The Islanders
Margaret Neal, Managing Editor

Digital Color Separation
This month's cover image was not scanned and separated to get yellow, magenta, cyan, and black negatives, which is the way pictures have been separated for printing for many years. Island Graphics sent its program that created the image to ImageSet Corp. of Sunnyvale, California.
President Leonard Schaefer says ImageSet has figured out how to convert the red-green-blue bit-mapped color stored on a computer diskette. Sometimes this is easy, but usually it is quite difficult. Schaefer uses a microcomputer design-oriented workstation to put the picture into yellow, magenta, cyan, and black digitally. Then he puts the whole thing on magnetic tape to make it readable to the Scitex color separation system, which is one of the newer digital color separation systems.
This makes it possible for the color separation to be done electronically, rather than with scanning, hard stripping, and candlework. In the old system all the methods of capture are analog, such as transparencies or reflective art. The analog system introduces all distortions that are part of the medium, like scan lines from the VDT or the color bias of photographic film. Then the color separator scans the image and redigitizes it, adding further distortion.
The ImageSet system usually does only one production pass to final image, rather than many iterations to correct color. The image comes out with crisp, sharp pixels. "It is like the difference between analog and digital sound," says Schaefer. There is higher resolution, a sharper image, no scan lines, and no matrix photography. It takes half the turnaround time to produce higher quality at a lower price, which explains why such companies are using ImageSet as Time Arts, IBM, Commodore, Atari, and Apple.

The graphics segment of the computer industry has not been immune to recent changes. Those tied to yesterday's "latest and greatest" technology have been affected. But a little group of 20 programmers has been climbing straight upward, as though it hadn't heard the word downturn. Island Graphics was started in 1981, and it showed a profit in the last six months of 1985 and expects to show a good profit in 1986, according to Rand Schulman, director of marketing.
Island Graphics creates software for such OEM companies as IBM, AT&T, Sun, AB Dick, CooperVision, Berthold, and a list of others. In the process it also produces many outstanding pieces of computer graphics art, as you can see from this month's cover (which first

How do you OEM software?
It's a more involved procedure than you might guess. In most cases a hardware manufacturer comes to Island Graphics and asks for software for equipment it intends to put on the market. After the financial negotiating is over—which usually involves setting a development fee and licensing arrangements for the software developed—an entirely different kind of negotiation begins.
It isn't as simple as "develop software that will fill this or that need." On the contrary, the manufacturer may have some ideas, and a general direction, but after that it's a senior technical person from Island Graphics negotiating with the head hardware person from the manufacturer. When you get into a complex piece of programming, there often comes a time when it is necessary to make decisions about what capacities should be part of software, and what should descend to the hardware level. Should the zoom capacity, for example, be left to software or would the software function more efficiently if that were wired?
In back of these negotiations are some basic principles. The processor needs to be as free as possible, for example, to do calculations, process management etc. At the same time the user should be able to make as many creative decisions as practicable. It is sometimes quite a delicate balance.
Figure 1. Jeff Griffeath did the realistic hibiscus, which was entirely painted by hand, with no digitizing. Griffeath used the IBM PC AT with the Number Nine eight-bit color board and the Island Compart Paint System.

Figure 2. The ape was painted by Erol Otus, also using the IBM PC AT with Number Nine and the Island Compart software.

Figure 3. The paint brush in a jar, showing remarkable transparency, is a Jeff Griffeath original using the same combination used for Figures 1 and 2.

One key to Island's success is its use of code written in C, and operating under Unix. This makes it portable for new OEMs, and it creates an ideal development environment for programmers, who can share and access one another's work. It saves "reinventing the wheel," says Schulman, and gives OEMs cost-effective alternatives to maintaining large in-house R&D staffs.

What can you dream up for software?

The applications Island Graphics is asked to program for are myriad. For just one example, they have recently agreed to take their own basic paint system and make it usable for plastic surgeons, a textile manufacturer, and a cosmetics company. This will call for some very novel abilities, but the Islanders, as they call themselves, are excited by the challenge.

Just a few of Island Graphics' finished projects include: software for the Number Nine, eight-bit color board for the IBM PC AT, with 256 colors at one time out of 16.7 million and a 512 × 480 resolution (see Figures 1-3); Island Software, which runs on the IBM PC AT with the AT&T ICB (see Figure 4); the Island
TIPS software, which runs on the IBM PC AT with the AT&T 16-bit TARGA Color Board, with 32,000 colors out of 32,000 available (see Figures 5 and 6); and three programs for the Sun Microsystems—Solar Paint, a monochrome, Solar Draw, an object drawing monochrome, and Paint 160, which does color (see Figure 7). The Islanders also work closely with Epic, AT&T's venture group, adjusting capabilities back and forth between Epic's hardware and Island Graphics' software.

**Portability is a key ingredient**

Programmers start off using Sun Microsystems. Island Graphics has 120s, 150s, 160s, and 170s. They are networked together, and since they are all working in C with Unix the programmers can easily share codes. On the Sun they usually develop the baseline code. Then they port that to the hardware for which they are developing software.

This portability makes it possible to get more people involved on a project and to work on many different pieces of hardware. Of course if the contract requires indigenous calls, the Islanders will use the hardware for which they're developing the software.

Is software developed after the hardware product goes to market? No, that is more for independent software developers. Island Graphics is
Figure 6. The stylized Islander is the creation of Jeff Griffeath, with the background digitized and the woman entirely painted by hand, also using TARGA and TIPS.

Figure 7. These images show (a) a generic space vehicle circling the sun, and (b) a view of a futuristic building through the windshield of the generic space vehicle. They were developed on one of the Sun Microsystem 3/160s Island uses, and they were done at 1180 × 960 resolution.

usually approached as hardware is being developed. Ultimately the software it develops is often part of the package customers buy from the hardware manufacturer.

Inhabitants of the Island

Island Graphics' corporate makeup is unusual. Dan and Paul Remer, both attorneys who specialize in software law, are president and vice president. Dan Remer is the author of Legal Care for Your Software, published by Nolo in Berkeley, California. This eclectic group also includes Steve Dompier, the first to use TV as a monitor for editing. Island Graphics programmers seem to have a lot of fun at their jobs. If the daily activity were set to music it would have to be Perpetual Motion. You get a feeling for the esprit de corps that abounds when you hear they've named their Sun Microsystems for various exotic islands. Who wouldn't want to work on Bali or Tonga all day!