Editing suite

The post-production and editing process in video animation, presented by Benjamin Woolley.

Over the last two months I have been looking at how you can get your carefully crafted 3D animations onto video. When 3D packages first appeared, this was just about the only way of showing them to others; computers could barely play back real-time animations, and the idea of distributing them through media like CD-ROM or the internet was a distant dream.

Now, though, video is not the only form of output open to the 3D enthusiast but it remains an important one, and it is still the most widely available and understood format. If you want to send an animation to someone but are unsure whether they'll have the technology to watch it, you are most likely to succeed if you send them a VHS tape.

▲ A SPACE SCENE RENDERED WITH THE LENS GLOW, RAY AND FLARE POST-PRODUCTION EFFECTS APPLIED TO THE SUN

After-effects

Last month I looked at the rendering implications of outputting to video — video formats, colours and so on. This month I want to round off the topic by looking at what you need to do *after* you have rendered your animation. The first thing to consider is whether you want to add some post-production effects. I've looked at this topic before, so there's no need to go into it again at length. However, there are a few issues to consider which are specific to video.

Post-production is about adding 2D effects to your 3D scenes, effects which are based on the content of the rendered image. They are particularly relevant when it comes to outputting to video, for a variety of reasons. Firstly, unlike, say, an animation for a web page, an animation intended for video will, by necessity, have a large resolution (720 x 576 for European PAL-standard video, 720 x 486 for US NTSC-standard video). This means that you may need to add some sort of 'noise' to particular areas of the image, such as smoke or haze effects, in order to break up large areas of uniform colour that might otherwise dominate the screen.

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Secondly, an analogue video signal doesn't look the same as a digital one, especially after it has passed through a non-professional video output card. In particular, areas with a large number of horizontal or vertical lines, or chequered patterns, must be treated in some way to prevent strange interference effects appearing.

Thirdly, video lends itself to a more organic, or natural, look, as though the scene being viewed really was shot through a conventional camera rather than a virtual one. You don't want the end result to appear too clinically crisp.

These factors mean that you may find an element of post-production is essential to make your animation suitable for the small screen. Various effects like lens flares, glow filters and focal blur will add the sort of 'analogue' look that suits video.

In the example above I have used a selection of lens effects to add a glow and flare to the sun. Such artefacts work particularly well in animations: for example, a glow effect, if properly set up, could be used to add a particularly intense shine to the first appearance of the sun's light around the edge of the planet.

The post-production tools provided

with some packages (the more expensive ones, generally) allow for Adobe Photoshop filters to be used to apply effects to each frame of an animation as they are rendered, which is particularly useful if you want to add a filmic quality to the final result. For example, you could use a filter to desaturate the colours used in the animation, so that the finished video has a sepia look to it.

Sequence of events

Once you have done your post-production, the next thing you will probably have to consider using is some form of video editing software. This is important for a variety of reasons. Firstly, the editing software will provide a much more efficient and convenient means of assembling your animations into a proper sequence.

You can, of course, create a sequence within the actual animation when you set it up in your 3D software: you can perform a 'cut', perhaps from a medium shot to a close-up, by making the camera move from one position to another in a single frame, or by getting the renderer to render from different cameras at different stages of the animation.

However, you're likely to get much better results if you create a separate animation for each shot in the sequence and then use video editing software to join them together. This will make it much easier to get the timing right, and depending on the editing software you're using, will allow for a variety of wipes or transition effects if a cut seems inappropriate.

Video editing software allows you to add another very important element to your animation: sound. Some 3D packages allow you to add a soundtrack to the animation prior to rendering, but if you want the greatest possible flexibility for co-ordinating sound with pictures, you are probably better off using a video-editing package, particularly if you want to use several tracks (such as one for music and another for effects).

Finally, you may find that video editing packages provide better facilities for adding credits and titles.

▲ THE MAIN SCREEN OF MGI'S VIDEOWAVE II EDITING SYSTEM. ONE OF THE CHEAPEST ON OFFER, IT IS NEVERTHELESS PERFECTLY ADEQUATE FOR MOST 3D GRAPHICS PURPOSES. IT CAN BE USED, AS SEEN HERE, TO ADD TITLES AS WELL AS A VARIETY OF TRANSITION EFFECTS, SUCH AS DISSOLVES AND WIPES

Once you have edited your animation into a suitable state, you're ready to transfer it to video. If you were working for a professional effects house, this would be done by copying the animation to a video deck frame by frame, using a card in the PC that controls the VCR. You might even transfer it to film using a film recorder, the staple device of Hollywood digital effects production.

However, in the real world, such options are not available and you will have to use a card (like the Iomega Buz I've been using; see July's column) that converts the graphics output into video in real time.

Even the most powerful PCs can run out of breath trying to play a full PAL-resolution animation back in real time

Such cards usually output what is being displayed on the computer screen to the video, which means that to record your animation, you simply play it back on your monitor. But even the most powerful PCs can run out of breath trying to play a full PAL-resolution animation back in real time; usually you will find that frames are dropped, or that sound goes out of sync.

There is no simple solution to this problem. If your editing software allows you to compress your finished animation into various different formats, you could experiment with several and see which one works best. You should also play the animation file off a hard disk that has been recently defragmented.

If you're likely to be transferring animations to video on a regular basis, perhaps the best idea is to invest in an IEEE 1394/Firewire interface connected direct to a DV camcorder. The cost of these devices is coming down and should soon be within the reach of most consumers. You might also consider getting a card that supports the MPEG-2 hardware codec.

Talent spotting

Despite the challenges video represents, it is still an important medium for distributing 3D content. It may be ageing, it may be analogue, but in a market saturated by imagery, it is possibly still the best way to get yourself noticed.

PCW CONTACTS

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