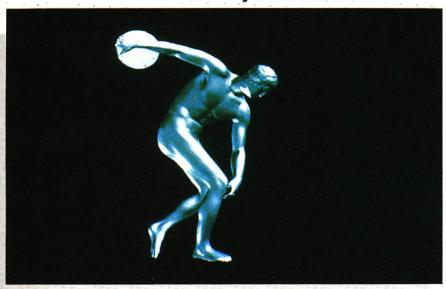
# The French Touch In Computer **Animation**

Graphics Simplicity, Sharper Lines, and Softer Lighting Mark the French Style

By Judson Rosebush



Thomson Digital Image (Paris) created Le Discobole for the 1984 Summer Olympics.

A bold, new style of computer animation is emerging today in France. Piston-powered robots, realistic cans, flying Texaco stations, and 3D funk for the video market are competing for presence worldwide with advertising and TV visuals produced in Japan, Britain, and North America. The French difference, though, is unmistakable. Pattern and light are obsessions, objects float freely in space, and colors are strong.

The French have achieved forms of rendering and expression that rival established North American studios. Remarkably, France has built an entire animation industry in less than five years. Government subsidy and planning and an industrial CADAM base, combined with the talents of graphics and video artists, fuel the boom.

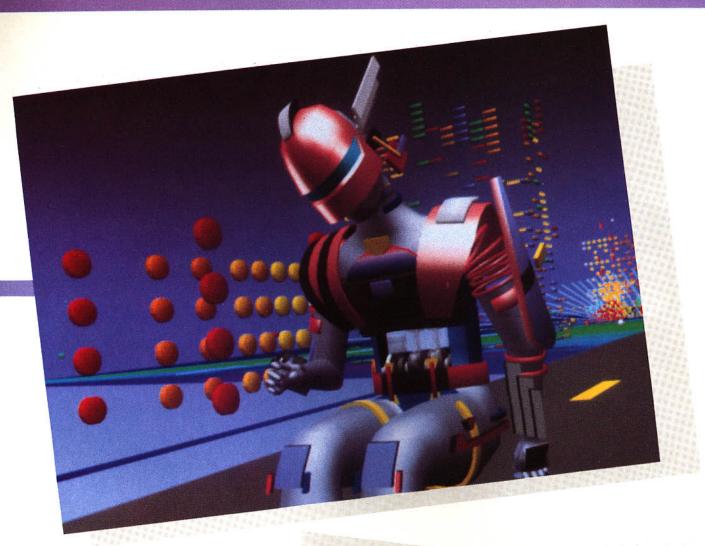
The French now produce graphics software, synthetic image generators, workstations, and flight simulators. Companies like Sogitec (Paris) and Thomson Digital Image (Paris) create animation reels for English and French television. They shocked and delighted American viewers at SIG-GRAPH 85 and The Los Angeles Olympics with images of floating robots and human figures twirling in space.

#### Willful and Planned Effort

The French are notably savvy about their moves in the graphics market. "We have two strengths: software and creativity," declared Henri False, director of prospective research at the Institut National de la Communication Audiovisuelle (INA), a state-owned audiovisual research and production agency. The French animation effort is willful and planned, False confirms. Animation in France is seen as a bridge between the sophisticated French CADAM applications, such as flight simulation, and the booming telecommunications and video industries.

"France is strong in graphics software, but does not concentrate as much in hardware," False explained. "We now export systems for flight simulation. And we are experiencing an incredible boom in audiovisual production."

Though less capitalized than in North America, the French animation and image processing industries are strong and growing. Software development has been

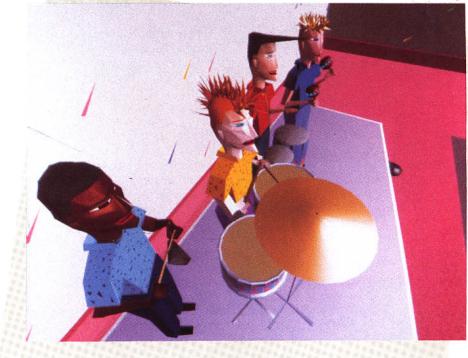


**Graphics simplicity and** strength, seen in the two Sogitec (Paris) images on this page, are characteristic of the French touch.

given higher priority than volume output and capacity. But now the industry is going into full-scale production.

"The market in France is smaller than in America," acknowledged Xavier Nicolas, director of Sogitec, one of the largest computer graphics production houses. "But we compensate for this by putting an emphasis on design. That is our secret, competitive edge."

Indeed, the French design sense appears to be rebounding again in new forms, as it did with the artistic revolutions of expressionism, pointillism, and surrealism. The new forms range from the sleek, cartoonish expressionism of Voir/ Captain Video, a Paris-based production company, to the more pri-





### Flat Flipper (above) is from a promotional film Voir/Captain Video created for 1985's Fiat Milan Fair.

vate experiments in graphics "painting" achieved by artists at the University of Paris. Both groups use French-made graphics software, incorporating a range in capabilities: image switching, repositioning, mapping, warping, and 3D. The software creates shadows, textures, specular and diffuse reflections, and multiple light sources. It runs on French-made as well as foreign workstations of 16 and 32 bits. Static display is more prevalent than moving display; color display is not scarce.

The French approach to design is characterized by simplicity and humor. Objects float freely in space; they are often built out of primitive shapes. Lighting tends to be more widely flooded, with less infatuation with shiny highlights than is found in American productions.

Characters have an airy and wry appeal. Robots drink oil, gas stations fly, and jazzy street people play bongos.

### **Pointillism to Raster Display**

The French have long been pioneers in graphics techniques. The painter Georges Seurat, who created pointillism, is arguably the inventor of raster displays. Nearly a century later, Pierre Bezier, a Frenchman, developed CAD/CAM surface patches: mathematical definitions of complex surfaces, used in automobile CAD/CAM applications. Another designer, Henri Gourault, pioneered shading techniques for color graphics in the mid 1970s.

Today, France is a leader in industrial CAD applications software that lends itself to animation. Packages such as Euclid (Matra Datavision), Catia (Dassault and IBM) and Strim (CISI) have won a significant share of the world market. Thomson and Sogitec produce world-class flight simulators. The French have also designed their share of graphics workstations; terminals such as Radiance (Gixi) and Pericolor (Numelec), digitizing tablets from Secapa, video paint systems (Graph 9 from X-COM and De Grafe from Multisoft), 2D animation systems (INA's Psyche 3, marketed by X COM) and 3D image generators (CCETT and IMAG). In addition, new graphics arts packages (such as one developed recently by DA-LIm) are being developed at a rapid pace.

There is no doubt that the very structure of French government, society, and even television accelerates this development. French television, which reaches both the native and international Frenchspeaking markets, including Belgium, Luxembourg, and North Af-



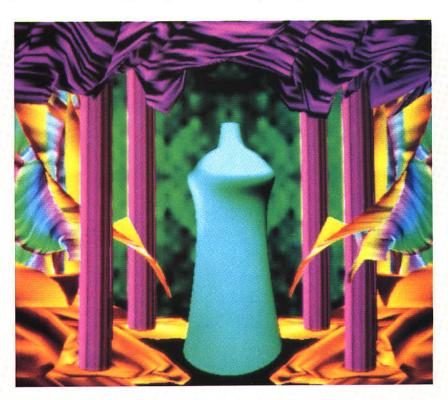
The soft lighting and expressive design of the two computer-generated images on this page represent the latest incarnation of the artistic flair that's always been a part of French culture.

rica, is essentially monopolistic; it uses its own separate video standard, SECAM, a standard for hardware and signal generation that is incompatible with standards for North America and Japan. Computer graphics generated for the three major French television networks (TF1, A2, and FR3), enjoy priority and exclusivity.

In addition, French animation efforts are synergized by the government and the press. The Ministries of Culture, Industrial Redeployment and External Trade, Telecommunications, and the Secretariat of State for Communications Technology launched in 1983 an Image Research Plan, essentially a graphics arts subsidy program to encourage the training, development, and marketing of graphics facilities and products. Organizations such as INA sponsor yearly meetings on animation in Monte Carlo (called the Forum International des Nouvelles Images). And these are complemented by privately-sponsored forums (Parigraph, sponsored by International Marketing Video, is an example) and heavy press coverage. Sonovision, an audiovisual magazine, Sciences and Techniques, a popular science magazine, and Banc Titre, with its cinema and animation focus, discuss animation issues and stimulate the appetite of French graphics audiences.

In an evolutionary sense, many French graphics production companies have roots in either the industrial/manufacturing sector or television production. Sogitec and Thomson, for example, are divisions of larger companies that produce broadcast television equipment, flight simulators, or CAD-AM. Sogitec has been particularly successful in combining skillful rendering with graphics design, and has made successful inroads in both England and France, producing slick advertising visuals and films. Its most widely-known reels include realistic cans (Quantro), automobiles (Lancia, Renault), a camera (Canon), and an oil-drinking robot (Restore, an oil company). And Sogitec has opened an office in New York.

Whether or not French animation can win a major international market niche remains uncertain, however. Sogitec, Thomson, and other major French companies have yet to penetrate the Ameri-



can market in any significant way. While the large video production studios in France are already incorporating American and English graphics hardware, a reverse wave is not yet evident. Americans appear entrenched in their own graphics technologies; in turn, the French accomplishments effectively keep American graphics companies out of France. With the exception of Robert Abel Associates (Hollywood), American graphics production has never sold very well in France. Language barriers, TV incompatibilities, the strong dollar, and a certain protectionist mentality have kept the French and American markets apart.

But interest in market trading is growing. This year, more Ameri-

Realistic renderings, some for commercial applications, are an important part of today's computer graphics activity in France.



cans than ever before are attending graphics conferences in France. France continues to make outstanding showings at SIG-GRAPH, Eurographics, and other forums.

In addition, American graphics agents are beginning to do liaison work between companies in France and the U.S. The Institut National de la Communication

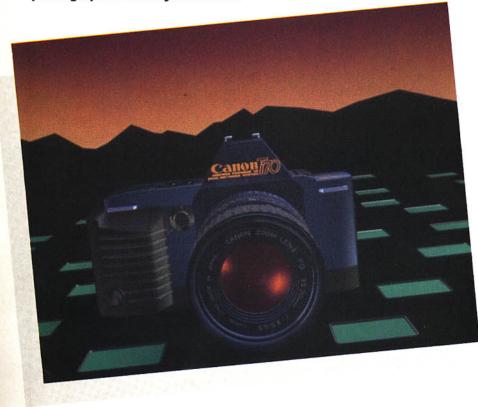
Audiovisuelle has American representatives in New York, and its focus is on importing the unique style of French animation to America. What is that style, exactly? Graphics simplicity and strength: sharper lines, softer lighting, and design that tends toward direct and expressive sympathy. The French offer fewer objects with fewer polygons, fewer points but more control of them—that is, a substitution of action for geometry. It is a new type of aesthetic, and could well be one that America wants.

## **Animation Companies** In France

Here is a selected list of French companies engaged in image synthesis and animation. Needless to say, this is only a partial list-for each of the graphics areas discussed, there are other companies producing significant work.

Sogitec, 32 Blvd. de la Republique, 92100 Boulogne, Paris. Contact: Xavier Nicolas, director, and Veronique Damien, executive producer. Telephone 331-608-1313. Sogitec's software evolved from flight simulation and it includes specular and diffuse reflections, multiple light sources, transparency, and shadows. The physical plant is designed around a 32-bit Perkin Elmer mainframe computer. A digitizing tablet and static nonrefresh CRTs are used to enter data and program action. Lighting and rendering are previewed using a color frame buffer and high resolution CRTs. A Dunn camera with a 35 mm Mitchell is used for film output.

Thomson Digital Image, 173 Blvd. Haussman, 75379 Paris. Contact: Gerard Allain or J.D. Pigasse. Telephone 331-561-9600. Thomson's software capability includes fully-shaded 3D images with textures. One of their more remarkable animations includes a statue of a human figure called Le



Discobole, done for the 1984 Los

Angeles Olympics.

Voir/Captain Video, 57 Avenue de la Grande-Armee, 75116 Paris. Contact David Niles or Michael Smith. Telephone 331-500-5055. Voir is a hardware services company, and Captain Video a production company affiliated with Voir. Voir/Captain Video build much of their business around a Bosch FGS 4000 computer graphic system, Sun workstation, Sony BVH 2000 single frame recorders, and an Ampex ADO. The Sun runs Unix and programs are written in C or in Motorola assembly language. The Sun is used to write software for motion control hardware and the single frame video recorders and for solid 3D object modeling, which is output in the FGS 4000 format.

INA, or the Institut National de la Communication Audiovisuelle, 4 Avenue de l'Europe, 94360 Bry Sur marne, France. Contact: Henri False or Phillipe Queau, Jean-Charles Hourcade or Etienne Beeker. Telephone 331-875-8274. INA's computer graphics research software capabilities include modeling of objects with bicubic patches and polygons, transparency, shadows, texture mapping, reflection, and multiple light sources. Hardware consists of a Perkin Elmer 3210 and a SM90, a French supermicro based on a 68000, both machines running Unix. The software is written in C and has been developed internally.

The University of Paris VII and VIII, 2 rue de la Liberte, 93526 Saint Denis, France. Contact: Monique Nahas and Herve Huitric. The University of Paris is teaching computer graphics and animation to art and communication students. Courses are offered in 2D and 3D animation, video, teletext, videodisc, and aesthetics. The two principals-Nahas and Huitric-are both artists and teachers, and have produced silkscreens, paintings, photographs, and films. The software is programmed at the school, and models and animates the shapes with B-spline curves and surfaces. The hardware includes a VAX 11/780 and a Raster Technology display.

Computer Video Film, 7 rue Bis-

cornet, 75012 Paris. Contact: Chiara Boeri. Telephone 331-342-2121. Computer Video Film is a post-production facility that has focused on the creative uses of digital video hardware. The heart of its computer graphics effort consists of two Quantel Paint Boxes and a Mirage.

Imatique, 36 rue des Alouettes, 75019 Paris. Contact: Philippe Rousseau. Telephone 331-203-9904. Imatique is a subsidiary of SFP, a major European production facility, and of Image West in Hollywood. Current capabilities include an ADO and DVE, an Aurora paint system, and a Bosch FGS 4000.

Judson Rosebush is a producer and director of computer graphics and animation. His work has been seen worldwide in feature films, television, and advertising. He is coauthor of the upcoming book, Computer Graphics for Artists and Designers, to be published early next year by Van Nostrand Rheinhold.

