



Solvent, Eco-Solvent, Mild-Solvent, and Lite-Solvent Printers At Print '05 Trade Show

FLAAR Fast Facts



Introduction	1
FLAAR at Print '05	2
Eco-Solvent Printers	2
Agfa	3
Charrette	3
Mimaki	3
Mutoh	3
Roland	5
Traditional (full) Solvent Printers	6
Gandinnovations	6
Mimaki	7
NUR	7
Seiko	8
Scitex Vision	8
Vutek	9
Solvent Flatbeds	10
Solvent Ink Accessories	10
Solvent Ink Consumables: After-Market Solvent Ink	10
State of the Market	10
Trends	11
Plan Early for 2006	12
Appendix A	12

Licensing Information

If you wish to distribute this report to other people within your company, please obtain a site licensing agreement for multiple copies from FLAAR by contacting Sheila Irving, sirving@bgsu.edu. Substantial discounts are available for licensing to distribute within your company. The advantage of a license is that you can opt for automatic updates. You may have noticed that FLAAR reports tend to be updated as additional information becomes available.

In some instances a license would be available to distribute outside your company, including in other languages.

To distribute this report without license violates federal copyright law. To avoid such violations for you, and your company, you can easily obtain additional copies from www.wide-format-printers.net.

Introduction

This FLAAR Fast Facts report is an annotated introduction of the solvent ink printers that we found at Print '05 trade show. Most of these were in the Wide Format Pavilion, organized by Sonia O'Donnell.

The full official name of the trade show is PRINT '05 & CONVERTING '05 Trade Show but this is too long to repeat every time, so most people just call it Print '05. FLAAR reports exclusively on the digital aspects anyway.

Print '05 was also a great place to look at copiers, variable data short-run digital presses, but our budget goes only so far in coverage. So for Print '05, we have issued two reports: the present one on solvent ink printers and an earlier report on UV-curable ink printers.

The "Show Daily" newspaper for September 12th, well into the show, had virtually no news or views on wide format inkjet printing. This newspaper talked mainly about heavy iron, such as Heidelberg printing presses and everything that was in that hall (the hall with not much from the world of large format inkjet printing; only Canon was in that giant hall, and one laminating company).

Water-based printers are gradually declining in usage, and there is not much new technology in water-based inks either. So we are reporting primarily on advances in the three technologies that are on the move:

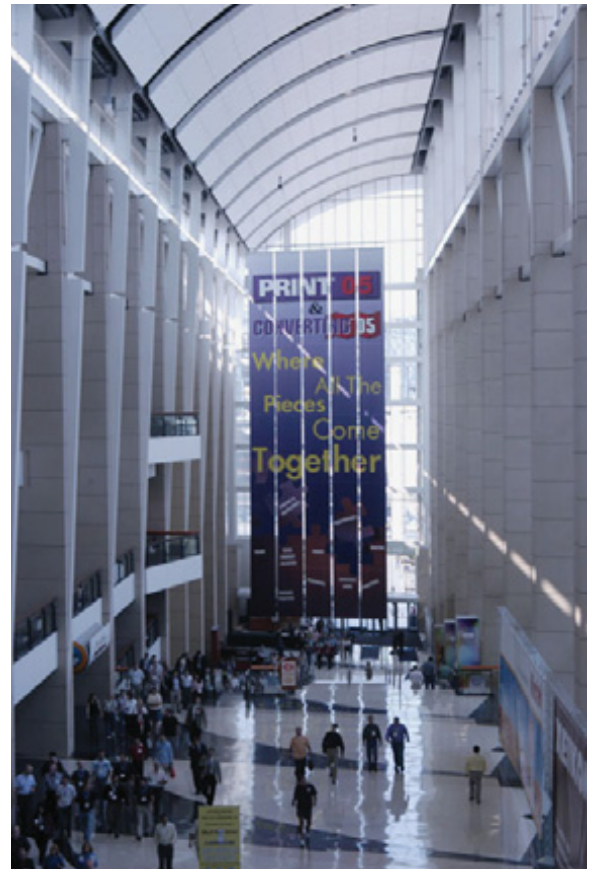
- the switch away from the failed eco-solvent concept to a more realistic mild-solvent chemistry
- the continued popularity of full solvent printers
- the increase in potential of UV-curable ink printers (in a separate FLAAR Report).

Award for the Nicest Booth: Seiko had the most attractive booth, both in overall design and in a handsome utilization of digitally printed fabrics.

Award for the Most Interesting Single Printer: the Agfa :Dotrix was by far the most interesting single printer in the sense of technology, speed, and output.

Award for the Absolute Highest Image Quality: goes to the Noritsu Mytis. The quality of this printer beat every printer at the trade show.

Award for Value: Many companies cut corners in order to lower the cost so they can sell more printers at a higher profit. Gandinnovations is a company that builds printers with a design concept that strives primarily for offering features that add performance and quality. So if metal is better than plastic you get metal. If plastic is practical then plastic is used, but not if it detracts from function.



FLAAR at Print '05

FLAAR had a booth at Print '05 & CONVERTING '05 so that all our readers can come visit and get to know various FLAAR personnel in person. Professor Hellmuth also presented two lectures. One was on digital photography equipment, as input for wide-format inkjet printers. This presentation will allow participants to learn how to better understand the differences between scanning and using a digital camera (and what kind of digital camera) when it comes time to providing a printer with images to reproduce on a wide format inkjet or variable data digital press.

The second lecture by Dr Hellmuth was How to Determine the Right UV-Flatbed Printer for Your Needs. This presentation will teach you how to understand the pros and cons of UV-cured ink flatbed printers in general and the comparisons among each individual brand and model.

These lectures are free and open to the general public. They are held in the trade show area.

At least four of Nicholas's photographs were on exhibit in the Innovation Gallery which is alongside the Wide Format Pavilion.

Eco-Solvent Printers

Eco-solvent ink was a great idea in theory but a technological nightmare and a marketing fiasco. The inks are not ecological to begin with. Go to any inkjet printer technology conference, and listen to the presentations, or listen to the discussions. Ink chemists or others knowledgeable about the inkjet world laugh at the attempt to insinuate that these inks are ecological whatsoever.

Once the printer manufacturers noticed the backlash against ecological claims, they tried to claim the ink was "eco"nomical. This could embarrass the manufacturers even more, since the ink trapped people with needing to use costly media (coated materials).

Quietly (so as not to draw attention to the fact that eco-solvent printers of year 2002-2004 stuck people with unreliable systems that did not meet the claims so loudly proclaimed in the ads), the inks are changing. Trouble is, in order to make the ink work at all, the eco-solvent inks are being abandoned and replaced by stronger more aggressive inks.

During September the ink that was being offered was seemingly the second generation. We still receive e-mails from people who bought these printers, based on the promises of the luring advertising, and were then seriously disappointed. So don't blame this on us. The advertising agencies and whoever foisted this ink on unsuspecting clients are the ones who are liable. Seemingly the outpouring of complaints must have been sufficient that a third generation ink had to be hurriedly brewed by the chemists. The third ink is now listed in the brochures during trade shows in November.

Agfa is one of the first that specifically switched from the eco-solvent fostered by the Epson alliance of Mutoh and Roland. The politics is simple: if you are a printer manufacturer, you can't use Epson printheads unless you buy your ink through Epson. Notice the word "through." Epson does not brew ink. Like most printer manufacturers, Epson uses the best ink they can find on the market, from regular ink companies. Actually Epson does not manufacture its printers: Mutoh has the factory. Epson designs printheads. Mutoh also manufactures the Seiko and many other brands that do not happen to possess factories of their own. Indeed Mutoh has two factories; in Asia and in Belgium. The printers manufactured in Belgium are also designed there and often are different than printers sold by Mutoh America, for example.

Agfa is not a manufacturer; they get their printers from Mutoh Europe. But Agfa does have the capability of brewing its own ink, so Agfa can differentiate its printers from Roland, Mimaki, and from Mutoh too.

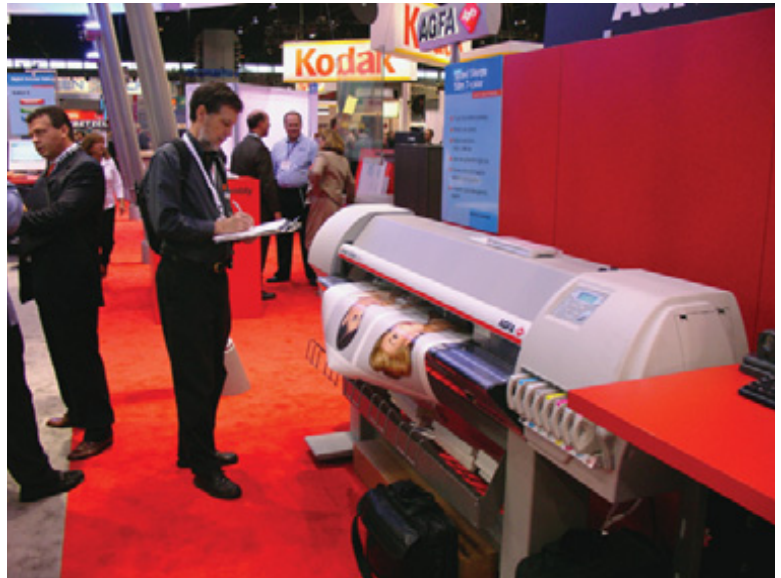
Agfa

Three Agfa Grand Sherpa Universal AM printers were in a separate booth in the Large Format Pavilion. The remainder of the Agfa stand was at the far other end of that exhibit building.

Agfa had the most alluring advertising brochure at the show.

Charrette

Charrette uses another name but it rebrands the Mutoh Toucan LT. The FLAAR Reports now has a complete publication on the Mutoh Toucan LT.



Mimaki

Mimaki offers an intelligent choice of inks:

- Full solvent, SS3
- Mild-solvent, SS2
- Eco-solvent, SS1

It is crucial to learn the difference, though there is no clear explanation that we have yet found. So we have to use educated guesses. Our guess would be that their eco-solvent ink (today at least) is hopefully the third generation kind, equivalent to the third generation ink of Roland and Mutoh.

The mild-solvent is probably similar to the mild-solvent of Mutoh.



So far Mimaki offers the best selection of inks because the basic printer, the JV3, is made to handle aggressive solvent ink to begin with. And it is precisely the aggressive solvents that work best on raw vinyl.

Mutoh

Mutoh offers both full solvent, mild-solvent, and eco-solvent. It is tough to learn the differences.

Some individual Mutoh printers offer the user to choose their ink. You can't easily switch; in some cases you can't switch at all (depends on the ink and the printer). The Mutoh Toucan LT offers the choice of Eco-Solvent Plus (I hope this is the 3rd generation ink), or LT Solvent. Nowhere do they explain what the differences are and whether LT solvent means lite-solvent, or a full solvent for the Mutoh Toucan LT machine.

The Falcon II Outdoor HD is a slightly different (and new) model. HD means heavy duty in that it



can handle rolls of substrates that weigh 250 lbs. This HD feature is also available on the Toucan LT.

Mutoh offered a handy chart of printers and prices, all on one sheet. This makes it so much easier to see the range of their products and their list prices.

Falcon Outdoor 38" Junior	\$11,995	Eco-solvent Plus
Falcon Outdoor 48"	\$15,995	Eco-solvent Plus
Falcon Outdoor 62"	\$19,995	Eco-solvent Plus
Toucan 64"	\$74,995	Full solvent
Toucan 64" Hybrid flatbed	\$149,995	Full solvent
Toucan LT 64"	\$33,995	Eco or LT-solvent
Toucan LT 87"	\$42,995	Eco or LT-solvent
Toucan LT 64" with charcoal air filtration	\$36,990	Eco or LT-solvent
Toucan LT 87" with charcoal air filtration	\$45,990	Eco or LT-solvent

Ink for the Falcon Outdoor is \$75 per 220-milliliter cartridge. All Epson printheads require, from Epson, that they have to use an Epson-style 110 or 220 ml cartridge (this is so you can't use bulk ink from after-market suppliers).

Ink for the Toucan comes in one-gallon sizes, which is about 4 liters. Price per gallon is \$322, so roughly \$80-something per liter. Any printer that uses printheads from Xaar or Spectra is not caught in the Epson mini-cartridge ink supply situation.

At Print '05 we took notes on the Mutoh Toucan LT for a complete FLAAR Reports. There were some issues with beta-versions of this printer and we need to find one of the current versions and so a site-visit case study so we can learn of improvements. The present FLAAR Report outlines at least what we learned so far (minus a site-visit, since the first two end-users that have reported back, are the ones that reported the problems with the first generation that was sold into Central America and South America). We would assume the printer or ink or firmware has been improved (or at least customer training on how to use it has been dramatically improved). So check out our report, since it is one of the few independent reviews of any Mutoh printer by a university-based technology institute.

End-user critique on the Mutoh Toucan is mixed. We have interviewed two different digital print shops. What was the most telling, is that the first shop (which had repeated issues with the Toucan, and sold it to buy a Gandinnovations Jeti), that we then by pure coincidence did a site-visit the print shop that bought the ill-fated Toucan from the other shop. In the new environment it did okay, and the new owners had no crushing problems. The difference was in how each printshop was using the printers: so now you can get a unique set of two reports. You might all them, "Mutoh Toucan in the real world." If there were any Mutoh Toucan printers of recent vintage near us in Ohio, we would do additional site-visit case studies when time, staff, and budget allow. It costs about \$4,000 to do a site-visit (mostly the time involved, but also transportation expenses, hotel, meals, and then the staff to prepare the actual full-color report).

The first two site-visit case studies we did near our offices in Latin America.

The really innovative Mutoh printers have been shown at FESPA (Munich 2005), at VisCom Düsseldorf (Oct 2005) and at Visual Communications Milan (Nov 2005). These are the Osprey and Phoenix. One of these has been rebranded as the Vutek UltraVu 260, but otherwise the rest of the year-2005 Mutoh technology advances have not yet appeared in the US. One brief exception was the Mutoh X-Jet which appeared for a few days at ISA 2005. I never saw or heard of it again, probably because it reappeared as the Vutek UltraVu 260. You can see the same printer in Europe as the Mutoh Osprey.

Roland

The Roland booth offered a professionally designed and handsomely printed 58 page booklet entitled, "Taking the Mystery out of Print/Cut." The format and layout are attractively done. Although the information is naturally from the Roland DGA point of view, at least it is clearly presented. We rate this as the nicest booklet at the trade show. Only at Nordson did we find anything even remotely close.¹ What was helpful about the Roland, and the Nordson booklets, is that you can leave the tradeshow with something more educational than just a sales brochure. An infomercial is reasonable when it is done in an acceptable and mature manner, as was this Roland publication.

Roland (and Mimaki) now offer white solvent ink. To use white ink in the Roland you have to not use Light Magenta and Light Cyan. The white ink was catchy-looking, but weak.

Some prices we noticed were:

- VersaCAMM SP-540, \$19,995
- HiFiJet Pro II FJ-540, \$21,995
- SolJet Pro II V, SC-545EX, print and cut, \$29,995

Although after-market companies outfit Roland with stronger solvent inks, Roland itself offers only what it claims are eco-solvent. The current generation of inks (the third generation) overcome most of the problems and deficiencies of the first and second generation inks, namely inability to print on cheap raw materials (the first generation inks required coated materials, which were expensive). The whole idea of having to put up with chemical odors with solvents is in order to be able to print on cheap raw vinyl and not need to pay the extra cost of coated media. At Print '05 they were still pushing the second generation inks in their literature.

The second problem with early inks (such as those touted at Print '05) was their inadequate durability or abrasion resistance. We would need to test a printer in-house or undertake site-visit case studies in order to see how the new third-generation inks hold up in the real world. We estimate they will be dramatically better in almost every way to the faulty first generation; and by necessity they have to be better than the second generation. Ink problems of this magnitude, to require two completely new ink chemistries, speaks openly to the deficiencies of the first two generations. Of course there were also hardware issues: these Roland printers were never designed in the beginning to take any kind of solvents whatsoever. It has taken several generations of trial and error to see what portions of the Epson printheads, ink hosing, ink pumps, and other parts that are touched by the ink, to avoid having the ink solvents dissolve the part (if some kinds of susceptible materials), corrode the part (if certain metals), or simply clog the arteries.

The third problem is that it is simply not true that no ventilation is required. You need ventilation for all solvent inks, including eco-solvent, if your employees are sensitive to the chemicals that these inks release.

The fourth advertising claim that caused upset clients was the insinuation that no lamination is required. If an ink can be wiped off, or abraded off, you need lamination all the more.

We respect Roland as a company, and everyone we know at Roland works hard. But the advertising claims for the eco-solvent inks of the first two generations simply are unfair because they appear to be misleading.

¹ Nordson had two booklets on UV-lamps for UV-curable printing.

We wanted to do a site-visit case study, asked for who in the area had these printers, and were told that they were so upset that a site-visit would not be feasible. So don't blame this on us. We did not brew this ink nor tell people all the things that it was supposed to do so well. Indeed we are curious as to how many people who bought these printers have asked if they could return them.

As soon as we have a printer in-house or otherwise have access to one, and when staff availability and budget allow, we look forward to being able to list all the advantages of the new improved third generation inks, and the more robust ink delivery system.

The same problems affected Mutoh eco-solvent inks and printers they tried to use them in, since both Roland and Mutoh use the identical eco-solvent ink. They merely give it different names.

Mimaki cleverly stayed away from the first generation eco-solvent ink, because their then US head manager realized that trying to foist those inks on the public would tarnish the reputation of Mimaki. So Mimaki used a more functional ink, and between 2002, 2003, and into 2004, outsold all other solvent ink printers put together (until the Seiko ColorPainter 64S came on the scene and took away substantial market share).

So if the head of a major printer company says the first generation eco-solvent inks were, effectively unusable, why did everyone else advertise them as super-inks? And then charge customers thousands of dollars to retrofit their printers to take the stronger second-generation inks when the first generation printers could not hold up to the solvents?

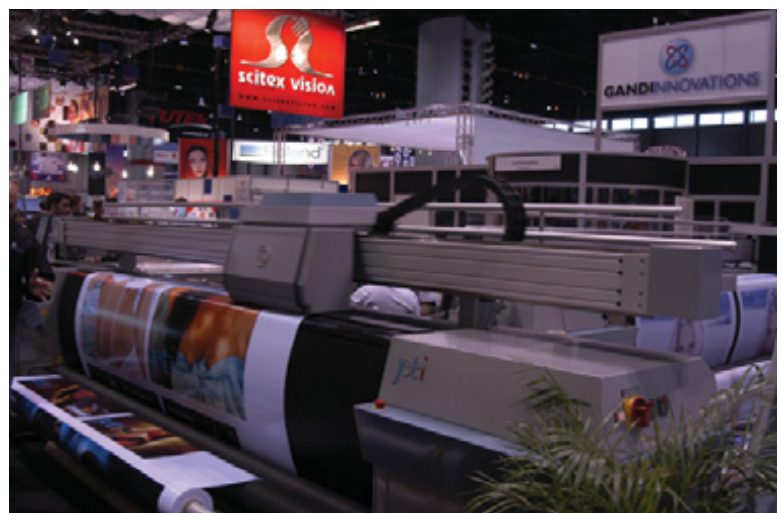
Let's hope we can put all this behind us, and move forward with a more positive evaluation of the third generation inks (and the printers that use them). We have our eyes and ears open to find end-users near us in Ohio, which is where it is more practical to undertake site-visit case studies. In the meantime, the site-visit case studies we have done of Mimaki JV3, ColorSpan Gator, and Gandinnovations Jeti (all full solvent), and Seiko (mild solvent, very close to full solvent), these owners are cranking out banners every day. None of them are complaining about needing to use coated media, about the ink rubbing off when it really should not. If you use a tough ink you get a tough banner. If you are stuck with a wimpy ink, you will have issues.

FLAAR itself does not come up with critique of a printer, nor praise for other printers. End users do. People who actually bought, and use these printers. This, plus common sense, is the source of our comments on printers. We also learn a lot at technical conferences, such as IMI and The Tiara Group.

Traditional (full) Solvent Printers

Gandinnovations

The FLAAR Reports have first-hand information on what it is like to have a Gandinnovations Jeti solvent printer in your shop. A colleague has facilitated our site-visit case studies over the last several years. First we studied his Agfa Grand Sherpa; then his two Mutoh Toucan printers. He found these were not robust enough to hold up to printing around the clock, so he bought a Gandinnovations Jeti 3.3 meter solvent printer. We were present when the printer arrived on the truck; and have done two site visits since then. You can obtain all this information from the FLAAR Reports on www.wide-format-printers.com.



[NET](#). Go to the link on the right to solvent printers.

Although Gandy did not show their back-lit camera duplex registration system at Print '05, we did see it at VisCom Düsseldorf a month later. Indeed we spent five days with all three Gandy printers: two days of set-up, and three days of the trade show. This is where having a sponsored research budget helps; it allows us to take the time to sit down and learn about each aspect of a printer.

Mimaki

In order to provide an entry-level solution, the Mimaki JV3-75 SP II is priced at \$12,895, in combo with a cutter CG-75ML, \$3,995. This appeals to small family-operated sign shops, or small franchise sign shops.

You do not absolutely need to have the cutter on-board the printer. It may be more effective to do all your printing on one printer, and do your cutting on a separate cutter. Besides, if you are laminating, you have to remove the print to laminate, before you cut it. So you have to put it back into a cutter again anyway. Might as well be a separate cutter.



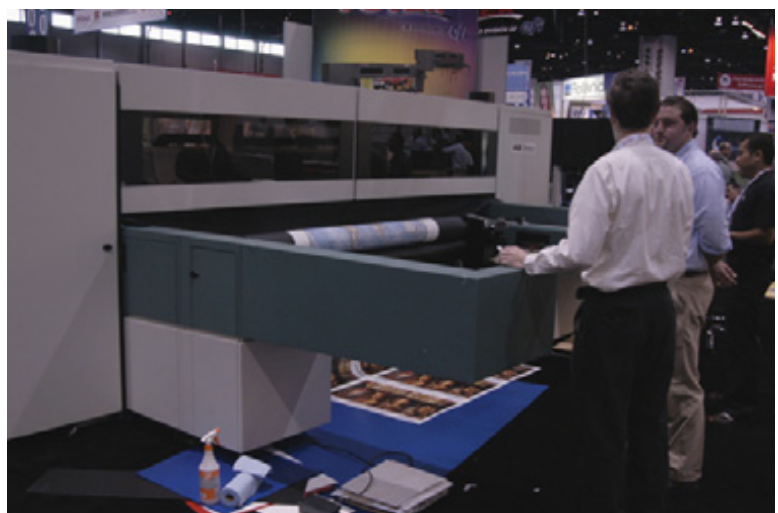
The stretch model Mimaki is their JV3-250SP Baby Grand. Sometimes these model designations change, so check to see what its current designation is. A stretch model is a regular model that is simply elongated. The JV3-250 stretch model offers its bulky UISS ink system, one at each end. This bizarre solution is required because Epson does not want any Epson printhead to be served by a bulk ink system. Epson collects a percentage of all ink that flows through any Epson printhead.

The mid-range Mimaki workhorse is the JV3-160SP. It now has four heads, which is twice the old system of a mere two heads. This upgrade is to compete with the speed of the ColorSpan Gator and the Seiko ColorPainter 64S. Since the Mimaki printer is made to take full solvent ink, it can more easily take a mild-solvent. The competing eco-solvent printers from other brands were never made to take any solvent at all. And when you are stuck upgrading from first generation solvent to second generation solvent you also have to add jerry-rigged heaters or fixtures. When you upgrade these other brands to the third generation, this ink may dissolve the ink lines that were in the original printer (which, remember, was made to use water-based inks in the beginning).

With Mimaki, they are made tough to begin with. So you just pour in the solvent cleaning solution and switch from full-solvent to mild-solvent.

NUR

With Vutek purchased by EFI and Scitex Vision bought by HP, that leaves NUR as a heavy-duty Israeli manufacturer of grand format printers out on a limb. The shrinking ability of Oce to design and manufacture their own grand format printers slows down one competitor, but in their place Gandinnovations has risen to be more success-



ful than any other grand format manufacturer in the years 2004, 2005.

NUR was temporarily saved by the success of its NUR Tempo and NUR Expedio, but now Durst has a direct competitor for the roll-to-roll Expedio. Lüscher offers competition one notch above the NUR Tempo and the Gandy brothers offer competition head on.

We have worked hard to learn as much as possible about the NUR Tempo, and our FLAAR Reports was recently updated with some candid remarks on print glass and on printing heavy materials on the Tempo. These FLAAR Reports are readily available from www.wide-format-printers.net.

At most American trade shows, NUR no longer exhibits solvent ink printers.

Seiko I Infotech Inc.

Seiko had the most attractively designed and decorated booth in the Wide Format Pavilion area.

The Seiko ColorPainter 64S is sufficiently well known it needs no introduction, but you should carefully read the FLAAR Reports on this printer. We have an evaluation and then a separate site-visit case study. Both are essential.

Seiko exhibited their ColorPainter 64S and stretch model 100S too.

If you are about to spend \$30,000+plus on a printer, then you need to read about the Seiko itself and reasonable alternatives. All this information is available on www.wide-format-printers.NET.



Scitex Vision

The Scitex Vision stand was still in Scitex style; they are gradually turning into a part of HP, which will result in changes in the manner that their booth is styled. Scitex Vision exhibited their XLjet5 8C and Scitex Vision TurboJet. As usual, no UV flatbed printer.

Scitex Vision makes heavy-duty industrial printers. Since obviously our lab at the university can't hold printers of these dimensions, we wait until we find one near our university or until sponsored research funding is available to provide a budget to get to wherever the printers are accessible. Since there is a Gandinnovations printer a few kilometers from our office, and as we have known the owner for five years, we do many of our site-visit case studies in this large commercial sign and banner print shop (in Guatemala City). Then we had a sponsored research funding to spend five days with all three Gandy printers: dye sub, solvent, and UV. So naturally we have more familiarity with these printers than with other brands.

Since the Scitex Vision printers are sophisticated technology, as you would expect for a product designed and manufactured in Israel. Innovative technology is what interests a professor of applied inkjet printing. So at some point in the future we hope to add more coverage to the TurboJet and 8-color Scitex Vision XL Jet Premium.

We already rate the Scitex Vision CORjet as our favorite printer for corrugated packaging. It has Aprion print-head technology, so does not use solvent ink, but it is an industrial printer, so mentioning it is appropriate in

this particular FLAAR Report.

We especially like the stand-up life-sized figures the CORjet can produce, with life-like quality. These figures would be great for museum exhibits, to explain the Maya, Aztec, and other civilizations to museum visitors. You could print samples of the Mayan deities, mythical heroes, kings and queens: all these are known by name and by actual contemporaneous portraits from the 4th through 9th centuries. They are shown on carved stone stelae or painted on murals. So it is easy to photograph them (this we have already done, with medium format Hasselblad quality). Now we are developing a project proposal to print them at life-size for exhibits in museums. FLAAR has the largest photo archive of archaeological heritage of Belize, Guatemala, Mexico, and Honduras available in the US.

This is why we spend so much time studying printers at trade shows. We want to find out what would be the best printers to utilize for our own FLAAR projects. Once we gather all the documentation on which printers are good, which printers to avoid, we simply publish the material so that other people can benefit from our time and effort. We study solvent ink printers because most of the archaeological sites are outdoor parks. So the signage for these parks needs to hold up several years.

Now about half a million people, in over 62 countries, read our over 500 pages on wide format printers across three major web sites. Another half million people read our evaluations on digital cameras and scanners.

Vutek

Vutek still makes solvent ink printers, but Vutek rarely shows its solvent ink printers at trade shows. Same with NUR: primarily their UV-roll-to-roll, the Expedio, and UV-flatbed, the Tempo. Scitex Vision presents primarily and sometimes exclusively their solvent ink printers, since they need a newer UV printer to compete in that world. Gandinnovations is one of the few companies that shows both its solvent ink printers and also its UV flatbed and also its direct dye-sublimation printer all in the same booth. This is because their technology is new, constantly being updated and improved, and so they want people to see what is available.

Vutek catalogs handed out at their booth picture the

- UltraVu 260
- UltraVu II 3360
- UltraVu II 5330
- UltraVu 150

The UltraVu 150 is their attempt to downsize and compete with Seiko, Mutoh, Mimaki, and Roland.

The Vutek Ultra VU II 3360 EC was the one solvent printer they showed, sandwiched between two of their UV-cured inkjet printers.

The UltraVu 260 is a rebranded Mutoh, probably from Mutoh Europe (manufactured in Belgium). This model of Mutoh is not (yet) sold by Mutoh America.

Vutek also handed out brochures on its FabriVu 3360, dye-sublimation printing systems. Would be interesting to do a direct comparison of this and the Gandinnovations dye-sublimation, which is several years newer technology. The Vutek FabriVu is rarely at trade shows. The Gandy brothers show their dye-sub printer all over the world. But since there are other trade shows, such as FESPA, that are more related to printing on fabrics, it is understandable why Vutek did not show their fabric printer.

Other Solvent Printers at Print '05

If we forgot to mention any other solvent printers that were there, please send us a note to customersupport@FLAAR.org.

Solvent Flatbeds

Mimaki has all kinds of flatbed printers: some with UV, others with solvent; others for printing T-shirts.

Oce had an exhibit only in the offset press area. Oce did not exhibit any inkjet flatbed printers whatsoever.

Keundo and Mutoh are among the two remaining few companies that offer a solvent-ink flatbed. Keundo did not have a booth at all. Mutoh rarely exhibits its hybrid solvent-ink flatbed.

Solvent Ink Accessories

Island Clean Air is at all US trade shows if a significant number of solvent ink printers are present. ICA makes charcoal-filtered air purification systems.

PAT Technology is another charcoal-filtered system, also made in Vancouver. Their brand name is Captivair. Mutoh has an exclusive on their products.

Spectra (we assume the printhead company; we saw them in one list, but not in the printed booklet). We were not able to find their booth.

Solvent Ink Consumables: After-Market Solvent Ink

Lyson offers a lactate-based solvent ink. But for some reason either the ink or the innards of their Tiara-modified printers did not do well. The entire Tiara enterprise was withdrawn from the market earlier in 2005.

Triangle Digital is a successful marketer of after-market ink. Triangle Digital operates worldwide. I see them in German and Italian trade shows. People we know in Guatemala use their ink too. They say the Triangle ink works just fine in their D.G.I. printer but that Seiko ink in their Seiko printer uses considerably less ink (probably because it is so heavily pigmented; the bright saturated colors are one secret of the success of the Seiko printer).

Triangle also makes after-market inks for Epson printers, for the Roland SolJet Pro II V, and other printers.

State of the Market

No Chinese or Korean manufacturer or distributor had their own booth at Print '05 that I can remember (I am writing this paragraph three months after the show). Asian printer companies tend to exhibit at Graphics of the Americas, ISA, and SGIA because buyers from Latin America come to those shows. Latin American buyers enjoy visiting Las Vegas and Orlando because they can bring their families too.

Chinese and Korean printers have decimated the market in Asia, Turkey, the Balkans, Eastern Europe, and are advancing on Italy and the rest of Europe.

Chinese and Korean printers have done well in Mexico; there were 46 D.G.I. printers in Guatemala City two years ago, so it is fair to estimate that Korean printers are selling satisfactorily in Latin America.

But then Seiko came out with its ColorPainter 64S; ColorSpan's tech service and reliability became better known for their 72" Gator. And Mimaki's JV3, albeit slow, provides the 1440 dpi print quality that some clients demand. So conventional Japanese and American solvent ink printers are not shirking from competition, nor withering away. The sales of ColorSpan and Seiko are growing, albeit somewhat at the cost of Mimaki, whose primary spurt was in 2002-2003 up to the point in 2004 that Seiko's prowess in the market was recognized. FLAAR Reports found end-users that gave kudos to all these brands. These FLAAR Reports have been influential both in start-up print shops, franchise sign shops, and family-run print shops. Printers that did not fare well in end-user comments, correspondingly, did not have as much increase in their sales. This is logical.

Now the market is in anticipation to see the impact of the HP purchase of Scitex Vision and the HP alliance with Seiko. 2006 will be totally different than 2005.

- Mimaki will need a newer printer technology to compete with the HP-Seiko impact
- Mutoh will need to differentiate itself; Mutoh Europe is doing this by going upscale with its Osprey and Phoenix model concepts (wider and overall more heavy-duty).
- Oce is caught in the cross-fire and has no new technology of its own; plus it lost distributorship of Seiko (in Europe) to HP. Oce will need to continue to ally with Gandy and ColorSpan, rather than keep trying to develop solvent ink printers on its own. None have done well on their own since the Arizona 30 break sales records in its day. But the Chinese and Koreans have taken away this entry-level market forever.

An interesting tidbit was that Xerox is selling 40% of the Encad printers that Kodak is manufacturing.

Trends

HP now has an exclusive relationship to distribute Seiko printers, starting in Spring 2006. Since Seiko currently makes only solvent-ink printers, this is a major change for HP. Not many details are available. Seiko (and ColorSpan) are beginning to catch up and surpass sales records that the Mimaki JV3 set from 2003-2004. In Europe Seiko was previously also distributed by Oce.

Oce thereby lost Seiko to HP, so Oce switched to distributing ColorSpan printers (we assume both the 72SI (Gator, solvent ink) and the 72UVR flatbed. Seemingly the Oce distributorship for ColorSpan will be primarily in Europe.

Creo has been so totally taken over by Kodak that the products, such as their proofer, are now re-labeled as straight Kodak. Nary a word on Creo. Don't yet know whether the Creo (Scitex) scanners are now so Kodakized that the word Creo disappears. The business cards are even eliminating the word Creo too.

Yet Vutek stays Vutek, a Division of EFI. Vutek had its own booth, but so did BEST RIP the first year after being taken over by EFI. Within a year most of the BEST employees had left and BEST barely exists under its former Germanic self. In their day, the Krefeld headquarters was a world center for development of RIP software. Now the better BEST employees are scattered, to GMG (another German proofing RIP); several key former BEST employees to GretagMacbeth and elsewhere.

Plan early for 2006

There are many trade shows across the USA that display wide format inkjet printers. If Chicago is a convenient destination for you, if the specific time in autumn is a time you can get away, then consider attending the year 2006 show.

Most years the show is named GraphExpo; but every four years the event is called "Print," so Print '01, Graph-Expo '02, GraphExpo '03, GraphExpo '04, Print '05, Graph Expo '06, and so on.

The cycle is arranged so that the expanded Print version is not the same year as IPEX or DRUPA. In 2005, FESPA was the same year, but the next FESPA is 2007 or 2008, so won't overlap with Print '09.

Appendix A

Notes on Exhibits at Print '05 other than Solvent Ink Printers

Since you may have interests on other aspects of digital printing, we add the following lists.

Water-Based Inkjet Printers

Agfa

Agfa Grand Sherpamatic, two sided proofing, dual CMYK configuration.

Agfa Grand Sherpa, 7 colors, includes light black

Canon USA

Their main booth was run by their copier division. In most trade shows the Canon booth is operated either by the copier division or the camera division. Printers are present on the periphery but are not featured in either kind of Canon booth.

Digital Information Ltd

They exhibited in booth #7938 at Print '05, Hyphen Asia Pacific, was tucked against a concrete wall. This Australian company exhibited two cleverly coordinated Epson printers for 2-sided proofing. They also had two Canon W8400 printers arranged for 2-sided proofing. I asked why they had no HP printers any more, they said "HP today are not fast enough compared with the competition."

Encad

We assume that the Encad NovaJet 1000i was in the Kodak booth, rebranded as the Kodak 1200i (same printer). The same Encad 1000i is also re-branded by Xerox.

Epson

Fujifilm's Enovation distributor booth naturally had an Epson 4800 because Fuji and most companies that don't have their own printhead technology tend to select Epson as their house brand. In previous years there were more HP printers than any printer at a typical trade show. This year, 2005, there were significantly more Epson printers.

HP

Several companies had two booths: HP had small booth in the Large Format Pavilion, and a main booth. In the small booth they had their HP Designjet 5500, 130nr, and HP 90. HP printers were in some other booths as

well, such as in the booth of Fuji.

Mimaki

Mimaki still offers two water-based printers, the JV4 and the JV22. They tend to show the JV22, 63", \$16,495. It is used primarily for dye-sublimation printing. We have a JV4 and it works just fine, especially for printing textiles.

Mutoh

Mutoh still makes and offers water-based printers but does not tend to include them in their trade show booth as much any more.

SpinJet

This company offers double-sided DuPont Dylux digital imposition printing, this time using a retro-fitted HP 4000 system.

Xerox

Xerox is successfully selling the Encad NovaJet 1000i. What we do not know is how successful the Encad printer actually functions once it gets into its location? We have a site-visit case study of four Encad NovaJet 1000i printers over a now going-on two year period.

Printers for proofing

The Epson 4800 has become the proofer of choice in the sense that in the booths for RIPs, such as EFI, there was the Epson 4800 and Epson R2400.

Absolute Proof had an Epson 4800 with special orange and green inks.

SpinJet previously utilized the HP 1055 but now has created a double-sided version of the HP Designjet 4000.

Inkjet Media: Water-Based

BullDog Products

Kapco (an Ohio company)

Magnum Magnetics Corp. (an Ohio company)

Pictorico Inkjet Media

Inkjet Ink: Water Based

DayGlo Color Corporation used to make their DayGlo ink for Encad printers. But nowadays printers won't accept after-market inks, so there are fewer options.

Textile: Direct Printing on Textiles

DuPont

DuPont Artistri now replaces the DuPont 3210 (the one made by Vutek). The Dupont Artistri is not made by DuPont. The Artistri uses Seiko printheads, one of the few printers in the world that uses these printheads (not even Seiko itself uses their own printhead; Seiko uses Konica printheads).

The Vutek/DuPont 3210 was to produce fabrics for home furnishings. The DuPont Artistri is for apparel, and fabrics for signage.

Two different RIPs are available: a textile RIP or ColorBurst.

Mimaki

Mimaki is a reliable source for entry-level printers for textiles. We have two Mimaki printers for textiles and are content with them.

The Mimaki GP-604D is their garment printer, for T-shirts. Just realize you must wash the shirt, and steam the shirt to complete the process.

Textile: Dye Sublimation Printing on Textiles

Gandinnovations

The Gandy brothers, James and Hary, had their grand-format dye sub printer and the grand-format transfer printer in their booth. This model is a special version for handling dye sublimation inks, but a special dye sub ink for direct sublimation. Direct sublimation means you print on the material (in this case textiles). You then feed the textile into a heat press (called in jargon a "calender"). The ink sublimates without using transfer paper.

Yet this same printer can also print onto traditional transfer paper.

Not many textile printers of any kind were present elsewhere.

Laminating Equipment

D&K

This is a manufacturer that I am not familiar with from elsewhere, but they have been around a long time. This is an American company, not a Korean or Chinese knock-off company. Their Expression 63 model has all the bells and whistles, \$14,500 was the show special price.

GBC

Neschen Accutech Corp.

Neschen itself did not have a laminator in their booth. But SEAL has three laminators, albeit no liquid laminators were displayed.

Royal Sovereign

Seal

Seal exhibited their

- entry level ProSEAL 25
- 62Pro
- 62 Ultra S

We cover lamination with film (traditional lamination), liquid lamination, and spray lamination. Canvas and watercolor paper don't want plastic-like layers of film distorting the "look" so these use liquid or spray.

Variable Data Presses

HP Indigo

Kodak Nexpress

Xeikon America

Xerox, iGen3

XMPie

XMPie makes software for variable data presses. They had a booth both on their own, and inside the area of one of the variable-data press companies (I believe it was Xeikon).

RIP Software

CGS Publishing Technology International, a RIP for proofing and color management
GMG Americas, a RIP for proofing and color management

We did not find Onyx in the alphabetical list but they were present at HP and elsewhere.
Scanvec Amiable

Color Management

Doppelganger, a color management consulting company, that includes Prof Charles Spontelli, a graduate of RIT, and a professor at BGSU.
Eizo Nanao Corporation, color manageable LCD monitors
GretagMacbeth
Pantone

X-Rite and Monaco software

Color Viewing Booths

JUST Normlicht

Laser Printers (Dry Toner)

Konica Minolta

Xante

Xerox – Tektronix

Desktop Publishing & Accessories

Renz makes spiral binders and lots of handy things you need, whether a school or a Fortune 500 corporation.

Laser Engravers

Universal Laser Systems, we have one of these at BGSU; it works great. We are now looking at their larger and more sophisticated systems; the one we have is a mid-range model.



Trade Magazines

Big Picture Magazine is one that we read every month. FLAAR was included in the December issue.

Cygnus Business Media is the parent company that publishes many printing and digital imaging industry magazines.

Digital Output

Electronic Publishing

In-Plant Printer (IPP)

Wide-Format Imaging Magazine

A major trade magazine that was not listed is Digital Graphics. FLAAR and BGSU have written several articles for this magazine. They would have been at SGIA, which is probably why they did not have a booth at Print '05.

Other Trade Show Organizers

DRUPA is held every four years, 2000, 2004, so the next will be 2008. But visitors and exhibitors are already making plans to attend.

IPEX will be in Spring 2007. Although it will not have as many textile printing displays as did FESPA, I would estimate that most of the solvent ink printers and UV-cured inkjet flatbeds will be displayed. Only downside of IPEX is that Birmingham, as a cultural and touristy destination, is a large zilch. Even DRUPA offers more local

excitement. Of course Photokina is the best, being in Cologne, within view of the Gothic style cathedral.

Industry Associations

PIA/GATF

GATF displayed their many informative and educational books. The ones we noticed were on color management, a concise Primer on scanners.

Two other associations dedicated to education were the

- Graphic Arts Education and Research Foundation
- International Graphic Arts Education Association

Digital Cameras

In past years Sinar used to have a nice booth, but their cameras are so expensive, and not very portable. As a result Leaf, Imacon, Phase One, and MegaVision have become more popular. Thus this year Sinar did not exhibit.

Although Creo scanners were present, Creo Leaf medium format camera backs were not present. In general digital cameras do not tend to be exhibited at printer trade shows, as though the images that we all print fall from heaven.

One lonely booth showed a tri-linear scanning camera that used a Nikon lens mount. They offered this for photographing on a copy stand. The problem is, that without an alignment system, a copy stand is not accurate enough. To have an alignment system you need either a 4x5 camera (and the special alignment system; we have tested it and it works beautifully), or you need a Cruse reprographic camera which is permanently aligned during installation. The company selling the line-scanner camera was not aware of these problems. Plus, at about \$11,000, I would rather have a BetterLight back or a medium format back.

It is ironic, that the leading US display of million-dollar printing equipment, in a display area of thousands of portraits, landscapes, and commercial photos, that not a single camera company had an exhibit.

Scanners

Aztek showed their scanners. Their owner and inspiration for their unique philosophy passed away earlier this year. But the company continues with the remainder of the staff.

Contex makes the best wide format scanners, great for architectural drawings, or, for our archaeological background, for site maps.

Creo is the scanner that we use and recommend. Kodak has already eradicated the brand name Creo and has rebranded them as Kodak scanners. Since both Creo and Scitex were high-quality brand names, removing this legacy is a bold move.

Screen makes the nice Cezanne flatbed scanner and an outstanding drum scanner, but Screen rarely exhibits these in the US. Screen had scanners at DRUPA 2004 but the booth personnel were not very inspired to provide information about it. Too bad, because these are professional quality scanners. However we are not sure they are developing the scanners or their software further. This is the benefit of Creo: they continue to produce

new models and improved software. Again, we know, since we have first-hand experience with Creo scanners.

Universities

Ferris State University

Kennedy-King College (Chicago)

Rochester Institute of Technology needs no further introduction; its name speaks for it.

University of Wisconsin-Stout

Western Michigan University, has impressive technical programs.

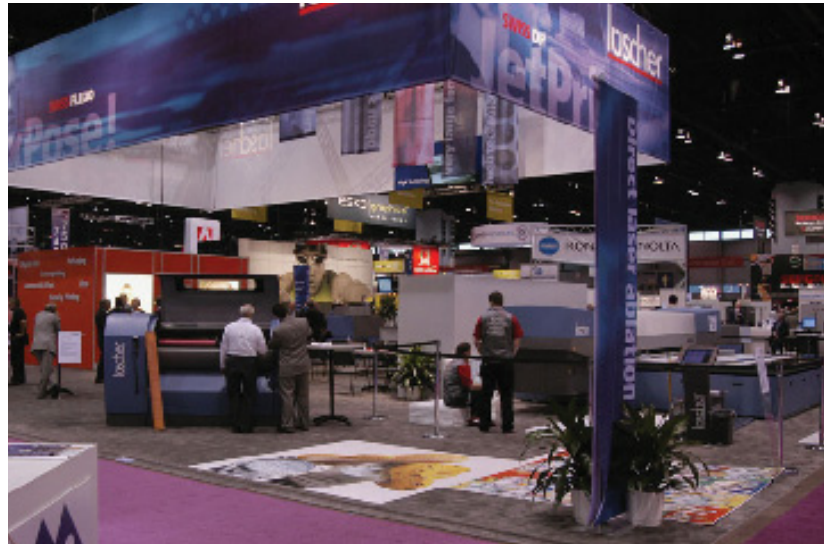
The five universities exhibited under their own name. Bowling Green State University was the sixth, but they were represented in two booths under the names of independent entities, primarily FLAAR (which is a cooperative program in digital imaging with the university's Center for Applied Technology). Then there was a BGSU professor every day in the booth of a color consulting company, Doppelganger. The FLAAR booth gave BGSU students the opportunity to experience the trade show both to learn more about digital imaging hardware and software, as well as to see how research projects were initiated through FLAAR between the university and manufacturers. Another thing we learned from having a booth at the show: virtually everyone has read our information about digital imaging on our multitude of web sites.



First issued December 2005



McCormick, where Print '05 was held.



Lüscher booth



Aisle within the Large Format Pavilion.



FLAAR booth in the Large Format Pavilion.

Acquire these reports at:


www.wide-format-printers.net

Eco-Solvent Publications


Falcon II Outdoor Eco-Solvent Ink Printer




FLAAR Reports
Mutoh Junior and Mutoh Rockhopper 38



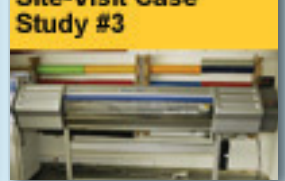
Roland SolJet Eco-Solvent Printer
Site-Visit Case Study #1



Roland SolJet Pro II
Site-Visit Case Study #2



Evaluation of Roland SolJet Pro II SC 540
Site-Visit Case Study #3



Solvent Ink Publications

Solvent Ink Printers for Outdoor longevity on Vinyl without Lamination



FLAAR Reports
Nicholas Hellmuth's Guide to Buying, Using & Maintaining a Solvent-Ink Printer



FLAAR Reports
Gandinnovations Jeti 3300
Site-Visit Case Study



Bus Wrap and Fleet Graphics



Printing Wallpaper with Inkjet Printers




Evaluation of Mutoh Toucan Solvent Ink Printer




FLAAR Reports
Mimaki JV3
Evaluation of Solvent Ink Printer



FLAAR Reports
ColorSpan DisplayMaker 72s
With comments on the Gator, 72SI



FLAAR Reports
Nicholas Hellmuth Evaluates the Seiko ColorPainter 64S




Solvent Ink Printers from China & Taiwan




FLAAR Reports
Mutoh Toucan
Are you considering this Solvent Printer?
Site-Visit Case Study




FLAAR Reports
Mimaki JV3
Site-Visit Case Study



FLAAR Reports
ColorSpan 725 and ColorSpan 72SR (Hybrid Flatbed)
Site-Visit Case Study



FLAAR Reports
Seiko ColorPainter 64s
Site-Visit Case Study



Solvent Ink Printers from Korea

