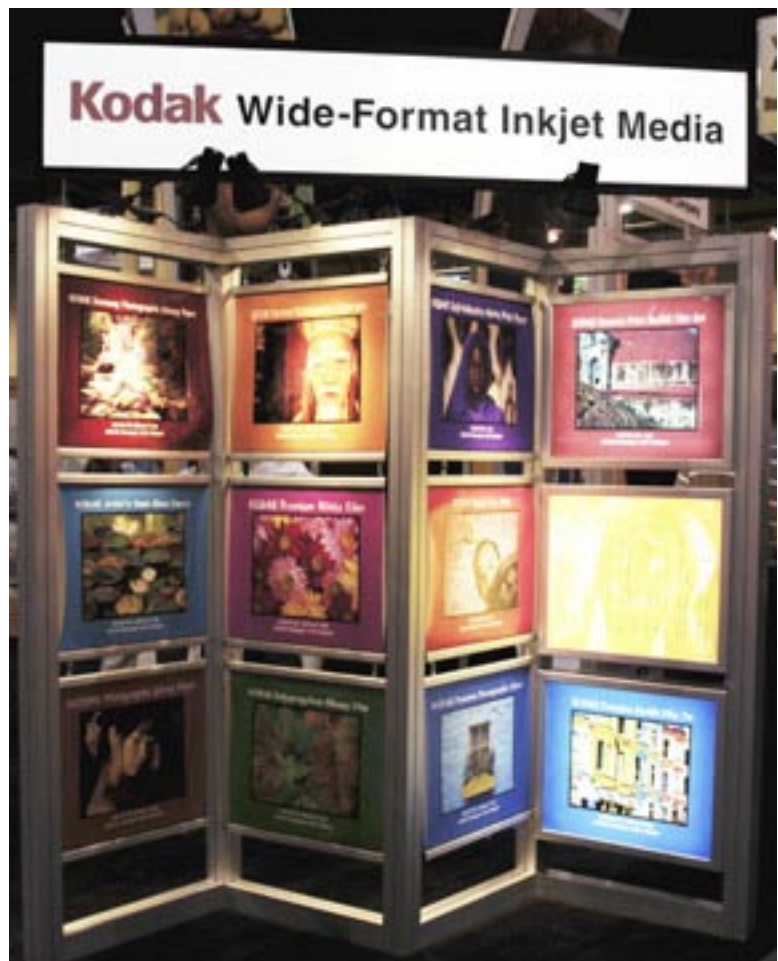


Wide Format Printers for Signs

FLAAR Report on ISA Tradeshow, 2003





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Introduction

FLAAR attends all major tradeshow across the USA as well as Photokina in Germany. Here are results of spending three days at ISA in Las Vegas. We stayed sober since we have been to so many tradeshow in Las Vegas that neither the casinos nor anything else in town tempts us. Besides, we are workaholics and go to tradeshow just for the wide format printers, inks, and media.

Notable by their absence:

- o Epson (too slow for printing signs; ink too expensive for this cost conscious market);
- o XES Xerox Engineering Systems. Evidently Xerox finally closed down their wide format inkjet division and bailed out of the market.
- o Sericol, Inca flatbed

But saw output from Sericol at IMI conference; looked outstanding. So the Inca is alive and well and definitely should be considered for any screen printer or sign shop.

Most other UV flatbed printer companies did not exhibit either. Only NUR, Scitex Vision, Durst, and an Oriental company not previously known in America showed UV curable flatbed printers.

The big news at ISA '03 was the invasion of solvent ink printers from mainland China. Combined with the solvent ink printers from Korea, these new introductions will forever change the landscape.

Encad introduced their VinylJet 36.

Mimaki surprised everyone with their UV1-100, 42" UV curable inkjet printer. Overall Mimaki seemed to have more printers around the tradeshow floor than did any other printer company. Only a few Epsoms; definitely not a venue for them. Considering that Roland tries hard in the sign market, actually not many Roland printers at all (other than in their own booth). A few booths other than their manufacturer showed Mutoh and Hewlett-Packard Designjet printers.

UV Curable Ink (usually flatbed, but not always)

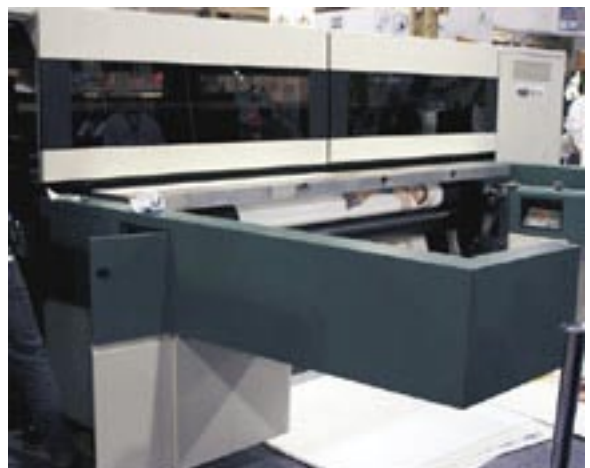
Mimaki surprised everyone by showing a prototype of a basic printer design which used UV curable ink. This unexpected Mimaki entry looked like any other normal Mimaki printer (in other words, this is not a flatbed design), except that it utilized white ink and other features of UV curable technology. White ink is used to print on transparent film, especially to print overlays for touch-pads for operating anything run with electronics.

DJT, Digital Jet Technologies, handed out brochures for their \$77,584 flatbed printer. Since most flatbed UV curable printers cost between \$300,000 to \$500,000, the \$77K price was quite a change. However no printer was physically present.

Dilli had brochures on their Neojet UV-46. Seemed to be roll to roll as well as flatbed. This is a Korean company about which we know nothing.

Scitex Vision showed their VeeJet, dedicated flatbed. No roll to roll option.

Nur Tempo looks impressive, but at last year's SGIA was not quite finished yet.



3M showed their version of the mammoth Virtu machine. This is one of the few inkjet printers built entirely from scratch with its own unique design. It is also potentially the most expensive. I believe it is the widest. The 1-page brochure had terrible quality, but that was probably pixilated images more than the printer itself being poor. Besides the brochure was offset printed, not from the 3M machine itself.

Zund showed their entry level UV flatbed, if you can call a \$140,000+ machine entry level.

The **Durst** Rho, as at other tradeshow, showed the most impressive output.

Before you buy any UV flatbed printer check two things: how many units are actually out there functioning, other than beta versions? Obviously we do not recommend buying any machine which does not have a track record.

Is the company doing well enough to survive the next three years? Xerox has abandoned customers now twice in a row. XES dropped ColorgrafX X2 suddenly a few months ago, and a few years before abandoned their electrostatic printer customers. The receptionist who answered the telephone at Xerox Engineering Systems last week did not even know the status of the ColorgrafX X2, whether it even existed! All the former employees in that division had ceased to exist !

Do you want this to happen to tech support for your \$350,000 printer?

Detractors of UV technology claim UV ink is dull, stays up on the surface of the media, and that dark colors clog. However at IMI conferences in May I have seen beautiful output from the Sericol Inca. I ran my fingers over the image and did not feel any bumps in particular.

Curious to know how far along HP, Encad-Kodak, and Mutoh are with UV cured inkjet printers. The fact that DJT can introduce such a printer at \$77,000 and Mimaki can introduce a prototype (unpriced but probably under \$45,000) should be a wake-up call for other companies.

Oce is the only producer of flatbed printers which does not have a functioning UV printer available or shown as a prototype, but obviously they are not totally asleep. Sales of the Oce Arizona have surely plummeted as DGI, Infiniti have taken the Latin American market and Mimaki and Mutoh have chipped away at the market in the USA.

Solvent ink printers: less than grand format width

Hybrids, after-market adaptations

Hybrids are printers using pseudo-solvent inks. These inks require media which costs more than regular substrates.

After-market adaptations means someone takes a printer made by someone else, and retrofits that printer to use a kind of ink for which it was not originally designed.



Lyson showed their Tiara Opal, with 46 and 63-inch widths. This is based on the Mutoh Falcon Outdoor but modified to run true solvent ink from Lyson. The Lyson ink is CMYK plus red and blue, since Lyson believes these are the colors most needed by sign makers.

We have a complaint from a sign shop in Mexico who says their Tiara Opal was notably slower than the specs claimed, and did not really come with a bulk-ink system. Plus they found they had to pay for ICC profiles for the economy vinyl they wished to use. We do not know this case first-hand, but it sure seems to be a legitimate complaint.

The Tiara Sapphire is an adaptation of the Seiko oil-based ink printer. I am estimating it has Konica version of Xaar heads. Specs almost never admit what heads are really inside. Cost is \$40,000, but you can get a Mimaki JV3 for \$30,000.

The Mutoh Falcon Outdoor is a printer not originally made for actual solvent ink, but rather a pseudo “eco-solvent.”

The Mutoh Falcon Outdoor was not successful because the pseudo-solvent ink required costly vinyl. Same problem with the Roland Sol-Jet. Many people consider the advertising was potentially misleading. Sol implies solvent, but it is reportedly sort of an oil-based ink, not really what an end-user would expect. The media was sufficiently expensive that you could not compete with people who had a Vutek or even a Mimaki JV3. As a result there will be a new ink formulation for the Mutoh Falcon Outdoor and probably for the Roland Sol-Jet.



Gerber Jetster is reportedly a rebranded Mutoh Falcon Outdoor, using eco-solvent inks. Gerber failed to sell the Encad NovaCut; Gerber failed to sell the Orion (it is now back to Oce as the Arizona 30). So will be curious to see how Gerber fares with the Jetster, and whether they explain to people that this is not yet an actual solvent ink printer, that media may have to be coated, that such media is expensive, and so on.

Warning: eco-solvent inks, and the Roland Sol-Jet inks, are not true solvent inks.

Warning: eco-solvent and Roland inks may require special media. Special media will tend to be more costly than regular vinyl.

Warning: you may find that the cost of cartridge inks is more expensive than bulk inks.

Warning: if you add up all these costs, you may find that the cost per square foot is not competitive if the sign-shop across town has a Vutek or any printer using cheaper vinyl, true solvent ink, bulk ink supply.

Also check to see if the pseudo solvent ink dries fast enough. If slow to dry it may smear. If slow to dry then you have to wait to laminate. If slow to dry you have to set the printer to produce less to allow for drying time.

Of course the printer across town is also paying off \$250,000 printer cost, which is why the eco-solvent is tempting.

Solvent ink printers with actual solvent ink: medium width

DGI (Digital Graphics Incorporation) is the home company in Korea. SIM, Steward of International Marketing is evidently the distributor for the USA. Omegajet is the series name but most people refer to them as the "Rex." Four colors only. DGI (from Korea) is at least more established than any of the Chinese manufacturers.

DigiDelta, Digital Dimension, appears based in Portugal. They offer what appears to be a Mimaki JV4 retrofitted to handle solvent ink. My question would be, why bother retrofitting a JV4 when you can get the JV3 already made for solvent ink?

I can not say anything about the DigiDelta printer other than "would you buy a new car from a company you had never heard of before?" Do you want to deal with an importer every time you need spare parts?

Infiniti is pushing hard in Latin America. At least this company has a head start over late entries. Output looked good on one model. But FY 6250 had bad banding and splotchy output, possibly from Xaar printheads. Just be sure to check with other sign shops to find out how the printer holds up, and what kind of tech support you can expect.

Eastsign International Ltd offered their Ding model. The printer looked crudely put together.

Do not confuse Eastsign with Eastech. **Eastech** has been around longer, and is from Taiwan, not Mainland China. Eastech printers produce handsome output. One source indicated the Easttech printers are based on Mutoh prototypes, but I do not have independent confirmation of this. Eastech offers six colors at higher resolution than Chinese clones. One model offers 8 colors which means full 8 colors or dual CMYK for faster speeds.

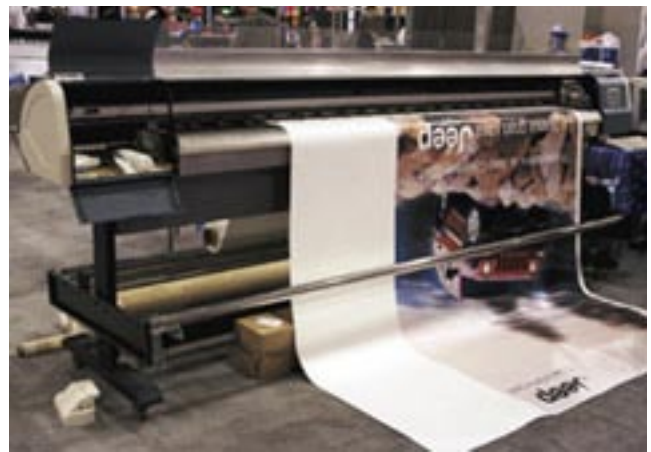
Although I do not have first-hand experience with Easttech printers, nor do we know anyone who has one, I would tend to recommend this brand over other Asian brands. Eastech seems to have an office in the USA, which is a useful benefit.

At Graphics of the Americas tradeshow Eastech had handsome output. At ISA booth there was banding (typical of piezo printheads). But solid blacks were otherwise excellent. Brochure does not specify whose heads are in the machine.

Mimaki JV3 has been a good seller. Their price of \$30,000 is great too, based in part on use of Epson piezo heads instead of industrial heads such as Xaar or Spectra (Mutoh Toucan uses the Spectra heads, essentially the same heads as Vutek uses).

Oce, Arizona 30-s, much improved over earlier generations, but reportedly still a tad slow. Oce Arizona 500 output looks nice also.

Zhejiang Gongsheng Tech Co Ltd offers four sized models, from medium to super wide format.



Retrofitted inkjet printers are still available. This means a printer, such as a Roland, which is then outfitted with add-on accessories to allow running solvent ink through it. You get just what it sounds like: a regular printer with just enough to allow you to print with solvent ink. What's missing? These after-the-fact printers were never designed from the ground up to accept the chemicals in solvent ink. If you find end-users who say these work okay, then by all means go for them (if they are substantially cheaper than a real solvent ink printer). But I am estimating that a Mimaki JV3 has more design features relative to handling solvent ink than a retrofitted Roland that was made for water based ink to begin with.

The only way to know is to ask end-users.

General considerations

These printers are not speed demons.

Mutoh Toucan is not cheap but at least the company is reliable. The printheads are Spectra which are better in virtually all respects than Xaar.

Mimaki JV3 would be a better selection than any Roland since the Mimaki is from the ground up built as a true solvent ink printer.

DGI and Eastech would be the only other brands I would look at. But in all cases, find someone who has the printer before you buy. Also, check out the local distributor. A fly-by-night local distributor can be a nightmare.



Solvent ink printers: grand format size

DGI also makes printers up to 93 inches in width. Otherwise DGI printers primarily compete against Mimaki, Mutoh, and Roland.

ColorSpan presented an innovative design with 72 Xaar inkjet heads to obtain true productively output speeds. There are several advantages to this particular printer. First, the company behind it is readily accessible in the USA. You do not have to wait for spare parts from China. Second, this is a second-generation design based on an earlier printer originally made for RasterGraphics.

What is innovative about the ColorSpan DisplayMaker 110s is the financing. You pay as you print. Contact is (800) 477-7714, (952) 944-9330.

Creon Azero, used a poor image so hard to tell if it was inadequate print quality or lousy image to begin with. Uses Xaar heads which are not as good quality as Spectra. Output from the Creon 2500 looked okay but the machine was not printing when I came by. I believe this model uses Spectra heads, which would explain why the quality was better than the model using Xaar heads. If I understand it the Creon brand is rebranded from Shenzhen Funkiang Advertising Equipment & Material Co (info from Web Consulting report, IMI 2003). President of the company (for USA?) was a pleasant person.

Dream Printtech offered an innovative double-sided printing on their Skyjet.

Gandi Innovations is to some degree a spin off from Signtech and Salsa. Their new Gandi Innovations printers are sold through Superwide Connection. Output looks nice.

Kwangko System Co from Korea offers their Sprin series printers, with Xaar printheads. But what if one part breaks? How do you get replacements? With Vutek, Nur, Scitex Vision, ColorSpan, you know you will have service, and parts, within a short time.

Mimaki JV3-250SP is a baby grand format printer. Frankly I would prefer a Mimaki any day over an off-shore model. At least with Mimaki you know whom you are dealing with.

Nur Macroprinters show nice looking products. But for reasons I do not understand, they are reportedly not selling many.

Scitex Vision XLJet 5, output looked splotchy.

Shenzhen Funkiang Advertising Equipment & Material Co offered their Runjiang Flora models. Quality looked rather nice. According to Web Consulting, Azero Creon comes from this company.

Yaselan (Shanghai Yaselan) showed a \$80,000 and a \$180,000 model. Quality looks nice. But do they have a US office? Tech support in your part of the country? How far away are spare parts? And what about a technician who knows this printer inside out.



Air Cleaning Systems

If you have a solvent printer anywhere in your building, you might start thinking about including an air cleaning system. At least two companies exhibited at ISA.

Island Clean Air was also at SGIA. Their units look effective.

SwissAir makes a SolventMaster specifically for the Mimaki JV3. But also consider using this if you have a Roland, Mutoh, or other solvent ink printer. Don't entirely trust "lite-solvent." I can't say there is such a thing as lite-cancer, but you know what I mean. If you can smell it at all, you don't want it inside your body, unless you don't care about your health later on in life.

Oil-Based Inkjet Printers

DGI offers their model OJ-62D. Media for oil-inks are only available from a limited number of sources. That causes higher prices and less selection. I have not seen the OJ-62D in operation so I am not able to judge the quality, but considering the lack of success of Seiko and XES ColorgrafX X2, I am not convinced of any oil-based inkjet system.

The output quality of the Seiko oil-based printer today is definitely improved since I first saw it at DRUPA 2000. However their ads varied from dubious to potentially misleading relative to speed claims. The safest thing to do with a printer such as this is find someone who owns one, and ask them what it is really like.

Industrial Inkjet Printers

Zimmer is the huge multi-national company in Austria which does industrial printing on fabrics, including mats. They showed a mat printing system, albeit without the Chromojet printer itself. You can see it on www.zimmer-austria.com or e-mail info@mat-masterusa.com.

Thermal Transfer, with ribbons or Sheets

The Roland-narrow-ribbon kind of printer and the Matan full-width ribbon printer are part of thermal transfer technology. The Matan offers outstanding quality because the sheets are as large as the total width of the paper, but has to run all day to be productive. Evidently there is considerable (expensive) waste every time you start up the machine.

The Roland uses tiny ribbons like desktop printers. As a result the 24" Roland suffers the problem of perennial banding. Even in the Roland booth I see banding. We also get complaints from end-users about the Roland and its mini-ribbons.



Suma offers their DC3 model with print-and-cut capability. The 36-inch width offers an advantage over the 24-inch models of other brands.

I did not notice Matan in the tradeshow index under their name. Output from Matan is beautiful, but a sign shop which used it said the material was simply too costly. The Matan system evidently gobbles up a sizeable amount of media turning it off and on. So if you run it all day long you are fine. But if you just do occasional jobs your profit disappears quickly.

The 24" Roland ColorCamm Pro thermal transfer had the noticeable off-color banding defects that end users also complain about. If this equipment has banding in Roland's own booth at a tradeshow, how is a sign shop supposed to expect to achieve acceptable output.

The designation Gerber Maxx 2 suggests that Maxx #1 was not very successful. We don't run into too many people who had either, so are unable to comment one way or another. What we saw at ISA tradeshow was imprecise photo image with noticeable printing pattern, worse than offset, worse than inkjet since the pattern was repetitive.

Dye Sublimation

Coldenhove Papier (transfer paper for dye sublimation heat transfer) is offered by U.S. Sublimation.

Dye sublimation via heat transfer from paper is an application that FLAAR is moving into gradually. One cause for pause is the knowledge that dye sub inks cause early demise of otherwise supposedly permanent Epson-type piezo printheads. Whether in an Epson, Roland, Mimaki, or Roland, your original warranty is unlikely viable if you are running dye sub inks. A head costs about \$530 to replace; two heads are over a thousand dollars. It is worth reading what Sawgrass Technologies includes in its "Maintenance & Service Training Package" (price available only by quote, but installation training

alone is \$1895): “Service training will include how to replace print heads and other ink delivery system components, cap assemblies, and pump units.”

So what this means is that Sawgrass recognizes the print heads, ink delivery system, cap assemblies, and pump units will not survive dye sub inks. From what we understand the same is true for all other dye sub inks. So the blame is by no means on Sawgrass. Actually they are one of the few companies who admit the situation up front.

Both Sawgrass and U.S. Sublimation recommend Wasatch SoftRIP.

Traditional Inkjet Printers

Epson did not show up; partially because sign makers need wide printers, partially because Mimaki, Mutoh, and Roland (and Encad and HP) already are favorites the sign market.

Canon does not yet offer pigmented ink, so is of less interest to sign shops. In Europe Canon is showing a prototype for pigmented ink, but not yet in the USA. An unmarked, undocumented Canon printer was displayed in the booth of Western Graphtec.

Encad

Encad printers are popular in sign shops that already have them. Although we did just receive a complaint from an owner of a model 700 who said all the insides wore out, the general consensus is that Encad printers run forever. The headache is getting used to their quirks. So although some people who have them continue with them, few first-time users would start out with them.



Most people in the industry ask how long Encad, as a printer manufacturer, will last. Kodak's main interest at present is inks and media. The media initiative is not successful in part because Rexam (InteliCoat), Sihl, Arkwright, and everyone else already occupy the market. Konica, Ilford, and Mitsubishi are already making excellent photo-base inkjet media so not even in the photo market is there much chance for any one company to be Number One.

However Encad does have a unique product with their NovaJet 880. It can print on material up to half an inch thick. However I did notice roller path marks every 6" or so on the surface of a print on poster-board material. Another image had streaks in area of dark blue. Sorry, we can't say anything more since all the signage in our two printshops is handled by two ColorSpan printers and several HP printers. We tend to find that when we have a printer in our own facility we can learn how to output great quality. But since we don't have any Encads, we can only report what we see at tradeshow and what Encad users tell us about.

Encad has always been interested in the sign market because Lexmark printheads are a bit grainy and dotty for the art or photo markets. Encad's prototype solvent ink printer (code named Sherwood) faced demise when European countries required a hood with vent on any new solvent ink printer. So Encad's only option (other than increasing the price of its solvent prototype) was to use an ink which avoided the European Union restrictions.

I have no idea what is in the VinylJet ink, but it's not as odorific as an actual solvent ink. This new ink is fixed to the vinyl by heat. Although the VinylJet is only 36" wide, you can do a six-foot poster by turning it sideways. We hope Encad does well with this so the overall company can survive. Competition is good for the industry. The more companies that exist the more niche products that are produced, with the innovative VinylJet and 880 flatbed being examples of great ideas not available from Epson, HP, or really anyone else at the Encad price point.



Encad VinylJet can supposedly print on 21 uncoated, untreated kinds of vinyl, from ICG, Arlon, and Avery. At least that is more than lite-solvent, eco-solvent, mild-solvent (I call them all pseudo-solvent). Cost of the special ink required for the VinylJet is probably not at par with after-market solvent ink. But as entry-level into printing outdoor signage on vinyl, this new printer warrants a closer inspection.

Just be sure that you do in fact inspect it, especially at a sign shop that already has one. The VinylJet is new and untried technology. However we admire Encad for persevering and producing such an innovative printer. We wish them well since it is good for healthy competition that Encad survives as a printer manufacturer.

Encad 850 printer at DigiFab was producing outstanding quality on inkjet fabrics.

ColorSpan

FLAAR has two ColorSpan printers, a 72" DisplayMaker XII and a 72" Mach 12. We alternate using one almost every day all year, with long lasting dye inks. Frankly these are among the most durable dye inks we have experienced. The printers hold up well also. Now ColorSpan has an even more refined model, the X12.



Since we know the XII and Mach 12 from daily use, and hence can document they both function great, it is a good guess that the improved X12 would be even better.

What does FLAAR do with two ColorSpan printers? In order to provide a realistic testing and evaluation environment, we print for the 19,000 students, thousand faculty, several thousand staff, and scores of departments on a huge campus. A university is like a small city unto itself. We can learn a lot more about a printer by using it in an actual printing environment, rather than just in some sterile lab.

Now ColorSpan has added another sign printer to its offerings, the 110s, with solvent inks. This is pictured and described in the section on grand format printers.

Hewlett-Packard

Ringed by a Chinese giant format printer area and traditional sign paraphernalia on the other side, the modest HP booth showed the capabilities of the HP DesignJet 5500.

ISA is the one tradeshow in the world where HP is not under the same roof as a popular Epson booth. Epson piezo printheads are a tad slow and ink a bit costly for a sign shop to remain competitive. Producing signs is one time when thermal printhead technology is a substantial advantage.

Signs are needed by every corporation so having an in-house wide format printer is a logical addition for every corporate in-plant print shop. Far more print shops than merely sign shops need to produce signs. Kinkos has even opened a sign franchise within their own franchise. Kinkos tends to use HP DesignJet printers.

When we had our Encad printer it always laid down too much ink. This would have made lamination difficult, due to having to wait up to an entire day for the print to dry before lamination. HP recognizes this and has worked to develop media which dries quickly so it can be laminated quickly. GBC is the first of the laminates which is certified to provide quick results.

Since many sign shops are ma and pa operations, or start ups by people who have never printed before, HP DesignJet tends to be a good choice. They get the best ease-of-use in the industry. We just got an e-mail by a sign printer who had an Encad and an HP. He definitely preferred his HP 5000 DesignJet. The model 5500 is the next iteration, so has even more features to like.

FLAAR has two HP DesignJet 5000 printers, one at Bowling Green State University and the other at Francisco Marroquin University. Both print signs, as well as giclée, photos, and inkjet textiles. After several instances of fading with dye inks, we now use UV pigmented ink in both. In both bad fading instances the culprit was high humidity (in Central America) and using media other than that certified by HP. In other words the lab manager tried to use some cheap no-brand media. With high humidity the dye ink began to migrate and lose good definition in one instance. In two other instances the image simply turned gruesome colors as it faded much faster than expected.



When we use the HP pigmented inks we don't have these fading problems, not even in Guatemalan temperature and humidity.

The fact that HP exhibited at ISA and that GBC laminating company features HP printers and media, is an indication that sign shops can expect HP to speak their jargon.

Mimaki

Mimaki had a strong presence at ISA 2003. There were probably as many and possibly more Mimaki printers at other booths than there were HP DesignJet printers. Mimaki itself had a large booth in a prime location.

Although I did not notice their table-top flatbed printers they had just about all their other models, such as their textile printer, then the JV4 (regular aqueous inks) and JV3 (solvent ink).

FLAAR has a Mimaki JV4 and also the Tx-1600s. Both work well.

Mimaki showed their JV4, their JV3 solvent ink printer, and their new textile printer, the TX2-1600.

Walking around the tradeshow area you could see more Mimaki printers than almost any other brand. This is the first tradeshow in the world that I have seen this many Mimaki printers in booths other than the manufacturer.



Mutoh

The Mutoh booth was filled with pleasant and knowledgeable people. The printers this year are increasingly popular. The Falcon II is the only 8-color printer on an Epson platform. Roland does not offer this generation of Epson printhead with eight colors, nor does Mimaki (their printer is dual six).

The Mutoh Toucan uses Spectra heads so insures better quality than anything with Xaar printheads. The Toucan is more substantial than cheap unknown brands from mainland China.



Mutoh is one of the few companies who design their own RIP, Isis.

Roland

The Pro II models are now out. These helped Roland win a DIMA award at PMA tradeshow.

Their Pro II has two sets of six inks but can't switch inks between them, so it's tough to compete against the Mimaki JV4 with two complete sets of six different inks.

The regular Pro II has dual six ink lines. The competing Falcon II has one set of eight ink lines. All use essentially the same printheads of the Epson 10000.

The trend is definitely towards wider printers, such as the 72" Roland model.

Roland lacks a true-solvent printer. The Sol-Jet does not really use regular solvent ink, much to the surprise of everyone. I would be very curious to interview people who bought one, to see whether they fully realized the nature of the ink and the nature of the required coated media. I did get feedback from a buyer of the Mutoh Falcon Outdoor; suffice it to say they returned it to the manufacturer. Mimaki did the best of all; Mimaki USA refused to sell their mild-solvent offering (JV-2) after they realized the implications.

Western Graphtec

Graphtec offers the only serious competition to the Roland cut-and-print. Graphtec uses thermal printheads so should do okay on speed too. Output from the Graphtec printers was bright and colorful; looked great.

An unmarked Canon printer was associated with a Graphtec wide format scanner. It was unclear whether Graphtec will take on selling the Canon or not.

RGB Laser Light Imagers

ZBE did not exhibit or if so I did not notice them. Durst was primarily promoting their Rho flatbed. Oce too had more space on their solvent ink Arizona printers, but did have a single example of the largest size print from the Oce LightJet 500XL. Stunning continuous tone output quality.



RIP Software

ErgoSoft had brochures on their PosterPrint. They offer ease of use via an intuitive interface. ErgoSoft also offers the ability to handle exotic inksets such as red, blue, or violet. Although their company is not as large as Onyx PosterShop, people who use ErgoSoft like it very much. You can get additional information from Robert Eversole, reversole@ergosoftus.com.

Wasatch had a booth at ISA. Their SoftRIP has added a host of features over the last year. They correctly title it "RIP & Print Management." The "and" aspect is important, since a RIP truly is an all-encompassing software.

Wasatch SoftRIP Light is lite in three positive aspects: price, does not burden user with high-end production features, and runs just one printer. After all, most users have just one printer.

Wasatch offers 60-day free trial (in form of money-back guarantee after 60 days) and 100% upgrade value (no penalty).

Scanvec-Amiable tends to have the largest RIP booth at whatever tradeshow they exhibit at. Their RIP is PhotoPrint, version 3. This same company also makes sign software.

It is worth noting that Roland dropped Scanvec-Amiable and reportedly switched to Wasatch. In each case it would be a lite RIP just for Roland. We received several complaints about the Scanvec-Amiable version, but that could have been because the user needed a full version. Roland offers the RIP "free" with the printer, so you get only the lowest cost version available. That is begging for potential dissatisfaction and desire for all the features you see in the alluring ads. We would need to find time and staff to test Scanvec-Amiable's full version. So far we are backed up since we received about nine RIPs so far. The lab manager tends to use Wasatch. He made this decision entirely on his own, in large part because Wasatch was one of the better RIPs which could also run the Iris 3047 giclee printer simultaneously with all the other printers we have.

In Guatemala we have tended to use PosterJet. For the two ColorSpan printers we use the hardware

RIP from ColorSpan itself. I am guessing inside is Scanvec-Amiable but I do not know for sure at all. Whatever it is works just fine, so too bad we don't know.

Onyx PosterShop is a full-scale commercial RIP for high-end printing. However, like many RIPs, it does not necessarily interact well with Epson's proprietary software. We were told the same thing about BEST, namely that Epson's own drivers give better dithering pattern than any outside RIP. It would require an expensive test to determine the veracity of these statements, but we have heard enough people mention this. Of software RIPs, so far only ColorByte can potentially speak to the Epson's insides well enough to get a really nice photo quality.

We recently received high praise for ErgoSoft with an Epson 10000, so this suggests at least one after-market RIP can indeed produce good results from an Epson.

Onyx PosterShop may be excluded from Epson's inner secrets, but PosterShop works just fine with HP, indeed they (along with many other fine RIPs such as Poster Jet, a totally different RIP than PosterShop) are often inside the HP booth at major tradeshow, especially in Europe.

Onyx PosterShop offers PosterGenie, ProductionHouse and the other sorts of high-end items you would expect at this price level, which would quickly exceed what a small shop would be willing or able to pay.

CGS showed primarily their Staedtler after-market inks, but CGS is better known for its O.R.I.S. proofing RIP.

Inkjet Media

Several Taiwan companies exhibited, such as S.N. Coatings USA, Inc. They specialize in budget cost material. Regrettably there is no easy way to ascertain what level of quality (or lack thereof) you get. We tested media of another company from Taiwan last year, and frankly the results were not very inspiring, but we also tested media from Germany that was worse.

The best rule of thumb is, if the source has been coating for many years and partners with major manufacturers (such as Sihl, Arkwright, InteliCoat, and other comparable big players), then you can generally count on their media for high quality.

Gradually the FLAAR labs at BGSU are starting to test media. But this is time consuming and hence costly. We can only accomplish systematic testing when a budget is available specifically for this purpose.

For comprehensive discussion of a wide variety of topics related to inkjet media, FLAAR offers an entire Series of reports on wide format inkjet media.

IJ Technologies had their usual exhibit booth. Since their facilities are in St Louis (the original home of FLAAR), we have often visited their place in Missouri. IJ Technologies makes good media that we have used on many projects. E-mail liz@ijtechnologies.com, tel (800) 356-6962.

Kodak continues to hope that it's media will become #1. But Epson, ColorSpan, and HP already offer



finely tuned media for their own printers. Arkwright, Sihl, IntelliCoat and IJ Technologies, among others, already offer dozens of viable options.

Twenty years ago you had a choice of Kodachrome 25; the best 35mm film ever made. Agfa was poor competition (it faded quickly). Ten years ago you had a choice of Kodachrome, Kodak's Ektachrome or Fujichrome. Kodachrome and Ektachrome from Kodak offered truer colors. Fujichrome offered saturated blue skies and greener grass (beautiful but fake looking).

Today HP, Epson, Hahnemuehle, Sihl, Arkwright, Mitsubishi, and dozens and dozens of other companies offer the industry standard media. Kodak came late to the table. The other media companies had already occupied the marketplace. Hence Kodak will have to figure out how to convince end users. The yellow Kodak label is no substitute for Kodachrome in today's year 2003.

This does not mean Kodak media is bad, or even second rate. Just that too many other media brand names are well established. Besides, those other companies have good distribution networks.

The invasion of cheap media from mainland China comes at a bad time. Companies who do not produce their own media can partner with the Chinese but thereby run the risk of diluting the value of their American brand name with cheap media.

Avery-Dennison; Avery Graphics is best known for vehicle graphics using solvent inks but is now adding media for Encad, HP, and other regular printers (water based ink).

IntelliCoat is the new name for what was Rexam. IntelliCoat recently purchased what was left of Azon. Today IntelliCoat is one of the top four media producers in America. Their media is highly regarded. IntelliCoat offers a diverse range, including printable laminate. You print directly on the laminate; you then press onto a mounting board.

I am guessing that **Kapco** coverts or rebrands a wide variety of media from many sources.

Tara Materials is related to Fredrix, the century-old source of artist's canvas. Tara offers a wide range of canvas for giclée and décor applications.

Kimoto is another of the dozens of companies exhibiting inkjet media. Lots of companies were selling textiles for use on solvent printers. In virtually every aisle there was another coater, converter, or distributor of inkjet paper. This multitude of options is one of many reasons why no one company (such as Kodak) will dominate.

Of course if a company does not make all their own media, it will be tough to convince people to pay attention anyway. And if they try to compete on price alone, using mainland Chinese or Taiwan media, the poor reputation of that media may stick.



Inkjet Fabrics

3P Inkjet Textiles is led by enthusiastic evangelist of inkjet textiles, Thomas Poetz. His media have the distinction of being flame retardant in most countries. You don't want your inkjet curtains catching fire. Would be a mess if your tradeshow booth caught fire too. Most 3P textiles do not require steaming.

DigiFab features output from the Encad 850 printer. DigiFab fabrics are consistently the most beautiful output of any at the tradeshow. I have never been clear whether their Encad is loaded with regular ink or reactive dye textile ink, or whether the samples have been steamed to pop their colors. However they do it, their colors are the best and brightest of any at the tradeshow.

Jacquard used Epson 9000 for the samples they showed. Quality was very nice, photo-realistic for sure. Jacquard has the best steamer, big enough to be useful in a commercial-sized shop. Jacquard is probably the longest established of the inkjet textile companies.



Several other textile companies exhibited but primarily for solvent ink printers.

Other Special media

Arlon and Avery both offer vinyl for the Encad VinylJet. It is too early to tell whether this will be the same low cost as basic vinyl for true solvent printers. VinylJet is claimed to be not an eco-solvent nor a lite solvent ink. However Roland and other companies did not fully apprise end users of the true nature of their pseudo solvent inks either. But like everything else in life, people found out soon enough, and learned that media for pseudo solvent ink printers was too costly to allow them to compete successfully against true solvent ink and true raw vinyl.

Avery is one of the few companies to produce "solvent enhanced media." This is jargon for using with eco-solvent ink.

Dye Sublimation Heat Transfer

U.S. Sublimation offers the only alternative to Sawgrass for dye sub inks. European countries will not allow a patent on this kind of ink because dye sub was in use many years ago. In other words, dye sub ink is considered long ago on the open market and hence unpatentable. Of course whoever was in the U.S. Patent Office evidently did not know about, or care about, the situation in Europe, so they issued a patent to Sawgrass.

An immediate result is the artificially high price of the inks. If they guarantee to replace your piezo printheads, then the price might become palatable. Dye sub ink in general has a reputation for causing piezo printheads to eventually fail.

We support U.S. Sublimation due to our belief in free enterprise. Being a historian, I prefer to recognize historical reality relative to the patent squabble.

Aftermarket Inks

It is not easy to judge ink unless it is available to test, and without a budget we don't have the personnel to test every ink that is out there. So at present we test only on a professional consulting basis.

Thus it is not possible to really say much about JetBlaster inks or any of the host of inks that had their booth at the tradeshow. Jet Blaster has a universal chip resetter for Epson 7600, 9600, 10000, and 10600. Since chips on ink is now illegal in Europe, it is about time for end-users to have freedom of ink in the USA. As long as the after-market ink does not ruin the system of course.

Staedtler ink is different. Staedtler is a respected German name. I am estimating it is a substantial company. This is one of the few after-market inks we would experiment with.

Lyson offers inks for Epson, Roland, Mimaki, and Mutoh. Other Lyson inks are solvents for many of that class of printers. Lyson has quad-black and all kinds of other inks. We do not have any experience with any of these ourselves.

Lamination: Liquid

Lamination does more than merely protect your images. Some lamination makes the colors pop very nicely. To eliminate the glossy shiny plastic appearance, more and more liquid lamination systems are being perfected.

Avery has partnered with Seal to produce the DOL Liquid Laminate Delivery System. This portable laminator is \$2,500 which seems a reasonable price.

Neschen Accutech continues the tradition of Accutech liquid laminators.

Clearstar has friendly literature. They also have a helpful pamphlet, "All About Clearstar Coatings." This is much more than a product guide. Call toll-free (888) 253-2778. You can tell them Nicholas at FLAAR suggested you could probably get a free copy. Would be nice if all companies had such useful material about their products.

Daige offers a hand-operated desktop "Rollacote" liquid laminator. This can also be used for giclée canvas. Telephone (800) 645-3323.

I believe it is GBC which offers a dry version of liquid coating, so to speak.

Triangle Digital offers spray-on liquid lamination. If I remember correctly Karla Witte is a consultant for this company, on overcoating giclée prints. She is one of the more knowledgeable people in the industry on giclée printmaking.

Just realize that some liquid laminating systems require a separate room to enclose the awful chemicals. However other systems are not as bothersome. Just realize that some liquid laminates smell worse than the most wretched solvent inks.



Some liquid laminating machines have to be cleaned on occasion as well. Some media do not take liquid lamination well. At some point we will prepare documentation on all this, the same way we have already spent four years evaluating printers. But it will take a while to cover all the varied laminating equipment.

Lamination: Traditional

Seal and GBC are the two largest companies in America which you also sometimes see at international tradeshows too, such as Photokina in Germany. Seal and GCB were both out in force at ISA tradeshow.

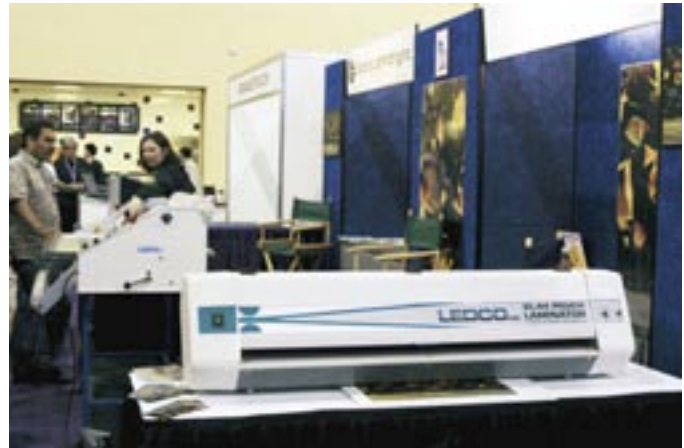
You need to laminate, and mount. You have to think about cold lamination, or heat lamination. Liquid lamination is already covered above in its own section.

Seal offers every size, shape, and kind of laminator and laminate material as well. However I have not yet seen a liquid laminator in their brochure.

GBC advertises a co-marketing plan with Hewlett-Packard. GBC, like Seal, offers a wide range from desktop through industrial-strength lamination equipment.

DuPont offers Teflon for signs, ruth.w.jackson@usa.dupont.com.

Graphic Laminating/LED CO had a modest booth. We have a LED CO pouch laminator at the university. It is very handy. A regular roll to roll laminator would be even more useful.



Lamination: UV Cured

Accutech offers a liquid laminator which is then UV cured. This is different than the system from a French company. "First" is a UV cured system from France. This system utilizes special media. You print on the media with a regular printer, and then bake it in the first laminator. The material encapsulates itself, so to speak.

Scanners

SGIA and ISA tradeshows tend to ignore digital cameras and scanners, as though the images on signs appear by Immaculate Conception. The exception are wide format scanners, usually Contex. This time Graphtec exhibited their sheet-fed scanners. I do not know who makes them or how they compare to Contex. Hewlett-Packard has a combo-system of an HP 800 with a Contex scanner mounted on top.

Display frames

Ding showed a number of aluminum tradeshow display frames in their brochure.

Hunatech, all the way from Australia, exhibited their Vivacity Edgelit Light panel. The results looked great. E-mail vivacity@unatechgm.com.

GBC, the company known for its laminating machines, now offers "Display Roll-up".

For Further Information:

A place we recommend for you to obtain further information on solvent ink printers is from Scarab Graphics, toll free (800) 350-1366, or info@scarabgraphics.com. They offer both Mimaki JV3 and Lyson Tiara solvent ink printers, as well as Canon, HP, and both PosterJet RIP and Wasatch RIP.

Awards

Encad, a Kodak company, deserves the award for being confident enough to unveil an innovative printer using a UV curing technology and unique ink no one has seen before.

Mimaki gets the award for most innovative technology for their UV curable ink printer which can also print with white ink on transparent material. Their UJ1-100 was a prototype model only.

We don't any more give a "Worst Printer of the Show Award" though both at ISA and especially at Graphics of the Americas tradeshow one of the mainland Chinese printers worked hard to win this award.

Advisory

We are quite content with the specific printers we have in the two FLAAR facilities at the two universities. We would obviously never ask for a printer that we knew in advance would not be good. But we can't guarantee or certify any make or model because we don't know the conditions under which a printer might be utilized in someone else's facility. Heat, humidity, dust, experience level of your workers (whether they are new or have prior years experience): these are all factors that will differ in your place of business as compared with our two universities.

Actually you may have people with even more experience than we do, since we deliberately use students to approximate newbies. FLAAR is devoted to assisting newcomers learn about digital imaging hardware and software. This is why Nicholas Hellmuth is considered the "Johnny Appleseed" of wide format inkjet printers.

Just remember that every printer has quirks, even the ones we like. However it may be that the specific kind of printing you need to do may never occasion that shortcoming. Or, it may be that your printer was manufactured on a Monday and has defects that are atypical, show up more in the kind of media you use which we may not use as often during our evaluations. Equally possibly a printer that was a disaster for someone else may work flawlessly for you and be a real moneymaker for your company.

Thus be sure to test a printer under your own specific work conditions before you buy. Check with other people in your area, or in the same kind of print business that you do. Don't rely on references from the reseller or manufacturer (you will get their pet locations which may be unrealistically gushy): find someone on your own.

Although we have found several makes and models to work very well in our facilities, how well they work in your facilities may also depend on your local dealer. Some dealers are excellent; others just sell you a box and can't provide much service after the sale. If you pay low-bid price, you can't realistically expect special maintenance services later on. Indeed some low-bid Internet sales sources may have no technical backup whatsoever.

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