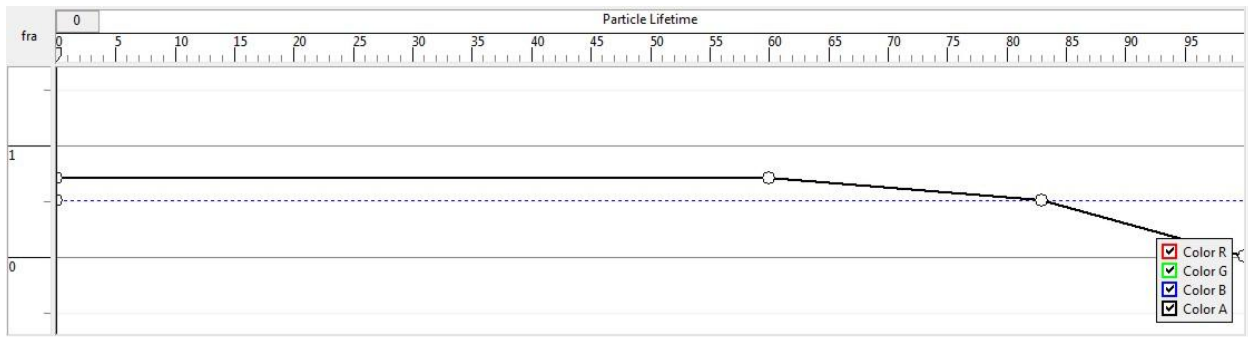


Now when you play the effect, the smoke should rise and lower with the flame. Feel free to play with any of these settings to get the look you like best.

### Fade it out:

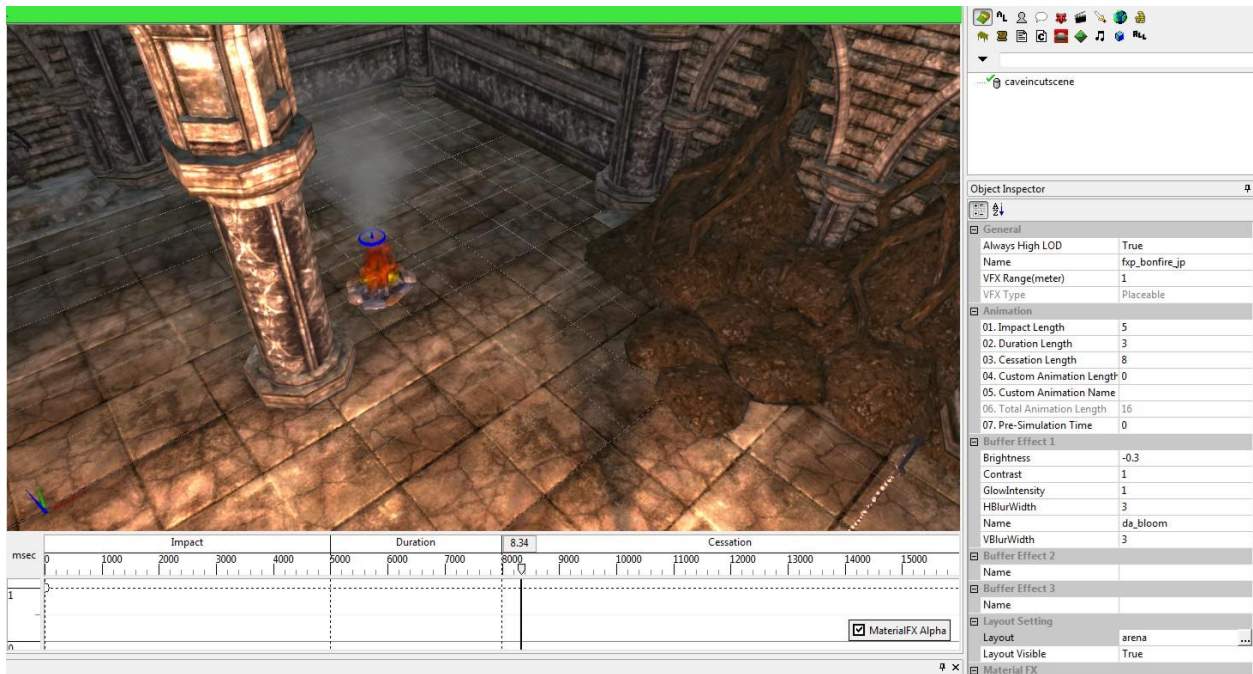
If you zoom out and look at the Animation as a whole you will notice that the smoke just suddenly disappears at the top, looks a bit odd. Instead we will fade it out so this isn't seen.

Select the Smoke emitter and then select the Color time line. Uncheck all the colors except the Alpha color. Add 2 or 3 control points towards the end of the time line and taper the alpha down to 0 at the end of the particle life time. This makes the smoke fade out naturally. Save your work.



### Light My Fire:

Before we continue, let's put our fire into a game scene. Select the VFX Root and in the Object Inspector, under "Layout Settings". You can select a area and see what your effect will look like in game. In Layout, select the area resource. Your effect should be near the upper right corner.



Play the VFX a few times, notice there is no light given off by the fire.

Right click the VFX root and select Insert > Insert Light. A new light object will be inserted on top of the fire emitter. It's right where we need it to be, by default.

Object Inspector	
General	
Affects Characters	True
Affects Level	True
Name	Flicker
Use Variation Tint	False
Visible	True
Animated	
Animated	False
Light	
01. Color R	1
02. Color G	0.5
03. Color B	0
Color Intensity	1
Point Radius	20
Location	
01. Position	2.12243,3.30355,0
02. Relative Position	2.12243,3.30355,0
03. Orientation	-0,0,-0
04. Relative Orientation	0,0,0

Light Properties:

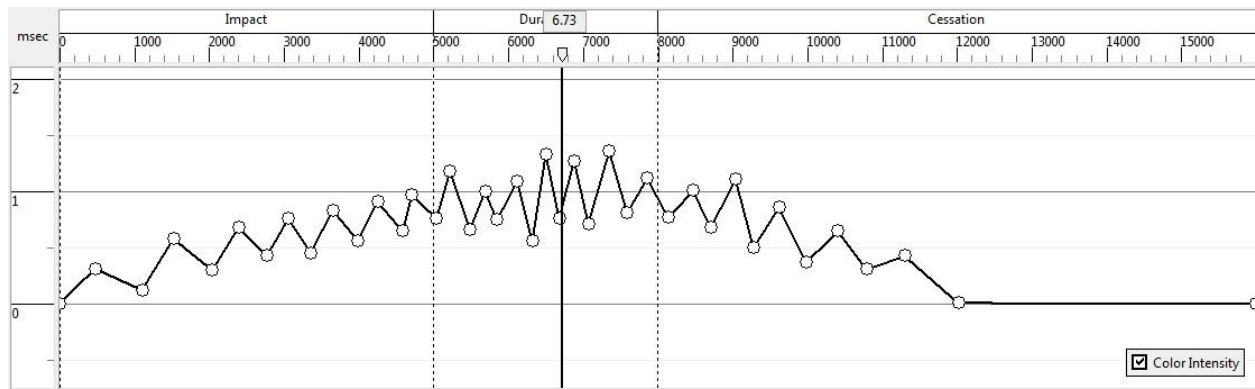
Affects Characters: Set this to true. This setting specifies if the light should reflect off nearby creatures and characters.

Affects Level: same as above but it applies to the surrounding terrain.

Name: Name your light, I called mine "Flicker"

First we need to give the light some color, a good yellowish – red should do. Set Color G to 0.5 and Color B 0. To make the fire flicker, we will change the intensity of the color to coincide with the flame.

Select the Flame object and then select the "Color Intensity" time line from the drop down list. Add several control points and adjust the intensity up and down so it climaxes during the duration, similar to the image shown.



Be sure to drop the intensity to 0 at around 12000 as this is where the flame goes out.

TIP: You can manually slide the time bar left and right on the time line to get a visual check of the intensity control points.

Now we have a nice bon fire complete with smoke and lighting.



Challenge: Using the Material Library "fx\_distortionmatlib" add a third emitter and give your fire distortion.

This concludes the basic VFX Tutorials, Thanks for reading.