Mounting Digitals

Part 1: Print Identification

By Chris A Paschke, CPF GCF

Common Digital Photos include (upper left) thermal transfer/dye sublimation photos, (center) wide format inkjet photos, and (front/lower right) RA-4 photos.

With so many different types of digital prints, how do you know the best way to mount an individual

It's not easy being digital, and being a framer or museum curator who handles digital prints just gets tougher every day. The common cry "how do we handle these?" has emanated from frame shops and museums around the world. Contemporary digital art acquired for museum collections is routinely bought in duplicate so one original may be preserved in dark storage while the other display image may be mounted to a sheet of metal, aluminum composite, or face mounted to a sheet of acrylic. But regardless of museum or frame shop, prior to deciding what to do with any digital, it must first be identified. A framer must become an investigator who researches most every digital's origin along with its intended display surroundings. You also need to uncover where the image originated, the type of technology used, and the printer that created it.

Basic Digital Photo Types

What is the most common digital brought in for framing? There isn't really one predominant type, but you're most likely to encounter a digital canvas or almost any photograph. Since digital prints may be both paper images and photographs, individual framers are likely to have their own most common digital project. If you frame mostly photos, you are likely framing digital images resulting from RA-4 processing, but they could just as easily be dye

sublimation, desktop, or wide format inkjet—all of which must be handled differently.

RA-4 — The standard chromogenic developing process used worldwide to make prints with a variety of equipment, photographic paper, and chemicals is called RA-4. Kodak created the RA-4 process for its color negative photographic papers, but Fuji, Agfa, and others also manufacture papers and chemicals that are interchangeable and compatible. And though there are individual company names for each process, most photographers use RA-4 is used as a generic term.

RA-4 is the most common process found in photo labs and drug stores, which develop prints made with optical enlargers and manual film processing as well as CD, chip, or e-mail jpg. It is truly rare to find any photo these days that has not been digitally impacted, as even fiber-based black-and-white photos are being printed digitally.

Fiber Base — Traditional black-and-white fiber-based photos were thick, smooth, and prone to curling if not properly dried. With the elimination of dark rooms and related supplies, digitally produced contemporary black-and-white prints have been developed. The Epson Stylus Pro 4880 uses inkjet to print black-and-white fiber-based prints, but the resulting image has a tendency towards orange peel in the paper itself even before mounting.

Metallic Images — Another popular contemporary image type is the metallic print available as either Kodak Endura Metallic or Fuji Crystal Archive Pearl (Fuji Pearl). Both papers use RA-4 developing, but because of a layer of mica between the ink receptive layer and base paper the image registers a metallic sheen and appearance.

Cibachromes Then and Now

Cibachromes are photos printed on polyester film from slide film, meaning a positive image to a positive print, rather than a negative to a positive print. In 1991 they were renamed Ilfochrome Classics by Ilford, and printing photos on RC paper using the Cibachrome developing process was promoted. An Ilfochrome Classic has a glass-like finish, is very surface sensitive to scratching and moisture, and never has any wording printed on the back. RC Cibachrome has wording on the back such as Ilfochrome, Ilfochrome Classic, Cibachrome, or other manufacturer name. An RC photo is resin-coated papers on either side of a paper core allowing it to be split at the edges, while polyester film has no paper content and cannot be split. Being printed on paper core, even an unmounted, digitally printed RC has a degree of texture.

Traditional black-and-white fiber-based photos were thick, smooth, and prone to curling if not properly dried. Contemporary black-and-white fiber photos (lower left) are thinner and lie flat.

Epson Stylus Pro 4880 uses inkjet to print black-and-white fiber based prints but has a tendency towards inherent orange peel, making it easy to identify.

Kodak Endura Metallic media may be used with many printers. RA-4 developing (left) and Océ LightJet (right) prints both have a metallic sheen to the finished image.

Ilfochrome Classic prints include (left to right): Cibachrome RC Matte; Cibachrome RC Glass; and Ilfochrome Classic.

An RC photo has a paper core and can be split at the edges while a polyester film is solid and cannot be split.

There is a high-gloss, glass-like surface on Ilfochrome Classic polyester film image (left), while Cibachrome RC has a slight paper texture (right), setting them apart.

Magiclée Verona fine art papers are compatible with either dye or pigment thermal or piezo printers like Canon iPF series, HP Z-series, Encad, and Epson.

Open edition digital canvases can be printed using a Heidelberg press, which incorporates color laser technology and piezo pigmented-ink printing in a wide-format machine.

Fuji has launched a version of the traditional Cibachrome as FujiFlex, a digital image printed on polyester film with much of the look of a traditional Cibachrome. FujiFlex film is a bit thinner than Ilfochrome Classic polyester film and has a bit of a pearl sheen to the back. Fuji also offers FujiFlex as an RC version in both matte and gloss finish. These may be static mounted just like traditional Cibachromes.

Laser Images

Océ LightJet printers are high-end, wide-format photo imagers that use red, green, and blue lasers to produce true continuous tone images to print to a variety of RA-4 photo media from Agfa, Fuji, Ilford, and Kodak. The LightJet's 300 dpi continuous tone image creates a visual resolution equal to that of 4,000 dpi, making it a very detailed image far beyond the capabilities of most other printers and perfect for photos. The LightJet is just a printer but one with superior photo printing capabilities for otherwise common photo media.

Inkjet

And then there is inkjet, which may be used for photos and fine art. There are two categories of inkjet: continuous flow and drop-on-demand. Continuous flow inkjet was originally the Iris printer, which shot a steady stream of ink—much like the LightJet—that made a 300 dpi image appear to be as refined as a 4000 dpi scan. Drop-on-demand printers break into three basic technologies: thermal, piezo, and solid ink. Thermal printers are dye-based desktop and wide-format printers such as HP. Piezo technology uses pigmented inks and this technology is dominated by Epson for small format and wide-format fine art printing. HP Z-series, HP DesignJet, Canon image ProGraf iPF, and Kodak Encad NovaJet all use thermal technology with pigmented inks.

Phasers, developed by Tektronix and acquired by Xerox, are also known as solid ink or phase change printers. They use solid ink blocks of wax, which are melted and the ink transferred to a print drum using a piezo inkjet head. The paper then passes over the print drum, and the image is transferred to the page. This type of printer is predominantly used commercially and is extremely heat sensitive.

Inkjet or Giclée

If you frame more limited editions and/or digital canvases, odds are your most common digital will be wide-for-

mat inkjet, often referred to as giclée. Giclée and inkjet printing are basically the same thing. Both are inkjet and use liquid ink applied through print heads onto media, but over time the terms have evolved to refer to separate and specific printing methods.

Essentially a giclée is an inkjet print, but an inkjet print cannot be called a giclée if the printer, inks, and paper do not meet certain standards. Inkjet printing most often refers to in-home/office small format desktop printers that print to plain paper from the computer or word processor. Archivability and color fidelity aren't major issues for inkjet printing, and the resulting images are best preserved by storing them away from strong light.

To be a true giclée, wide-format images must be printed on fine art materials of any size. They use moisture-resistant archival inks tolerant of indoor display lighting, and the images have been computer formatted and color matched prior to printing to canvas, fine art paper, or photo paper.

The first giclées were created in the late 1980s on continuous flow Iris inkjet printers (taken over by Scitex, now owned by HP). Iris printers were originally developed to produce proofs from digital files where color matching was critical such as in product packaging and magazine publication. Their output was used to check what the colors would look like before production. The Iris printer has now been replaced in the fine art industry by Epson and other large-format printers that use inks designed to be archival and are much cheaper than the original Iris. Today's giclées may be printed on any media, from canvas to watercolor paper to acrylic. They are superior to traditional lithography, producing brighter colors, longer lasting inks, and have such high-resolution that they virtually qualify as continuous tone.

Most polyester/cotton blend digital canvases are compatible with either thermal or piezo print technologies that use pigment inks, and many suggest firmly mounting the canvases rather than stretching them.

Fine Art vs. Commercial Art

Commercial images may be printed on numerous unfamiliar products in the framing industry from Tyvec to vinyl that are designed for outdoor use. These include everything from floor and window graphics to auto wraps and enormous banners for the sides of buildings. Solvent-base printers including Roland VersaCAMM, Epson Stylus Pro GS6000, and HP DesignJet 8000s and 9000s have been developed for commercial wide-format printing

CONDITION REPORT

Digital Print on Paper, Textile or Rigid Media
Photo, Poster Print, Giclée, LE Canvas
Liquid or Dry toner: Electrophotographic / Electrostatic
Thermal transfer: Dye sublimation / Dye transfer / Dye diffusion
Aqueous Inkjet: Thermal / Piezo / Phase change (solid wax) / Continuous flow
Solvent Inkjet: Thermal / Piezo

Client _____
Address _____
City _____ State _____ Zip _____
Phone _____ Fax _____ Email _____
Artist _____
Title/Subject _____

Declared Value _____

Height _____ Width _____ Thickness _____ Weight _____
Printer _____ Medium / Technology _____
Substrate _____ Micro porous _____ Swellable _____
Inkset (if known) _____ Surface Coat _____ Other _____

Condition (see damage recorded on attached grid sheet)

____ Abrasion	____ Fingerprints	____ Perimeter Damage
____ Bulge	____ Foxing	____ Previous Hinges
____ Cockling	____ Indentation	____ Previous Repairs
____ Crease/Fold	____ Ink Smears	____ Puncture
____ Fading/Color Shift	____ Moisture Damage	____ Stains
		____ Tears

Other _____
_____

Conservator consultation will be required. __ Yes __ No
Conservator Report Notes _____
_____
_____

The client has been informed of—and agrees with—conditions on this form. __ Yes __ No
The client has been informed of the need for specific framing requirements and agrees to the methods recommended. __ Yes __ No

Client Signature _____ Date _____
Frame Designer _____ Signature _____

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of exterior images to withstand rigors of weather. This does not mean that art images are never printed with solvent inks. There are even times when a custom framer may be asked to work with them (see "Peel Proof Photos," October 2010).

100 Questions

So, is a print digital? And if so, what type of digital? And what is the best way to handle that digital? Rather than just guessing, always start by filling out a condition report specifically for digital images to help guide you. Every project needs to be fully identified; otherwise, you may guess and blindly select a mounting method—and cross your fingers. The questions are basic: What is the art printed on? With what type of ink was used? What is the name and series of the printer? What is the print head technology? These can be tough questions, as most clients may not know. Ask where the art was purchased, the name of the gallery and/or the artist. Acquire contact information, phone numbers, addresses, e-mails for following up with the retail gallery or artist. Calls may need to be made to the seller to find out the publisher as well as the manufacturer and the name of printer used.

Always determine if a duplicate is available, and have the client sign a disclaimer and the condition report. Then be prepared to search the Internet for details on the printer or media.

Knowing Your Digitals

Identification is only the tip of the iceberg. Canvases, photographs, and fine art giclée prints pretty much cover what a typical frame shop will encounter. Filling out a condition report with your customer may help you remember what must be identified and help guide your questioning. ■

Chris A. Paschke, CPF GCF CMG, mounting editor, owns Designs Ink in Tehachapi, CA, featuring commercial custom framing, fine art/graphic design, and industry consulting. Specializing in mounting, matting, creative design, and fine art, she routinely teaches at industry trade shows and The National Conference. She has written four books on mounting including *The Mounting and Laminating Handbook* (now in its third edition) and *Creative Mounting, Wrapping, and Laminating*, available from PFM PubCo. She may be contacted through her website, www.designsinkart.com.