

BIG PICTURE Trade Show ***Wide Format Printers inspected at*** ***the Show and Conference***



Following is the first draft report on the most recent inspection of wide format printers. It will be a while before we have time to check all our notes but here is a substantial installment.

Oct 4-7 it was possible to obtain an abundance of fresh information on the Epson 7500, 9500, Mutoh (Kodak), Roland, the impressive new 1200 dpi six color Hewlett-Packard DesignJet 5000ps, the new Canon 1200 dpi prototype, Mimaki, Encad, ColorSpan, Nur, and other large format printers. The following report covers each printer one by one.



The Big Picture Magazine is the leading trade magazine dedicated to large format printers. Every year they hold a trade show and conference with seminars. I was invited to speak on advanced digital photography as an input device for large format printers. The several days of seminars were as informative as was the trade show itself.

PRINTERS FOR TEXTILES:



Mutoh Textile Printer

Due to the amount of questions on how to get started using an inkjet printer for printing on textiles we were especially happy to find so many displays on this subject at the trade show.

Sawgrass Systems had an informative exhibit. They showed their SubliJet transfer inks for the Epson 3000, 7000, 9000 and Mutoh printers. Just be sure you don't make the mistake and try these in the Epson 7500 or 9500. Remember, those new printers do not take any aftermarket inks, none whatsoever, not even the original Epson dye-based inks.

The Sawgrass SubliJet dye sublimation inks can be used to heat transfer to T-shirts, carpet, tiles (for murals) and all kinds of fabric, plastic, wood, and metal (anything with a special surface coating). Sawgrass is the world leader in this dye sub technology. For information, try lizpendleton@sublimation.com, tel (843) 884-1575.

This was our first opportunity to see the Stork textile printers. These are customized versions of a Mimaki printer optimized for handling inkjet printing on textiles. Stork is a European company dedicated exclusively to printing on textiles. Stork is a large and successful company and it is clear that their engineers know how to handle textiles with inkjet technology. Because of the rising interest in printing as well as proofing textiles, we are working hard to gather more comparative information. It's tough because at every booth different stock images are used so you don't get a direct comparison. Tel (704) 598-7171.



Stork Textile Printer

The Stork Amber is their entry-level machine. There is no need to print on textiles at 1440 dpi so these printers are set for 360 or 720 dpi. The mesh of the fabric does not reveal any benefit with such a high dpi. Besides, the native dpi of an Epson piezo printhead is only 720dpi.

The Stork Zircon uses 8 colors to achieve 324 x 360 dpi on polyester. The Stork Amethyst seems to be the high end production system. Details in the brochures were sparse and measurements were provided only in centimeters, easy for FLAAR to decipher because we operate on the metric system but tough for the average American reader. What counts is the quality of the output and in this aspect we give good ratings to Stork. As soon as we develop a suite of test images we will report back our results.

Our Photokina trade show report also discusses textile printers. Then FLAAR also has two reports exclusively on textile printers; one for printing basic textiles directly with an inkjet printer. The other report is similar but includes information on using dye sublimation. If you

let us know what you need to print, what printers you have been looking at, and what kind of printer you are thinking of, perhaps our report can help you reach a final decision. Crucial factor is whether your printer can accept dye sub inks or not.

EPSON 7500 and 9500:

At the Big Picture trade show it was possible to have some prints from the FLAAR photo archive done on the Epson 7500. Over the last several months the capability of these printers has steadily improved. How is it possible that a printer which was unusable in May looks so nice today? At DRUPA printer trade show in Germany in May Epson made the mistake to show the unfinished prototype. The chemists were still formulating the inks and therefore none of the ICC profiles or RIPs could handle the new colors. It took several months for the inks to reach their final stage. At that point the software engineers could refine the RIP and printer drives to handle the new inks as well as the new papers.



EPSON Stylus PRO 7500

Furthermore, some of the stock photos shown at previous trade shows were not very good. Today Epson has selected better images. Besides, when we use a photo from the FLAAR Photo Archive we know what they should look like. So at The Big Picture event Epson printed several samples and the results looked great.

Epson now has 16 kinds of media that work with the 7500 and 9500 including several art papers. Admittedly not the over 40 kinds of media and all the Hahnemuehle water color paper and canvas that goes through any and all HP DesignJet printers, but 16 is a good start. Did not notice any canvas in the sample book, however canvas is listed in the main brochure.

Originally print life was listed as "200 years..." now it has been quietly downsized to "over 100 years..." The user should realize this is not longevity in a sunny room, or in a room with normal lighting. The "longevity tests" (for all inks, not just for Epson) are based on a semi-darkened room with dim lighting as in a museum. Of course no normal person has such a room other than their basement or a closet. The entire longevity testing system has come under increased scrutiny; indeed the main testing site was suddenly complete taken off the air recently (January 2001), under the ruse of being under construction. In point of fact the longevity claims were too sensitive and had to be removed. I do not know who made the original claim of 200 years but it has caused considerable mirth.

Now that the gamut of Epson printers has matured, and since neither HP nor Canon has an archival ink in any 24" printer, the Epson 7500 is something you might consider. If you wish to buy an Epson to do fine art giclee printing then be sure to obtain your Epson from IT, Improved Technologies, e-mail iris@itnh.com. They also sell Mutoh and Ixia (the improved replacement for the old Iris giclee printer).

Why? Because if you just buy your printer in a box from a mail order address or some local dealer, they will have no idea how to assist you to obtain maximum quality. Furthermore, eventually you will need a RIP. Who will help you with all of this? Certainly not the mail order place. So you need to be sure to obtain your entire system from a place that knows how to actually do the printing.

Its too late if you buy your printer low bid and then realize you need help. Since you did not buy your printer from the more experienced dealers, how can you expect anyone to assist you after the sale?

We inspected the IT facilities a few days before arriving at the Big Picture trade show. Very capable people; IT also handles media for fine art as well as inks, more reasons to get your Epson from them than from a no-name cheapo place on the Internet (where you will get no after-sales help whatsoever).

If you wish a comparative report on the Epson 7500, compared and contrasted with other comparable printers, as for the FLAAR report on "24" printers for fine art and photo-realistic quality"

ROLAND

For the first time we had the opportunity to see the Roland ColorCamm Pro up close. This is a 24" printer cutter that uses thermal or wax ribbons, just like the Alps desktop printer. This specialty printer does labels and many other small practical things. Disadvantage is the mini-ribbons are so small that you have to change them often (easy to do however). Since the ribbons must make direct contact on the media, they leave a faint band path. Otherwise, from a distance, the quality looked very nice. These are for signs, labels, and other basic work.



Roland Hi-Fi Jet Pro

Roland Hi-Fi Jet PRO is the new 8-color printer. This offers true 1440 x 1440 dpi, albeit a bit slow, namely about 2 hours to print full width image.

It was possible to have some FLAAR Photo Archive images printed on a Roland Hi-Fi at the booth of BEST color management RIP, by a normal Roland Hi-Fi. Seeing one of our own images on the Roland makes it so much easier to judge the quality. The Roland media itself has an exceptional feel and appearance, the best media I have seen for photo-glossy. Of course using the proper RIP and with the help of a technically capable person from BEST it was possible to obtain an outstanding image even at 720 dpi. No one in their right mind would set any of these printers to 1440 dpi; simply takes too long to print.

The Roland Hi-Fi is capable of achieving 16 pass printing; the Roland Pro can do 32 pass printing. These high quality modes eliminate the Roland's tendency to leave banding patterns across the print. These bands are the result of trying to print less slowly. To print a tad faster you have to drop the dpi. That lowers quality and increases the tendency for horizontal banding patterns. Disadvantage of any piezo printhead is glacial slowness, namely about an hour per square yard on the Hi-Fi and up to 2 hours on the Pro; per single picture.

What I like most about the Roland is one of their photo gloss papers. Every one of our sample images that is reproduced on this media looks outstanding.

NUR exhibited its heavy iron at the Big Picture trade show. The quality was good. Prior to reaching California I had stopped at Vutek, Nur's main competition in New Hampshire, en route from Photokina trade show in Germany. In New Hampshire I first visited IT Improved Technologies (Ixia and Mutoh) and then visited the headquarters of Vutek 20 minutes away. Vutek and Nur are two of the main companies which produce the super wide printers (for billboards, bus wrap and other uses). Its tough deciding which of the two to favor. Both Vutek and Nur have their strong points. We will do further research and perhaps can visit the Nur headquarters as well. You may notice FLAAR goes to considerable effort to acquire factual information for our reports.

GRETAG printers were much easier to study at The Big Picture Conference than at Photokina. Too many people at Photokina. Also, Gretag had the Carolina Textile Press in situ in California but not at the show in Cologne, Germany. The Carolina Press is for industrial production of dye sublimation, largely for textiles. Medium dpi, fast speed, six-color quality.

The Bellise Plus is now available with UV pigmented inks. The Bellise uses Epson printheads. Printers from Gretag are not for home use or for SOHO businesses; Gretag equipment is for large scale commercial printing companies.

CANON's new 1200 dpi six-color printer looked very nice at this October trade show.

They were using the same glossy photos that were shown at Seybold (which were better than the ones selected at Photokina). Still no UV pigmented inks on the horizon. Evidently they can't fit the pigments through the head system.

When you judge a printer's performance realize that the gritty background on the print may be the grain of the original transparency. You get grain of the original film if you scan a small transparency at over 3000 dpi. If you use a large format digital camera you don't get any grain. Thus it would be of interest to see printers such as the Canon with a really good large format photograph from a BetterLight scan back.

I was not able to see any banding on the Canon prints. Banding is more typical of Epson piezo heads.

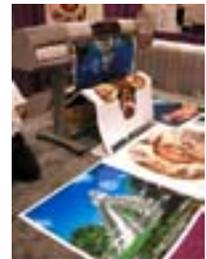
The Canon produces 15 posters an hour at its 1200 dpi. The Epson, Roland, and Mutoh produce only one single poster an hour at their 1440 dpi. The Roland 8 color advertises 8 colors and top quality. But if you actually select those options the printer can produce a poster only ever two hours. The HP 5000 can print circles around any piezo printhead system. Piezo technology = nice but slow; thermal technology = nice but fast. The HP is a tough production workhorse, built primarily for speed and reliability. Both the HP and the Canon do six colors and 1200 dpi, but only the HP has archival UV pigmented inks (available in Spring 2001).

COLORSPAN

Early reports about technological snags with early models of ColorSpan are now subsiding. We have no reports on problems with newer models as long as you clean and calibrate them daily. The quality of ColorSpan remains tops. Neither Roland nor Epson can reach apparent 1800 dpi yet. The ColorSpan is so much faster than the Roland and Epson it's hardly fair to compare them.

HP is getting faster and offering six colors at 1200 dpi, so it was clever for MacDermid to drop the price on the newest ColorSpan model, the Esprit. Here is an 8-color printer that is substantially faster than any Roland, Epson, or Mutoh or Mimaki for that matter.

We spoke to one person who owned a (earlier model) ColorSpan. He said "I made lots of money with that machine..." due to its speed and high color quality. As long as your company is large enough to handle the operator intensive needs of a ColorSpan printer then you should consider one (or more, we know one company that bought both a DisplayMaker XII as well as a Giclee printer...they love them both). For more information contact productinfo@colorspan.com tel 800 477 7714.



HP 5000 ps

HEWLETT-PACKARD

HP proudly displayed its flagship printer, the DesignJet 5000ps. This printer was the talk of Seybold (where it was first premiered in late August) and was the most discussed large format printer at the Photokina trade show in late September as well. The reason is the technological breakthrough in thermal printheads: high quality at sustained speed. HP is the first six-color printer that can actually produce such photo-realistic quality without slowing to a crawl. HP is also the only printer that has its own on-board PostScript drivers that avoid the need of a complex aftermarket RIP system. The integrated on-board RIP makes the HP considerably easier for first-time users.

Seybold and Photokina were so hectic we did not have an opportunity to print our own samples on the HP 5000; at The Big Picture trade show we had several of our sample images printed. The quality was absolutely outstanding. I would defy any normal viewer from being able to tell the difference between the output of a new HP and a Roland. Actually the only printer that might top the quality of the HP 5000 would be the ColorSpan 12 color printer which

costs roughly twice as much and frankly needs an experienced operator. The HP does not require daily maintenance and is designed for user friendliness and ease of use. Of course the new ColorSpan Esprit is now roughly the same price as the HP, so it's exciting times for digital fine art and photo printing.

HP's new line of printers includes the 800 and 800ps as well as entry-level printers for architects and graphic designers, the 500 and 500ps. Since the FLAAR evaluation studio for Latin America is affiliated with the architecture department at the university where we are headquartered, we will be testing the HP 800ps when it arrives. The 500 and 800 feature dye inks and fast speed. If you need UV pigmented inks for UV resistance and longevity, then that is the HP 5000 (or the earlier HP DesignJet series 2000 (36"), 2500, 2800, 3000 (54"), 3500, 3800 which are still available).

The biggest request is for our reports on the HP 5000ps. As soon as possible we will get an HP 5000ps in-house, in the meantime we have comparative comments on the HP 5000ps at the end of this report. Since October we have had several sessions with the HP 5000ps, including with beta versions of its impressive pigmented inks.

KODAK still patiently offers their OEM version of the Encad printers (as does Oce and Ilford). But Kodak now also offers their OEM version of the Mutoh, which uses Epson piezo heads and hence higher dpi than the Encads.

Kodak realizes that people want a few years longevity even with dye based inks so they now offer lightfast-plus dye inks.

Kodak lacks its own large format technology. Other companies make the printers and printheads and Kodak just puts their own name on them, as is typical elsewhere in the industry. We have, though, received a favorable mention of one kind of Kodak branded media, ironically listed as one of the better media to use with the HP 5000ps.

ENCAD and **OCE** exhibited but had no new products. The prints on the Encad 8 color system looked a bit better than the output on the same printer at earlier trade shows. As predicted the ICC profiles and color management software for the Encad had improved somewhat. However the quality of the Canon, Roland, HP, and Epson is better than anything produced by a 600 dpi Encad.

RIPs (Raster Image Processors) for large format printers

RIP is software that controls your large format printer and tweaks the best quality out of your equipment (if you have a good RIP that is). We do not recommend EFI Fiery RIP, a hardware RIP, that many people find overpriced, underfeatured, and overrated. In any event the EFI exhibited at the HP booth was still under development. The technicians admitted it was not yet ready.



On the **BEST** color management software RIP brochures I noticed they are now expanding a bit beyond their core of proofers. They now list graphic arts, photography, and other uses on the front page of their brochure. BEST can do nesting and tiling, for example. Although BEST has long been one of our favorites, we are increasingly getting exposure to the other good RIPs which are available. The capable BEST people did some sample prints with their Roland Hi-Fi. The results looked very fine. Contact is Richard Dannenberg, rd@bestcolor.com.

Over the last several months we kept hearing good things about the Wasatch RIP. So it was fortunate that Wasatch had a booth at the Big Picture event. I was surprised to find out how many printers the Wasatch can run. Overall this seems like an excellent RIP to consider. For more information contact Improved Technologies, e-mail iris@itnh.com. They include Wasatch RIP in their fine art giclee printer bundle.

We had a first look at the Photoscript RIP from CADLink and several other companies. There are so many different software RIPs it's hard to keep track.

MEDIA

I especially liked the YUPO media for maps, as in waterproof maps you can drop overboard or get rained on. Such maps would be great for my own work (as an archaeologist exploring lost Mayan ruins in the humid jungles of tropical Guatemala and Belize). It was unclear which media worked in inkjet printers and which for traditional four-color presses.

Rexam Image Products is probably the largest media company in the United States. Rexam produces media for practically every use you could imagine such as pressure sensitive that adhere to many surfaces, textiles, backlit material, banner material, and photorealistic papers. E-mail ilsa.murray@rexam.com for further information.

SCANNERS

FLAAR is receiving an increasing number of inquiries about what wide format scanner do we recommend so we are continuing our research into this area. The Contex wide format scanner is the one that has attracted most of our attention so far. Contex equipment is designed in Denmark, a country increasingly known for its high quality digital imaging equipment.

Although we are spoiled with a CreoScitex EverSmart Supreme flatbed and experience with an ICG drum scanner, neither of these companies exhibited at this trade show so we got to learn about Howtek and Aztek. Until we see results and can compare them all we can't issue any preferences other than that the scanner software of the Scitex is outstanding and we found the ICG drum scanner easy enough to use that it required no long-range training.

Due to the quantity of incoming e-mail we don't have time to update the web sites, hence most of the information is updated on the e-mail answers and PDF format reports only.

SUMMARY

We had the opportunity to have images from the FLAAR Photo Archive of pre-Columbian art done on a Roland Hi-Fi (normal six colors, not the eight color Pro), on the Epson 7500, and the Hewlett-Packard 5000ps. Each image was different as was the media selected so it was tough to compare but the results of viewer reaction are as follows: An image from a \$200,000 Cymbolic Sciences LightJet printer was clearly continuous tone as far as the eye was concerned. There was no traditional inkjet which was as crisp if viewing distance was hand-held. It is unfortunate that no ColorSpan print was available. I estimate it would have been the closest to the LightJet quality.

The Roland HiFi image (720 dpi) was impressive, largely due to the exceptional quality of the media which Roland favors. It has a surface quality that I have seldom seen elsewhere.

The image from the Hewlett-Packard was outstanding in color fidelity, brilliance, and exquisite detail. It took a while for the judges to distinguish the HP from the Roland print. In other words, if you are looking for a quality printer, you can now count on the same high photo-realistic capability from the HP 5000ps as from the Roland. The difference is the HP offers less propensity for banding and much higher speed. The HP uses thermal printheads so has none of the generic problems which are increasingly well documented for piezo-electric print head systems such as Epson, Roland, Mutoh, and Mimaki.

Although we did not have an opportunity to do prints on the Canon BJ-W9000 my feeling is that the results would have been comparable to that of the Epson, Roland, and HP. Major deficiency is total lack of pigmented inks for the Canon bubblejet system.

The Epson 7500 was on matte media, so did not look as enticing as any of the other images. The judges found the Epson image very handsome, with nothing inferior about it, just that the others clearly looked better. We have been told there is a severe shortage of some kinds of Epson media such as photo glossy. We do not know whether this is due to a failure in manufacturing or too much demand. We are curious to know whether it is part of the rumored problems in some of the "new media" with the troublesome "new inks."

As at other trade shows, the most uninspiring output was from the Xerox Xpress, using Xaar MIT printheads. I believe it uses solvent or oil-based inks. The combination of that kind of ink with those kinds of printheads equals low quality.

OTHER REPORTS WHICH ARE AVAILABLE

First report is from the mammoth international printer trade show, DRUPA, in Duesseldorf, Germany. The Epson 7500 and 9500 with their "new inks" were presented here for the first time, as well as a new 8-color printer and a few other surprises such as a new Seiko printer.

Next report covers the introduction of the HP 5000 and others at Seybold San Francisco trade show the last days of August. All kinds of information on other printers especially the ColorSpan, Roland, Epson, and the new Iris-Ixia giclee printer.

Next report comes from the time we dedicated to checking out all the printers at Photokina photography trade show in Cologne, Germany. Canon, Seiko, Mimaki, Fuji, printers for textiles, Roland 8 color printer, Encad 8 color printer and much more.

The next report has resulted from attending two trade shows in early November: SGIA: large format printers for signs and PhotoEast: large format printers for photographic quality.

We do not send them automatically and to know what portions of which report are pertinent it is essential for you to let us know what kind of printing you intend to do (for indoors or outdoors, posters/signs or fine art, textiles or bus wrap), what size, and what printers have you already checked out.

The most difficult e-mail for us to respond to is "...please send XYZ report" because that does not tell us what kind of large format printing you intend to do, nor what printers you wish to learn more about. Thus we now have a "provisional inquiry form" on all web sites. Please fill this out (or an approximate facsimile).

Due to popular requests we have an updated separate report on the HP 5000ps, including an upcoming new report on the UV pigmented inks for the HP 5000ps. Includes reports from people who have recently purchased the HP 5000ps as well as results from our own tests of these DesignJet printers with our own FLAAR images at several trade shows.

ColorSpan DisplayMaker XII and ColorSpan Esprit, new report based on three days of training at ColorSpan outside Minneapolis plus inspections of printers at more than seven trade shows in Germany and the USA. These reports also include feedback from actual ColorSpan owners and operators in sign shops and fine art giclee studios whom we have interviewed.

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