

# Computer Animation & Design

*Using Adobe After Effects, Computer Animation and Design Provides Quantel-Quality Graphics at Half the Cost*

## Adobe™ After Effects™ in Broadcast Design

### Key Benefits Summary

- Computer Animation and Design is able to serve a new market by providing high-quality graphics at a much lower cost.
- Improved motion control and a wide range of plug-in modules support more creative efforts than were possible in the past.
- The ability to import files directly from Adobe Photoshop™ and Adobe Illustrator™ allows projects to be completed more easily and more quickly, therefore better serving clients facing tight deadlines.

Randy A. Cates, president and founder of Computer Animation and Design, has a long history in the design/production industry. And as the design director for various post facilities, he was always amazed at the high costs associated with compositing, editing, animating, and creating special effects.

“Some prospective clients would walk in the door with as much as \$20,000 to \$30,000 and were told that for their particular production, this would not be adequate to hire us,” says Cates. “The equipment in these facilities always included a Quantel Paint system and high-end edit suites, resulting in pricing that was just too expensive for many clients. If you didn’t have a serious budget, you may as well forget high-end effects or digital compositing.”

Cates recognized that many customers turned away because of the high prices of systems like Quantel. He saw a lucrative niche in the market, if only the right production equipment could be found to service it. After seeing Adobe Photoshop for the very first time, Cates elected to leave the facilities to go out on his own and to service this market with an Apple® Macintosh® computer, Adobe Photoshop software and, eventually, Adobe After Effects software.

“Much to my surprise, that early version of Adobe After Effects could do just about everything that a Quantel Harry could do,” says Cates. “This single product opened the door for every designer who wanted to do professional animations but couldn’t afford, or wasn’t lucky enough to work on equipment like a Harry.”

In fact, Cates discovered that Adobe After Effects could do things that the Harry system could not. One of the features that most impressed him was the ability to move complex patterned images in any direction through the screen at 4,000 x 4,000 pixels, as if shot on a camera stand with motion control. No more was there a need to perform laborious edits marrying raster-sized frames together to achieve these effects—known as “push frames”—which in an analog environment just won’t marry seamlessly.

“I get the big picture in Adobe After Effects,” says Cates. “That helps in terms of both greater creativity and speedier production. When you digitally composite in any other medium, once you have laid one layer over a previous one, the layers are fused together. Then, the only way to go back and change something is an expensive, tedious redo of all the preceding layers, or edits.

“This freedom to change not only edit decisions, but actually add layers between edits performed at any level prior to your present point in time, means clients are no longer ‘out of luck’ (due to the sheer expense) should they want a change. The best part is, after the change is made, the rest of the entire edit is performed automatically by the program. No stress there.”

### Adobe Software Is the Cornerstone of Computer Animation & Design

Cates quickly realized that Adobe software running on a Macintosh computer was the combination he needed to service the market with high-end needs but smaller budgets. So in 1990, he founded Computer Animation & Design with that goal in mind.



“Adobe After Effects and the other applications from Adobe enable me to provide high-end quality graphics at about half the cost,” says Cates. “As far as I’m concerned, Adobe is one of the most forward-thinking and professional technology companies. Without its products, I simply wouldn’t be in business.”

Computer Animation and Design produces computer animations for corporate and broadcast clients, including movie opens, bumpers, and tags and technical imagery for industrial accounts. Typically, Cates works with between 5 and 50 layers and with numerous elements, most of them created in Adobe Photoshop.

“The ability to import native files directly from Adobe Photoshop into Adobe After Effects saves an incredible amount of time and helps me to meet tight client deadlines,” Cates says. “Often, I simply pull the storyboards built in Adobe Photoshop into After Effects and begin creating animations immediately. Now, with version 3.0, I can actually import Adobe Illustrator files, which are considerably smaller and therefore render faster, and even fly them past the view with no breakup, a problem always associated with analog-edited ‘Fly-By.’”

Another important feature for Cates is the compatibility between Adobe After Effects and his Data Translation Media 100 digital editing system. He digitizes video on the Media 100, moves it into After Effects to add multilayered animation, and then takes it back to the Media 100 for final output to tape. Because these systems are designed around the QuickTime® codec, there is no need to convert files from one compression scheme to another, which would create digital degradation.

“After Effects takes my 3D animation rendered at 60 frames per second and interpolates these frames into 30 field-interlaced frames,” Cates says. “This generates the smooth playback that is critical for success by anyone with video clients.”

A recent television commercial created for the cruise ship Scotia Prince demonstrates the process. Cates took the digitized video from the Media 100 directly into Adobe After Effects and output a numbered PICT sequence without converting to any other format.

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—Randy Cates,  
president,  
Computer Animation & Design

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In Adobe Photoshop, he opened these PICT files and roto-scoped out a tower crane visible in the background of a shot with a deck steward. The PICT sequence was then imported into After Effects and joined with the original source video, where graphics were layered with soft shadows and other effects.

“Adobe After Effects seamlessly handled all of the importing and exporting of video and graphic elements, digitally composited the final composition, producing an outstanding end product. Using the highest-quality settings available in all programs involved, there is virtually no indication of any degradation whatsoever,” Cates says.

Adobe After Effects 3.0 delivers many additional benefits to Cates, including enhanced motion control features. For example, Time Remapping gives users the control to manipulate the time for any layer, to create slow motion, palindrome looping, stuttering, and other timing effects. Roving keyframes ensure smooth acceleration through multiple keyframes.

After Effects 3.0 also enables Cates to apply multiple effects to a single layer without precomposing, eliminating as much as 90 percent of the nesting previously required. This, in turn, reduces rendering time, but perhaps more importantly, allows Cates the same creative capability of previous versions but with accelerated production that just isn’t available anywhere else.

**Adobe After Effects: Artistic Freedom**  
With traditional compositing and editing systems, designers must carefully plan the design through storyboarding. This is because there is little room for change in the traditional manner.

With the standard methods of analog or digital A62-style edits, any changes after a pass (edit) is laid down require starting the edit again. A digital session in a high-end post house can be as much as \$4,000 to \$5,000 per day. The expenses associated with this type of edit and the scheduling issues that are involved make changes to a multi-layered digital composites virtually unheard of.

“With Adobe After Effects, the layers are independent,” says Cates. “I don’t have to plan ahead as much because making a change involves only the layer on which it occurs. You don’t have to rebuild every

subsequent layer. This means that I can deliver a much more creative project and clients can actually make changes even after the entire production is complete.”

The plug-in modules available for Adobe After Effects also foster creativity, providing a range of filters, motion-control capabilities, and various other options. Cates regularly uses the Xaos Tools Paint Alchemy brush strokes plug-in and Adobe Gallery Effects™ plug-in filters in his work.

For the cruise-liner piece, Cates relied on the digital time stretch feature to stretch a shot that his client wanted to use but was actually 2 seconds too short to fit in the spot. With frame blending, the stretched video was smoothed out, hiding the fact that the clip had been altered.

“Traditionally, designers must work within the parameters of the equipment and the client’s budget,” says Cates. “With Adobe After Effects, we are freed of those constraints. We can be much more creative within the same boundaries and deliver in much less time.”

### Creating a Classic

One of Cates’ first projects using Adobe After Effects has become a classic among graphic designers. VP Film and Tape in South Portland, Maine, subcontracted Cates to do a 60-second attract loop to be used at a golfing industry trade show for Etonic Manufacturing Company, which designs and manufactures golf shoes and clothing. The loop contained 50 to 60 elements in 20 layers.

Cates worked in Adobe After Effects using stills, video from television advertising, and computer-generated animations. He began

in Adobe Illustrator, building large words—*Etonic*, for example—that he then imported into Adobe Photoshop, where he had already digitized photographs. Next, he built the storyboards, and once all the elements were created, Cates began importing them into After Effects.

“The process was fairly easy, even then, compared to the traditional manner,” says Cates. “However, with the direct import capabilities in Adobe After Effects 3.0 and no need for nesting effects in After Effects 3.0, I could do the same job much faster now.”

Cates also had several graphic elements larger than the raster, including tees supporting golf balls and spikes from the shoes that march across the screen. The ability of Adobe After Effects to display these larger-than-raster images aided Cates in compositing in one pass. The animations were then rendered and output to tape, uncompressed, using a Diaquest system.

“The same project would have taken about the same amount of time on a Quantel Harry, but it would have cost about four times as much,” says Cates. “With Adobe After Effects, we delivered the loop on time and within budget.

“More importantly, we delivered top quality for that price. The direct import capabilities, enhanced motion control, and the ability to add multiple effects to a layer in Adobe After Effects 3.0 enable us to provide quality normally associated with a Quantel Harry at a considerably lower cost.”

## Computer Animation and Design Systems at-a-Glance

### Hardware

Apple Power Macintosh® 9500/120 PCI with  
80 MB of RAM and a 1-GB hard drive  
17" Apple monitor  
Micronet 1-GB external hard drives  
Agfa® Studio Scan II flatbed scanner  
Hewlett-Packard LaserJet 5MP printer  
Sony® external stereo speakers

Apple Power Macintosh 8500/120 PCI with  
80 MB of RAM and a 1-GB hard drive  
17" Apple monitor  
Fujitsu external magneto-optical drive

Apple Macintosh Quadra® 840 AV with  
80 MB of RAM and a 1-GB hard drive  
17" Apple monitor  
Data Translation Media 100  
Wide SCSI 2 card  
4 1-GB Hammer disk arrays  
UVW1800 Beta SP deck  
Sony RGB monitor  
Spirit Folio Lite audio switcher  
Optimus XA-155 amplifier  
Stereo speakers  
Micronet DAT tape backup system

Apple Macintosh Quadra 800 with Apple 601  
PowerPC™ card, 20 MB of RAM and a  
500-MB hard disk  
17" Apple monitor  
13" Apple monitor  
Apple 2x external CD-ROM drive  
SyQuest® 44-MB external removable  
disk drive  
Yarc board  
RasterOps™ 24XLTV MoviePak board

Sony CCD TR81 high-8 video camera

### Software

Adobe After Effects  
Adobe Gallery Effects  
Adobe Illustrator  
Adobe Photoshop  
Adobe Premiere™  
Adobe ScreenReady™  
DeBabelizer  
Elastic Reality  
Electric Image  
form-Z  
Fractal Design Painter®  
Fractal Design Poser  
Gryphon Morph  
Gryphon Batch It  
Kai's Power Tools™  
KPT Bryce  
Pixel Putty  
Specular Collage  
Specular Infini-D  
Specular TextureScape  
Strata Studio Pro

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