The Comet can you see on the cover was created for Compton Advertising agency to use for its client Procter & Gamble. It was done by the graphic artist Alan Green and directed by George Parker. This is an increasingly popular use of graphic art, and one that Digital Effects is very involved with.

The Comet can was produced on a Harris 500, using vector displays from Tektronix and a KEL Graphica image display. The can was constructed as a cylinder. We digitized the surface of the can as a flat set of polygons and just wrapped it onto the can. Then we lit it, using our own custom vision software and a general purpose computer.

Not a difficult task

This wasn’t so much a difficult task as it was a culmination of years of work solving problems of lighting and representation. Certainly how to model the geometry is well understood. And how to model the lighting is pretty well understood, too. But using them together to come up with something that looks really snappy is a slick trick.

How the graphic has been used

The Digital Effects Comet can has been used in a straightforward presentation as a print ad. It has also been used with animation in a TV commercial. In the animation for TV, the word Comet peels off the can and comes toward the viewer. These are just some of the things we did with this particular graphic. Digital Effects has provided design innovation and leadership in the area of computer graphics in advertising, in the theatrical world, and in scientific and medical applications. These are together a large component of our service, which is a conceptualization of how to use techniques like computer graphics in such applications as advertising. You take a concept like the Comet can and develop that with an agency as something that can be done. You explore the medium with these people and convince them that this is a viable medium to use for representing the product or doing station I.D.’s and things like that.
Our sales effort is only mildly aggressive, and we expect most of our business to come through word of mouth and other such exposure. We have built a reputation on the East Coast and in Los Angeles, and then in Western Europe and in Japan, as people who can solve difficult problems and bring new kinds of design concepts to a project.

For example, we recently did a Tide bottle animation strip. In that animation the bottle turns into a map of the United States, and that’s no trivial piece of animation. It’s a complicated piece of business.

Applications for computer graphics

We seem to be going through a period in which products are coming out in computer graphics. Things like the Comet can and the Tide bottle represent a new threshold in our ability to make products sufficiently realistic to substitute for the real thing. In some cases the computer representation is even preferable to the real thing or photography of the real thing.

If you look at the Comet can carefully, you’ll notice that although it has very nice reflections on the can, there aren’t any reflections where the label is. It’s clear and free of reflections because we didn’t calculate any reflections in the label area. The type on the label is unobstructed. This is the kind of subtle thing you can do with computer graphics. In a way this can be an improvement over the reality of photography, which sometimes clutters up a product with natural imperfections.

Not only is your computer graphic multiply reusable, but you can view the product from any angle, even use it in animation, as we did with this Comet can. This went through several animation sequences, at one point taking the pendant shape shown in Figure 1.

Sometimes you want to do something other than exact reality with computer art, so you can make it appear more real. One of the reasons the Comet can appears as real as it does is that it isn’t completely real. The photograph of a Comet can might not look that good.

Judson Rosebush is a founder of Digital Effects, of which he is now chairman. He has been involved in computer graphics and animation for 15 years. He received his Masters degree in public communication from Syracuse University.

Computer Graphics and Advertising: Here Today. Where Tomorrow?

Asked how they viewed computer graphics and advertising today, and what they saw for its future, some leaders in the field had these things to say:

Charles Csuri, president and founder of Ohio-based Cranston/Csuri Productions predicts that the technological improvements in the future will allow the common production companies to enter the arena of computer graphics but will also extend the quality capability of the specialized animation houses to create more realistic and visually complex images.

“Production companies will have in-house capability to do their own computer graphics within the next few
Figure 1. The NBC sports series has three-dimensional computer-generated animation from Cranston/Csuri Productions. Animation for the baseball sequence takes the viewer on a dramatic aerial flight over the American flag, while dodging a field of baseballs. For the conclusion of the spot the flag’s stripes rapidly rotate to form a game ticket announcing the competing teams. Programs producing the new metallic and shadow effects used in the NBC sports spots were designed by Cranston/Csuri software developer Shaun Ho. Various effects are achieved, according to Ho, when different colored environments are reflected on the metallic surface. Technical and art directors for the baseball spot included Maria Palazzi, Michael Collery, John Berton, Tom Longtin, Ed Tripp, Ron Tsang, Marc Howard, and Paul Sidlo.

Figure 2. ARD is the number one television network in West Germany. Cranston/Csuri designed its logo, which presented some problems. The network is made up of nine stations, and in this commercial the logos of all nine are melted into a figure “1.” The logos had to be remolded to conform to the uncommon shape of the “1.” The 1 symbolizes the cooperation of the nine state broadcasting stations in the 11 states of the Federal Republic of Germany. Few citizens understand how the network functions, but the commercial explains it graphically. Michael Collery, Cranston/Csuri’s director of animation, explains that there are two versions of the ARD 1 logo. In the first sequence, each of the nine logos zooms onto the screen, then spins and melts into the metallic ARD 1. A red flash streams through the number and ARD positions itself in the bottom right-hand corner of the 1. The second version shows the ARD 1 spinning and forming each of the nine station logos. The technical director was Tom Longtin.

Figure 3. After Bo Gehring Associates developed the concept for the Canadian Broadcasting Company’s image campaign, Cranston/Csuri developed a logo surface. “We wanted to create something that had never been done before,” said Mark Steeves, technical director animator. “We rendered the CBC logo with transparent chrome and reflective colors. Steeves translated the vector format into three-dimensional, solid-shaded raster graphics. A lightening line zips onto the screen, exploding into fragments of the letter C. The fragments encircle a C, forming a colorful, multilayered reflective disk. Software developer Shaun Ho created a program for the transparent, reflective surface. The overall use of light, as opposed to a singular light source, created the transparency, and refracting light helps to simulate a true environment by providing effects such as a change in the shape of the light source and various environmental shadings.”
years,” Csuri says. “The low end of computer graphics will get higher. Image quality will get better, and computational costs will be reduced.

“But the requirements for image quality will increase as well. People will want top-of-the-line work. And top-of-the-line will continue to cost twenty minutes per frame and several thousands of dollars per second, no matter what computer you are using.”

Csuri also predicts that, “people will get sick and tired of flying logos—rotating things flying on a path through three-dimensional space. The next phase is more complex motion control—modeling the way objects accelerate and decelerate, for example.” This kind of animation, he says, is a derivative of robotics technologies.

President of Digital Productions, John Whitney, Jr., speaks of, “the advent of the ‘computer camera.’” The minute the computer is able to create a look that is the same as a camera can create filming on stage, then everything changes, because there are no impediments to understanding how to use a computer.

“Ten years ago people thought computer graphics were interesting, but individuals were frustrated by their limited applications. Today,” says Whitney, “the computer is no longer a motion graphics tool; it is a tool to simulate live action, and this is changing the way advertising agencies are thinking about how to use the computer.

“The advertising world has always used live action as the principal means of producing commercial film. Advertising people understand the creative power of live action for producing successful messages. They are familiar with it, they are right next to it, and they have been using it for years.” Now, with the computer capable of duplicating live-action film, using the computer “is no mystery, and there are no impediments to using it creatively.”

The graphics by Digital Productions were done on the company’s Cray XMP22300 with DP’s own Digital Scene Simulation, program DP3D, and copyrighted in 1984.

Figure 4. McCann-Erickson of Houston wanted to integrate its product, the Exxon Uniflo oil can, into its live-action commercials in a new and exciting way. The agency got Digital Productions to do the job. The use of computer simulation offered options traditional effects and motion-control photography did not. Two pieces of simulation in the spot incorporated expansion by polygon and metamorphosis. The oil can in the opening scene reveals itself from a cylindrical network of pinpoints, which individually expand to fill in and form a solid reflective oil can. Metamorphosis in the second half of the spot involves a gridded road with moving autos. The road slowly bends, then forms into the Exxon Uniflo can; without any obvious dissolves or transitions. The entire film was done with the interaction of the live Exxon tiger, the tiger jumping out of the can at the end of the commercial, which was produced by Sherry McKenna. The creative director was Mario Kamberg, working with technical director Jim Rygiel and technical designer/encoders Kevin Rafferty, Beth Leitner, and Kathleen Prestera.

Figure 5. The WTBS logo is part of a commercial that shows the transition through environmental geometry from one textural space into another, finally building into the WTBS logo. Simple geometric objects were placed on a reflective ground plane, while using reflection and interactive lighting on glass surfaces to highlight the move into a glass cube as one of the glass walls reveals a window into another world. At the same time a textural transition occurs when leaving the glass cube, which merges into stone and metallic surfaces, as large marble cubes shrink to reveal the encased, reflective metallic WTBS logo. They continue to shrink until they disappear, leaving the logo alone at the center of the stage. Turner Broadcasting contracted with Digital Productions for this commercial, which was originated and directed by Mario Kamberg with Paul Isaacs as technical director and Beth Leitner as technical designer/encoder.
Figure 6. In an animated commercial by Digital Productions for Southwestern Bell Telephone, it was announced that Southwestern was getting involved with computer communication. In this commercial, when the “send” key is pressed (a), lines come down from above and build the “skyline” (b). Then the message symbolically arrives at a receiving computer, and the scene ends with the Southwestern Bell logo appearing on the receiving computer’s monitor (c). The producer of the commercial was Lee Dyer, who worked with art director Jim Kealy, technical director Sherry Lake, and technical designers Beth Leiter and Kathleen Prestera.

Figure 7. The commercial about the Norelco shaver was commissioned by McCaffrey & McCall Advertising. In this commercial the Norelco shaver races along a surreal landscape. There is a roadway made out of neon tubes floating above the landscape, and the shaver is floating above the tubes. The shaver and the background appear to be real, but they are both computer generated. Larry Ellen, vice president for production at MAGI, says the agency insisted the Norelco shaver look even better than real. To do the production with a real shaver would require trying to get all the highlights in the right places while the shaver was in motion. That would have been very difficult, but it was easy with a computer-generated image of the shaver. The animators on this commercial were Chris Wedge and Jan Carlee.

Phillip Mittleman of MAGI Productions answered, “Computer graphics is certainly getting widespread use in TV commercials now. It accomplishes one of two things:

1. It gives a unique look—images moving in different ways, for example.
2. It gives high quality, but at less expense than the usual commercial means.

“When MAGI set out to do the Norelco commercial, for example, we did cost comparisons of the two methods we could use: the real razor, with motion control and all the optical work that would entail; or computer graphics. The computer method came in at approximately half the cost.”

Asked what he saw in the future for computer graphics and advertising, Mittleman said, “People who are as involved in the field as we are learn to create textures, mapping; they are producing images so realistic that they are almost beyond detection. We will be getting better and better artistic effects for less cost. We can move around the lights, the objects, the ‘camera perspective.’ We are expecting big things in this rich field. We’ve only begun to scratch the surface.”

Judson Rosebush of Digital Effects was also asked how he views computer graphics and advertising today and what he sees in its future. He said, “It’s really too complicated to answer in a sentence or a short article. Some of the facets include logos and corporate IDs. This is well established. Product demonstrations are another major area developing. Computer graphics can tell stories about things that are invisible to the naked eye as well as to the camera.
Figure 8. This sequence of pictures is what happens, says Larry Ellen, when you are knee deep in creative people. First a computer artist generated water, with wave patterns, like the Atlantic as one would see it from an airplane window landing at Kennedy International Airport (a). Then someone generated a vase with a marbleized texture (b). Then somebody said, “If we can make a flat plane look like water, and a vase appear to have a marbleized texture, maybe we can make the vase look as though it were made out of water. And so they did (c). The R&D people at MAGI based their texturing algorithms on work done by Ken Perlin, Carl Ludwig, and Eugene Miller.

Figure 9. These are frames from the end of a commercial in which a water-skiing woman appears to be on the verge of colliding with a ship. Then the ship turns out to be only a picture, so she skies right on through. The commercial closes with a logo sequence created by Digital Effects. First we see the Fuji Films box, then it revolves and starts breaking into smaller boxes, which randomly shoot out into the camera. Then they merge, forming a ship, which dissolves out. The work was done on a Harris 500 with Judson Rosebush and George Parker designing and directing. Don Leich was the animator.

Figure 10. The title of this still life is “East and West,” which is self-explanatory. It was done on the IBM 4341, using APL for modeling and Fortran for lighting. Both texture mapping and image mapping were used. The design and direction were by Alan Green, and the artists were Alan Green and C. Robert Hoffman III.
"This year seems to represent a coming out of the 'table top' product shot—computer graphics is demonstrably able to simulate a Comet can. One suspects, however, that a mature still life is within grasp in the near future.

"What is initially important about this is not the still life itself. This is certainly fascinating, but when coupled with the computer's ability to transmogrify objects, the results become magical."

Figure 11. These are frames from a commercial done by Digital Effects for Pifco Products. First we see through a window a wrapped present under a tree (a). Then we see the present on a table beside the small tree, with a window behind them (b). The present opens (c) and reveals many appliances (d). The appliances are featured one by one. One of the products featured is a crockpot (e). The commercial was done on a Harris 500, using DEI's APL Visions for modeling and lighting. Fortran was used for hidden surface removal. Judson Rosebush did the design and direction. The animators were Stan Cohen, D. L. Deas, and Alan Green.