

Mastering Mounting



by
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An Eye on Digital Technologies

An interesting thing happened on the way from a trade show. I realized I needed to report the new technologies uncovered at recent industry events. It should come as no surprise that the PPFA Convention in Las Vegas earlier this year featured a trade show floor with a plethora of digital information and equipment. Though I did not expect to find too much to add to my repertoire of digital information, I was once again proven wrong. I routinely talk about the state of our industry, and how it evolves almost daily, particularly within the world of digital technology. And now with the PPFA's affiliation with the Photo Marketing Association, we are able to experience that development firsthand (see Photo 1).

While preparing for a class I was teaching, I hustled around the show floor seeking out new samples of familiar (but difficult to identify) digitals. I unearthed two new concepts that kept pretty much to familiar formats (as discussed in previous articles and the second edition of my book). They were: a thermal dye transfer machine; and a thermal Autochrome system, both by Fuji.

It's not so much new technology that is the important issue, but being receptive to the evolution. Traditional analog photography is giving way to digital imaging. The photos are wonderful, bright, clear, and immediate. Let's investigate...

Mounting Tolerances & New Guidelines

I have previously stated the "square peg in the round hole" syndrome, with digitals

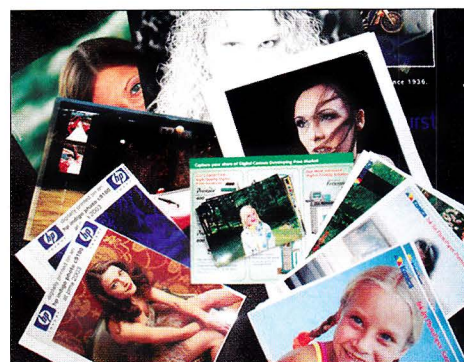


Photo 1: Digital and Analog Abound—Beginning lower left corner is new hp Indigo photo c9100; Durst Laser and LED images printed with new technology on traditional photo paper; Fuji thermal dye transfer on photo paper; Fuji Autochrome instant printing; and Konica papers being tested on Canon, Hewlett Packard, and Epson printers.

being the square peg. With the onset of digital photography over traditional analog, the mounting issues are increasing. It used to be simple: regardless of heat or mounting tolerances any original, limited edition, or valued collectible might tolerate the rigors of mounting, but the question remained, "Should it be mounted at all?"

A new dry mount adhesive has recently hit the market, Bienfang ClearMount. It is a 190°F permanent, dry mount film claiming to be safe for use with pigmented digital images on inkjet coated fine art and photo paper, especially Hahnemühle papers. It seems there has been a yellowing that has been occurring when traditional dry mount adhesives were used to mount this type of fine art paper. This yellowing has been eliminated with this new product.

The question that comes to my mind again is, should limited edition digitals be dry mounted at all? Based on preservation framing practices these fine art digitals, or

giclées, should be hinged or alternatively mounted in order to preserve long-term value. Or is this yet another state-of-the-art variance and another adjustment to the square peg of fine art digitals?

Thermal Transfer Technology

One of the "new" technologies I mentioned earlier is Fuji's thermal dye transfer system; however, it is not really a new system at all. Thermal transfer is a system of four-color printers using dyes and pigments on a ribbon of wax-like paper that transfer with heat during the printing process. This technology encompasses dye sublimation, dye diffusion, and dye transfer systems of which Fuji is of the latter.

In the thermal transfer process the printing head comes in direct contact with the uncoated side of the wax ribbon, which in turn pushes the inked ribbon to the surface of the paper. Ink is heated and the melted ink transfers to that receptive surface as a dot pattern.

Though I have previously referred to this technology mostly in relation to dye sublimation images (i.e.: Kodak kiosk using Image Magic paper) it needs to be noted there are assorted similarities and differences between systems. Even if you do not know all of the variations, understanding the overall concept will help you in framing.

Thermal Autochrome

Fuji has also launched a new photo mini lab series called Printpix. It appears to be a laser printing of digital photos only, rather than traditional film. The prints are on a digital photo paper that has Fujifilm and Printpix paper printed on the back. Heat tests in a 210M-X Mechanical Press at



Photo 2: Fuji Autochrome—Fuji launched a new photo mini lab series called Printpix. It is the laser printing of digital photos. The images show the discoloration of the image when subjected to heat of dry mounting in a mechanical press. The image reverts back to its normal color within seconds of press removal, but the paper is slightly altered. So it seems heat sensitive, but with no lasting damage.

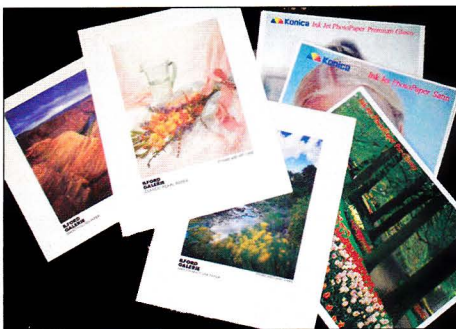


Photo 3: Paper Technology—Two familiar papers were being tested for image clarity and color, which I also tested for heat tolerances. (l to r) Ilford Galerie Smooth Gloss Paper, Classic Pearl Paper, and Smooth Multi-purpose Paper. Konica papers (top to bottom) are Ink Jet PhotoPaper Premium Glossy, Ink Jet PhotoPaper Satin, and Ink Jet PhotoPaper Pro Glossy.



Photo 4: Heat Tolerances—I tested both the lower left Fuji Autochrome images and the Konica PhotoPapers using the mechanical press at 190°F for two minutes. There appeared to be no impact from the heat with the Konica samples.

190°F for one minute illustrated no visible change after cooling, but the image was drastically varied upon immediate removal from heat (see Photo 2).

Paper Technology

As digital technologies progress, the manufacturers of inks, papers and printers are working together to improve their interaction (see Photo 3). Ilford has a line of papers called the Ilford Galerie line. These papers include a Smooth Multi-use Paper, a Classic Pearl Paper and a Smooth Gloss Paper. Though the paper line emulates Ilford's Cibachrome photo papers, they do feel like other high end fine art paper.

Konica Ink Jet PhotoPapers were being tested with smaller desktop format printers. The ProGlossy paper was printed on a Canon S830D, Satin was on the Epson 925 piezo printer, and Premium Glossy was on the HP Photosmart inkjet. The images all passed basic heat test tolerances and were unaffected by water application with an eye dropper (see Photo 4).

Other papers in the line include a Two-sided ProPhoto Glossy and Premium Photo Self-Adhesive not seen at the show. All papers are resin-coated, micro-porous, instant dry, and smudge-proof. They look and feel like traditional photos, but have no printing on the verso side of the papers.

Heat/Moisture Tolerances

Though only 8"x10" in size, the Ilford Galerie papers had been printed on more professional level printers. Galerie Multi-use paper was printed on the Canon S9000 using matte finish inks and was water-resistant when smudged. Galerie Smooth Gloss Paper was printed on an Epson 2200 piezo printer and also resisted smudg-

ing. Galerie Classic Pearl Paper printed on the HP7350 inkjet printer did smear when water was applied and smudged. All paper, ink, and printer combinations were totally unaffected by the heat test of 190°F for two minutes (see Photo 5).

Electrophotography

Dry (pigment toner) electrophotography prints black and white, and four-color copies from an existing document. It uses an electrically charged drum that receives an illuminated image that is converted into a dot pattern. It picks up toner, rolls it onto paper, and fuses it with heat rollers. These may or may not be affected by heat and laminate applications. The original color copiers use this technology and we have found by testing they can be somewhat sensitive to average dry mounting temperatures.

Liquid Electrophotography

HP has just launched a new technology described as liquid electrophotography (LEP), which is a photo finishing system. LEP is not to be confused with LED which is a laser heat application (see next heading). It claims to use somewhat the same basic transfer technique as the traditional dry electrophotographic system, but these images may now be printed from existing undeveloped film; from negatives for enlargements and duplicates; and from a digital source as CDs or home computers.

The system is called an HP Indigo Photo c9100, and samples of the photos were quite beautiful (see Photo 6). It is a pigment-based system with photo images looking very much like traditional film, though the paper backing says "hp invent." It is a multi-ply paper that feels very much like RC paper, but is a little slicker.



Photo 5: Ilford Galerie Papers—The Ilford papers seen here were used on the three basic mainstream home office printers. (l to r) Smooth Multi-Purpose Paper with a Canon S9000; Classic Pear Paper printed on an HP 7350; and Smooth Gloss Paper on an Epson 2200.



Photo 6: HP Indigo Photo C9100—This hp system is a liquid electrophotographic (LEP) system, new to the HP line. Prior to this technology all other printers were thermal inkjet technology, this is not. It is somewhat like a liquid version of the dry toner electrophotographic Xerox machines.



Photo 7: HP Indigo Heat Test—Though difficult to tell in this photo there was no color change when subject to temperatures of 190°F for two minutes. There was a slight visual alteration of the image glossed surface. It is no more disruptive than traditional orange peel though.



Photo 8: Durst Led and Laser Images—Durst has a series of professional quality equipment that develops photo images on traditional photo paper using Theta 50 Laser and Epsilon Plus LED printer technology. The images appear to tolerate the same as any traditional photo.

I did a few heat tolerance tests on these photo images and there was a slight surface muting of the gloss. I did not pull new release paper, use Overlay foil, or test at multiple temperatures yet; only at standard 190°F for two minutes in a mechanical press. The result was no more distressing than a light orange peel, but the gloss was altered, and that is what should be noted (see Photo 7). (More on this in future articles.)

LED and Laser Printing

Another photo developing display caught my eye featuring Durst Theta 50 Digital Laser Lab and Epsilon Plus LED Photoprinter (see Photo 8). The images from both of these machines are developed on actual RC photo paper; they are real photos. The two systems are similar in that the image is printed on silver halide photo paper using a light source.

The paper is exposed by tiny pixels of light that activate the colors in the paper itself, which is how it differs from traditional developing. The color is already in the paper, rather than a photo emulsion sitting on top of the RC paper substrate. Epsilon LED images were printed on Kodak Professional Digital Paper, and the Theta 50 Laser images were on Kodak Professional Paper. (Heat and tolerance testing to follow at a later date.)

The Epsilon system should not be confused with Epson; it is a different technology. Epsilon is LED printing on silver halide paper using a light source, Epson is piezo inkjet.

Digitals in 2003 & Beyond

So how does all this impact the framer? More than you might realize. I think we will encounter items produced on desktop photo printers much more as time goes on. Accord-

ing to literature distributed at the show earlier this year, by the end of 2003, it has been projected that 47% of all households will own a digital camera. Digital photos make up 19% of all photos being printed monthly, with a basic digital production over traditional film jumping to 53% monthly.

The word in Vegas was that digital photographers haven't figured out they can have their digital images printed out at a high-tech kiosk in one hour just as they have done with traditional film for years. Framers will be even more impacted by the onslaught of digital photos they can't identify. The good news is more framing... the bad, how to handle and mount these images? Actually, as technology evolves, it is becoming more and more likely that

these photos will be heat safe and water-resistant if the right combination of materials has been selected.

Where Do Rollers Fit In?

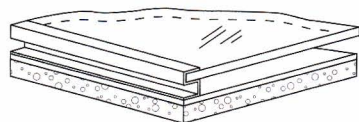
For some time, I have been advocating the uses of cold roller machines for framers. I researched these at the show too. SealGraphics, Drytac, Artgraphix, D&K, Coda, and Daige all have hot and/or cold roller systems from 24" to 64" wide. If you wish to go the high tack, pressure-sensitive route, the equipment is there to research. If not, you can always continue to hinge mount. Or, we still have the low temperature 150°F heat-activated Speed-Mount boards. Now I'm torn between low temperature dry mounting and high tack pressure-sensitives.

Why Do We Need to Know?

The question I get from framers is why do we need to know all this technology stuff? Personally I think it is very important to know the difference between electrophotographic and inkjet, thermal transfer and piezo, and the names of the key players (HP, Epson, Kodak, Canon, Fuji...), because the images react differently when mounted and framed. A recent set of emails on PPFA Hitchhikers concerned an image that appeared to be a traditional photo that turned green after framing. Most likely the result of it being a CMYK digital whose inks have faded unevenly, resulting in dominant visual green remaining. But the jury is still out on that one. I'll let you know more after my next ISO meetings. ■

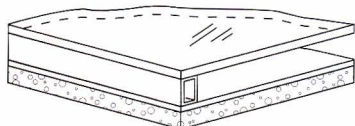
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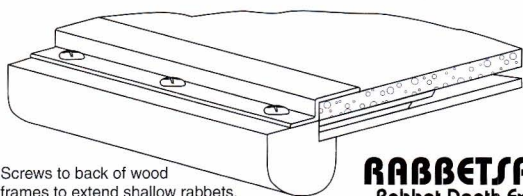
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