



Observations on Wide Format Inkjet Printers Scrutinized at PMA Photography Tradeshow, March '03



ColorSpan booth at PMA tradeshow 2003



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Inkjet Printers

Epson

Literally won the hearts and souls of every photographer who attended the show. Epson exhibited a bright, happy, friendly series of art and photographs. The Epson booth was quite large and spoke the language of photographers: light, composition, and everything a prosumer, hobbyist, and pro feels at home with.

Roland Incorporated

Had no booth. One lone dealer had a booth. We understand that their SolJet has or will appear in a new iteration in order to accommodate problems of costly media for the pseudo-solvent inks.

The Roland Pro II series of printers no longer use a lite RIP from Scanvec-Amiable. Roland is reportedly ready to offer a lite version of Wasatch. Wasatch will be an improvement, since earlier ColorChoice was a bit light for most users who needed a commercial grade product. But that is typical of all bundled RIPs, they just don't have all the feature set that you really need.

Encad

Had a nice booth. Their NovaJet 880 flatbed produced attractive output. Word on the floor is that their new direct-to-substrate printer will be presented at ISA in April. This is the mystery printer which was still in crates last year at SGIA; it was not unpacked because the special ink was not yet ready. To print direct onto sign substrates requires a special ink. Only one ink is available that works well, but that's the only kind of ink which works in the unusual heat curing system.

If you are printing on canvas, an Encad is okay because the rough texture of the canvas hides the rough grainy dotted pattern of the Lexmark heads which Encad is stuck with (neither Encad nor Kodak own their own printhead technology). But if you want better photographic quality we have seen stunning results on Epson, Mimaki, Mutoh, and Roland (all with Epson piezo printheads). At FLAAR we print all our art exhibits with our two HP DesignJets because media and inks are less costly than with piezo printers. Being non-profit we have to be frugal. We have a 60" HP 5000 at Bowling Green State University and a 42" HP 5000 at Francisco Marroquin University.



Epson 10600 printer



Encad Novajet 850

Canon

Exhibited the line of their imagePROGRAF thermal printhead machines that were shown at earlier tradeshows. The new printers are gradually establishing a reputation as well constructed and relatively fast. We don't have one yet.

Hewlett-Packard

Continued a gradual move towards a more photographic orientation for their tradeshow booth but with old favorites, traditional photographs of bygone eras.

More and more we learn of photographers and artists who use HP DesignJet for giclee or photographic prints. Actually it is surprising how many people started already with HP 2000cp or 3000cp machines several years ago. FLAAR also used an HP DesignJet 2800 successfully. Even with four colors it produced enviable output. I know, since I had one in my living room in Germany (until my German girlfriend said either the printer or I had to leave... we both left).

Now the DesignJet 5500 is available. Six colors and ease-of-use make it a natural favorite with photographers and artists who don't want to fuss with constant downtime with clogged piezo printheads. The other advantage of thermal printheads is they clean themselves; piezo printheads require multiple flushing with precious ink. That is like flushing them with liquid money. Our piezo printheads sometimes require more than six flushings to get them to work again. One person calculated it's \$50 per flush for his clogged Roland heads (our lab manager simply said the HP DesignJet used less ink, period).

However these nice features are available only at 42" and wider. For 24" there is not one single printer with pigmented ink other than the Epson 7600. Neither from HP nor from Canon nor from Encad since their ancient Chroma 24.

Mutoh

Is fully capable of producing photographic quality art so it was good to see them at PMA. Parrot Digigraphic will be selling their Falcon II into the photographic and fine art markets.

Mimaki

Had a booth with several regional dealers. Mimaki JV3 solvent ink printer and JV4 aqueous ink printers are runaway best sellers for the market niches for which they are appropriate. The strong point of Mimaki is their carefully engineered and constructed equipment. The general impression is that these are the best built of the piezo print-



Canon ImagePROGRAF W7250, PMA 2003



Mutoh Toucan NX-PRO, at PMA 2003 booth

ers. Word on the street is that Mimaki will take over from Mutoh the manufacturing for Epson wide format printers. Epson designs their printheads but has no manufacturing plant for the printers themselves.

General Observations

More discussion on the street is that Seybold San Francisco tradeshow continues in freefall. It is unsure that venue will survive. Too bad, since everyone liked to visit San Francisco once a year. Problem was lack of focus at Seybold; people in digital imaging feel the tradeshow wandered too far into web based products and hence was no longer a place to exhibit digital imaging products.

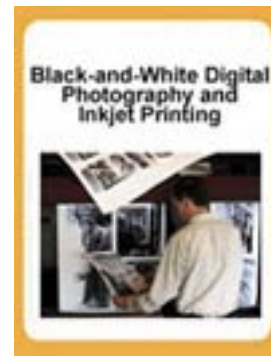
Although we can't attend CeBIT tradeshow in Europe this year (we are tied down teaching digital photography at the Malta Centre for Restoration, University of Malta) we can report back that the new model of Canon with pigmented ink was presented there. But not for 24" model. Canon is very careful and slow with its wide format projects, sometimes taking a year between showing a model in a European tradeshow and actually having it for sale in America.

Inks

Although piezo printers guzzle expensive ink and have banding defects, piezo printers do reproduce handsome output when they are finely tuned. It is my impression that piezo printers swept the DIMA awards. I could not help but notice that two entries in the contest had a grayscale that was so obviously magenta in color that it was unacceptable. It is likely these inadequate grayscales were from thermal printheads. If the company itself can't get a good grayscale, how can they expect artists and photographers to prefer their product? If thermal printheads have a problem then the companies should at least cover it up, or offer an option, with a quad black inkset. Epson was very clever to create an extra black. Ilford is even more clever to offer quad-black or triple black combined with five colors (on their rebranded Encad 850 and 880). ColorSpan offers quad-black inkset with 7 additional colors to create a spectacular 11 color set.

On the subject of black and white, saw the impressive system of R9 software combined with Sundance Quad-tone inks for B+W on piezo printers. It is our impression that this is the origin of what was behind (and inside) the Cone piezography system for several years. The companies all split, and now the original ink and the original software is, I guess, not available from Cone. He has found some other ink and added ColorByte RIP software to replace the customized black-and-white software from R9 he had been selling under his own name for two years.

Instead the original software engineer and the original ink company have restored their products themselves. In other words, now you can get the acknowledged leader in black-and-white digital imaging directly from R9 and Sundance. Contact is info@bwguys.com.



For more information on Balck and white digital photography and inkjet printing you can look at the FLAAR course on digital photography; click [here](#) for auto-download of abstracts, free and in full color



Entries in DIMA competition; piezo printheads won all the awards; thermal did poorly with grayscale. Epson and Roland trounced the opposition.



R9 printer software creates outstanding grayscale for black-and-white photos using Sundance inks

Lyson unveiled their Cave Paint pigmented inks for piezo printheads (Epson, Mimaki, Mutoh, Roland, etc).

Solvent Ink

The main venues for solvent inkjet are SGIA, ISA, and shows dedicated more to printers for signs. You would not tend to use a solvent ink printer in a photo lab (despite Ilford's attempt two years ago to sell Vutek printers into that market).

There have been a number of complaints about retrofitted solvent ink printers. Even more complaints have come in from end-users about eco-solvent and lite solvent printers.

Thus until we test these printers in person, and/or until we have case studies of actual users of these printers, we are withholding recommendations. This includes the SolventJet II and a host of others. The problems of the initial model were because connector parts and ink lines inside normal Roland printers were not designed to handle solvent inks.



Vutek DIMA 2003 winner, PMA tradeshow

Use common sense in weighing claims for longevity. The only warranties for longevity that are acceptable are those of 3M and Avery. Hence I find claims by other ink companies of "5 years outdoors without lamination" to be unrealistic. Acceptable claims are two to three years outdoors without lamination, period. If you are absolutely determined to pollute your building with solvent fumes, we recommend you at least stick with traditional solvent ink since it is a known and proven product, the best of which would be the Mimaki JV3 or Mutoh Toucan.

Inkjet Media

We can discuss the capabilities of media best when we know it from first hand experience. Media which we have seen, but not used ourselves, we can only mention.

Mactac, a Bemis Company, is at most tradeshows. We got one letter from an upset user stating their Cheap and Tacky material was not water resistant. At our university in Guatemala the lab there likes the cheap aspect of this same media. We have not ourselves tried out whether it holds up to rainfall. Plenty of rain in Central America so sooner or later we will try it out. Testing and evaluating media is time consuming and hence correspondingly costly.

Since FLAAR offers an entire Series on inkjet media, we will defer to those reports. Suffice it to say that wide format and desktop inkjet photo paper booths were present at PMA. Mitsubishi, Konica, Kodak, Fuji, and Ilford, among others.

RIPs

Wasatch and a few other RIP vendors had a booth at PMA. Raster Image Processor software is what provides the operational brains to run your large format printer. You use a RIP when you want more sophisticated options than can be provided by your printer driver alone.

Color management for inkjet printers

The first step in color management is to calibrate your monitor. You can do this with any number of tools:

- Monaco OPTIX
- GretagMacbeth EyeOne
- Spyder with Optical, Pantone ColorVision

among others

FLAAR uses GretagMacbeth EyeOne at our facility at Universidad Francisco Marroquin; we use X-Rite DPT41UV at our facility at BGSU. BGSU's College of Technology uses a DPT41 (non-UV version). Firelands College (a sister institution of BGSU) uses the GretagMacbeth Spectrolino system. So if you have a large print shop you may want one of each (as we do).

X-Rite's DTP41 spectrophotometer is now available in their Series II format. This is intended to be used with Monaco Profiler; we recommend "Gold Edition." We use the earlier version of both and they produce custom ICC color profiles every day. Thus the newer Series II ought to be useful too.

X-Rite now has ColorShop X profile analysis software for Mac OS X. For further information contact Bill Owens, bowens@x-rite.com. ColorShop X is a color and profile analysis software for Mac OS X. We also have the Spyder with Optical.

For ICC color profiles, the world standard at present is Monaco Profiler. It is by far lower price if you buy it simultaneously with X-Rite or GretagMacbeth spectrophotometer. You can obtain information directly from Monaco Systems (Bonnie Fladung, bfladung@monacosys.com) or from a qualified wide format specialist for photo, giclée, and signage, Parrot Digigraphic (e-mail jlorusso@parrotcolor.com).

Training in color management is available from Chromaticity, Chromix, and Integrated Color Corporation.

For all other suggestions on color management we have a separate report, available in the FLAAR Series on RIPs as well as available to participants who sign up for the FLAAR course on digital photography.

Awards

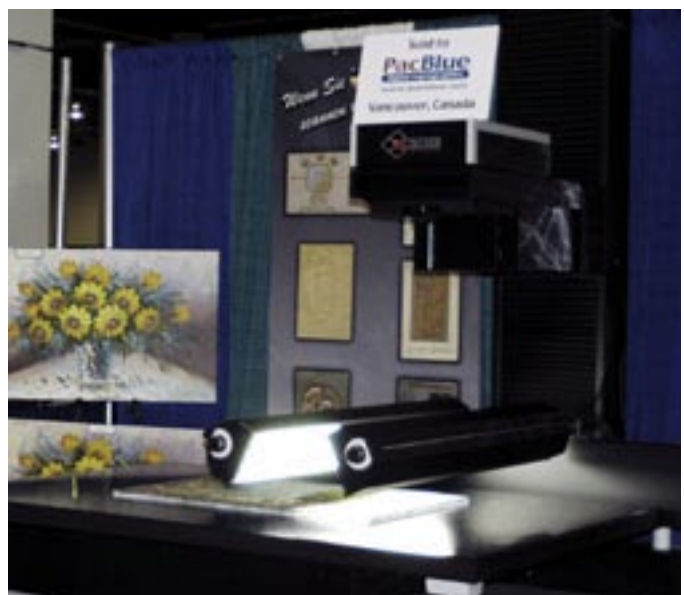
Award for the most impressive digital capture device is deservedly won by Cruse scanner for their ability to capture three-dimensional detail by a side-scanning overhead reprographic scanner.

"Most honest advertising" for a digital camera goes to Kodak for their Pro Back Plus and Pro Back 645 and to BetterLight for their understated ads for what is an outstanding product.

Most impressive new technology award is deserved by Foveon, for their sensor in the Sigma SD9. I would also point out that the Sigma



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Cruse reprographic scanner

designers did better with their first digital camera than Leica, Pentax, Contax, or Olympus.

Most innovative inkset is that by R9 + Sundance. Sundance sells the inks; R9 sells the software that handles the quad-black set.

In color management software award goes to Monaco. Their ICC profiling software has become the de-facto color management software around the world. They have allied with both X-Rite and GretagMacbeth. The X-Rite DTP41 Series II is bundled with Monaco Gold. The GretagMacbeth EyeOne is also bundled with Monaco Gold. You can obtain either or both at ParrotDigigraphic (jlorusso@parrotcolor.com).

Island Clean Air deserves recognition for cleaning up the workplace. We are real sticklers for smelly solvent inks, photo chemicals, and other pollutants. Thus we like to see products from companies such as Island Clean Air which make the workplace a nicer place to be.



R9 Sundance printer , PMA 2003 exhibit booth

We used to have a “Worst in Show” award, won by the Xerox Xpress 54 two tradeshows in a row. But XES has closed its doors and there is not really any terrible inkjet printer out there any more. Even the Seiko oil-based printer has improved to the point that its output is bearable.

Although we have a winner for most honest advertising, there were too many candidates for “most dishonest and misleading advertising” to declare one winner. Their ads varied from outright lies to slick and alluring bait and switch.

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