

"What Is A Digital Print, After All?" And Other Questions From 1998

by Chris A. Paschke, CPF, GCF



Is it possible that this year has flown by at such an alarming rate? Can it already be time for my annual "most asked questions" article? Why yes, it can and yes, it is.

I find it interesting that although I write about commonly asked questions (that's "questions," plural) every year, they often revolve around the same topic. While questions on canvas transferring, glossy photos, and air bubbles were all typical this year, the ones that came up the most were about inkjet prints and digital images.

What exactly is an inkjet print and why do some of them mount fine while others turn into a goo that resembles holiday leftovers? Let's wrap up this year (a gift-giving pun) with a discussion on the most generic of this year's questions and a segue into my review of digitals.

Can "____" Be Mounted?

The object here is for you to fill in the blank: limited editions, watercolors, silk paintings, animal skins, even wax rubbings. All will often tolerate heat and could possibly be dry mounted. But, as I've said for years, the question really isn't "can something be mounted?" but rather, "should it be mounted?" Even so, I am pleased the question

is still being asked.

With the onset of the digital market and the continuance of thermographics and other potentially heat sensitive items around, this "can it be mounted" question has developed into a much more complex one. Asking the question is only half of the problem; knowing what to ask, or being able to identify the problem item, may be the bigger question.

In order to identify a digital image, we need to better understand digital technology. Digital printing refers to the driving of a printer using digits of electronic information in the form of bits and bytes. The alternative traditional analog system uses positive and negative images of what the item really looks like on a film or plate. In other words, digital imaging uses electronic language (something like impulses) rather than literal images from an inked plate.

Digital printing takes that stored electronic image and drives it, as ink, onto paper. There are four basic digital printing technologies: electro photography, electrostatic, thermal transfer, and inkjet. They all make up what is known as digital printing.

Electro photography would be best compared to dry toner color copiers that use plain paper. My two part article "Color Copiers," in the March and April 1997 issues, details a year-long

mastering mounting

study I completed on color copies and their tolerances to UV light, dry mounting, and heat-set surface laminates.

Electrostatic technology utilizes pigmented toner onto dielectric paper. It is a process not generally found in the fine art market, but still might be a project a framer is asked to mount.

Thermal transfer printing is another form of digital imaging. It consists of four-color printers that use dyes and pigments on a ribbon of wax-like paper that transfer their color by the application of heat during printing to the paper. This wax type of imaging is therefore very susceptible to any reapplication of heat. The printed image would most likely be damaged if mounted using any type of heat, and laminating must be avoided.

Inkjet printing is the fourth group and it, in turn, breaks down into four categories, or families: phase change, piezo, thermal, and continuous. These categories are also broken into two types of ink jet application or spray: drop on demand (DOD), and continuous ink spray.

The first three of the four inkjet techniques are called drop on demand (DOD) printing. They deposit, spray or shoot a drop of ink onto the paper. Continuous ink spray printing allows ink to be applied in a much tighter, smaller or closer dpi (dots per inch) making it a more continuous or more steady flow than the short jetting action of shorter DOD sprays.

Phase change is a process of using dye or pigment suspended in wax which is applied to paper. It begins as a solid (somewhat like a wax stick for rubbings), melts into a liquid during the process, then cools again to a wax solid, hence the "phase change" name. It changes from a solid to liquid to solid as it goes through its various phases during color transfer of the digital image to paper.

Piezo is a process of using either liquid or solid inks that are available as water, solvent, and oil-based dyes and pigments.

Now, with this tidbit of information alone, consider the options and combinations of inks, papers and printers that can confuse this technical process and whether or not digital images can be mounted. But wait...there's more.

Thermal inkjet printing is a heat process of applying liquid, dye based, color stable inks to the paper surface at a very high temperature. Also known as bubble jet, it boils the ink inside a tiny glass bead until it pops, spitting or jetting the ink onto the printing paper. Since the color setting process involves high temperatures, these prints are safe to heat mount and will indeed tolerate a great deal. This is a common version of printing for both desktop and home office printers, and is one of the major types of digital printing making up much of current wide format imaging.

Continuous flow ink printing, although identifiable as a dot pattern when viewed under a loupe, is the application of ink that is jetted in a more continuous spray rather than individual short shots of ink. This is the process that appears so much like a flow of paint that it can produce the high quality inkjet imaging required of giclée quality prints. There are far more dots per inch; the image is pristine and duplicates the original wonderfully.

Digital printing is printmaking executed by a computer. Many refer to the process by the name of the company (Iris Graphics) that develops many of the printers in the market today, calling these images Iris prints. The name giclée, meaning "that which is sprayed", was developed from a combination of the French words "gicleur" for nozzle and "gicler" to spray by master printer Jack Duganne in 1989. Giclées are indeed digital images of a particular type: a continuous flow printer creating a perfected image through technological means. Giclée also appears to be used somewhat as a marketing term to best describe the fine art quality of a color print made using a digital inkjet printer.

Interestingly, in the art and framing worlds when we speak of giclées, we often are referring to limited editions that are signed and numbered by the artist—a piece of fine art. Yet when we refer to a digital print there is generally an entirely different connotation, almost implying that it is a mere disposable image of little quality. Since a digital print is an inkjet, the same as a giclée, it needs to be equally respected. Perhaps not for the monetary or

mastering mounting

fine art value, but at least for its sensitivities.

We would not consider mounting a limited edition giclée for obvious reasons, but we should also think through the decision to mount any digital print. It is suggested that digital images be cared for like any work

of art on paper: keep them out of direct light, under UV glass, and away from moisture.

Is It Safe To Dry Mount Digital Images?

A great question, especially in light of the fact that the digital market is most likely here to stay. It is very possible that digital images may be dry mounted in a vacuum or mechanical press, but more information is required to better make an educated appraisal of its heat tolerances. We need to know the ink set used, the paper the image was printed on, the printer that executed the job, and even when it was printed, for many inks take time to cure to a truly dry state. Digital prints will always be mountable in a cold frame or manually using cold methods. The problem is to determine which is which. Confused? Understandably so.

It is clear that thermal transfer and phase change inkjet prints should never be mounted using heat of any kind. How to tell them apart from the heat tolerant versions is more than this framer can do. It may boil down to grilling the customer as to where the print originated, if that is an option.


The problem remains that even when all of the above information is supplied by the client, the framing industry remains at a loss to commit to an answer. Sometimes they work; sometimes they don't. It depends on the variables, and unfortunately there are so many possible combinations of inks, papers, and printers that it's nearly impossible to know. There really is no way to tell what combinations have



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been put together.

Manufacturers are actively researching this problem and have been wrestling with it over the past few years. Currently the most acceptable method of mounting large scale digital prints is using the cold mounting methods of a roller laminator. (Not the small office pouch laminator, but a large commercial machine designed for use with high tack pressure-sensitive adhesives and laminates.)

It is very probable that digital images can be successfully mounted in a heat press if the temperatures remain low and the materials are all porous, but at this time, it's better to think cold rather than hot. Stay tuned—as soon as I can make a more committed statement about when digitals will tolerate dry mounting in traditional framer equipment, I will let you know.

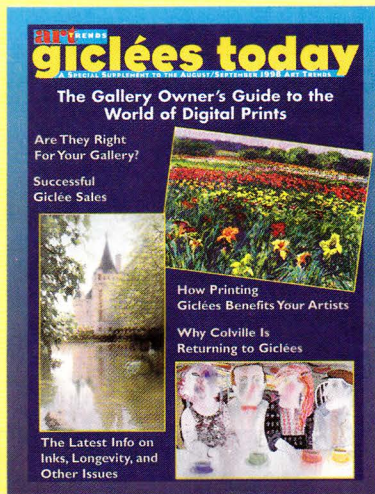
As I head into the holiday season I find myself trying to catch my breath from a fast paced year on the road

and complete projects that have been promised. Customers still need our attention and framing designs our expertise; that's what we do. I'm actively working on my second book, *Mounting and Laminating Creativity*, which I hope to release by end of next year.

My most asked question: Isn't there an easier way to earn a living? May you have the best holiday season and the happiest new year ever. See you in 1999! ■

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Chris A. Paschke, CPE, GCF, owns Designs Ink, Oxford, Connecticut, featuring commercial and retail custom framing, product consultation, design and education. Specializing in mounting, matting and design creativity she works with numerous industry leaders including HUNT Corporation, Crescent Cardboard, Fletcher-Terry, Larson-Juhl, PPFA, and Wild Apple Graphics. Her first book, *The Mounting and Laminating Handbook*, is already in its second printing.



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