



## Sounds good!

**The sound of silence? No way: CD-ROMs are available with sound effects for every occasion. Panicos Georghiades and Gabriel Jacobs tune in.**

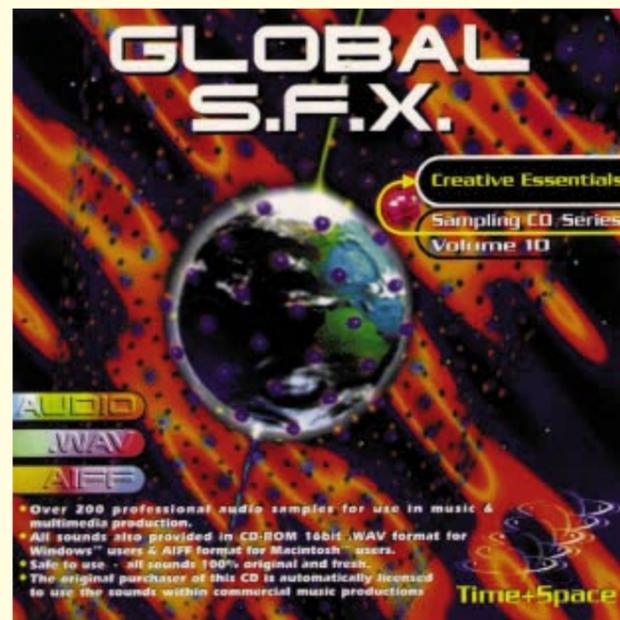
We get mail from time to time asking about sound effects and media clip-art for use in multimedia applications.

Here's a typical message: "I'm looking for a collection of traditional sound effects like footsteps, doors opening, thunder and so on. Preferably, I want them in Macintosh format and royalty-free so that I can include them in Director movies. Do you have any idea where I could find such a product?"

**Gordon Cowtan**  
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There are many CDs with sound effects in ordinary CD-audio format, but the best collection, in our view, comes from the BBC. The catalogue for internal BBC use spans over 100 CDs, and 40 of these are available at £29.99 each. There is also a cut-down, amateur collection of 12 CDs which cost £12.99 each. The Hollywood Edge catalogue from the USA is worth having, too. It's sold in the UK by a number of professional audio distributors, and there are about a dozen or more sound effects catalogues for use in music and film production.

For multimedia, there's less choice (of good quality material, anyway). You'll find far more in Windows (WAV) format than in Mac (AIF) format. More come from the USA than from the UK, which will make a difference if there's speech in the environments you're after. A typical media-clip CD-ROM is Moon Valley's



*Global SFX is part of the Creative Essentials series and offers high-quality sound effects*

### News in brief...

- Asymetrix has just launched a special version of ToolBook for the Internet, called ToolBook II. It's said to deliver distributed learning applications in HTML and Java.
- Macromedia will shortly be releasing a toolkit for creating CD Plus using Director 5. Sounds interesting...
- Adobe Premiere 4.2 for Windows is now on sale, as are GLPro for Windows (the Windows version of the Grasp programming language), and Authorware 3.5.

ROM Material Again (£19.95). It contains video-clips, stills, animated icons and, of course, sounds. Most sounds are available in all the formats from 8-bit, 11kHz mono to 16-bit, 22kHz stereo. The sounds cover a selection of machinery, animals, nature environments and spoken words in American English, UK English and English with French accents.

This CD-ROM is targeted at end-users who want to use it to enrich their desktops

rather than for multimedia purposes. You'll find many similar CD-ROMs, and the sounds are really quite usable.

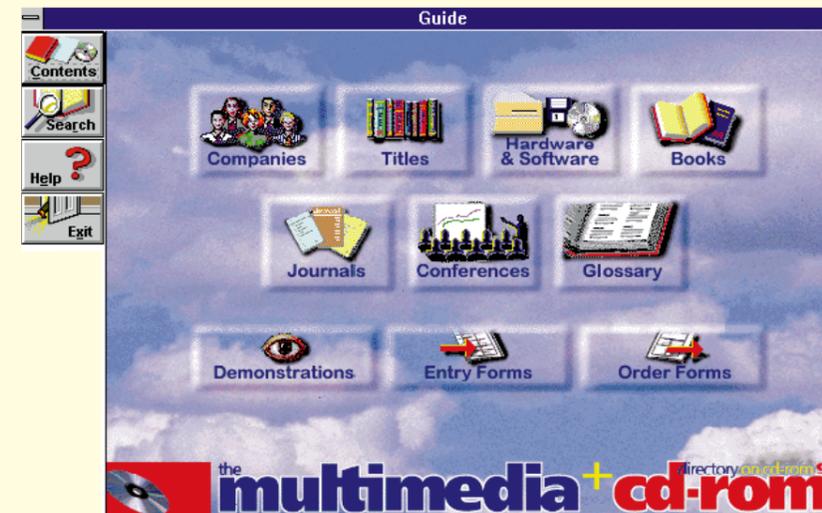
CD-ROMs specifically meant for multimedia are more rare, although they are beginning to appear in greater numbers. One example is a new CD-ROM release from the UK called Global SFX (£19.95) which has samples of a much higher quality than standard clip-art-type sound effects. In fact, it's the best you can hope for at the moment. It's part of a 30-volume series called Creative Essentials released by Time+Space.

The series has a dual use: multimedia, and sampling for music applications.

This is why most of the titles in the series have a musical instrument sound content. Volume 10, which we can recommend because of the quality of the recordings, contains sound effects. The sounds have been recorded in three formats: CD audio, Windows and Mac, and in 16-bit 44.1kHz stereo.

There are 26 tracks, with about 200 individual sounds. Here is a sample of the types of sound effects covered:

- Video and cassette machines, static, cameras, beeps, phone-related sounds, alarm, hammer, WC, typing, door-related sounds, stapler, spray-can, hair-dryer, kitchen sounds, lawn mowers, trimmers, water, percussion, zoo, café, swimming pool, market, public park, launderette,



*The Multimedia and CD-ROM Directory is an up-to-date guide with worldwide coverage*

sirens, airport sounds, railway station, various motoring sounds, ducks, flies, laughter, burping, footsteps, drinking, and a 1kHz tone for setting up your equipment.

One word of warning, however: with some of the CD/CD-ROM collections, you're free to use the sounds in your distributed applications. With others, you're only free to distribute the applications containing them, within your own organisation. In no case are you allowed to repackage and sell the sounds.

The Creative Essentials sound effects mentioned above are royalty free, so they're fine for you, but you must read the small print carefully.

### The CD-ROM and Multimedia Directory

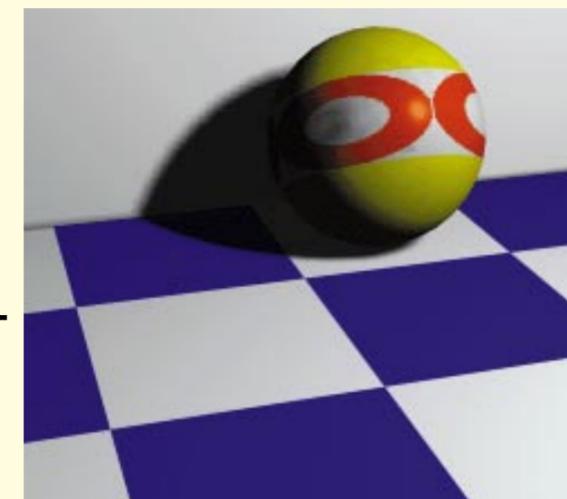
We've recently had the chance to browse through this year's Multimedia and CD-ROM Directory (on CD-ROM). It combines two paper publications: the CD-ROM Directory 96 (15th edition) and the Multimedia Yearbook (5th edition). It may be useful if you're looking for companies

that develop, or are otherwise involved in, multimedia and related hardware and software, even multimedia titles.

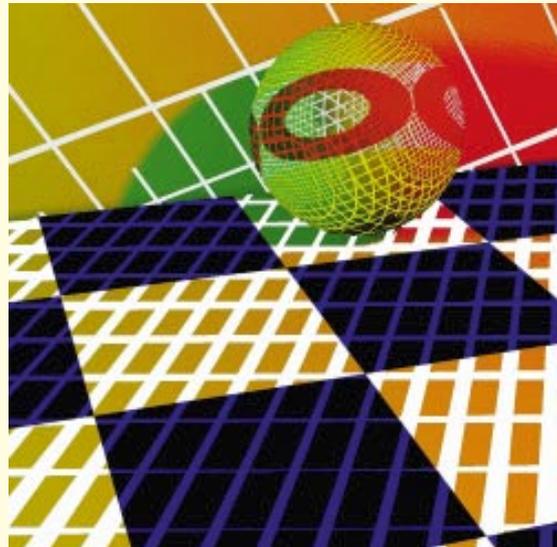
The publications have a worldwide coverage (there are about 1,400 multimedia-related companies in the UK alone) and they have a multi-lingual user interface for menus and help screens (English, French, German, Spanish and Italian).

The CD-ROM is divided into a number of sections including companies, titles, hardware/software, books, journals, conferences, and a glossary. There's a search engine, of course, and you can copy and print what you find.

The problem with material on CD-ROM today is that it can easily become dated, especially in an area as volatile as multimedia, even if the CD-ROM is updated every six months. We were pleasantly



*An example of photorealistic rendering (more are shown, overleaf)*



*The two illustrations here show the kind of rendering that Artificial Drawing can perform. There are more examples on our cover-mounted CD-ROM this month*

surprised to find included some recent versions of products, showing that it's about as up-to-date as possible. The importance of any directory of this kind is that it provides a good starting point, and this one certainly does.

● *The CD-ROM Directory 1996 (ISBN 0-333-662-55-5) and The Multimedia Yearbook 1996 (ISBN 0-333-662-56-3) cost £135 each. The CD-ROM version (which includes both) is a bargain at £175 and is published by TFPL.*

### Artificially yours

Computer graphics have been around for a very long time. From their beginnings in the early sixties, with Ivan Sutherland at MIT, they have grown into a billion-dollar industry which has even arrived in Hollywood, as in the latest Disney blockbuster film, Toy Story.

Animations of the kind used in Toy Story are based on 3D models (wire-frames) which are then rendered into photorealistic pictures by applying textures to surfaces, lighting and camera effects. These impressive animations are all produced in the same way. The computer always emulates a camera so it's difficult to create a personal style, and we all know how important this is in making an impact.

On the other hand, paint packages like Fractal Design's Painter, which emulate natural media, enable you to create works which are both expressive and creative. Recently, these packages have been able to import video clips and animations to which artistic effects can be applied. But these are applied to a 2D image.

The computer has no knowledge of the content in the picture. People, trees, and houses are all just screens full of pixels. So, although you can create artistic effects, it's difficult to make them realistic. For exam-

ple, the texture on a plane flying into the distance will not change gradually, so the flexibility that 3D animation offers is lost.

It would be nice to have the best of both worlds: a 3D animation system that also draws in the expressive styles allowed by 2D painting systems. A new technology called Artificial Drawing, developed by computer scientist Peter Hall, does exactly that. It allows animators to render animation frames from 3D models in a variety of expressive styles.

Artificial Drawing works by painting lines, dots, and other marks on the surfaces of 3D models in a scene. It paints more of these marks where a model looks dark and fewer marks where it looks light. When the scene is rendered, the marks made by Artificial Drawing are rendered, too. All the shadows in the picture now show up as marks, and this gives the picture its "painterly" feel.

### Making a scene

To understand the difference between photorealistic rendering, painting systems, and Artificial Drawing, think of a sculptor who makes models, arranges them into a scene and then lights that scene. If the sculptor takes a photograph of the scene, that's like photorealistic rendering. If the sculptor paints over the photograph, that's like passing an animation/video through a painting program and adding effects. But if the sculptor paints the models and then takes a photo, that's like Artificial Drawing.

In this technique, the marks are more than just dots or lines: they're intelligent

textures, which is why they change depending on whether a model looks dark or light. Textures used in most rendering programs are applied to objects, but don't adapt themselves in this way.

The marks can be set up to look like ink, pastel, or paint to reflect photorealistic light, to create holes in models and to draw things like fur, and they can even move, to animate the sea.

A computer animator is able to choose Artificial Drawing marks from a preset library. New marks can also be created and stored. Different marks can be applied to different objects in a scene, and many marks can be applied to each model. Once each object has all its intelligent textures associated with it, the animation is then automatically created (even though the animator sees no operational difference).

For those in the know, Artificial Drawing is designed to fit into the standard rendering pipeline: it could be a part of any standard renderer, with no significant change to the rendering software.

If you're impressed with the stills and animations created using Artificial Drawing on this month's cover-mounted CD-ROM and you would like more technical information, contact Peter Hall (*see below*). ■

### PCW Contacts

If you have any multimedia-related problems, queries, hints, tips, or suggestions, write to us c/o PCW at the usual address, or email:

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**Macmillan General Books**  
0171 881 8000

**Time+Space** 01442 870681