

New Tech
by Joseph Maurer



A Computer That's Music to Your Ears

Illustration: Mary Ann Fraser

Ask any television and film composers what the most unwelcome aspect of their job was three years ago. Most will cite the often grueling mathematical calculations required to compose a music cue, the hours spent hunched over a calculator and voluminous fractions in an effort to coax a violin cue to fall at just the proper instant during the film's action. They'll tell you about scoring sessions when, confident the cue was solved on paper, the conductor found the composition missed the "hit" and had to scramble with pencil and eraser while fifty expensive musicians twiddled their bows.

Many of those same composers are humming a different tune today, due to an innovative computer software system, Auricle, and its first application, the Film Composer's Time Processor. In less than two years, the program has been adopted by almost one hundred composers worldwide, among them Academy and Emmy award winners John Addison (*Murder, She Wrote*), Charles Bernstein (*Sadat, Scruples*), Bill Conti (*Rocky, Dynasty*), and James Di Pasquale (*Lou Grant, The Jericho Mile*). These artists have made the system an indispensable companion during the writing and scoring process.

So innovative, in fact, is the Film Composer's Time Processor that it won an Emmy last September for its creators, brothers Ron and Richard Grant, of Los Angeles. The program was initially conceived by Ron in the summer of 1983 and marks a major shift from the conventional film scoring process. He wrote the

prototype in program BASIC, determined to address the film timing problem in a natural, musical way with minimal mathematical interference. But the computer software then on the market was cumbersome. A cleaner, faster way of manipulating the computer's data was needed. And that solution came from another aspect of this remarkable program, the Auricle.

The guiding mind behind Auricle is Richard, the elder Grant sibling, whose philosophy degree from UCLA and ten years' experience as a practicing attorney seemed an unlikely springboard to the abstract realm of computer programming. But spring he did, in 1977, when he realized his law partnership spent an inordinate amount of time and money on mountains of account paperwork. Couldn't a computer, he wondered, minimize this headache?

The search for a software program began, but the still computer-ignorant Richard was disappointed to find none on the market that served his needs. After a considerable amount of soul searching, he purchased a \$25,000 Hewlett Packard 9845 and schooled himself in the forbidding jargon of computerese. Six months later, to his own and even Hewlett Packard's amazement, he'd developed a law program. The good-natured Grant is quick to admit that he had help along the way from a geophysicist who programmed commands from the lawyer's rudimentary storyboards.

The big breakthrough came out of a nagging problem with the computer screen display. Richard wanted the heading information to remain on the screen

so his attorneys could, at a glance, review top-line specifics of each case. But the screen allowed only twenty-one lines of material to appear before rolling ahead to blank space, hiding the crucial information at the beginning of each report.

As it often does, inspiration came from an unlikely source. For Richard, it was a Bill Murray sketch on *Saturday Night Live*. The comedian was at times Square, standing before the famous rolling news board. A light came on for Grant. If there's no more room top to bottom of the screen, he thought, why not roll information across the screen, overlapping without eliminating what's already visible there?

Grant envisioned a dimensional phenomenon, a second layer that would allow the user to view multiple pieces of information simultaneously. The attorney began applying this notion toward a revolutionary new program. Auricle was born, but it would take years for it to mature to its present state.

Preceding Auricle are two other more familiar MMIs (man/machine interfaces), the "menu" system and the "mouse." If you've used a computer, you've doubtless confronted the menu, which essentially stores all information, categorizes it in chunks, and through the punching of many buttons, puts that information at your disposal. Grant says the slow system constantly forces the user to go back to the menu for each different function. "Wouldn't you be frustrated," he asks, "if every time you went to your favorite restaurant you were forced to reread the menu before being allowed to order?" The mouse system poses similar slowdown problems.

The Auricle, on the other hand, could



theoretically put all program information within easy reach of the user. Grant visualized the computer user in the center of a hollow sphere, with all information printed on the inside surface. To find any information, all he'd need do is turn his head.

Auricle (from the Latin word for *ear*, as in ear of the computer) could also be designed to respond to everyday human language. Today it is so flexible, in fact, that the user can program it to any language or symbology, from French to gibberish.

By now Grant and his computer-scientist companions were convinced they were on to something remarkable. He abandoned his law practice, much to the chagrin of some friends and family members. "I was lamented as the mad Jewish lawyer gone awry," he chuckles. After all, the Auricle system was still just a great idea. A specific application was needed to demonstrate its power.

Enter Ron's Time Processor. Ron, an accomplished composer for film and television (a regular on *Knot's Landing*), wondered if the Auricle Richard had developed could help speed up the program he was writing. Entangled in a mesh of menus, control keys, and the full complement of the usual cryptic computer commands, Ron reasoned there had to be a better and faster way. Richard, of course, heartily agreed. Together the brothers began creating the first real application of the Auricle, a program that in a few months would be christened "Auricle: The Film Composer's Time Processor."

"Creating the program was fascinating," Ron recalls, "mainly because of the input other composers provided while we built it. I never realized how many different ways my fellow composers worked until we started asking specific questions. So the system had to be remarkably flexible, a real test of Auricle's hypothetical prowess."

Most composers create a music cue by first determining the total length of the cue in real time. They then find all the action points within each cue, moments on film when something either alters the tempo or requires a musical highlight. After establishing a basic rhythm or rhythms for the cue, the composer must work carefully from each action point to be sure his violin screech, for example, falls on the guillotine

drop, and not two seconds before.

The Film Composer's Time Processor frees the composer from the restrictions of the standard frame counter, "click track book," and stopwatch (used for determining tempos needed to sync with the visual action) and gives him instead a musically based system in which score synchronization can take place in any musical manner he can conceive. The mathematical preoccupations, including frame counts and video footages, are eliminated by the program.

The Time Processor, which operates off an inexpensive Commodore 64 computer, presents the composer with a display screen that looks just like the music he's familiar with—3/4 bars, 4/4 bars, 5/8 bars, accelerations, ritards. These materials, once solely in the domain of the composition process, have now become computerized synchronizing tools. There is a Time Map into which he feeds a tempo, time of the cue and its "action points:" and a click track, which the composer can choose to manually feed by tapping a key much as you would drum a tabletop.

The Time Processor then tells the composer whether he's early or late on a hit, given the tempo he's chosen. The program then synchronizes, on the user's command, a limitless number of minute variations in tempo, adjusting the click track so slightly that even a seasoned studio musician cannot hear the variance in his headphone while recording the cue. He does, though, hit the action points with tremendous accuracy. And the composer, previously burdened with math and frame calculations, is freed to be more creative with the real task at hand — writing music that will move an audience by subtly enhancing the film image.

It's no wonder the Film Composer's Time Processor has won many loyal fans since it first hit the market in 1984. "I'm completely computer ignorant," says the Emmy-winning composer Bruce Broughton, "but I now use the Time Processor constantly. It drastically simplifies everything to do with musical timing." He first used the system while composing a score for the TV movie *The Cowboy and the Ballerina*. With Richard Grant's assistance, Broughton further proved the Time

Processor's efficacy during recording sessions for the film, *Silverado*.

"With the computer by our side at lunch," Broughton recalls, "we solved a problem with the main title and credit themes and delivered those changes into the hands of our musicians for the afternoon session, something that would have been virtually impossible with the old manual system." He even took the Time Processor with him to London to score *Young Sherlock Holmes* and reports the English now share his enthusiasm for it.

Today the Film Composer's Time Processor is used on most prime-time episodic shows, including *Dallas*, *Dynasty*, *Knot's Landing*, *Amazing Stories*, *Falcon Crest*, and *Murder, She Wrote*. In features it enjoys an increasingly prominent place as well. Quincy Jones kept it close at hand while scoring *The Color Purple*.

Composer Misha Segal takes pride in the fact that he was an early believer, the sixteenth person to acquire the Time Processor program. "Two days after buying the system I was using it full time. That's how beautifully simple it is. Today I can take more creative chances with my scores, stretch my wings a bit more, without being exhausted by the mathematics."

It appears the Auricle has only begun to stretch its wings. It's conceivable that it will one day supercede other man/machine interfaces in computer software programs. At this writing the Grants and company are preparing to license their discovery for a potentially limitless number of program applications.

As Richard Grant says, "The ultimate proof of a program is its "transparency. That is, using a computer should be like driving your car to some destination you know well. You should be able to conduct a nice conversation along the way and arrive refreshed, happily unaware of all the complicated steps you took to get there."

It's this type of down-to-earth logic that creates dollars and sense — and appreciative composers.

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