SEYBOLD TRADE SHOW

(San Fransisco)
Large Format Printers, RIPs and related Digital Imaging

ColorSpan Displaymaker XII shown at Seybold 2000

Here is the draft of our report on wide format printers we inspected during three intensive days at Seybold San Francisco trade show in late August 2000, updated with notes from subsequent research.

Canon presented a prototype of its new 1200 x 600 dpi printer, the model BJ-W9000. When seen at a distance the colors and photo-realistic quality were definitely equal to and actually seemingly better than the Epson 9000. This was largely a result of the attractive high gloss photo paper used by the Canon at the Seybold booth. The Canon printer, however, will not be delivered until later in 2001, and will not have UV pigmented inks at all. There is no 24" model currently but the desktop version, model 8500 if I remember the model number correctly, produced nice color; quality looks as good as any Epson desktop printer. The general consensus is that Canon finally did well to get rid of the old-fashioned Selex printer and move forward with something improved.

Canon BJ-W9000

Do not, however, buy the currently available Canon bubble-jet printers (models BJ-W3000 and BJ-W7000); they are based on the old Selex engine; are low quality, and have problems with banding. Those are models to avoid since even an Encad is better and the HP DesignJets are better still. Canon's new future BJ-W9000 model, however, offers a different and improved technology and outstanding image quality.

The general consensus is the new Canon printer was one of the two outstanding new technologies premiered at the Seybold San Francisco trade show. Unfortunately, the new Canon printer is not finished and it is unsure when it will be available.

At Photokina trade show a month after Seybold we learned that the new 1200 dpi BJ-W9000 printer will offer PosterJet RIP software from DCS Software. This is one of the better software RIPs available. PosterJet also works on the HP DesignJet 1050, 1055, 2xxx series, 3xxx series, and the newest HP 5000.

BEST color management RIP also works with the new Canon printers, including the desktop Canon 8500. The combination of Canon + BEST makes a great desktop proofer whose colors are more stable than those of the Epson 1520 or Epson 3000. Contact for BEST is Richard Dannenberg, rd@bestcolor.com

In the world of wide format **Xerox** has been dead in the water for the last several years. Their electrostatic printer has failed miserably in the market. Their Xpress model printer seems a bit overpriced considering the poor quality. They charge an unprecedented $7000 for their X2W hardware RIP, practically the identical EFI Fiery hardware RIP that everyone else tries to charge $4500 for (yet many companies can't sell even at that price since all the better software RIPs cost only $3000 and offer more options). I have two models of EFI Fiery RIP, and I believe one is the same as that which Xerox charges the $7K for. This RIP is not even worth half that.

The XES Xerox Xpress uses MIT XAAR piezo heads, the lowest dpi on the market. Even a 4-year old Encad printer (long obsolete) can produce better quality at its 300 dpi than the newest most expensive Xerox large format printer. I believe the Xerox uses oil-based ink, a rarity, and possibly needed for certain special applications, but uugh, what grainy dot structure. In a recent lecture on ink types it was said that the problem of oil based inks is that they never really fully dry. Oil-based large format printers

Xes, Xerox Xpress

are not among the technologically most advanced. Xerox is among the most conservative and outmoded of all. 36" Xerox Xpress is $19,995, with no RIP. That makes it the most expensive of any 36" printer I know of. 54" is a whopping $29,995. That is close to the price of a ColorSpan, but a ColorSpan that offers 12 colors and museum quality output.

Large format printers are sort of leftover orphans at Xerox. They don't even get space in the Xerox web site. At DRUPA the lonely wide format printer had no attendant, no audience, and was totally abandoned. At Seybold the tiny Xerox booth was rather small compared with the impressive displays of ColorSpan, Hewlett-Packard, and Epson. At Photokina trade show it took me a long time to even find the XES booth (Xerox Engineering Systems).

The **Epson** 7500 and 9500 were definitely matured; the color gamuts of the new Epson archival inks were improved. As a result we are removing our warning based on the poor appearances of the weak color gamut as prematurely presented at DRUPA trade show. Although the product is better the advertisements still claim exaggerated performance. If the ads were more realistic it would be easier to reconsider our rating even further. We will spend more time studying the Epson printers at trade shows. In other words, the color gamut is improved but systematic generic problems remain with the overall Epson ink systems on the Epson 2000 for example, color shifts with certain papers (not Epson papers; those have other problems). Thus our overall caution has not been lifted. If you are seriously considering an Epson printer, desktop or large format, you really need the
more detailed FLAAR reports that are available. To know which information is of use to you, please indicate what kinds of images you intend to print, what size, for inside or outside use, how many copies you tend to print of each image, whether for home use, for your studio, or for a commercial facility.

No other company is currently producing a 24" roll-fed photo-realistic wide format printer for fine art giclee purposes, thus the Epson 7500 would seem to be a printer to consider for that price class. The impressive new 1200 dpi six-color Hewlett-Packard 5000 is targeted for the 42" and 60" sizes.

The disadvantage of the Epson new inks is precisely their newness. The inks are not yet stable, are not yet mature, and have not yet proven themselves. Other new Epson hybrid inks have been an especially unsettling experience in the desktop Epson 1270. Ozone evaporation and discoloration are reported with alarming frequency on that desktop model. The "greenish tint" problem occurs primarily with the wide format Epson printers. This generic problem is discussed under Roland printers (which also uses Epson piezo printheads).

Although their HP model 500 and 800 are available in 24" and very nice, the 500 and 800 are not targeted at the fine art market but rather at CAD, graphics art, GIS, etc. For anyone who needs an economical printer in those fields which is fast, trustworthy, and can also do giant photographic enlargements, the new HP models are ideal. The built-in PostScript option on certain HP DesignJet printers means you do not have to add any PostScript RIP. The new top model, HP 5000, is discussed later in this report.

When you compare prices beware of "bait and switch." For example if a printer is offered for sale at say $9,000 (such as the Epson 9000 or 9500) and you compare it with a Mutoh or Roland or HP at $15,000, the $9,000 is the bait. The switch is when you figure out you really need a RIP. A RIP is printer software loaded on a separate computer which then functions as a print server. RIP software will cost between $3,000 and up. "Lite" versions tend to be inadequate for serious use though are okay for a beginner. So the true price of an Epson is the Epson with the EFI Fiery RIP (which is probably around $4500), so $13,500 for the Epson printer, not $9,000. This means that a 42" HP 5000ps (with its RIP already on-board) saves you the cost of a Fiery plus

saves the cost of the RIP server (in the HP it's all so easy, the RIP server is built into the printer itself). That also makes the overall system easier to use.

Don't worry if you are unfamiliar with what a RIP is and why you need one. Just ask for the FLAAR report on RIPs (don't forget to remind us who you are and what you intend to print, since without that we don't know which RIP report to send you).

Of the three major photo-realistic contenders, Epson, HP, and Canon, the best UV archival inks are considered to be the HP inks (for the new model HP 5000ps), since the previous UV inks for the HP 2xxx and 3xxx series are already used by many artists, indeed were exhibited at Seybold. The HP UV pigmented inks for the 5000 and 5000ps have already been exhibited at trade shows and will be available by Spring of 2001. The printers themselves (with dye inks) are available already. (Note: the HP pigmented inks for the HP 5000 were recently evaluated by FLAAR. This report will be available shortly).

Encad presented its 8-color printer at Seybold. It was an unfinished prototype in the sense that the ICC color management system was clearly not yet working. The color balance looked as bad as did the Epson 7500 and 9500 colors three months ago (shadow areas all too dark; reds, greens, and blues out of kilter; highlights blown out). But, as the Epson printers improved dramatically since May, surely the Encad will improve by the time it ships later this year.

Disappointment is that the dpi is still 600 dpi, seemingly all its printheads can handle. Several other models of Encad use Lexmark heads so perhaps that's what the new printer uses as well. Also keep in mind that the speed claims are based on using double-four colors (two sets of four colors simultaneously in parallel). That means you only get four colors, not six, not eight, but the same ordinary CMYK, in two identical sets, to print (more or less) twice the path at once. If you wish to take advantage of six colors or eight different colors, then the printing gets slower.

The new 8-color Roland produces attractive images but again, to get speed you can use only 4 colors, in sets of two. Typical case of ads which tout "fast speeds" but the quality deteriorates when you attempt to achieve that speed. So you get an image "less slow" but not even six colors. We suspect that the new printers are delivered only a few a month for a while which means the waiting list may be as long as several months. In today's market is any printer worth waiting three months for. Otherwise the Roland HiFi has a good reputation among people who like this system.

If we don't sound overly enthusiastic it's because of the propensity of piezo electric print heads to banding and occasional possible clogging. Then there are the continued reports of a greenish tinge with certain papers when printing monochrome (black and white grayscale) images with some piezo electric printheads. That makes it tough for photographers who like to print black and white as fine art prints. We have received another report of severe banding with these printers as well. Since other users are content and say they never have problems with a Roland HiFi, it's a tough printer system to evaluate, because clearly a few units are causing consistent color management problems. We can only report what we hear from end users. We do our best to balance both sides of the question and will continue to check out the problems of color matching and banding until they are solved. If you do opt for a Roland be absolutely sure you get the entire system (printer plus RIP) together from a single vendor and include a color management system and adequate training.

Most of the people who write in are fascinated by "1440 dpi." Please realize that the highest apparent dpi is the ColorSpan, not the Epson or Roland. Second, dpi is merely mumbo jumbo (smoke and mirrors). A lowly Encad at its 300 dpi is often higher quality than a Roland, Epson, Mimaki or Mutoh at their fast speeds which are claimed in enthusiastic advertising hype (which is actually 360 dpi). The curator at the museum where we do our research

refused one print from a seven-color Mimaki, yes, seven, not merely six (t had been done at their rated "fast" speed which resulted in a lousy 360 dpi. Yet the same museum has four prints from an obsolete Encad Nova Jet Pro (a mere four colors and a lowly 300 dpi) proudly hanging on exhibit. The Epson print is a 720 dpi system; anything above that is generated by software or smoke and mirrors

As important, and often even the deciding factor, is how many printing "passes" a printer can accomplish. You need at least 8 passes to get acceptable quality with many printers. A really good RIP can often accomplish more passes out of the identical printer and hence get a print of even better quality. Tradeoff is that every additional pass slows down the printing.

At almost every booth at every print show, hardly every was any Epson, Roland, Mimaki, or Mutoh printing at 1440 dpi. I asked naively at every booth. They always replied identically…"you can't tell the difference between 720 and 1440 dpi, and 1440 dpi is just too slow. Nobody uses it…"

ColorSpan produced its newest version with the model designation Esprit. The quality looks as nice as all the other ColorSpan printers. The advantage of the ColorSpan is that its apparent 1800 dpi is available even at an acceptable speed. The new management (MacDermid) seems to recognize that a company ought to offer better attention and service to customers. Overall we look for continued improvement from ColorSpan. ColorGate RIP is also available, as well as ColorSpan's own RIP. I believe Wasatch is also available for the ColorSpan printer. Wasatch is the #2 RIP in America. If you are interested in more information on the ColorSpan their contact is productinfo@colorspan.com A new report by FLAAR specifically on the ColorSpan DisplayMaker XII and Esprit is now available from FLAAR.

Presentation of ColorSpan Esprit

IT (**Improved Technologies**) introduced the Ixia printer, their replacement for the IrisGPrint. Iris reportedly stopped manufacturing that printer last year. Iris will instead concentrate exclusively on proofers. The new Ixia contains multiple improvements over the Iris glicee printer. Altogether a very impressive accomplishment, truly the Rolls Royce of fine art printers for true giclee quality, namely an apparent continuous tone image.

IT also offers the I-Jet for fine art giclee printing, an OEM printing at up to 1440 dpi. The people who recreated the Ixia have considerable experience with large format giclee printers and as a result have designed an outstanding printer. IT also offers inks and media for fine art giclee printing. Contact iris@itnh.com

Accuplot (Mile High Engineering Supply Co) offers a comparable Mutoh for fine art printing. Mutoh is the Japanese company that manufactures the Epson machines for Epson (Epson makes only the printheads). Epson piezo printheads are used in the Miamki, Roland, and Bellise (Gretag Imaging).

We also inspected the nice textile printers of Jacquard. Their featured printer is a Mutoh because this class of printer can handle the special dye sublimation inks used for heat transfer. Jacquard is respected as a capable company.

Konica and Seiko did not have a booth at Seybold; perhaps we will see how their prototypes are advancing at Photokina trade show in mid-September.

HP 5000ps printer

Hewlett-Packard introduced their new photo-realistic printer with six-color capability and faster speeds. This is the DesignJet 5000 model. This printer competes favorably with the Roland, Mutoh, and Epson (much faster, quality at 1200 is comparable to theirs at 1440). What a great printer for doing fine art giclee prints or limited editions of photographs. The new HP archival pigmented inks will be available for the 5000 and 5000ps top of the line models only (by Spring 2001, indeed FLAAR has already tested these pigmented inks in January '01).

People knowledgeable in large format printing indicated that they felt the HP 5000 represents the best new technology that was showcased at Seybold San Francisco 2000 trade show. Speed is important to HP so they made sure this printer allows a print shop to produce enough production to beat the competition. HP accomplishes this by a wider print head. The swatch of the head is simply much broader than any previous head. The impressive print quality is accomplished by microscopic placement of the various ink droplets. Everything is controlled by a precisely fine-tuned onboard PostScript driver (which means you do not have to buy any aftermarket RIP).

The difference between say an HP 800 and an 800ps is solely the software PostScript (RIP) on-board. The 500 and 500ps are for CAD and comparable drawings as well as basic photographs and 3D graphics. The 800 and 800ps are for more sophisticated CAD, GIS, 3D renderings and better photographic quality. The internal PostScript is slightly faster than other previous HP models. The 500, 500ps, 800 and 800ps printers are dye based only; no pigmented inks will be available. All these printers will do photographs but only the 5000 and 5000ps will do fine art giclee exhibit-quality. FLAAR has ordered the model 800ps since we are affiliated with the architecture department at the university where our evaluation center is headquartered. The model 800ps will be perfect for doing posters, banners and signs all over campus as well. We intend to add the HP 5000ps several months later because FLAAR is also associated with several art museums.

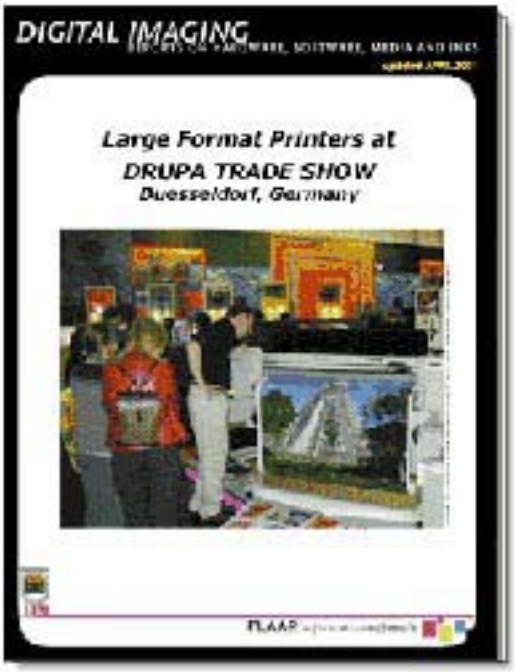
FLAAR also receives special analysis of printers from private sources worldwide. We got a fully detailed report from a comparative survey of printers at Seybold which detected subtle banding on virtually all of the otherwise better piezo printhead machines. The report also noticed that the HP booth was producing yard after yard of flawless images, no banding. This is because HP uses its own thermal printhead technology and thus escapes the glitches of piezo-electric heads. If you wish the report on fact vs fiction, piezo vs thermal printhead technology, just fill out a "provisional inquiry form" and ask for your additional free report.

On the basis of what we saw ourselves, plus some insider tips we received from people who know these printers inside out (not info from anyone inside the printer companies but rather from the people who inspect the printers in detail plus other technical people who make the RIPs; they know the printers even better) we award the "Best of Seybold San Francisco 2000" to the Canon prototype and to the HP 5000 for top photo quality. The edge goes to HP since they have UV pigmented archival inks for their model 5000. Furthermore, the model 5000 is available today (with dye inks; pigmented inks available early next year). The Canon printer will not be available until 2001. HP printers are renowned for their user-friendly manner, ease-of-use, and all together an ideal printer for a beginner who wants impressive professional quality.

Although there are countless places you can find an HP dealer, we have picked out one that handles nationwide sales, Color DNA. They have the advantage that they know fine art photo printing; they are trained by Heidelberg Germany on Linoscan scanners, and in general know a bit more than some of the local dealers. Contact: Jonathan Knecht, e-mail colorguru@colordna.com. They provide free delivery anywhere in the continental USA, free setup and installation, and free introductory training.

I wish I could have filmed the reaction of a ColorSpan dealer when he examined the output from the new HP 5000. He was trying to figure out how HP had accomplished this technological coup. The HP model 5000 was definitely the talk of Seybold. Its rare for a company which is a household name makes the effort to achieve state-of-the-art equipment at the cutting edge of digital technology.

We hope this information is helpful to you. There is now also a FLAAR report on large format printers at Photokina. These reviews highlight the new products of that week-long exposition in Cologne Sept 20-25th. So if you are a bear for punishment you can also go for the Photokina report. But again, in order to provide the information that is more meaningful for you, it helps if you can tell us more of what you intend to print and especially what other printers you have considered, looked at; and what doubts you have about the performance claims that sometimes get rather excessive in advertisements.



Another comprehensive FLAAR report is from DRUPA, the largest printer trade show in the world, held only every four or five years (in Germany). We spent over a week at DRUPA and took copious notes. The Epson 7500 and 9500 had their world premier here. If you wish this report be sure to let us know what size you need to print, whether for indoor or outdoor use, since each report is based on your needs and your specific questions. When someone just says, "send me the DRUPA report…" we have no way of knowing which aspects we should cover in most detail.

Our other report-in-progress is from The Big Picture Conference. This was organized by the leading trade magazine that focuses on large format printers. We attended and I was asked to give a lecture there as well. If you wish one or more reports please be sure to let us know what size prints you do, how many copies of each, whether you are new to all this or a seasoned print shop pro, whether for home use or photo studio.

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

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

It's nice when you can e-mail other people to tell them about our reports and no-cost consulting services, especially if you belong to any news groups where lots of people will receive your message.

FLAAR Digital Imaging Technology Center

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Visiting a Tradeshow with Nicholas Hellmuth as your Guide

If you would like to visit a tradeshow and get personal consultation from Dr Hellmuth, this service is now available. You can walk the floor with him, meet key people, or have a more leisurely breakfast, lunch, or dinner and learn about printers, RIPs, inks, media, scanners, and/or digital cameras.

One option is just to attend any IMI seminar which Hellmuth may be also attending. Several of the IMI lecture conferences have a small tradeshow area attached. There is no additional charge for meeting and speaking with Professor Hellmuth at any IMI conference (unless you need detailed technical consulting or marketing information or seek his assistance to design new products). IMI seminars are usually attended by between 40 and 70 people; there are plenty of times at breakfast, lunch, cocktail hour, or dinner to meet informally. Indeed that,s why these are the best conferences in the industry.

IMI web site is http://imi.maine.com. Just ask Al Keene which would be their most appropriate upcoming seminar.

The other option for learning directly from Nicholas Hellmuth is signing up for any of the courses offered by FLAAR at Bowling Green State University or FLAAR at Francisco Marroquin University. These courses are listed on www.digital-photography.org as well as www.wide-format-printers.org. Or you can just write info@FLAAR.org and say, please send me the PDF format syllabus on Dr Hellmuth's training courses.

Most of the courses include the option of a tradeshow visit with Nicholas such as Photokina (photography tradeshow) in Cologne, Germany or PhotoExpo East in New York (early November). It is also possible he will be available during the first two days of SGIA in St Louis the last days of October.