

AROUND THE WOR

How to create QuickTime



Edward Gabinet shoots the Sony VX-1000 mounted on a Kaidan QPX-2 panoramic head.



LD IN 360 DEGREES

Virtual Reality

BY BOB CONNOLLY

MOST OF US HAVE SEEN THEM — THOSE NEAT 360 DEGREE panoramas featuring majestic locals or interiors of office buildings. Every multimedia designer would love to incorporate them into a website or CD-ROM but up until now it has been a very difficult procedure.

Apple has heard the cry of the industry to come up with an easy way to make panoramas and has finally brought to market the QuickTime VR Authoring Studio 1.0.

It should actually be called version 2.0 — if you take into account Apple's first incarnation that required MPW (Macintosh Programmers Workshop). Well, most of us didn't want to learn, so QTVR movies were primarily used for games such as Paramount's *Star Trek Enterprise* VR walkthrough.

But now, with Apple's VR Authoring Studio, we can all produce these fascinating worlds with almost no effort—provided we have the right equipment for the job.

Incorporating them into a CD-ROM presentation is now a lot easier with the release of *Director 6.5* which now recognizes QTVR movies. No more cryptic code!

In Star Trek fashion, featuring continuing episodes, we will boldly go through the entire procedure of photographing, editing and final authoring of QTVR movies. First we will deal with the equipment you will need to photograph or digitize a series of still images that will be incorporated into a QTVR panorama movie.

STEP 1. BUY OR RENT THE APPROPRIATE GEAR

A QTVR panorama consists of a series of still images joined (stitched) together to produce a 360° view of a location. Until recently, almost all these images originated with 35mm film photography because digital capture cameras were severely limited. High resolution captures, interchangeable wide angle lenses, manual exposures, focus, depth of field, variable shutter speeds, etc. are now available on digital still and video cameras, making the use of image capture a very viable solution.

You also need a good tripod and a way of taking a precise number of pictures that cover the 360° surrounding. The easiest way to accomplish this is by using a tripod head that has camera position stops already built in.

Kaidan (www.kaidan.com) is the largest manufacturer of QTVR tripod camera mounting heads. These panoramic heads come in a wide variety of sizes and prices. Some are designed for smaller QuickTake or 35mm film cameras and others are designed for the weight of larger video cameras. For our test, we used the QPX 2 model which is Kaidan's top of the line model that lists for about \$700. Their starter

heads begin around \$100.

The Kaidan QPX2 head is perfect for lightweight digital video cameras and we used what is considered to be the Rolls Royce of digital video — a Sony VX-1000 for digital image capture. This video camera is broadcast quality and lightweight, and has three CCD's and a very good lens. Its initial popularity was with TV newsmen who were shooting documentaries in foreign countries that prohibited television crews from shooting in sensitive areas.

For our purposes the VX-1000 is ideal because it also has a Firewire output for direct digital transfers to a Macintosh via a Radius DV capture card. Thousands of pictures can be stored on one DV tape, freeing up the limitations that are imposed on still digital cameras that use RAM cards.

2. SHOOT THE SCENE

This process is fairly simple if you have a QTVR tripod head.

Kaidan's tripod heads come with a circular wheel that is notched, allowing you to forget about counting off precise degrees of camera rotation. You will need to overlap the images so the computer can stitch the common parts of the sequential frames together. Kaidan suggests a 50% overlap which makes it easier for the computer to join the common elements of the pictures together. For our tests, we rotated the camera 18 degrees, pausing the camera at the predetermined indent. The result was twenty pictures which made up a 360° rotation.

Getting an even focus and exposure over the entire series of images can be tricky. You need to keep the same exposure for all the images or you will start to see banding where the pictures are joined together. Some professionals choose to shoot two sets of images if there are problem areas, like overexposed windows.

Shoot one panorama exposed for the interior and shoot another panorama that is correctly exposed for the windows. After you author and stitch the images into long and wide PICT files that produce your panoramas, you can then copy parts of the correctly exposed windows and paste them into your correctly exposed interior using *Photoshop*.

Focus is also important, and depth of field comes into play here. Wide angle lenses are great because everything tends to be in focus. When you zoom in on a scene, tight focus is needed. This will change from frame to frame, resulting in an uneven focus overlap in images.

CONTINUED

You need to be wide all the time and, if possible, all the images need to be in focus without refocusing the lens. Lots of light will keep all your images in focus because you will get a greater depth of field. Once again, shooting outdoors in bright sunlight is ideal.

3. TRANSFER THE DV TAPE TO THE MAC

Radius has a great setup for capturing DV Firewire. Its software is called PhotoDV and it works marvellously. As you play back the live video, you capture a frame when it comes to rest on the tripod notch position.

As soon as the picture rests, you click the capture button (which is a *Photoshop* plug-in!). Instantly the picture is captured, resized, deinterlaced, saved and numbered for a series of PICT files. This is a big improvement over shooting film, processing, scanning slides, saving to Photo CD, etc. While you might not have the quality or look of film, most

of this high quality look is lost anyway when compressing the final QTVR to Cinepac. Digital frame capture is the way to go if you don't need wide angle film lenses that are usually used for shooting small rooms. Digital video capture with a standard built-in 50 mm video lens is fine for outdoor scenes or large rooms.

After all your images are digitized, you will now need to import them into a QTVR authoring application.

We will cover off stitching the images into a panorama using Apple's new QTVR Authoring Studio in the next issue, but if you can't wait, there are alternatives...

QUICKTIME VR TRAINING

There are schools that specialize in QTVR where you can learn to create the next generation of multimedia applications using QuickTime VR (QTVR), Apple's award-winning nonlinear movie format.

The flexibility in creating such virtual scenes, however, requires a fundamental shift in perspective. Entering the world of immersive imaging requires three-dimensional thinking, and gaining practical production tips (such as lighting and locations) benefit from a healthy dose of experience and training.

While the rudiments of QuickTime VR can be learned by experimenting (as I generally do), hundreds of multimedia professionals have jump-started leaps into this virtual realm by attending intensive training courses in the technology.

One company, The Learning Alliance, is regarded as the pre-eminent training source for QuickTime VR. They developed the original training for Apple Computer when the product was released in 1995, and have been delivering classes and conducting train-the-trainer sessions in the technology ever since. They currently offer a sequence of classes that are intense, hands-on experiences in all aspects of QTVR creation. Classes focus on each of the three main approaches to QTVR: panoramas, objects, and scenes. Included in the scenes course are approaches to using VR files in multimedia projects with authoring tools such as Macromedia *Director*.

The complete three-day course costs \$750 (US), and one-day courses in individual QTVR components cost \$275 (US). Courses are available in Los Angeles (Santa Monica), Orlando, Chicago, Boston and Cupertino (Silicon Valley) and Vancouver, B.C. (and soon in New York City and Atlanta).

For details, contact the Registrar at The Learning Alliance by calling 617-630-9208. Check out The Learning Alliance website at <http://www.letmedoit.com> or e-mail them at registrar@letmedoit.com — and master the virtual media! *

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