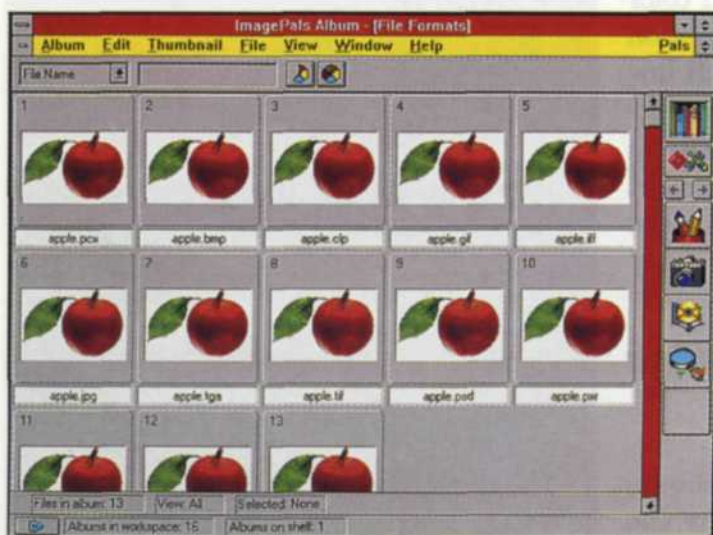


DIGITAL DIRECTIONS

Service Bureau Blues Part II



Original color negative.



File Types.



Slide duplicator Kodak 5072 print film.

IDEAL FILE SIZE FOR FILM RECORDERS (PIXELS)		
	35MM	4 X 5 & 8 X 10
2K Resolution	2048 x 1366	2048 x 1536
4K Resolution	4096 x 2736	4096 x 3072
8K Resolution	8192 x 5472	8192 x 6144
16 Resolution	16,384 x 10,944	16,384 x 12,288

McLain Imaging

Best resolution for scanned images to film recorder.



Slide scanner to film recorder.

Sue and Jack Drafahl

LAST MONTH WE discussed some of the problems plaguing service bureaus. Due to space restraints, we were only able to help you solve some of them. This month we're back to help you side-step additional problems.

Transportation of Media

Because files are becoming larger every day, your clients need a way to transport data to your service bureau. It never fails that whatever media you have on your system, you will have a client who wants

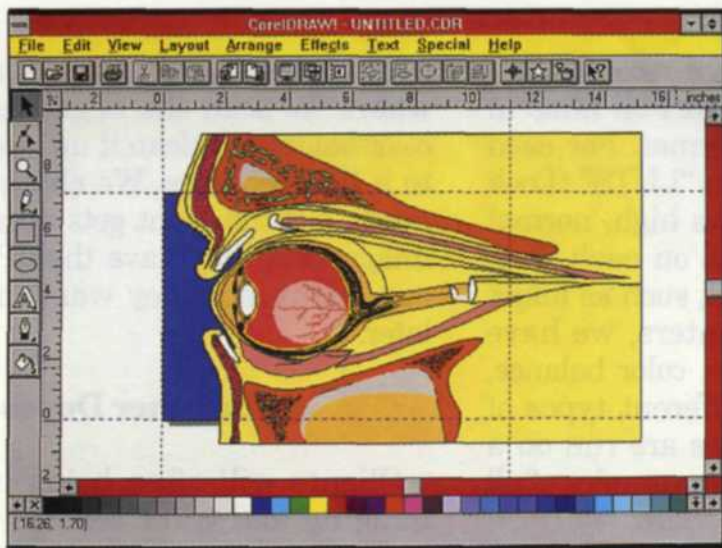
to know why you don't support his tape format, or floptical system. There is no easy solution to this problem. Before setting up your service bureau, you should contact clients who will be using your services, and ask what media they use to transport data. Keep in mind there are dozens of media formats, and you can't have all of them on your system. We have found the 3.5 inch floppy, SyQuest 44 and 88 to be the most common with our client base. If the client has files that are slightly larger than 3.5 floppies, we have a list of alternate solutions for file

splitting or compression so that the client can still bring the file in on floppies.

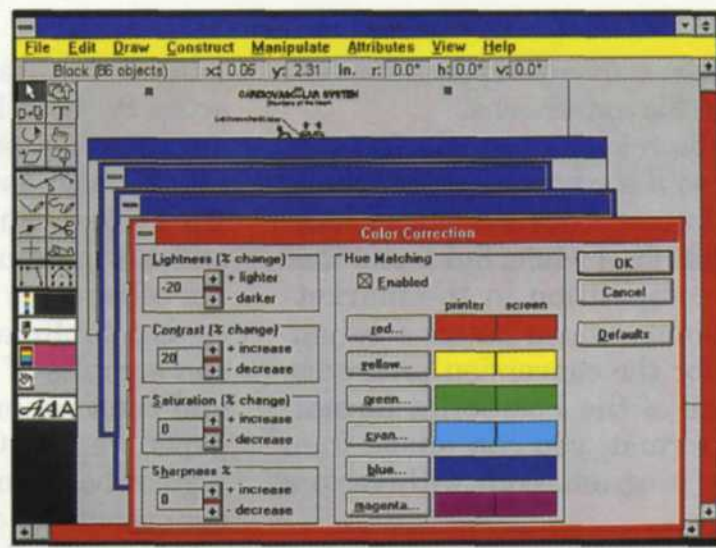
Data CD

If you offer scanning as part of your service bureau, and plan to scan very large files, you will probably need to think about saving to data CD. With a CD writer at less than \$2,000, you can write scanned images up to 650 megabytes on a blank CD for less than \$15. Almost every client we talk to owns a CD reader.

If you plan to image from data CDs, we



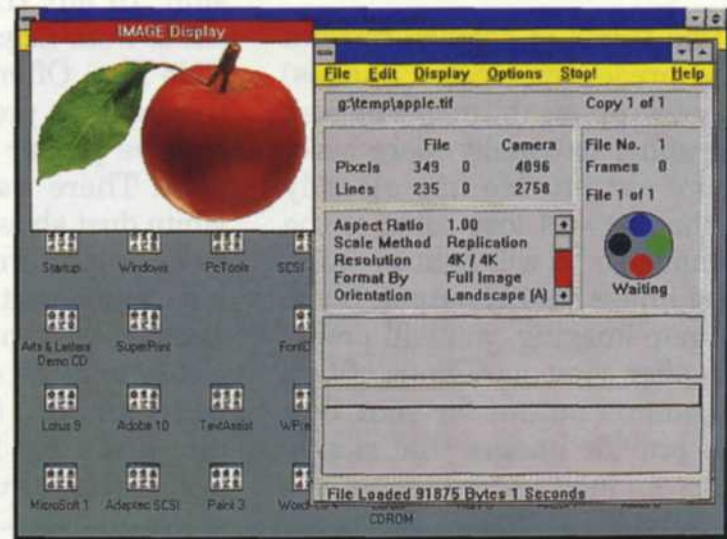
Bleeding pages.



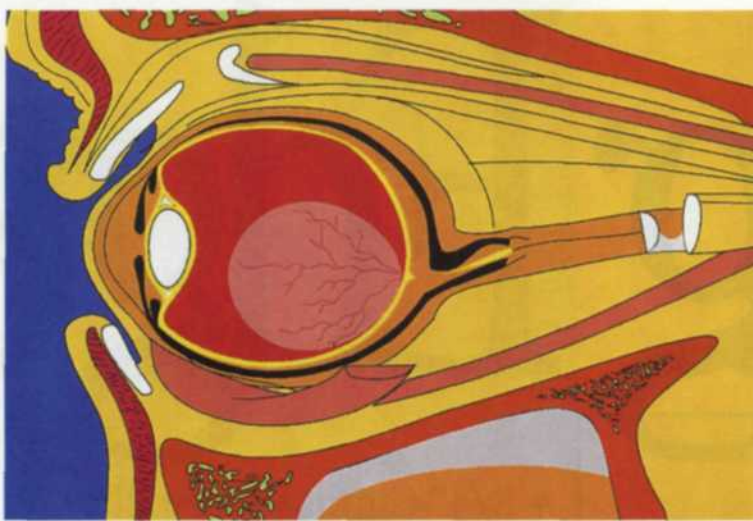
Zenographics Superprint. Adjustment for color exposure.



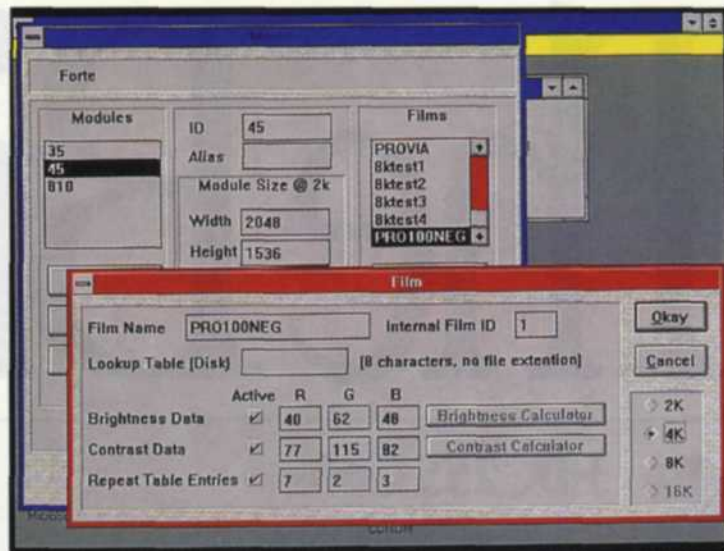
Bleeding pages. Non-PostScript driver for film recorder.



McLain Imaging Image Assist.



Bleeding pages. PostScript driver for film recorder.



McLain Imaging Image Assist. Adjustment for color exposure.

highly recommend that you copy the files to temporary hard disk, and then send them to the film recorder. The speed of the fastest CD reader cannot feed data to the film recorder fast enough. This results in long imaging times. There is also the possibility of imaging error from the film recorder due to incorrect data transfer.

We recommend that you keep a separate CD reader, although your CD writer will read data. Writers offer much slower access time because their main purpose is writing, not reading. The time you save with a fast, inexpensive reader

will quickly pay for itself.

File Types

Now that service bureaus are imaging photographic images, a new can of worms is opened. A TIFF file is a TIFF file, right? Wrong! There are more than 50 different types of TIFF files that can be read by most paint programs. Now there is even a TIFF JPEG and a special TIFF file format for the Kodak DCS digital camera. Keep in mind we are only talking about TIFF files. There are also

TARGA, BMP, PICT, MAC, GIF, and dozens of other bitmap formats, each with dozens of possible variations. Add in the 50-100 vector formats used for lecture slides, and your service bureau may be required to handle over 200 different formats!

There are several approaches to alleviate this problem. Discover which programs your customers use most often, and make sure you have the most recent version on the shelf. Many of these programs allow you to convert from one program to the next. You could also add to

your collection conversion programs that specialize in file conversions.

Some labs restrict the file formats they offer, so if a customer doesn't have it in that format, they are out of luck. We tried that for a while, but found that with stiff competition in the marketplace, flexibility was a better solution. We opted for the conversion programs, and the use of the PostScript format. With this format, you can image from almost any program, both with vectors and bitmaps.

Photographic Images

Of the two types of service bureau clients, the presenter (vector images) and the photographer (bitmap images), the photographer is usually more picky about image output. He has already been told that he will lose some of the original quality, so he will fight to maintain the best image quality output. If you provide bitmap imaging, you will probably have to offer some variations of film type, and gamma output for your film recorder to provide images that closely resemble the original.

In our lab we have film recorder balances for both Kodak and Fuji films in negative and positive format. For each film we also have set up "LUTS" (Look Up Tables), which allows high, normal and low gamma output on each film. For other types of output, such as inkjet or dye sublimation printers, we have run samples of exposure, color balance, and contrast on the different types of paper we use. Grayscales are run on a regular basis and we have samples of all our outputs for clients to view.

One service that has been a real bonus with digital is negative to slide conversion. In our traditional lab we made slides from negatives using Kodak 5072 slide film. Often the images had to run through the process more than once to achieve proper exposure and color balance. There was always the chance of white dust showing up, or finger fungus, in an important part of the image. We have found that color negatives stored in sleeving tend to have more damage than slides, and the damage becomes magnified with 5072 film. The 5072 slide film also has a red D-Max, which gives it a look different from normal slide film.

We now offer a computer version, where we scan the negative in at 2k, color-balance it, clean it up, and output it to a film recorder. We charge twice as much, but the client gets a much better image, and they have the JPEG file in our archives if they want more slides later.

Computer Dupes

Clients will often bring in files for imaging and want several copies for multiple presentations. If you offer traditional slide duplication, the client will zero in on this right away, and will often ask for one copy from the computer and then the slides to be duplicated. You want to immediately steer them away from this scenario because you will both lose. The client will get poorer quality from the dupe, and if there is text close to the edge of slide mount there is a chance of cutoff.

Here is where samples come into play. Have a sample of a computer dupe vs. a slide dupe. Besides samples of quality differences, show samples of possible cutoff problems. Try to price your com-

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puter dupes as reasonably as possible.

In one case we had a client who wanted an extra duplicate of each computer image and was unwilling to pay the price. We found it was cheaper to make the extra dupes on the film recorder, and only charge the slide duplication rate. The client was happy, and we didn't waste time with a two-step process for that specific job.

Over-extended Images

This problem occurs mostly on the PC side of the service bureau and deals with non-PostScript drivers for film recorders. When a client works with a program such as PageMaker or CorelDraw, they can extend the image beyond the page, with the idea that the image will be clipped or will bleed to the edge. Unfortunately most non-PostScript drivers can't

handle such a file and will drop part of the image or distort it. The solution again is to use a PostScript driver for your film recorder, where the image is clipped exactly as the client designed.

Embedded and Linked Files

Some newer software programs can embed or link files. This works well until the files are moved from their computer to your computer. If the files are linked, the client must bring all the linked files in addition to the main file. Even if the file is embedded there is still a chance that there will be a problem in crossing from one computer to the next.

By having the client always include all files, either linked or embedded, the service bureau can correct any errors and keep the client looking good.

Even with all the files at hand, some programs are still very stupid, and are constantly looking for files linked on the clients "D" drive, when it's now on the service bureau's "F" drive. Fortunately, most programs have a re-link function, and the error can quickly be corrected.

Output Programs

This is the part of a service bureau that will make or break you. Inkjets and dye-sublimation printers usually come with a print driver or else they will recommend a third-party device driver. The basic controls for these devices include density or exposure, color balance, gamma and dither pattern. The dye sub printer is usually very straightforward, and will need little adjustment. Inkjets generally take more setup time, but otherwise it's much like setting up a color printing line.

Setting up the film recorder is a different story. Most film recorders have two basic sets of controls. The internal controls set up the basic LUT tables, and the software controls add variables to this basic setting. The problem with linking these programs to the film recorder is compatibility and speed. When we first got our film recorder, we tried several types of output programs, but were constantly running into hardware/software compatibility problems.

The programs improved and we finally settled on two programs for our PCs to output to our film recorder. For vector and vector/bitmap combinations we found that the Zenographics Super-Print is an outstanding imaging program that works with almost every film



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recorder on the market. The program allows control of contrast, color, exposure and sharpness, as the image is being sent to the film recorder.

Image Assist from McLain Imaging, available for both MAC and PC, was by far the best bitmap program. It was the fastest output program, had the most film controls, and was bug free. We realize that the best situation would be to have just one program for output, but we have found that using a program that is best suited for each task gives us the fewest problems and provides the fastest imaging times.

Another problem related to film recorders is that clients assume all film recorders that create 4k images are the same. They view 4k as a rating of quality. If you have invested in a more expensive service bureau film recorder, it may be hard for you to compete with a competitor using an inexpensive desktop 4k film recorder who is charging a lot less per slide. You should have on hand some samples of film imaged on a lower-end film recorder vs. a higher-end service bureau film recorder. If cost not quality is the issue to the client, you must rely on your past service record in order to keep the client. We have had several clients try other lesser quality service bureaus, only to get them back later when they reviewed their results.

Setting Prices for Services

When we first started our service bureau, we used a complex chart of programs and file formats that would calculate out the price for each output. We compared the prices to our competitors and then ended up with a new price sheet that we thought would cover every situation. The day after they were printed, we found that things constantly change. We continued to use this concept but carefully monitored all aspects of our service bureau.

Finally we realized that almost all aspects of a service bureau could be reduced to megabytes and minutes. Looking at how many minutes and how much disk space each file or image used, we were able to restructure our services. We had a "by-the-minute" fee for editing, a fixed rate for vector images, and a fixed rate based on megabytes for photo imaging, scanning and writing CDs. Our accounting was easier, clients could easily understand our prices, and this offered a fair price structure for both client and service bureau.

We can't reveal the prices we charge, as each locale and situation varies, but using the minutes and megabytes idea will give you starting point for your own pricing structure.

We are well aware that we have not touched on even half the issues vital to operating a service bureau. Our goal was simply to give you the benefit of our research, headaches, heartaches and tri-

umphs. The potential is there, you just need to take the plunge and give it a try.

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Sue and Jack Drafahl own and operate a custom lab near Portland, OR. They are also professional photographers, specializing in underwater photography.

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