

its 400dpi output can't compare to the results produced with a true 400dpi scanner, such as the Océ 6045-S. Therefore, you should plan to buy the model of scanner you need. Most inkjet printers create 300dpi output. If you create hybrid drawings for output on a 300dpi plotter, this is the perfect scanner for you. If you primarily use a scanner for raster-to-vector conversion, one of Océ's higher-resolution models may be better for you.

The Océ 6035-S sells for \$13,990. Its software costs an additional \$995. Like all Contex scanners, it is a very good unit. Its unique paper feed system and stand make it even better. Highly Recommended.

VIDAR

### TruScan 800

**Pros:** Impressive

Windows software; good price.

**Cons:** None significant. **Address:** 460 Spring Park Place, Herndon, VA 22070 **Phone:** (703) 471-7070, fax (703) 471-1165 **List price:** \$14,500

Circle 268



Two years ago, most people only saw Vidar scanners under CalComp's or Houston Instruments' name. Although Vidar sold high-end scanners under its own name, it was mainly an OEM company. Now the company sells its scanners directly to the public under its own name.

The TruScan 800 is a three-camera scanner with an optical resolution of 400dpi. It uses a straight optical path, with the cameras mounted in the bottom of the scanner (the stand is integrated with the scanner). The media drive uses two stainless steel drive shafts with elastomeric rollers, one on each side of the scanning aperture. This arrangement is much more accurate (and repeatable) than the drive system used in the older units Vidar made for CalComp and Houston Instruments. The media path is straight and unobstructed and has no difficulties with thick or thin originals. The TruScan uses a media sensor that determines when a document is loaded and when it is completely scanned. The scanner also has a feed switch so you can move media forward or backward, but it does not have a media release.

The TruScan 800 uses a SCSI interface and the supplied host adapter is a fast ISA bus Adaptec unit. The Windows-based scanning software supplied with the

## A NEW LEASE ON APERTURE CARDS

WHEN GOING ELECTRONIC, TWO STEPS MAY BE BETTER THAN ONE

AL DOUGLAS

**W**hen I entered the engineering drawing scanning market in 1987, I was convinced that the microfilm market would witness a sharp decline as the scanning market grew. However, microfilm—in this case, 35mm aperture cards (keypunched cards with microfilm of the drawings attached)—has gained a new lease on life.

Organizations with 35mm aperture cards of their engineering drawings can economically convert them to an electronic format using aperture card scanning (see the "Aperture Card Scanner" sidebar on page 76). When it comes to scanning engineering drawings, aperture card scanners can produce a large volume of data over time and, thus, give a high rate of return. For example, under full quality assurance conditions (setting the scanner to stop at each card so that the operator can check image quality), a high-speed aperture card scanner can process 75–120 drawings per hour, whereas the average E-size paper scanner might process 20–30. This brings the price of scanning down to a level that is easily justified. Companies that implemented strict quality control standards with regard to Hollerith uniformity and film densities will reap the greatest rewards.

Organizations that do not have aperture cards of their paper drawings may want to convert their paper drawings to aperture cards and then scan those, especially for large projects with thousands of drawings. This process offers two advantages. First, for volume production, it saves time. It is faster to produce microfilm for a large number of drawings and then scan it on an aperture card scanner than it is to scan directly on

a paper scanner. Second, aperture card scanners produce an associative database with each drawing file. The card scanner captures the aperture card's Hollerith (keypunched) data into an ASCII file and associates the image filename with the Hollerith data in an index file, thus eliminating human error in the linkage of the scan file to its associative record in the final database. With paper drawings, you must link such data to the electronic file after you create it.

Most people believe that you get the best results from scanning original drawings. In some cases, this may be true. However, my company took 65 drawings of diverse quality and on every conceivable medium from blueprints to linen, filmed them on a high-quality camera, and scanned the resulting cards at 200dpi. In our opinion, the majority of these scans contained more detail with thinner raster lines than those scanned on our paper scanner. We believe the higher quality has to do with light transmission. Paper scanners reflect light off the original back into the CCD camera, bouncing extraneous light around and thereby causing lines to get thicker. Aperture card scanners, on the other hand, pass laser light through the film so that it matches the resolution of the film. The process is, of course, more complex than this, but this is the basic principle behind it. □

*Al Douglas is vice-president of TERN Solution Group Corporation, which provides professional scanning, software integration, and support services, and director of the National Scan Network, a service-based imaging company, both located in Ottawa, Ontario.*

TruScan 800 is quite good and complete. (It was developed for Vidar by Spicer Corporation, and is a subset of that company's IMAGEation software.) The scanner operates on a scanning-to-view paradigm: You scan a document, its image appears on screen, and when you are satisfied with it, you can save it. While the image is on screen, you can modify it in any way. The TruScan software even allows raster editing. The TruScan's thresholding adjustments are a delight to use when scanning difficult-to-read documents. With little experience and almost no practice, I got acceptable scans. The software includes thresholding presets for different types of drawings, so if you find a set of values that

work well for a particular type of document, you can save them for later use. Unlike earlier low-cost Vidar scanners, this unit includes adaptive area thresholding, borrowed from Vidar's \$60,000 top-of-the-line unit. This thresholding method looks at the pixels surrounding the current pixel in order to determine an optimal threshold level. It seems to work well.

The TruScan 800, with its 400dpi optical resolution, turns out high-quality scans as good as those from competitive 400dpi units. It also provides interpolated resolutions in discrete steps up to 800dpi.

The TruScan 800 is a solidly-built unit that does the job it is supposed to do, well. It lacks DOS-based software, but I'm not