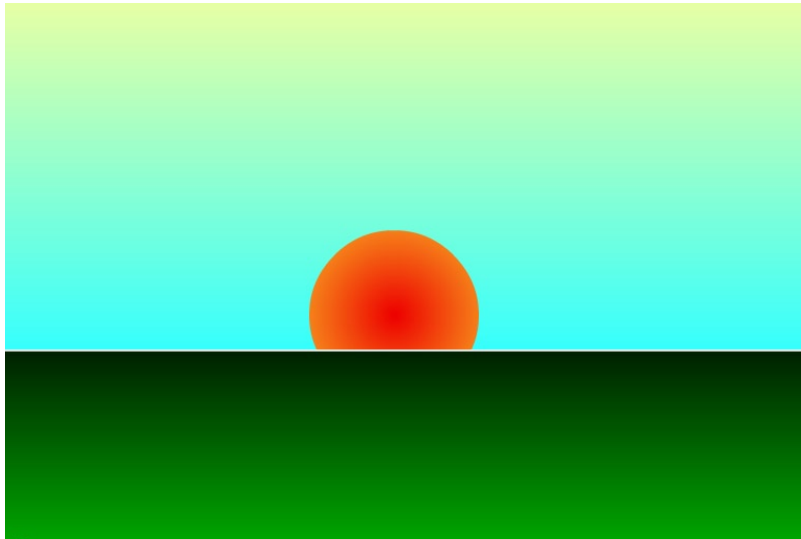


ROSE BRUFORD COLLEGE
SOUND AND IMAGE DESIGN.



Seminar Report: Vector Shapes Window - Director.

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Chapter 1: Why Use Vectors?

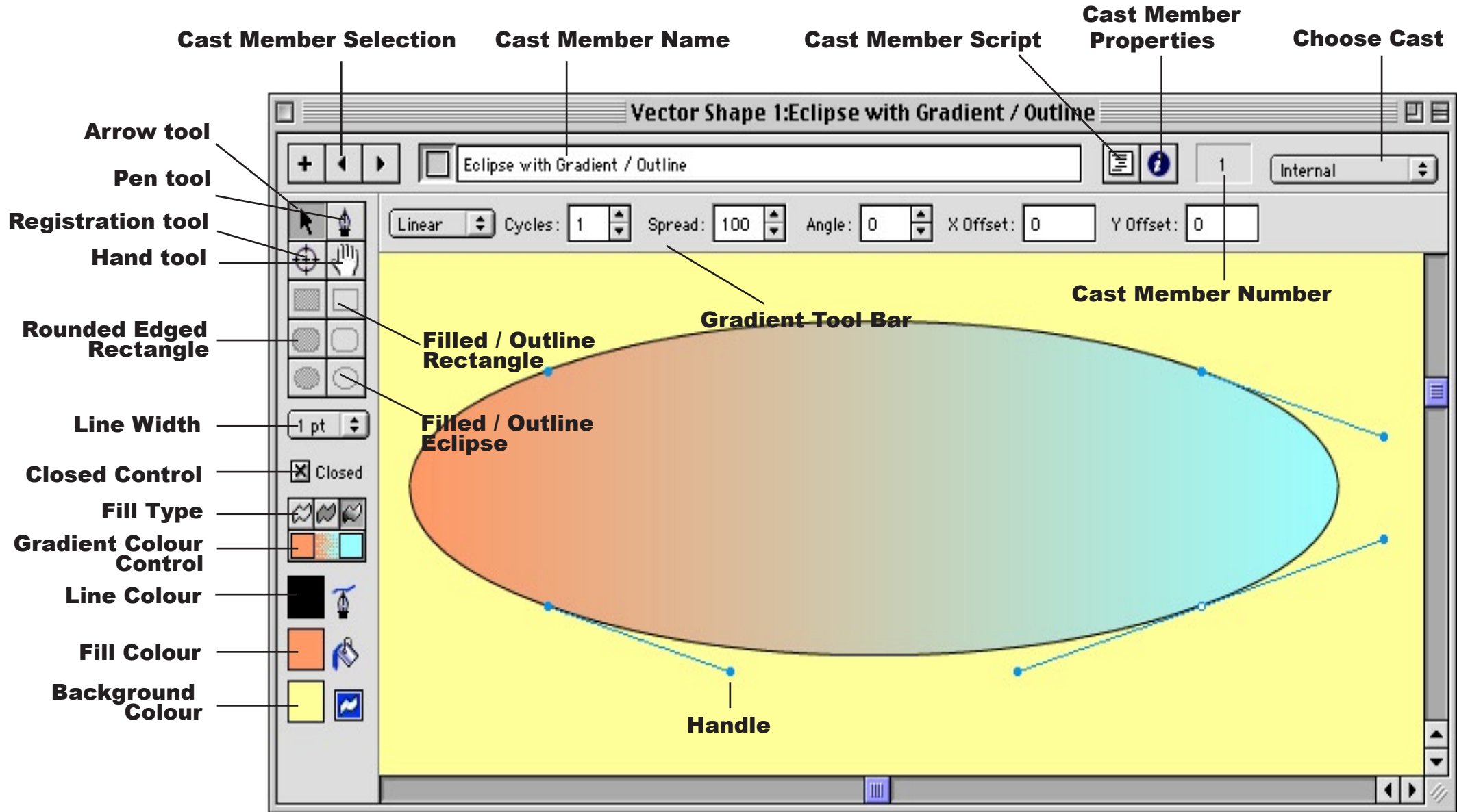
The 'Vector Shape' Window was a new addition within Director 7. It is useful in that it provides a creation tool for making vector shapes within the context of Director (previously you could only use bitmapped images). This is important because of the advantages of using vectors within the context of animation. Deciding on the appropriate use of bitmaps or vectors depends on a few factors. These are:

1. Bitmaps store information about each individual pixel within the image, whereas vector shapes are a mathematical description of the shape. Essentially this means that vectors use less RAM and disk space than an equivalent bitmap. It is important to try and keep the size of files as low as possible within animated Director work to avoid overloading the RAM on playback – the effect of overloading is to cause your animation tempo to fluctuate and stutter, ruining the intended smooth running of your animation. For this same reason vector shapes are useful because they will load faster on the Web.
2. Vector shapes can be resized without any distortion or becoming pixelated, whereas bitmaps become jagged when they are enlarged. Therefore vector shapes are ideal if you want to create smooth images. However, by definition vector shapes are simple images, involving much less detail than bitmaps. If you are dealing with complex images then bitmaps are perfect because you can control and adjust the image on a pixel-by-pixel basis.

3. More tools are available in Director for manipulating bitmaps. You can also import / export bitmaps into high-powered applications such as Photoshop. You cannot import vectors into Director that you have created in Illustrator. You must first rasterize the vector into a bitmap.

4. Vector shapes can be created and controlled in Director using Lingo. You can write a script that manipulates the various parameters of a vector shape such as line, size, shape and colour.

See my simple Director projector ('V+B Projector') for a demonstration of the quality of vector shapes in comparison to bitmapped graphics.



Chapter 3: Creating Vector Shapes.

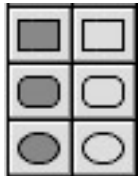
Vector shapes are a series of points with connecting lines. The shape or curve of those lines can be adjusted using the handles, and closed shapes can be filled with a colour or gradient. You have a pen tool for freehand drawing and a variety of shape tools similar to those in the Paint window.

When opening the Vector Shapes window the first thing you must do is create a new cast member and name it. You **cannot** create two disconnected vector shapes as a single cast member. Each single vector shape must be an individual cast member.

Here is a run down of how to apply the various tools that the Vector Shape window has on offer:



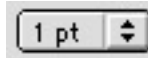
Pen Tool – you can use the pen tool to plot the points in which you want a line to pass (use the Shift key to constrain a new point to a horizontal, vertical or 45-degree angle. If you want to create a curved line, you hold click and drag. At this point two handles will appear, determining the angle of the curve; one controls the curve of the line before the point, and the other controls the curve of the line after the point (you can use the Shift key to constrain the handles). To add a new point in your line or shape, click the pen tool over that point whilst holding down Alt (Windows) or the Apple key (Macintosh).



Shape Tools – the shape tools consist of both filled and unfilled rectangles, rounded rectangles and ellipses. You can use the Shift key to create squares and circles.



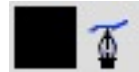
Arrow Tool – the arrow tool is used for editing a shape. Click and hold to select an existing point and drag to the new location, or click and hold to adjust the handles in a curve.



Stroke Width – this defines the weight (in points) of the outline of the shape. Select '0 pt.' to have an invisible outline.



Closed – the closed option enables you to open or close the outline of any shape, from the first point to the last point plotted.



Stroke Colour – providing the outline of your shape is visible (see 'Stroke Width'), you can select the colour of the outline by clicking on the 'Stroke Color' chip.



Fill Tools – once you have created a closed vector shape, you can consider filling it with colour. You can choose one of three options:
Unfilled (outline only);
Solid fill (filled with a single colour, chosen by clicking on the 'Fill Color' chip); or
Gradient fill;

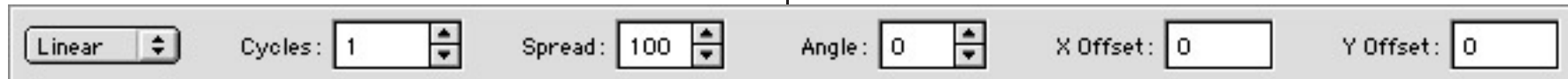


Gradient Colours – two paint chips are available for gradient colour selection. The left chip sets the starting colour of the gradient, and the right chip sets the ending colour.



Background Colour – To set the background colour for a shape, click on the ‘background color’ chip. On your stage the background will appear the shape and size of a bounding rectangle around the shape. It is a good idea to set your background colour to the same colour as your stage background. Shapes with the same background colour will animate faster than a shape that uses the ‘Background Transparent’ ink effect.

The Gradient Tool Bar:



The ‘Gradient Tool Bar’ only becomes active when you have selected the ‘Gradient fill’ option.

Linear / Radial Option – used to switch between a linear gradient and a radial gradient. This option defines how the spectrum of colour values unfolds. A linear gradient moves in a straight line, whereas a radial gradient proceeds from a central point, providing a sunburst effect.

Cycles – this option defines the number of times the gradient passes through the spectrum of the two colours. The maximum number a cycles possible is seven.

Spread – the gradient-spread control determines the rate of the

colour change. The spread is given as a percentage – 100% specifies that the colour change occurs over the entire area of the shape. A smaller percent makes the blend less gradual, and a higher percent creates an effect as if the gradient spanned to an area larger than the shape.

Angle – the angle tool is used in conjunction with the linear tool to define the angle of the gradient in degrees. 0 degrees blends from left to right, 90 degrees blends from top to bottom.

X Offset / Y Offset – Use the X (horizontal) offset and the Y (vertical) offset to move the starting location of the gradient effect.

See my simple Director projector (‘Sun Projector’) for a demonstration of the quality of animated vector gradients.