

## ***Digital Imaging Products Displayed at PRINT'01 Tradeshow, Chicago***

***Observations by FLAAR editor's on  
Wide Format Printers, Inkjet Media,  
RIP software, Scanners***



View of the exhibited floor, in which GBC laminators participated.

## Introduction

Print '01 was at McCormick Place in Chicago, in early September. Four faculty and staff from Bowling Green State University (BGSU) of Ohio attended. In addition four advanced BGSU students attended for 2 days, all of whom worked for the FLAAR large format digital imaging Division of BGSU's College of Technology, Center for Applied Technology. Altogether, we probably comprised one of the largest university components at the event.

Nicholas Hellmuth, senior review editor and Visiting Professor of large format digital imaging at BGSU, writes this first edition. Subsequent editions will include feedback from other staff members who also attended the tradeshow.

This new update (April 2002) has been necessary since many of the products presented at Print '01 last year have improved. We feel that in fairness to the companies whose products were weak last year but have re-engineered them to the point they are much better today a year later, that the printers deserve a re-appraisal.

Of course one product has continued just as bad as it was a year ago. So that too deserves mention. All the updates are in dark reddish brown color so you will be able to immediately recognize the difference between the new comments based on all the tradeshows in 2002 as compared with the original evaluation based on what was available last year.

In previous years, certain products won the "undistinguished 'Worst in Show' Award" for the most out-dated technology still being foisted on unsuspecting buyers. Both these antiquated inkjet printers have been retired from the market, so there are no more "worst in show" awards, though one company tried hard with their new proofer printer which exhibited obvious and embarrassing banding defects. Beginning in 2001, FLAAR has evolved past harping on the obvious losers and now prefers to herald the innovative and well-designed products, which most deserve your attention. More importantly, these products make your digital imaging work easier, faster, and sometimes more enjoyable.

Usually the FLAAR reports begin with inkjet printers and then advance to other categories of equipment, but one booth stood out among what I witnessed in the five days, namely the stunningly beautiful computer monitors of U.S. Electronics, Inc. So I begin my tradeshow report with them.



### U.S. Electronics, Inc – Totoku North America

The monitors presented by this company showed breathtaking quality. It was like looking at a 4000 dpi Cymbolic Sciences backlit image. If you use a monitor all day long or you are tired of the flicker of a traditional monitor which is ruining your eyes, try out this monitor.

I will wager that once you place a monitor from U.S. Electronics, Inc. on your desk, you will never remove it or return to any other monitor (other than a 22" Apple cinema display, which is still not as colorful as the Totoku monitors; besides, Apple monitors fall apart within a year; we know, all four we bought were pathetic after one year).

In color quality and especially in the ability to rotate from landscape position to vertical portrait position, these Totoku North America monitors are awesome. You will never want another monitor. But see for yourself, contact: Madhu M. Reddy by phone at (952) 285-5720, fax (952) 285-5727 or by e-mail [monitors@usElectronicsInc.com](mailto:monitors@usElectronicsInc.com).

This monitor's superior quality deservedly earned the editor's award for Best Product of the entire Print '01 Tradeshow.

Several of the monitors we saw at Print '01 were experimental prototypes. Now (early 2003) some of these outstanding monitors are actual production models that you can actually buy from Totoku (U.S. Electronics, Inc). They also have available a dual-monitor arrangement, both for medical imaging, and for CAD applications.

### Traditional Wide Format Inkjet Printers

#### Encad

Encad has excellent inks because it offers long-life dye rather than "fast fade" dye (made infamous by the Epson desktop printers followed by the Epson 7000 and 9000 wide format). We have Encad images from GA inks that have lasted now over five years, even without any glass to protect it. Encad now has a 25-year indoor rating on its newer dye inks. HP dye inks only last six months to a year on some media. It's in pigmented inks where HP has the advantage, HP UV pigmented inks last for decades and have an outstanding color gamut.

Encad also offers dual-ink lines. This means you can have four dye inks and four pigmented ink tubes ready for action without having to clean out the tubes (which, with the Encad NovaJet Pro, could take up to four hours). If a simple four color CMYK printer is enough (as opposed to using six colors which virtually all other printers offer), any of the dual-ink line printers that Encad offers is okay. Of course there are not eight reservoirs, so you still have to change the ink itself, but it is less mess than the earlier models.

Encad now has a new budget printer, the 736, with a 36" width. Unfortunately, their advertising agency fell into the gimmick of claiming "profits in a matter of hours." Such claims today might be considered misleading. Legal complaints were filed against Virtual Fund for that claim several years ago and ColorSpan dropped the claim immediately.

People who actually use printers realize that you do not make pure profit on four 2x3 prints per month. There are many other costs besides the initial cost of the printer. While you might find the printer enticing, it is a shame that the advertising agency made claims that might be construed as potentially deceptive and unrealistic.

Encad was showing their economy printer rendering on canvas. With four colors and 600 dpi you can print on canvas with an Encad. The rough surface of canvas hides the grainy pattern of the Lexmark print heads used by Encad. I got perfectly acceptable prints on canvas from an HP 2800 and it also has 600 dpi and only four colors. We would probably find the same capability with Encad printers but unfortunately we don't have any recent models at all; not in either our university in Latin America nor our university facility in Ohio.



The Encad 736 has a free PostScript RIP inside, a version of Scanvec-Amiable. This is an economy RIP so at least you don't get stuck with a \$3,000 price tag just for the RIP. Users of Roland printers report that versions of Scanvec-Amiable RIP last year were not fully adequate. I do not know whether the Encad 736 has a light version or a full version of the included RIP.

FLAAR does not have any Encad printers in our facilities to evaluate. We get all our data on performance of Encad printers from reading between the lines at tradeshows and by contacting end-users at sign shops. End users tell us what it is really like to own an Encad. The most polite thing to say is that lets hope the new printers win more friends and influence more people than predecessor models. Some Encad 600 and 700 models had occasional problems such as printheads (for the 600) or skewing of the media (for 700 and possibly later models) that finally brought Encad's corporate value down to less than the cost of Bill Gate's home.

Encad's new models such as their 880 are well thought out. Their marketing strategy is well conceived, other than their lack of reality of the actual world of fine art. The reality of the fine art printing scene is that most museums, art collectors, and galleries prefer six-color images from a recognized fine art printer. However, if you are just printing for family and friends, then a \$68,000 Iris GicleePrinter is unnecessary. The Encad is definitely faster than any Epson, will not suffer metamerism (as some Epson models are prone to), and is less prone to band. (Banding is a defect you might experience on any printer using Epson's piezo print heads meaning Epson, Mutoh, Mimaki, and Roland). Because Encad uses Lexmark thermal heads, they may not offer variable droplet but they do provide images without horizontal banding defects provided the printer is set to print at photo quality and the print heads are kept clean.



FLAAR is updating its report on printers-for-sign shops to offer suggestions whether or not the new Encad models are a good decision or not both in light of their Lexmark printheads and in light of Encad being bought out. The technology aspect is because Mimaki now has an outstanding new printer which can print on posterboard and other thick or stiff material. The new Mimaki JV4 has substantially higher quality than any Encad.

FLAAR is also rewriting its reports on photo-realistic printers and also its separate report on "Fine Art Giclee Printers" to comment in detail on whether either of the new Encad's is seriously appropriate for the fine art market. The need for this comprehensive evaluation is because the photo and art world is very very picky. FLAAR grew up in this world, there are two museums on our university campus. Our photos have been published by National Geographic and we know the world of professional photography.

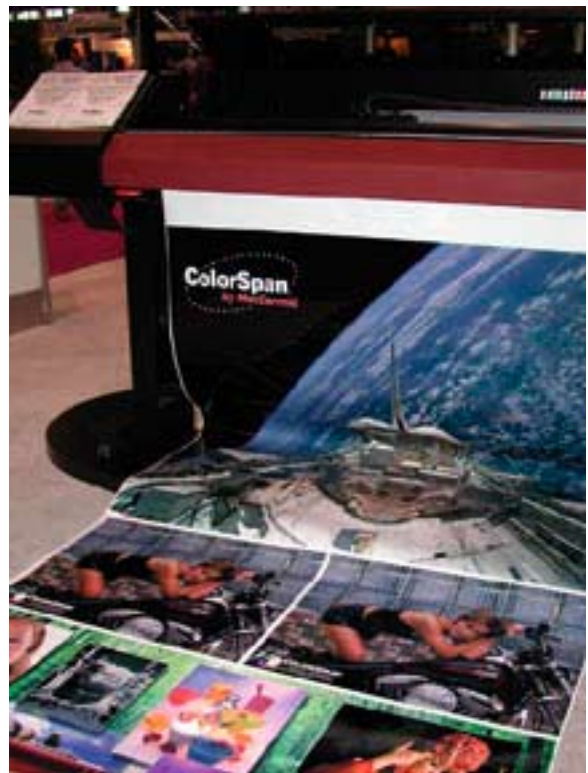
The second problem with the Encad printers was the continuing decline of the company's sales and bail-out by Kodak several months after Print '01 tradeshow. This purchase was probably mainly for Kodak to obtain the ink market to refill all Encad printers which had already been sold long ago. That's enough ink sales for the nice Kodak inks to cover the paltry 25 million dollar purchase price. But switching to Kodak ink does not help any Encad owner improve the inadequate dithering pattern of Lexmark printheads. The low dpi and poor dithering pattern of those antiquated Lexmark heads was one reason Encads sales had been steadily falling for the past several years. HP and Epson simply made better printheads.

The third reason why anyone contemplating purchase of an Encad printer needs to do serious comparative research beforehand, is that the newest Mimaki has been impressive capabilities. The Mimaki JV4 is on the verge of becoming the first universally adaptable printer. It has the Epson 10000 printheads but is much faster, considerably more adaptable, and can take virtually any and all inks, even textile inks. All these considerations are explored in the newest version of all key FLAAR reports.

## ColorSpan

I noticed no banding on the ColorSpan Displaymaker XII, even on areas of solid black. This mature printer has been out long enough to work out any bugs. That's why the FLAAR facility at Bowling Green State University selected this model of printer. FLAAR has an entire report on the Colorspan titled, "ColorSpan DisplayMaker XII and Esprit." Just ask for it.

The ColorSpan Mach 12 is still new and still being fine-tuned, as is traditional with any new printer model. We will not



## Canon

Whereas countless booths featured either Epson or HP printers as proofers, Canon BJ-W9000 wide format printers were not widely used elsewhere in the tradeshow. Evidently their sales across the USA have been equally disappointing. The output is beautiful, but UV pigmented ink cannot get through their bubble-jet print heads. One of their sample prints showed horizontal banding.

## Hewlett-Packard

HP 5000 printers were featured throughout the trade show, especially in the booths of RIP software vendors. HP 1055 printers were found in booths showing 2-sided proofing solutions. FLAAR itself has an HP 5000, which we use for photographs and fine art with UV pigmented inks, and an HP 1055, which we use with PosterJet RIP to do architectural drawings. I did not notice any banding on the output from the 1055.



An HP 800ps was also on display. FLAAR has one of these as well but we are waiting for the newest version of PosterJet RIP so we can speed it up. PosterJet RIP is now readily available in the USA, contact is [PosterJetUSA@aol.com](mailto:PosterJetUSA@aol.com). Also speeds up the HP 5000 and 5000ps, and all old Hewlett-Packard DesignJet printers.

New at the show were the HP six-color desktop units: one for individual use (Model 10ps), one for office with a network (20ps), one for even more sophisticated proofing (50ps). The one for basic proofing is the model we are acquiring for our university. Its main competition

is the Canon 8500. The Epson 5500 is pigmented ink only so it may not have the gamut that a proofing situation would prefer. The HP and Canon offer only dye based inks, so it may not have the durability that photographers need (and get with the Epson 5500).

Thus, each printer is specifically made for certain end use. No one single printer can cover all needs.

The new desktop sized (13 x 19 inch) printers showcased by HP were three iterations of a new desktop printer to replace the older 4-color units. As usual with HP inkjet printers, they work equally well from Mac or PC. The prices are very favorable. Much much less cost than the Epson 5500.

Color DNA was one of the premier HP dealers to experience the new HP desktop printers. Jonathan Knecht of Color DNA commented that these printers offer new next-generation dye inks combined with the latest new-generation print heads. That is what offers the 1200 x 2400 dpi image quality on selected media.

Imagine that quality in a wider format! At 24" with pigmented inks such an HP printer would be serious competition for the aging Epson 7500. Unfortunately HP does not make any pigmented ink system except its model 5000, in 42" and 60" widths (nothing in 24" or desktop from HP offers UV inks).

## Konica

Konica actually had a rather large booth but I saw more Hewlett-Packard and other printers than anything made by Konica itself. Even the RIP was foreign (from Australia).

Konica seems unable to bring their 8-color "Iguazu 1044SD" proofer to market in the USA. The large Konica booth was actually using Hewlett-Packard 5000 printers to showcase Black Magic proofing RIP. Rather strange that Konica spends millions of dollars on their own printer and then promotes HP DesignJets (sure says a lot about the suitability of an HP 5000 for proofing).



It is interesting to read a news release just 1 year ago, "According to the company, Konica aims to sell 10,000 printers in fiscal 2002." (August 2000, [www.modrepro.com/pages/issues/2000/800\\_if-printers.shtml](http://www.modrepro.com/pages/issues/2000/800_if-printers.shtml)). It would be lucky if they sold even 2000 in the USA market (actually I would be surprised if they sold 200 printers in the USA). I was unable to find the printer on the Konica web site. If the printer is a shipping product, they sure are keeping a low profile. There is virtually nothing on the search results on the Internet search engines.

It's amazing that any company can spend millions of dollars designing a printer and building prototypes, and then never bring it to market. Guess Konica makes enough profit with their other products to cover these massive losses in wide format inkjet printing.



## Epson

Epson 10000 printers were as popular throughout the show floor at other booths as was the HP 5000. Both printers are favored for proofing.

I noticed no banding on any of the Epson 10000. The problem of banding was notable March 2001 at CeBIT where the Epson 10000 was introduced in Germany, but either a firmware update or other tweaking seems to have removed this unsightly habit.

The skin tones done on the Epson 10000 was not impressive. However, the problem could have been an overexposed image (taken with strobe on Sinar system). Ignoring the stunningly beautiful model and the nice print, the skin tones were not correctly rendered.

This is why we prefer to do our own photography and our own printing, since here is an instance where we do not know whether it is the Epson inks, the paper, or the photo that is at fault.

But if you intend to print images of people, it sure helps to know which printer does skin tones better than merely adequate. FLAAR is considering setting up a portrait studio to capture images of skin tones. We will use our in-house HP 5000 and ColorSpan DisplayMaker. If an Epson happens to arrive, we will try that out, but in the absence of one, then we will stick with our thermal print head technology, which is doing just fine here at the university.

What surprised me about the output of many of the Epson 10000 printers, as well as the new Agfa 8-color machine supposedly with new Epson piezo heads, is the grainy pattern. The Epson 10000 at the Onyx RIP booth was very grainy (but no banding). Epson 10000 at ColorMetrix booth, 720 dpi, full overlap, claimed 60 sq ft per hour, using a RIP, bi-directional, noticeable grain pattern. If you set this printer to 1440 dpi what would that do to the inherent slowness of these piezo print heads?

At the tradeshow, the output from the Epson 5500 looked great.



We continue to be impressed with Lyson's inks on the Epson printers. Since the Epson model 10000 now replaces the models 7000 and 9000, the Epson 7000 or 9000 would mainly be useful if you needed to do B+W with Lyson quadtone inks. Otherwise, if you wish to use just dye inks, the Canon BJ-W 9000 would be a good choice.

The Epson 1270 has been replaced by model 1280, probably because of the bad press for the 1270. It is hard to remember which models had the disastrous ozone deterioration. This is the cause of the orange shift on Epson prints. Wilhelm failed to test for atmospheric causes of the media shifting before the ink faded.

One thing we have learned about wide format printers in general and Epson in particular. If you buy at low-bid off the Internet then you get zero technical help after the sale. No one is available, or capable, of answering your questions. So if you intend to go for an Epson 10000 or 5500, at least do yourself the favor of acquiring it in a value-added system complete with personalized assistance from people who know color management.

Our own university made the mistake of buying their Epson 9000 from a company that was prominent on the Internet. But we got inadequate service. We were appalled. So now we only recommend Epson dealers who are polite, capable, friendly, and who are willing to follow-up with substantive assistance. Hence we recommend Parrot Digigraphic; e-mail [jlorusso@ParrotColor.com](mailto:jlorusso@ParrotColor.com)

## Agfa



The first of the new Mutoh Falcon II printers was unveiled with zero fanfare at Print '01. There was so little information that I would have missed the printer had not someone made a casual reference to it.

The Agfa-Mutoh printer is named the Grand Sherpa. This will eventually come in 50, 64, and 87 inch widths. 87 inches is a rather unusual width for a prepress company such as Agfa. It is hard to picture a sign company ordering an Agfa printer. Sign companies prefer ColorSpan, HP, Encad, or solvent ink printers. Proofers get along quite well with 42" and HP 5000 offers 60", so it is hard to see the need for 87 inches in proofing.

As typical of the new printers, such as from Mimaki, there are lots of print heads, in this case 16 print heads, which can achieve true 1440 x 1440 dpi.

As sort of usual with any brand new printer, there was extreme graininess and blatant banding. This is because on a new printer the RIPs are not yet coordinated with the media and inks. Also Agfa is not really a large format inkjet company. It is a Mutoh printer with an Agfa label. So possibly no one bothered to clean the print heads or calibrate it after a rough journey, which could easily have disoriented the heads. 16 print heads would indeed be a challenge to keep from leaving horizontal banding tracks.



It is to be expected that the banding and graininess will be resolved in the coming months. The Epson 10000 also had a banding ailment when it was first introduced. Now, six months after introduction, the Epson 10000 output is definitely improved. So in three to six months we will re-inspect the Agfa printer and report back. Downside of the Agfa-Mutoh is reportedly it's older generation Epson printheads. Mimaki's new JV4 is evidently the only printer to use the newer Epson 10000 printheads. Even Roland is still stuck on the older printheads.

The eight colors for the new Agfa-Mutoh are CMYK, light cyan, light magenta (as typical for the first six colors on almost all modern inkjet printers) plus orange and green. The total of eight is what allows achieving Pantone hexachrome gamut.

I did not see any mention of whether UV pigmented inks are available, but I would guess so eventually.

It is now rumored that between the time of the Print '01 tradeshow and the end of that year that Mutoh recognized the old printheads (of the same generation as the Roland V8 HiFi) were effectively obsolete. Besides they had the obvious banding defects. So at some point Mutoh quietly selected the newer better faster heads used in the Epson 10000 and in the Mimaki JV4. The result of this late changeover from one printhead to another is that Mutoh's version is not yet finished. The new Mutoh Falcon 2 (the GrandSherpa of Agfa) is shown at tradeshow, but is evidently still not ready for shipping.

## Roland

Roland was displaying packaging proofing rather than fine art. Roland was also featuring their nice flatbed cutter (for cutting packing or labels). The Roland CammJet had its usual banding defect clearly visible. Why a company allows that at a trade show booth is hard to explain. If the printer bands at a trade show, how can you expect an end user to be confident it will not band if they buy it.



The Roland Hi-Fi Pro V8 was producing output where the design itself had banding in the image. It was not possible to tell whether the printer itself was banding or not. The recently printed sheet was abruptly removed to the trash the minute I bent down to look at it, so I had no way to judge.

Roland people at the booth were friendly and knowledgeable. I do note, however, their sometimes imaginary description of why piezo print heads are preferable to thermal print heads was disappointing. There was no mention of the propensity of piezo print heads to band. To get all the pros and cons of each head technology, just ask for the FLAAR report on "*Piezo vs. Thermal, Fact vs. Fiction.*"

Roland has a new twist on the supposed superiority of piezo. They now say that thermal prints have outgassing over a 24-hour period. They obviously do not comment on the infamous color shift of some Epson prints over that same time period.

Roland did not show any fine art printing, saying that this Print '01 tradeshow did not attract the artsy crowd or photographers.



### Mimaki

Mimaki rarely exhibits in its own booth. Mimaki printers are seldom seen at trade shows even in other company's booths. So it was nice to see a Mimaki in the Praxisoft (RIP) booth.

The new 12-color Mimaki is evidently a dual-6 color printer. So this is not like a 12 color ColorSpan Displaymaker or Mach 12. The Mimaki is gradually resolving the initial development glitches that were noticeable at ISA and DPI, namely severe banding. The banding is now gone. As with any new product

it takes a while for the RIP software engineers to get inside the machine and really make the printer do all that it can.

In the meantime, we really like the Mimaki flatbed. It prints on virtually anything and everything. Regrettably, this model was not exhibited at Print '01. All Mimaki printers are available from Improved Technologies, e-mail [sales@itnh.com](mailto:sales@itnh.com)).

### Kodak

Not a single inkjet printer was evident in the Kodak booth, probably because the booth was of "Kodak Polychrome" which is a division other than inkjet. There was a single image from the new Kodak 5260 on the wall with no fanfare. Brochures were available but you had to ask for them.

Kodak officials would not answer the question of whether Brother made the print heads, nor whether Mimaki assembled the printer. They did not deny it, but they just would not confirm it. Of course eventually a clever reviewer will find out, and indeed FLAAR is one of the first reviews that I know of to mention the Brother heads.

With zero reports from end users and not being able to see the printer in action, it is too early and tough to review.



Nonetheless, Kodak's lone image suggests that this printer might have deserved the "best new printer in show" award...if it was a finished functioning product. The only other competition was the new HP DesignJet desktop units. Downside of both is lack of pigmented inks.

### Oil-based Ink Printers

Eastech showed their oil-based version of a Mutoh printer. I do not know if it is an oil version of the Mutoh Albatross (also known as the Mutoh Tomahawk) or whether it is an oil version of the regular Mutoh Falcon.

Problem for anyone in the USA, Europe, or Latin America of buying from any offshore company (in this case Taiwan) is threefold: 1.) spare parts 2.) low resale value since there is no brand name recognition, and 3.) you never know how long this company will continue with the product.

Today (April 2002) the Kodak 5260 printer still seems to have a few mechanical glitches. This printer has been heavily advertised but is, in reality, not actually available. This also means there is no printer available for us to look at or evaluate. However since Kodak continues ceaselessly to advertise and promote this model 5260 printer as though you could buy it today and install it tomorrow, FLAAR has issued a report in response to the many people who find it rather curious that no actual production model of this printer actually exists. At least not yet. You can get this report by writing [info@FLAAR.org](mailto:info@FLAAR.org) if you have already filled out an Inquiry Form once before.

### Seiko

The prints from the Seiko oil-based ink printer looked better than at previous trade shows such as DRUPA. However if placed side by side with the XES Colorgrafx X2, I would prefer prints from the Xerox printer.

Seiko claims it is the “fastest printer in its class,” which the person at the booth realized was not necessarily true (the XES printer may be the same or faster speed). Also, the ColorSpan comes close in speed at dual 6-color mode. In a recent trade magazine Seiko again claimed it was “fastest printer in its class.” Unfortunately on the adjacent page the Kodak ad demonstrated that the Kodak is much faster than the Seiko. It is interesting that a printer company (Seiko in this case) makes such an issue out of hype that is untrue. In plain English, as the Vutek executive said in an article, “they are all lying.”



The reason that untruthful advertising claims backfires is that as soon as you realize the ad claim is bogus, you next ask, “well then, what is the company attempting to cover up?” In this case, it is the so-so output. In other words they cannot beat other printers on output because the quality is superior on their competition, so they hype an imaginary speed.

It is worth noting that Seiko admits the Xaar piezo heads are not permanent. This is the first time in print, from any manufacturer, that the admission has been so nicely done. So even though Seiko is misleading on the speed, at least they are honest about the print heads not lasting: “print heads are considered consumable parts” (Seiko brochure at Print '01 tradeshow).

### XES, Xerox Engineering Systems

We have received several favorable comments from end-users about the Colorgrafx X2 from XES. However FLAAR's evaluation facilities do not have one, so we cannot judge the printer other than what we note at the trade shows.

## Print 01 Tradeshow



The images look attractive and the printer is fast. Overall, the quality of the output is superior to that of Seiko, but Seiko is getting better. Until we get both printers there is no way to judge which is fastest. The man at the Seiko booth wavered when I asked him which was faster. This made me suspect that the XES Colorgrafx X2 was probably speedier. Printer companies are misleading about speed; Seiko makes claims that potentially can no longer be substantiated or at least are dubious. Xerox's descriptions seem ethical on the Colorgrafx X2.

It is best if you do not ask about the previous model, the XES Xpress 54". We visited a photo display lab in Mexico City, and they regretted the day they made the serious mistake of buying one of those XES printers. The XES printers were vastly overpriced, and have a lousy output (claims in XES ads were not forthright in this respect). However bygones should be bygones unless we learn that anyone is still trying to sell the Xpress. It is one of the few printers we actually warn people about outright. Otherwise, even the worst printer in our eyes may actually be a viable alternative to someone else somewhere.

If you need speed the XES Colorgrafx X2 is something to consider if you wish to use oil-based inks and if you clients do not demand museum-quality photo-realistic images.

If you need highest quality, then oil-based systems with Xaar piezo heads are not quite there. This is one instance you are better off with piezo heads from Brother (in the new Kodak 5260) or piezo heads from Epson (in Mutoh, Mimaki, Roland, and Epson). Of course most of the thermal print heads such as from HP (also used in Western Graphtec and ColorSpan) can also beat any oil-based system.

If you need outdoor durability for a few months, with no lamination, then the XES is the alternative, since the Kodak does not yet offer any pigmented inks at all (but probably will eventually).

So these are your decision factors: speed, outdoor durability without lamination, and photo-realistic quality. XES is tops on the first 2, but other printers are tops on the quality. The limitations are due to the origin of Xaar heads in the world of high-speed but low-quality output.

### Solvent Ink Printers

Roland's solvent ink printer was shown at the Lyson ink booth but not at the Roland booth.

At the recent IMI meeting speakers gently pointed out that the Epson printheads inside the Roland were not originally made to accept solvents. Evidently these aggressive inks are dissolving the glue that holds the Epson printheads together. Thus many people are reporting problems with the Roland SolventJet printer. Hence it is a good case of noting that ads and PR on the Internet does nothing to warn people of these potential problems. Kind of a bummer if your entire business depends on one solvent ink printer; you buy this; after six months the printheads dissolve!

We do not have any Roland printer to test this ourselves. It is possible you might buy one, love it, and never lose a printhead. However be careful and be sure you speak personally with some other sign shop who already has a Roland SolventJet before you buy one. And don't ask your dealer to recommend a place to ask...you may just get a pre-prepared staged pseudo-review or infomercial.

There is now a competing Roland printer with solvent inks. This is Roland's own SolJet. They use a "lite" solvent ink. Less headache from the solvents; less chance the solvents might dissolve the printheads; but equally well slightly less outdoor wearability precisely because the solvent does not eat into the vinyl as deeply.

Lyson itself showed off their Tiara Sapphire solvent ink version of the Seiko oil-based ink printer. Since Lyson is an internationally known and recognized leader in solvent inks, it is logical to expect that they can produce a good printer too. This is their modification of what otherwise is an oil-based ink printer with Xaar piezo print heads.

Downside of all these after-market solvent ink systems is no air-evacuation system; no purification system as required by law in Europe even at trade shows. What I do not yet know is what kinds of solvent ink this law covers. The Mutoh Tomahawk is covered (has to have a hood and air system, which is very expensive).

Gretag showed their new Arizona 500. This solvent ink printer uses Xaar heads to produce handsome output with little to no banding. These must either be a new generation of Xaar heads or otherwise the Gretag is driving the heads or using a feeder mechanism, which is superior to Vutek, Nur, and Scitex-Vision. The market for the Gretag Arizona 500 is large banners, POP, and vehicle wrap.



The market for the Arizona 1100-3 is soft-sided vehicle wrap for semi-trailers.

Gerber has dropped the Orion, a solvent ink printer from ANAgraph. The Orion was very slow and had severe potential banding. This printer is no longer mentioned on the Gerber web site. Gretag now attempts to sell this. Surely the Swiss could make a better printer. Now Oce is stuck with this, since Oce bought Gretag.

Now, in April 2002, the Oce reincarnation of the Gerber Orion as the Arizona 30 is much improved. The Arizona 30 is faster than before, and less banding. Overall the Arizona 30 has improved enough that we are removing our buyer advisory. Actually this is one of the few low-cost solvent ink printers actually designed for solvent ink. Most other solvent ink printers under \$100,000 are in the \$28 to \$40K range and are just regular printers with after-market accessories to allow solvent ink.

In distinction the Cymbolic Sciences LightJet 430 is the Rolls Royce of laser imaging digital printers. Many people prefer a print from Cymbolic Sciences over output from the Durst Lambda, though both are very high quality. These are the continuous tone printers that every inkjet manufacturer works so hard to emulate. Both Epson and then Roland tried to claim that their printers offered continuous tone; both failed, in part due to banding defects, a malady that laser imagers do not suffer. Although no Lightjet machine was present, 2 stunning backlit photos were displayed.



### Inkjet Inks

VanSon had a large and impressive booth. Our first experience with their inks will come when we test ProofMaster inks from PerfectProof. We will report back.

Lyson is dedicated more to ink for inkjet printers (from Iris to Epson). Lyson makes a wide variety of inks (more than VanSon or Staedtler). A major asset of Lyson inks is its chief, Jeff Ball, definitely one of the most knowledgeable people in the inkjet printer industry.

I did not notice a booth of Staedtler; if they were present then I missed them.

### Inkjet Media

Few inkjet media companies exhibited. I did not get to the Yupo booth. One or 2 of their innovative products works on inkjet printers.

Magnetic Specialty Inc makes inkjet printable magnetic media either as individual sheets or as rolls. This is mainly to use in a desktop printer, though evidently rolls are available up to 24" wide.

Brightcube offered the most innovative inkjet media that I saw. Their double-sided inkjet paper is 100% cotton rag and water-resistant. The color gamut was outstanding.

Brightcube's products are good enough to suggest they are poised for major growth. They have cleverly made their media work with Epson's archival-pigmented inks.

Kodak has some nice EI media though whether the newer fast-dry media works under all conditions remains to be demonstrated conclusively. Epson's media failed more quickly than its Epson inks when the Epson media encountered chemicals in the atmosphere.

Kodak is conditioned to selling consumables (film in the pre-digital era). Thus Kodak hoped it could sell wide format inkjet ink and inkjet media in the new millennium. However it was a textbook case of "too little, too late." Too many other ink companies are already entrenched and dozens of excellent companies already make outstanding media, such as BrightCube. Unless Kodak buys them all, it cannot get its message out to anyone other than the older "faithful Kodak crowd." The newer generations of buyers do not go for the yellow brand name any more; they go onto the Internet and shop around. Independently minded buyers quickly find the FLAAR network of web sites and do their homework here. Giant companies, whether Kodak, Epson, Encad or other companies, have not yet fully comprehended this phenomenon since they did not have an opportunity to see anything like this in their MBA program, nor in any recent seminar or course on marketing or PR.

## Proofing Software (RIP software)

**BESTColor** had the largest software booth in the whole trade show other than Adobe. BESTColor also had a large contingent of their technicians both from Krefeld, Germany headquarters and from their Ohio office. This is clearly the #1 proofing RIP.

BEST also makes RIPs for laser printers, though several of the models are found primarily in Europe. For specific information, especially on RIPs for the popular large format printers from Encad, Roland, HP, Epson, Canon and others. Overall, it is apparent that BEST is the RIP company which is setting the tone for RIPs, although lots and lots of capable competition keep popping up to provide alternatives.



Several people within the company, as well as FLAAR over two years ago, suggested that a RIP company which has as many capable software engineers might also create a useful product for photographers, fine art giclee studio needs, and other markets.

Although BEST is now gradually announcing new products beyond their origins as a proofing RIP (and already has presented their handsome new logo), other RIP companies are rising to meet the needs specifically of photographers.

Imation is famous for its' industry-standard "Matchprint" proofing system. Digital printers, especially wide format, have sort of bypassed some of the older traditional turnkey proofing systems. Thus, Imation is now catching up and offering its own system using an HP 5000 printer.

Imation selected BESTColor as the core of its proofing solution. That is quite a kudo for BEST and bespeaks the quality of the resultant Imation system.

Compose is a RIP from Korea that we last saw at DRUPA. Unfortunately, the sample test at the Compose booth in DRUPA got zapped in the transition from RGB to CMYK and the results had to be thrown away. This is why FLAAR prefers to do its own tests in its own facilities with its own staff. It is probable that Compose is a great RIP, but the only test we did failed.

At Print '01 we made a special effort to visit Compose's large and impressive booth. We noticed that Compose could handle newsprint, which is rare. SeeColor and the moribund Colorbus are among the few we knew which could handle uncoated paper. Evidently BESTColor can handle this type of media as well.

Actually, we like the idea of printing on newsprint for far more reasons than just proofing. If you can print on newsprint, you can also print on Kraft paper. This means you can make samples of wrapping paper, something you cannot possibly do with normal media. Coated media usually cannot be folded without a raised crease and/or crinkling the edge of the fold.



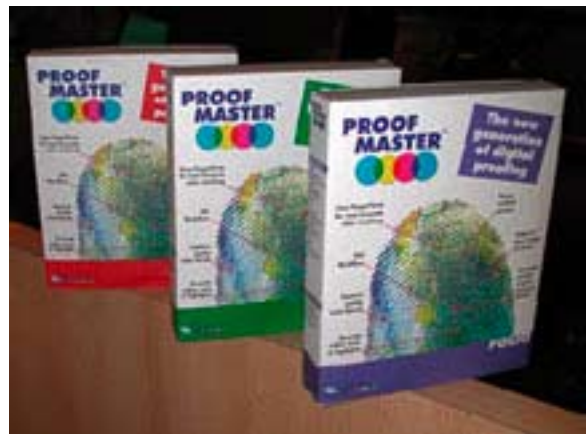
We have noticed that architecture students at our university like to print on the brown surface of Kraft paper. And we can imagine the art students doing all kinds of neat designs on Kraft, on newsprint, and on other raw paper materials. The drawback is that you have to control the ink. For example, an Epson on its own drivers would oversaturate the media so much it would curl up in ripples. Most other brands of printers would also, unless the RIP tells the printer not to squirt out so much excessive ink.

Thus, we hope to acquire Compose RIP in order to give it a fair evaluation in our own premises.

BlackMagic from Serendipity Software exhibited in the Konica booth, featuring an HP 5000 as an inkjet proofer. It was noteworthy that Konica's eight-color Iguazu inkjet proofer seems to have disappeared from the market.

**ProofMaster** is the newest of the RIPs yet is based on a tried and true RIP from the Netherlands, namely Aurelon. I visited the Aurelon headquarters in March. Now Aurelon in its former self no longer exists. Instead the core of the product and its philosophy has been taken over and is being marketed by PerfectProof in Belgium and Delaware. The company executive has considerable experience in prepress digital imaging (we check out more than just a product, we check out the people behind it).

It is tough for FLAAR to evaluate every RIP because new ones pop up every season. However, ProofMaster appealed to us because it does not use ICC color profiles. That's daring of them, but they have plenty of technology to document that their ProofMaster system can do just fine. You can check it out yourself by asking for a demo copy. You may be pleasantly surprised. ProofMaster runs most Epson, HP, and Canon printers, as well as Rolands and at least one Mutoh. The Bowling Green State University of Ohio report on ProofMaster is available on our large format web site.



Bowling Green State University tried out the ProofMaster RIP and was quite pleased with it. You can find the review by Professor Spontelli on [www.large-format-printers.org](http://www.large-format-printers.org). Just look for the logo link for ProofMaster.

To obtain additional information on ProofMaster proofing RIP, contact is: Ms. Rustie MacDonald, [Rustie@perfectproof.com](mailto:Rustie@perfectproof.com), Tel (USA): 1-(888)-228 9070, Fax (USA): 1-(888)-228 9070.

If you wish to reach their headquarters in Europe, it is Tel (Belgium): 32-(0)2-253 07 32, Fax (Belgium): 32-(0)2-253 36 67. Dr Hellmuth recently visited these facilities and was favorably impressed at the technical knowledge of color management, proofing, and wide format inkjet printers.



## Color Management Tools and Software

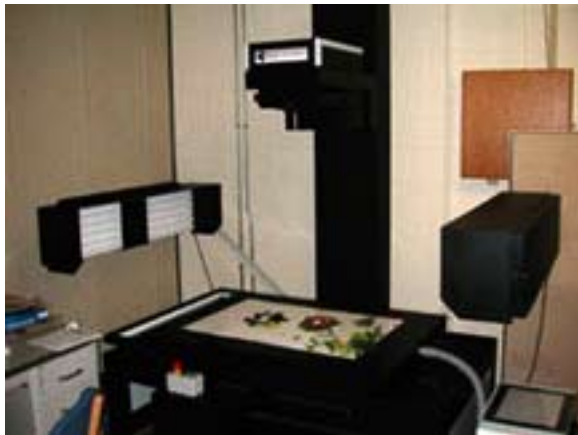
The big international names in color management measuring tools are Gretag and X-Rite. Both had a booth at Print '01. FLAAR has a separate report on color management, updated January 2003.

## LED Digital Photo Imagers



While Gretag did not have a Cymbolic Sciences unit at the trade show (for they are rather large), Gretag did exhibit two stunningly beautiful backlit images from their LightJet.

Kodak exhibited samples from the Durst Lambda at the Kodak Polychrome booth. Kodak is going through continued turmoil. They are both downsizing and re-defining themselves as they continue to stumble in inkjet printing in the digital imaging millennium. The company is large and traditionally known for producing old-fashioned cameras.



The question everyone is asking nowadays is “when will wide format inkjet output equal the continuous tone of a Lambda or Cymbolic Sciences?” Both Epson and Roland claimed to have exceeded that quality, but both failed. Epson abruptly withdrew the ludicrous claim. Roland still claims continuous tone on their web site but we have photographs of output from that printer at Photokina or CeBIT where the output was so grainy as to be unacceptable even as inkjet. The most polite way of putting it is that the claim of continuous tone is premature.

If your original image is stunning and you use the best scanners in the world, the quality of such input will result in excellent output no matter whether you use a Lambda or an HP DesignJet 5000. This is because if your original image is scanned from a transparency, you will have grain. If your original image is from a cheap digital camera, you will have digital noise. The noise and film grain will reproduce as a dirty grainy pattern even on an LED printer and make the print look as though an Encad reproduced it.

FLAAR is launching a program to ascertain to what degree you get better output if you feature better input. Hence, we have installed a Cruse digital scanner/camera system to obtain output that has no film grain. With proper lighting, we should get minimal digital noise as well. We will print the output on our HP 5000 and see how it looks, and how it compares to other kinds of output.

## Digital Printing Presses

FLAAR is gradually becoming interested in the Xeikon vs. Indigo kinds of digital presses. We inspected the output of both printers. Some of the Xeikon output was great; yet other prints looked like they had come from an average quality office laser printer.

In distinction, all prints from each of the Indigo models looked photo-realistic and of museum quality.

Why the difference? Indigo is a wet ink using an offset process. Xeikon uses dry toner, similar to that of a Xerox machine.

As we learn more of the nuances as well as of the Heidelberg, Xerox, and other variants, we will report back. But in the meantime, if we won the Lottery, we would definitely buy an Indigo rather than a Xeikon.

Xeikon recently filed for bankruptcy protection (several months after Print '01).



### Laminating Equipment



Laminating equipment evolves gradually rather than by major technological change. We visited GBC, saw the Seal, and noted the USI booths. There were several other laminating companies but GBC and Seal are the world leaders in this field. USI is popular because they also resell countless accessories so you can get all your finishing equipment under a single roof.

The person who we have visited with at the GBC booth both here and at the B.I.G. trade show in Columbus is Brad Haupt, Region Manager. You can contact him through his fax number at 913 685-7539. Their models most appropriate for wide format inkjet printing would

be the Orca 1600 (62-64") for top of the line or the Falcon 160 at a lower price.

For specific information and for contact information ask for the FLAAR Report on "Laminating Equipment."

### Display

I intended on visiting display system booths at SGIA. It was after I already left for Print '01 that I found SGIA was cancelled.

I did notice one display booth, "InkjetLand & Media." They had a wide variety of backlit displays, all of portable size. Eventually, FLAAR needs to acquire some, so we can test backlit output. Contact is Tony Chuang, fax (732) 203-0350, e-mail [tony@inkjetland.com](mailto:tony@inkjetland.com). Their products look good, so you might wish to check them out.



### Scanners: flatbed

Not too many new flatbed scanners have been around. Prices on some of the older prepress flatbeds have collapsed. When choosing a scanner, keep in mind the software plays an important part. Is an older scanner really what you want? Older scanners were primarily hardware driven; newer scanners are primarily software driven. Be aware that if your software is antiquated, and the company is no longer updating the software, you may get stuck with a turkey.

One of the reasons why we at FLAAR prefer the CreoScitex scanners is that the software on their EverSmart Supreme is frequently being enhanced. In the first few months we had our demo unit, the software was updated several times. At a lesser or smaller company, there would not be enough software engineers to ensure new updates.

### Scanners: drum scanners

Screen, Heidelberg, and Fuji still make drum scanners. However, the drum scanner we have tested is the ICG drum scanner from Global Graphics. We do not see any advantage to a low-end drum scanner; after all, you might as well buy a high-end flatbed.

Actually, we have tested three brands of drum scanners: Howtek, Aztec, and ICG. We printed scanned images on a ColorSpan and on an HP. The prints were fine, but the scanned images were unusable. We had to throw them away. Unfortunately, the scans by Howtek and Aztec were done in their facilities, so we do not know whether the scans were not acceptable due to a problem in the 70mm transparency. We scanned a 6x6 cm transparency on the ICG and it was museum-quality; we have this image on exhibit. Eventually, we will test the same images that were scanned on the Howtek and Aztec also on the ICG to see how it comes out.

Tests, whether scans or printing, are not useful unless we do them ourselves in our own facilities. Unfortunately, Global Graphics got out of the scanner business.



### Scanners: wide format sheet-fed scanners



With a background in architecture, architectural history, and archaeological site mapping, I can immediately recognize the need for wide format scanners to digitize all the decades of accumulated maps and drawings.

FLAAR is expanding to cover wide format scanners. We have spent the last two years keeping our eyes and ears open. We quickly learned that the world leader in this field is Contex. It will be a while before we can evaluate equipment in-house. In the meantime, you might wish to ask for information directly with them by e-mail [henrik\\_vestermark@msn.com](mailto:henrik_vestermark@msn.com) or by phone at 877 2-CONTEX, ext 11.

## Digital Photography Equipment

Sinar (Sinar Bron) is the world leader in large format professional studio camera equipment. Sinar X and Sinar P are the Bentley and Rolls Royce of large format photography. FLAAR tried out a Sinar X about 2 years ago: very impressive. It sure was vastly superior for a studio camera than the many brands of 4x5 cameras we have used before. Regrettably, it was a demo model, only for a test drive, so we had to send this Bentley back. Calumet kindly replaced the Sinar with a brand new Cambo Ultima and then a Cambo Wide (90mm). Thus, we had the opportunity to experience a Cambo, probably the biggest surprise in my photography lifetime. The Cambo turned out to be a sophisticated camera built for solid performance. I had previously thought this brand was mainly for entry level into 4x5. If I had not turned the Sinar back to Sinar Bron I never would have experienced the Cambo.



It is worth noting that PhaseOne used a Cambo Ultima at the trade show. Obviously a PhaseOne also works on a Sinar and most other leading 4x5 cameras, but it was a Cambo Ultima that PhaseOne featured at Print '01.

PhaseOne uses Firewire connection. The advantage over SCSI is that it is generic, not proprietary, and is less weight and pull on the scanning back.

Back to Sinar: the FLAAR crew from BGSU got an informative discussion presented by the Sinar team. Subsequently it was possible to get additional documentation from Jim Epley, e-mail [jepley@sinarbron.com](mailto:jepley@sinarbron.com) of Sinar.

If you also wish intelligent information on digital camera technology get a hold of the Sinar Bron "Imaging" catalog. This catalog shows you why Sinar is a viable option to Toyo, Linhof, ArcaSwiss and all other camera manufacturers. Namely, Sinar produces an entire system. Every single item of studio equipment is available from Sinar, and it all works together seamlessly. Unfortunately, since FLAAR does not sell its photographs (we photograph for archaeological projects throughout Guatemala, Belize, Honduras, and Mexico and are not paid by them), we cannot afford any of the Sinar equipment.

For specific information on the Sinar digital solutions, along with comparative product information for virtually all other digital cameras (Imacon, BetterLight, Kodak, etc), just ask for the FLAAR Report on "*Digital Camera Equipment.*"

## What to watch out for

Advertising hype ought to be a public embarrassment for many companies. Why does Seiko claim "fastest wide format printer in the world" when the XES Colorgrafx X2 is surely equally as fast and actually potentially faster? The hype makes you wonder what the Seiko advertisement is attempting to cover up.

I asked the Seiko people (as politely as was possible under the circumstances of their glaring exaggeration all over their booth display) which printer or printers they felt they were faster than. They said their claim was aimed specifically at the HP 5000.

What about the Encad 850 in dual CMYK mode? What about the ColorSpan in dual six-color mode, or triple CMYK mode? Then there is the newest Kodak 5260, which is probably faster than the others along with outstanding quality.

Moral: if your printer is not tops in its class, do not draw attention to that by making potentially misleading claims.

### **Specs, why specs alone are not always a valid measure?**

We respect company managers and sales reps when they are proud of their equipment's specifications. However in several booths, or in their ads, all you get is specsmanship. What is specsmanship?

Well its almost a disease, definitely a brain cell situation whereby people within the company have convinced themselves that the statistics and specifications of their product are so innately superior that you absolutely need to buy their product and no other.

What these specs-people overlook, is that eyeball quality counts too. No matter how good your specs, if the resultant print, or scan, or digital photo looks lousy, then all the specs in the world are meaningless.

So if anyone says his or her product is the fastest, or the best, be wary. It makes absolutely no difference whether it is two-pecrons or two hundred microns if two-pecron equipment produces an unacceptable result to a normal observer. You can measure it until hell freezes over, but the measurement is just bluff. Some equipment may be over-designed, that is, so full of engineering specs that the actual results trip on themselves.

A "pecron" is not a real measurement of course, but specsmanship is a real malady in digital imaging advertising today.

Your best antidote to this kind of advertising is to ask people who use that product if they like the equipment and its results. Then ask owners of other brands if their other equipment produces an outstanding image.

Specsmanship is by no means always hype. Often the specs are "true," in the sense that the equipment is really of that size, or shape, or output. My own caution is whether that size, or shape, or class of output is useable in your business.

For example, a Ferrari is not very effective in driving around Manhattan. I wouldn't recommend a Yugo either, but a Ford or Chevy will do just fine. Obviously a BMW, Lexus, or Mercedes is somewhat nicer. But the specs on a Yugo, no matter how impressive they are to the engineer who designed it, do you really want a Yugo in your garage?

### **Laser Printers**

Hewlett-Packard has finally recognized that a color laser printer needs to handle more than pie charts and bar charts. QMS (Minolta) long ago figured out that people also liked to reproduce photographs on laser printers.

The HP Color LaserJet 8550 is an improvement over earlier HP office models. The color quality looks very nice. The HP Color LaserJet 8550GN can print up to 12 x 18.5 inch sheets at photo quality. What is most important is the optional auto-duplex unit. We made the mistake of getting a Tally color laser that had no duplex capability.

The QMS laser printer offers an optional duplex attachment. That turns this into a veritable color printing press. For more information contact [john@QmaxDigital.com](mailto:john@QmaxDigital.com).

### Color Copiers

FLAAR is moving gradually to cover color copiers. Our heritage is in scanners, inkjet and laser printers, so actually color copiers are a close fit. But we did not take all the copiers at the tradeshow under the loupe. Thus I did not personally inspect the Xerox or other brands.

But while inspecting the Canon wide format printers I got some samples of the Canon CLC 1150 and Canon CLC 5000 printers. The colors were superior in every respect to the output of a Xeikon CSP 320 D, which probably costs over a quarter of a million dollars. Furthermore the coated glossy card stock and the 243gsm cover stock used by the Canon color copier was an attractive premium paper. Actually the output from the Canon copier looked as good if not better than most of the desktop inkjet printers in other booths.



Canon actually makes one of the better desktop inkjet printers, the model 8500, but I did not see many of them at the tradeshow.

### Helpful Accessories, Odds and Ends

Gadgets, accessories, and the little items that make digital imaging easier are an important component of successful progress. There is a European company, BBA Nonwovens, which makes all kinds of wondrous products, which make life easier in a photo studio or prepress shop. 2 products that I will mention here are their Photex anti-static scanner and screen wipes, and KleanWipes for delicate surfaces. Fax is (864) 962-2034.

### Recognition for Outstanding Products

**BEST SOLVENT INK PRINTER:** Gretag Arizona 500. Not only beautiful output but also a price much lower than any of the competition. The Gretag Arizona 500 is handsome on the outside and well designed on the inside. It looks like something you would expect from Swiss engineers

**BEST Oil-Based Ink printer:** Xerox Engineering Systems (XES) Colorgrafx X2.

**MOST POPULAR all round printer:** The HP 5000 was in virtually every booth where a proofing software RIP was offered. Epson 10000 were also frequently shown in proofing booths as well as in the few booths dedicated to media. Based on comments by people at the trade show, the HP5000 has continued to grow in acceptance, closely followed by the Epson 10000. The Epson 10000 is so new that many people do not know about either its pros or cons yet.

**BEST new WIDE-FORMAT PRINTER:** not really a product in this category at the trade show since the Mimaki 12-printhead machine had already been shown at ISA and DPI, albeit in unfinished although working prototype state. Also, there was no Mimaki booth at Print '01: their sole printer was in the Praxisoft RIP booth. So far, the only company which has tweaked maximum performance from the new Mimaki is Improved Technologies; but they did not exhibit at Print '01. The other new printer was the 8-ink Agfa (Mutoh), which was clearly not yet finished. So actually the best new printer was the shadow of the Kodak 5260. Nary an actual printer in sight, but the one image reportedly from the Kodak 5260 was on display. This print was of very notably high quality.

The brochure on the printer was also available. However Kodak subsequently withdrew from Seybold San Francisco trade show. So the question arises, to what degree was this a result of the new Kodak 5260 not yet being ready for public inspection? So for the first time at any major trade show, no clear winner, though in many respects the Gretag Arizona 500 certainly was a notable printer. However the FLAAR "best new printer" award tends to be given to printers using aqueous inks, since solvent-ink printers are not for the mass market.



**BEST new DESKTOP printer:** The HP desktop DesignJet 50ps, the vastly improved six-color series. No other new desktop inkjet was presented; the Epson 5500 had already been shown at countless previous trade shows.

**Nicest output on a color laser printer:** we really like the output from the new generation of Minolta-QMS printers. Lexmark did not have a booth; HP showed nice output but along with Lexmark their market is office printing (pie charts and bar charts). QMS understands the graphics market and how to make a full-size photograph look great on a laser printout. We do not have as much experience with Xante

and the Xerox color copier at our university. However, we understand that the newer Xerox color laser printers are greatly improved. We will check them out at future trade shows; at Print '01 we were inspecting primarily inkjet output.

**BEST new RIP for proofing:** The most popular RIP at the trade show was BESTColor, but that is a venerable standard. The present award is for a new RIP. We would need to use any new RIP personally in our own facilities before we can issue a final report. ProofMaster has just arrived at our university.

**BEST new RIP for printing photographs:** 2 years ago FLAAR recommended to several RIP companies that the emerging market for their product would be photography and fine art giclee. Of all the companies, BESTColor seemed the only one to recognize the potential, but their strength still resides in RIPs for proofing. In the meantime another company has risen to cover the huge demand for inkjet photography RIP. In September we gave our award "Best new RIP" to this other company. But the first person who bought this on the basis of our recommendation reported to us that it was still unfinished as far as he could tell. Thus we are removing the award because we do not have the RIP to try out ourselves to double-check the problem.

**BEST new inkjet media:** BrightCube offers awesome inkjet media for Epson printers. This media shows very impressive color gamut. For information, telephone "Nick" toll free at 1 (877) 392-0266. Even more, this media is now double-sided. So at last you can print on 2 sides of a sheet of paper. This means you can publish limited-edition portfolios of your art or your photographs. You can also produce postcards and all kinds of other products.

**Digital imaging software you definitely need to check out:** Nik Sharpner Pro1 Inkjet Edition ought to be in every sign shop, photo lab, and fine art giclee studio" fax (619) 725-3151, email [infocus@nikmultimedia.com](mailto:infocus@nikmultimedia.com).



**BEST, most interesting and innovative product overall:** U.S. Electronics, Inc – Totoku North America for their 20.8" QXGA TFT-LCD monitor: can be rotated either landscape or portrait any time you wish. Stunning image quality. Contact: Madhu M. Reddy, tel (952) 285-5720, e-mail [monitors@usElectronicsInc.com](mailto:monitors@usElectronicsInc.com), fax (952) 285-5727.

### Feedback

If this FLAAR report provided you information that helps in your decision making process, we would appreciate you telling other people about our web sites and free consulting services. Notifying news groups and other references via e-mail is nowadays the easiest way for you to return the favor.

Another way you can return the favor of all the results of our evaluations that have been sent to you, is when FLAAR itself needs feedback from your initial experiences from whatever particular printer you bought.

We do not own stock in any printer company nor do we get sales commissions, so we do not keep track of who buys what printer. But it is informative to us to learn what printer you eventually decided to acquire and whether this printer satisfied your expectations. The department of our university that handles user-experiences will get in touch with you at some future point. When this happens we will appreciate it if you can give back to us at least a portion of the helpful tips as a thank-you to FLAAR in return for what we have already rendered to you.

<a href="http://www.wide-format-printers.org">www.wide-format-printers.org</a>	<a href="http://www.fineartgicleeprinters.org">www.fineartgicleeprinters.org</a>	<b>CLICK HERE TO VIEW EACH FLAAR NETWORK SITE</b>
<a href="http://www.digital-photography.org">www.digital-photography.org</a>	<a href="http://www.flatbed-scanner-review.org">www.flatbed-scanner-review.org</a>	
<a href="http://www.laser-printer-reviews.org">www.laser-printer-reviews.org</a>	<a href="http://www.cameras-scanners-flaar.org">www.cameras-scanners-flaar.org</a>	<a href="http://www.large-format-printers.org">www.large-format-printers.org</a>
<a href="http://www.FLAAR.org">www.FLAAR.org</a>	<a href="http://www.ctpid.ufm.edu.gt">www.ctpid.ufm.edu.gt</a>	<a href="http://www.wide-format-printers.NET">www.wide-format-printers.NET</a>

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