Mastering Mounting

A New Digital Generation

by
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More and more photographers, artists, galleries, and framers are getting into the production of medium- and wide-format images for their own and consumer consumption. The framing knowledge required to handle these images goes far beyond the heat tolerances of mounting or the use of cold roller-laminators, however. Not only are there new technologies to learn about, but such issues as image degradation that accompany the aging of digital equipment are increasingly important. These include not only the deterioration of hard drives, CDs, and DVDs but also the impact of temperature, light, humidity, and moisture on any permanently displayed print.

Photo 1: A variety of media may be used with the new HP Z series pigmented Photo Printers. Clockwise from lower right: HP Matte Litho-realistic Paper on an HP Z3100; HP Hahnemühle Smooth Fine Art Paper on a Z2100; and HP Professional Satin Photo Paper and HP Collector Satin Canvas, both printed on Z3100.

Care and Storage

Framers have long been the educators of consumers on how to best care for their art. In the light of digitals, for best long-term storage all the following issues must be followed:

- Avoid storage sleeves for prints made of polyvinyl chloride to control outgassing
- Make certain images are printed with paper and ink combinations advised by manufacturers
- Do not house or store images in hot, humid, or excessively dry environments
- Keep prints away from unventilated kerosene or natural gas heaters and ozone generating printers
- Avoid high light areas and direct sunlight
- Always select UV glazing when framing.

All of these are, in fact, good practices for any fine art, not just digitals.

Current photo print technologies, such as digital inkjet and dye diffusion thermal transfer, are dominating the marketplace, but digital versions of traditional silver halide (the developing process used for traditional R/C and B&W) photo printing have also been manufactured. Many of today's photo papers are receptive to either digital or traditional film developing capable of turning out a silver halide image, which is very lightfast and heat safe. These can be printed from CD, electronic transfer, or film, and the resulting image may be mounted, laminated, or framed in any typical RC photo fashion.

While the bulk of photo images are being stored on CDs, DVDs, and computer hard drives, many consumers are opting to have some of their images printed. Deterioration is a natural consequence of the chemical changes that happen over time to printing processes that use plastics, dyes, adhesives, and metals. Learning how to handle and preserve photos and prints during both long-

term storage on disks or when on permanent display should be a concern to any custom framer.

A new consumer-friendly website, Consumer Photo Preservation (CPP) at www.savemymemories.org, was recently launched by the International Imaging Industry Association (i3A) to educate, inform, and motivate consumers to take steps to better care for and protect their digital photos. Even when consumers learn more about digital photo printing, they will still continue to rely on framers for advice on the best ways to preserve and display their prized images.

Understanding Storage

Keep in mind that computer hard drives have a limited lifespan and at some point most will fail.

External hard drives are a good option for preserving digital photos—even though they can fail as well. Images should definitely be stored on more than one drive; a collection of CDs or DVDs is best. Just remember that CDs and DVDs can also deteriorate over time depending on the quality of manufacture.

It's better to purchase high-quality discs designed for archival applications or photo preservation. These discs are significantly more expensive than standard discs but are predicted to last a century or more. Low-quality discs may only last a few years, depending on storage conditions. Another factor is that CDs and DVDs written on one computer may not be readable on the CD/DVD drive of another computer because of poor recording quality or incompatible recording format. And technology is changing all the time, so who knows what the technology of the future will be.

Photo 2: Canon imagePROGRAF iPF8000 piezo inkjet printer printed these samples on the InteliCoat Torino line of coated canvas for pigmented and dye inkjet printer systems.

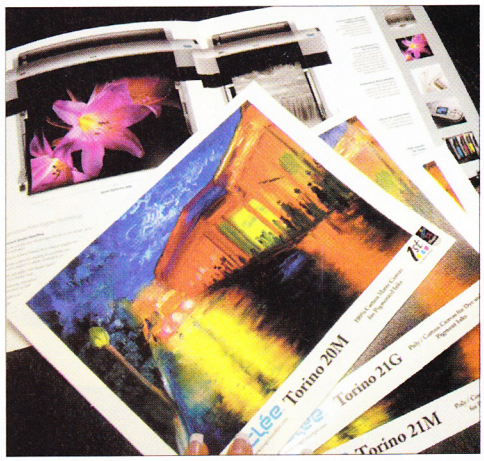

Photo 3: The Epson 7800 piezo inkjet printer creates vivid colors on Magiclée 100 percent Cotton Matte Canvas for pigment inks, Poly/Cotton Canvas for dye and pigment inks, and Poly/Cotton Matte Canvas for pigment inks.

Aging of Materials

All materials may be vulnerable to the effects of aging, and the term "degradation" refers to the reduction in the quality of the materials used to preserve a photo or fine art digital image. While magnetic media are vulnerable to chemical degradation, physical damage, and demagnetization, mechanical failure may also reduce the expected life of photos. Lifetimes range from about five years for a typical hard disk to 10 to 30 years for magnetic tape. High quality CDs and DVDs will last longer than magnetic media, but these disks are also vulnerable to chemical degradation and corrosion. Life expectancy predictions for CDs and DVDs range from 5 to 300 years.

Permanence Claims

Consumers and gallery owners are always searching for the answer to the question, "How long will these images last?" Whether it's related to valuable limited edition giclées, gallery canvases, or home photos, lightfastness remains an utmost concern. When searching for image permanence ratings by manufacturers, you must verify display vs. storage longevity. When it has been stated that an image will last "100 years in a photo album," that may be only when you use a museum quality photo album (dark storage) with buffered or rag papers stored at moderate temperatures and under controlled humidity—much like a museum. This is definitely not the same as for an image framed for constant display in the presence of daylight.

The phrase "archival quality" is little more than a marketing term, much like "acid-free" was a few years ago. For archival quality to be a valid claim there must be scientific documentation, and materials must meet specific ISO standards, PAT testing, and/or ASTM requirements. Continuing advances in digital printing technologies have greatly improved print life, fade, and moisture resistance over the past few years. But consumers, gallery owners, and publishers must be well informed if they want to

compete in the digital market.

The most lightfast of the photographic images are traditional photographic silver halide prints made by traditional photographic companies. These may be printed from digital media at retail stores and online. This includes on-site, one-hour processing and overnight or two-day processing but not prints made via kiosks, which are dye-sublimation prints.

Other lightfast images include photographic quality thermal prints (dye sub) printed at home (often in camera-printer docks) or from retail kiosks. These may also be traditionally mounted and framed. While photographic quality inkjet prints have been improving over time, they are still not the best media for lightfastness and image permanence.

Photo 4: The Mitsubishi Electric CP-3020DAU and CP-9550DW are portable dye sublimation thermal printers that are helping to revolutionize wedding and special event photography with immediate image printing.

Printer Updates

Most of the higher-end desktop printers for home, office, and art studio handle an assortment of fine art media, including canvas, fine art, photo rag, watercolor, and photography in sizes ranging from 4"x6" to 13"x19". Framers must keep up to date on the latest digital technology to know how to handle the art and photography that comes in for framing. Much of it may come directly from consumers using home-based printers. Always use UV glazing for digitals. Being knowledgeable about which printed images are prone to scratching (Epson) or not (HP, Kodak) is also important. Instant dry media is an indicator of heat tolerance (Epson pigments) while slower evaporation ink drying is not (HP dyes). Pigmented inks are, in fact, generally more instant-dry and are generally more tolerant of heat.

Digital printing has taken a leap in the production of fine art

images this year with the launching of Kodak's new thermal inkjet, EasyShare AiO (all-in-one) printers, which feature pigment based inkjet technology for photos, documents, scanning, and copying. This crossover printer uses HP printer technology with Epson pigmented inks, a revolutionary and much more framer friendly piece of equipment.

HP's new Designjet Z2100 and Z3100 thermal inkjet printers have 8- and 12-ink systems that use HP Vivera pigmented inks (Photo 1). These are capable of printing on a variety of media from photo papers to canvas and have lightfastness ratings listed at more than 200 years.

Information on a number of HP media products is that HP's pigmented Vivera inks may be liquid laminated for added durability. For years HP has said they did not need to develop pigmented inks for their systems, but these new products show a change in thinking.

The Canon imagePROGRAF iPF5000, which prints at 17" wide, and the wide-format Canon imagePROGRAF iPF8000 use Lucia pigmented inks with a 12-color thermal inkjet system, offering photos and fine art that they say lasts more than 100 years (Photo 2). The Canon printers' use of gray tones allows for beautiful monotone fine art reproductions.

The Epson Stylus Pro 7800 UltraChrome K3 is a high-density, eight-color pigment-based ink printer with drop-on-demand Micro-Piezo technology. It has a wider color gamut for more professional level neutrals and toned black-and-white prints with lightfastness ratings of up to 108 years for color and 200 years for B&W (Photo 3). It also offers improved pigment and resin technology for better scratch resistance, which has been a huge problem for framers in the past.

Dye-Sublimation Thermal Transfers

The world of thermal transfer imaging, also known as dye transfer, dye diffusion, or dye-sublimation, is making advances with more portable units and new players in the field. There are thousands of freestanding thermal transfer kiosks everywhere from drug store chains to big box discounters. The Sony Picture Station prints in 7 to 80 seconds depending on output image sizes of 4"x6" to 8"x10" with greeting cards that print in just 20

seconds—all suitable for framing.

The popular Kodak thermal dye-transfer/dye sublimation process found in big box stores across the country have been cropping, editing, and getting the red out of photos for many years. The 100,000-plus kiosks have been a huge success, but with the advent of new Canon, HP, and Lexmark home desktop dye sublimation models, printing photo quality images at home could take over. These new printers use pigment inks for greater lightfastness than inkjet at half the price of the thermal transfer images of kiosks. The photos are heat tolerant, scratch resistant, and react pretty much like any traditional RC photo.

Along with the Kodak and Canon thermal transfer (not thermal inkjet) systems, the new portable Fuji ASK-2000 and ASK-4000 high speed digital printers allow professional photographers the opportunity to quickly provide guests at any special event on-site 4"x6" prints in eight seconds and 8"x10" prints in 40 seconds. The Mitsubishi Electric CP-3020DAU and CP-9550DW are also new portable dye sublimation thermal printers. They print in 15 to 90 seconds depending on image size and will also help revolutionize wedding and special event photography with immediate reproduction (Photo 4).

Framing Impact

So how do all these printers impact framers? Wide-format and medium-format inkjet photos, fine art prints, and canvases will be cropping up at craft fairs and bazaars more than ever. A small town wannabe artist or photographer may now create limited editions that will actually last decades longer than the original electrophotographic Canon 4-color toner copiers of the early 90s that lasted only three months. New Epson, Canon, and HP desktop printers are finally allowing scrapbookers and lovers of photographs to print out quality images that are affordable and have the required longevity. A new level of consumer known as the advanced amateur wants to photograph and print with the same quality of equipment as the professional and are now able to that.

The market is progressing and becoming more sophisticated, and this is changing framing needs. Guests from weddings, bar mitzvahs, and kids' sporting events will have dye sublimation images in hand as they depart from events, and Mom will bring in photos from Saturday's picnic ready to frame. All this is changing the face of what the public wants to frame. Framers must keep up on the latest vocabulary, equipment, and handling techniques for this new generation of digital imagery. Those who don't will be left behind as their customers' framing needs evolve along with today's rapidly changing technology. ■

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