FLAAR Reports

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GLOSSARY

of jargon and other confusing terms related to Fine Art Giclee Wide Format Inkjet Printing

Together with

A List of Suggested Additional Reading

FLAAR Reports

CONTENTS

Caption for cover page: Cruse scanner at Bowling Green State University

Introduction

Readers have asked for a glossary specifically on giclée printing, so Professor Hellmuth did what university professors do well, he spent a year doing research, got a hold of tons of literature, and then wrote a glossary from scratch.

There are several glossaries already available on the Internet, but if you are at a university there are resources (library for one) and assets (21 inkjet printers in the FLAAR facilities at two universities) that the normal author of a glossary does not have.

Other than the fact we have a university policy against plagiarism, it is not much of an intellectual activity to merely copy someone else's work. It is more challenging to write one from scratch.

Our policy is to read abundant material, gather personal experience, and then write a glossary based on actual knowledge of the material. Since Nicholas' PhD is in art history from a European university, and as he held two positions at Yale University's Dept of History of Art in 1970 and 1980, it is logical that he has some familiarity with art terms anyway. On top of this Dr Hellmuth has attended several paper trade shows so he can learn the jargon from the source. Furthermore Prof. Hellmuth has visited Shroellershammer paper mill in Duren and other 400-year old paper mills elsewhere in Germany. Not many other authors of glossaries on the Internet have dedicated this preparation.

It is embarrassing to see the glossaries which are on the Internet since most of them copy shamelessly from each other. The result is humerous when one glossary entry is totally wrong, and then it is nonetheless thoughtlessly copied. So the concept that "giclee…printed by a special ink jet printer, using ink, acrylic, or oil paints" is obviously impossible. You can't jet acrylic or oil paints through an Iris or HP or Epson. This erroneous entry is in www.omniguard.com/glossary-prints.html and also in others such as www.artcafe.net/artcenter/studio/printglossary.htm. I have no way to know which is the origin and which are the copies. The definition of canvas transfer is mutilated in some glossaries as well, with hopelessly improbable definitions. Usually it is associating one process with another, which usually shows lack of understanding of both.

Our policy is to write our own glossary first, and only then check it against published ones to find the occasional term we missed. We also list every single glossary that we could find on the Internet in the "Sources and Resources." So, if there is a published glossary which is of special pertinence, we note it in the citations portion. Nowadays most readers don't want to wade through footnotes nor the standard manner of academic citation (author, date, page number). So we have the citations as a separate section for those readers who prefer the academic manner, albeit updated to the fast pace of the Internet where things are cited by web page more than by author.

We deliberately do not capitalize the first entries. If all words in the glossary were capitalized you would have no way to know which are capitalized in positions other than the start of a sentence.

Glossary for
Fine Art, Giclee, Exhibit-Quality Photographs, and Décor Printing

A

Adobe RGB (1998), sometimes written just Adobe RGB, a **color space** whose specifications were seemingly established in 1998. Despite that being seven years ago, this color space is very up to date. Indeed, because of its wide color **gamut**, Adobe RGB is the most popular color space for printing on professional wide format inkjet printers. see also **sRGB**

accelerated testing: to guess whether a print will last 40 years or 200 years or any number of years, requires accelerated testing, since few testing organizations are willing to attempt a test that actually lasts 40 years. 3M and Avery, however, do real-time testing since their frame of reference is 1, 2, to 5 year longevity (for solvent ink prints for outdoors). Kodak claims accelerated testing does not produce reliable results. The Wilhelm facility does most of their testing in an accelerated manner.

acid free paper is preferred for giclee prints so the material will not deteriorate or turn yellow. This paper is free from lignen which comes from wood pulp. This implies that acid free paper is not made from wood, but from cotton.

acrylic paints. Acrylic is a synthetic **polymer.** In the beginning most painting was **oils** or **watercolors**. Then acrylics became popular because of better properties as compared with natural colorants.

addressable resolution as compared with **true resolution** (size of the dots), and compared with **apparent resolution.** Virtually nowhere is this concept adequately explained. I have spent an hour on the Internet. Finally found something at http://dequim.ist.utl.pt/lti/docs/hpdesignjet/printres_141_en.pdf

alum is a salt-like material used in sizing paper. Unfortunately alum introduces acidity into the paper. Alum is something, along with **lignin (lignite**) that you do not want in your art papers.

apparent resolution is a way to get around the low numbers of true **addressable resolution**. Advertising agencies know that American buyers want to see big numbers. But in fairness to some manufacturers, in some cases extra colors or extra droplet quality does result in more apparent quality than addressable resolution. So an Iris giclée printer is really only 300 dpi but it is rated at much higher. ColorSpan uses 11 to 12 colors, so it's apparent resolution is 1800 dpi. Where it gets fuzzy is with Xaar heads or other industrial piezo printheads where the quality is not very good on vinyl no matter what. I find claims of 720 dpi dubious and not comparable to quality of an Epson, Roland, Mimaki, or Mutoh at their 720 dpi (which is not necessarily their true dpi, which is closer to 180 for all recent models and 360 for current models). 2880 dpi is fiction; 5760 dpi is ethereal hype (the word ethereal means insubstantial, as ether that evaporates quickly). The most extreme form of dpi hype is "**optimized dpi**." HP may have invented the concept and now other printer ads tout the same term, so Epson is not alone, indeed each company ratchets up the excessive dpi claims as soon as their competitor comes close to a previous high number.

aqueous, consisting of water, meaning **water-based** ink: ink colorant in a vehicle of water as opposed to ink in solvents (solvent-based ink, the smelly stuff used to print billboards). Water-based ink is precisely that: water and coloring material, along with an impressive list of additives. Full bibliography and discussion of ink is in the FLAAR Report on *Inks & Colorants for Wide Format Printers.*

archival is a misused word in the inkjet world. As an archaeologist and person working in museums and libraries, archival is tantamount to lasting forever. However archival in inkjet means "it will last long enough that the person who claimed it would last 200 years is no longer available to sue." When the image fades in 40 years instead of 200 everyone knows that no one is going to bother to sue for misrepresentation.

art card is usually a folded card, but may be one piece (unfolded), usually the size to go into an envelope (less than letter size). An art card may be same size, shape, and decoration as a greeting card, but an art card will lack the pre-printed greeting message.

artifact in digital imagery is a defect; this is not the same meaning as an archaeological artifact.

artist's canvas is **canvas** with the texture, finish, and overall look and feel that artists accept as what they prefer to paint on. Otherwise, canvas is also used for banners and other more industrial signage. Canvas is also used for tents, sails, and other non-artistic purposes. Thus the concept artist's canvas attempts to distinguish that industrial canvas from what is better for fine art. See also **studio canvas**.

artist's proof is a heritage of an earlier era when the first prints came off the master before the master was worn down from use. Today the first prints off the machine are essentially indistinguishable from the last prints because there is no wear down of the "master" because the master is digital and identical from first to last. Hence today the reason for having what is really a separate edition as artist's proofs is not always precisely defined. This edition is usually left out of the main numbered sequence (even when the artist's proofs have their own separate serial numbers). These are actually final fully perfect prints as differentiated from **trial proofs.** See also **bon-a-tirer**. In summary, an artist's proof in the digital era is not a proof, it is a separate edition.

B

banding is a horizontal defect, sometimes about 3 millimeters high, usually the length of the printing path (the width of the paper). There may be thin or thick lines within the bands. The edge of the individual band may be well defined or vague. Either way, these are undesired and detract from the quality and value of the print. A continuous tone print should have zero banding. Photographic quality (photo realistic) should have zero banding. A print with noticeable banding should be rejected (by the artist and by the buyer). Banding is called many other things, such as streaking, but it's not a streak, it's a continuous horizontal defect caused by the printhead, most commonly a piezo printhead though thermal printheads may also occasionally result in banding. For more information see the FLAAR Report on Piezo vs Thermal.

base, as in oil-based ink, water-based ink, solvent-based ink. The **vehicle**, the material which carries the colorant

base, such as paper base, the material (which may be synthetic) which holds the coating on top. Layers on the bottom help in feeding the media through the rollers.

B.A.T., see **bon-a-tirer**.

bi-directional printing is when the printhead is laying down droplets both coming and going. Bi-directional printing is faster than uni-directional printing, but bi-directional printing may not be as high a quality, see also **uni-directional** printing.

black from K only, If you attempt to form black from mixing CMY you get a muddy brown. Therefore it helps to have black. Another disadvantage of mixing CMY to form black appears when you attempt to print a grayscale image. It usually ends up tinted magenta or green.

black from CMY, Ideally a **RIP** should allow the user to decide whether they wish black to be printed from K or CMY or CMY+K. Better RIPs offer this choice.

blooming in digital photography is when excess light spills out of a photo site on the CCD and, in effect, burns out (overexposes) in a linear fashion.

You get blooming in a digital photo when you take a picture of a sunset, for example, or have bright street lights in an evening photo.

board is thick paper with its relative stiffness resulting from lots of layers; cardboard would be one kind of board, but "board" alone means something a tad thicker and a bit more noble than plain cardboard.

bon-a-tirer ("good enough to print" might be a rough albeit definitely not literal translation) is the proof signed by the artist as acceptable as final output. This becomes the reference print to match for all subsequent editions.

borderless printing means no white border around the print. Epson has successfully championed borderless printing.

Boulter, Steve Boulter, an early digital imaging personality, sales rep for many of the products needed to produce giclee prints in the early days, such as IRIS printers and Scitex scanners.

brighteners are chemicals added to the inkjet layer to make the media look whiter than it really is. Brighteners may cause color measuring tools to give incorrect readings. You can try to use a UV filter on your spectrophotometer, such as the DTP41 UV vs the plain DTRP 41. There is also a transmissive version, for reading on transparent media.

bronzing, an undesired effect resulting from coincidental reflections primarily from pigmented ink, mostly noticeable from large areas of ink and especially black. Bronzing is a not always precisely a bronze-like coloration but whatever hue it's appearance is noticeable, namely differential reflection off a print. Bronzing may occur with some glossy media on some Epson printers with their proprietary inks. This is sometimes called differential gloss and may also be seen on virtually any pigmented ink including HP DesignJet.

bubble-jet is Canon's trademark name for thermal inkjet printhead technology. Heat causes a bubble of air to form inside the printhead. The rapid expansion of this bubble forces out a drop of ink. If you have 3000 nozzles and fire them rapidly you get a Canon bubble-jet inkjet printer. We have a 24" model in the FLAAR facility and it works just fine. HP and Lexmark also make thermal printheads but do not use the designation bubble-jet due to it being a registered trademark of Canon.

buffering is an alkaline material such as calcium carbonate which provides an added protection to keep acidity out of paper.

C

calibration is an initial step you should take in color management. Calibration is jargon that means setting a device, usually output devices such as monitors and printers, to specified predetermined conditions (usually the condition they were supposed to be coming out of the factory). Output devices are calibrated as opposed to input devices, because they are not self calibrating.

calibration bars, either grayscale or color. These bars are printed to ensure printed output is accurate.

cancellation proof is, or was in the old days, a print made from the defaced master to prove that it had been destroyed. However today there is no realistic way to make this with a giclee print. Sorry folks, "destroying" the digital image is a contradiction in terms.

canned profile is what you get free with your media, with your printer, or from a commercial profile service. They use their printer, in whatever heat and humidity of their location, and the age of their printheads. The result is not as good as if you did your own custom profiles yourself.

canvas today may be 100% cotton or a cotton-polyester blend. Linen and other natural fibers such as hemp have also be used to create a heavy durable material called canvas. **Artist's canvas** may have matte surface, glossy surface, and so on. Surface color may be white, or yellowish. You can select from various surface textures. Artist's canvas may need to be stretchable without ruining the inkjet surface. Synthetic (non-cotton) canvas is also available with a faux-canvas texture.

See also **stretched canvas**, **pre-stretched canvas**

The second meaning of canvas is "a canvas," as in a surface (any generic surface as in the sense of an area) on which to paint.

canvas transfer is a time honored process of taking a print, applying a chemical that removes the ink from the paper, and transfers the ink (image) to canvas. The transfers were then touched up quickly to make then look more like an original. Canvas transfer prints were more popular in recent years before it became so easy to print directly onto inkjet canvas as giclee. The original purpose of canvas transfer was to create what looks like an original oil painting on canvas but using a photograph or other image which could be mass produced. So a canvas transfer was simply a mass-produced pseudo-painting. Reportedly the earlier "giclees" of Thomas Kincaid were canvas transfers, in other words, not giclee at all. A giclee is an original print, not a secondary transfer. It would seem that inkjet printing onto canvas sure is a lot easier and can create a lot more prints without anyone laboriously transferring one print after the other.

cast coated papers, pressed between unheated metal rollers.

cellulose is contained in all plants. However some plants such as cotton are richer in this substance than others such as wood.

certificate of authenticity is expected in better art circles and required in some states such as California.

characterization means profiling a device; profiling means you describe it colormetrically using color measuring tools. You calibrate the device first, then characterize it.

chips are what computer manufacturers put on their ink supply to force you to have to buy their ink. Mimaki is one of the few companies which eschews this subterfuge. Reportedly ink-control chips are now illegal in Europe.

chop, is a print makers mark, embossed on the print, usually in a lower corner.

clear coating is usually how a coating on a giclee or inkjet print is listed. It implies that the material is clear. In reality the clear coating may knowingly improve the saturation and contrast of the image, in addition to protecting the surface.

clear finish is a protective material with a clear as opposed to textured or colored surface, rolled, sprayed, or dipped onto the print to protect it.

CMYK, Cyan, Magenta, Yellow, and black, the process colors used by most printers. More sophisticated printers also use light cyan, light magenta. Epson adds one extra black; Ilford adds two; ColorSpan adds three extra blacks (quad-tone black inkset). Although printers print with CMYK colors, their software (driver and/or RIP) prefers to receive the file in **RGB** color. B is not used for black since it could be confused with process color Blue.

coating an inkjet print to protect it after it is printed. You may be protecting it against scratching, fading, moisture, **ozone**, or other potential problems. See also **topcoats**, **clearcoats**, **lacquer**.

coated paper means paper (or really any material) which is pre-coated with an inkjet receptor layer of chemicals to help accept and manage the inkjet inks.

cold pressed fine art paper may be distinguished from hot pressed papers. Has to do with whether the rollers (which press the paper) are heated or unheated (cold). Cold pressed paper has a textured surface. Hot pressed paper has a smooth surface.

collage is joining disparate things together to form a work of art. The collage is usually formed on the approximate size and shape of a normal painting and is usually framed like a traditional painting. See also **montage**.

color management enables users to specify, control and predict color from concept to reproduction in any creative process in which the use and impact of color is important. It must provide a comprehensive and intuitive set of tools that will ensure we get the desired result.

color model, synonym for color gamut or color space. Some color models include RGB, CMYK, and Lab.

color profile, usually meaning ICC color profiles.

color shift means the change of color as the ink dries and stabilizes within the chemicals in the inkjet receptor coating.

color spaces include **Adobe RGB**, **RGB, CMYK, CIE L*a*b***. Also called a working space.

ColorSync is the trademark name of Apple computers color management system before ICC color profiles existed. Apple was one of the founding members of the ICC. Prior to ICC profiles you really needed an Apple computer with Apple monitor and ColorSync to tame your colors. Now, with ICC color profiles and after-market color management software you can handle color management on a PC just fine.

color viewing booth is an enclosure with standardized lighting so that your impression of the color is not influenced by ambient light. Such a booth is usually on top and both sides; usually sits on a table. Just Normlicht is one of several leading brands of such color viewing booths.

computer generated art is any art where a computer is used as a part of the creative process. **Fractal art** and manipulating photographs are two kinds of computer generated art.

connoisseur, an art connoisseur in this case. A person who either position themselves, or better, is recognized by others, as having sufficient knowledge and good taste as to set standards. May be an art historian by training, or avocation.

consumables are the supplies you consume (use up) when you print. Inkjet consumables would be ink and media (paper, canvas, fabrics; whatever you print on). Over time your consumables will cost more than the purchase price of your printer.

continuous tone is variously defined, depends on viewing distance to some degree, though continuous tone is usually understood to be judged up close. . In the world of wide format printers, “continuous tone” means output that is similar to that of a traditional darkroom photograph. The digital printers which can produce this quality are mostly desktop dye sub resin transfer systems such as the Kodak 8600; the Fuji Pictrography; or digital laser imagers such as the Cymbolic Sciences LightJet; the Durst Lambda and others. Most photographers do not accept output from any inkjet to be continuous tone. Hence claims by Epson and Roland that they produce continuous tone are not widely accepted. And when these printers display banding defects from their piezo printhead swath, that is a continuous lack of tone quality, the opposite of continuous tone. See also **photo realistic.**

contone is intended to imply continuous tone, the Holy Grail of all inkjet printers. Kodak attempted to take over this term for their own as “dynamic contone” a great technological concept except that the engineers could not get the Kodak 5260 printer to work consistently. Contone is sort of smoke and mirrors. “Near continuous tone” is more correct. Since the word continuous tone already exists I am not convinced of the need to confuse people with contone.

copy stand consists of a reprographic camera on top of a column, facing down onto the copy stand. The copy stand is a flat surface on which you set an object to be copied photographically. Nowadays the copying is done with a digital camera. This may be either a component system: any camera added to the copy stand; add side lights and you are all set. Or this may be a turnkey system, such as the Cruse, where everything is included and all aligned and coordinated with each other. Synonymous with reprographic stand.

custom profile, means custom ICC profile. Most ICC profiles come from the manufacturer. These are **canned profiles** (a generic profile). A canned profile is accurate primarily for the one printer used for the test. Your printer has heads that may be older, or younger; your room may be warmer, or colder, less humidity or more. So canned profiles do not work as well as a custom profile that you do yourself, every few months, since your printer’s performance can drift. See also **profile**.

curating is jargon for the final preparation of the inkjet print for the collector. Curating would include adding a few brushstrokes and gobs of real paint on top of an inkjet print. Often white paint is added since an inkjet can’t reproduce white other than using the color of the surface of the inkjet media. In most cases such repainting is done by art students, graphic designers, and other employees (in other words not necessarily the original artist). In a sign shop aspects of what is called curating by artists would be called finishing.

curl especially of the edges of **canvas**, can cause **head strikes.**

cutter or **trimmer** is a usually hand-operated device to trim the paper and cut through mounting board if needed. You absolutely need some kind of a cutter or trimmer sooner or later.

D

darkfastness is whether or not an inkjet print will fade in the dark, meaning will it fade even if not exposed to sunlight. The answer is often yes: high heat, high humidity, and ozone can cause fading of an inkjet print even if the print is in a closet or basement. Several prints in our exhibit faded dramatically because they were stored in a hot humid basement next to a refrigerator (which emits ozone). Some media is more prone to lack of darkfastness than other media. The kind of ink also affects the fading. So every different ink-media combination has a different longevity or fading rate.

deckled, edge deckled; what to a lay person looks like torn and ragged edges looks sophisticated and desirable to the art **connoisseur**. Most deckled edges today are produced after the fact, merely to make the paper appear to be hand made.

décor, slang for decoration, or frankly for decorative. Most giclee prints end up decorating the walls of offices, homes, hotels, etc. That is décor to the interior decorator. However to the artist, he or she wants to produce fine art or giclee. That they end up as decoration is blissfully ignored. It is unfortunate there is this artificial gulf between collectable art and decorative art because the latter is a much larger potential market for paintings and photographs. The other advantage of the décor market is that you can use Encad printers on canvas or watercolor paper and crank out 200 to 400 copies relatively quickly. This size of a run on an Epson or Roland would be too time consuming unless you substantially lower the print quality. Besides, Encad printers from 1996-2003) had less risk of banding defects which would be a major flaw if trying to use any piezo printer for such a print run. The new Encad 1000i has a history of banding. Of course you could also use a Canon, ColorSpan, or HP and achieve a tad better quality than an Encad's Lexmark printheads.

density range The difference between the maximum and minimum density of a single image. To determine the density range you do linearization test with color management tools and software.

device, jargon, usually meaning an item of hardware such as a monitor or printer.

digital art is art, however defined, which is worked in computer software. Digital art may have originated as a painting, photograph, or computer generated art but what makes it digital is that software has altered its original appearance.

digital fine art. Many artists prefer to avoid the word giclée. Each has their own reasons. We are neutral on the matter.

digital imaging really means working with your image in a software, usually Adobe Photoshop. From this core meaning digital imaging has gone on to mean everything from digital photography, scanning, imaging in Photoshop, to output in digital printers.

digital imaging software for a professional is far more than Adobe Photoshop. Nik Multimedia, Pictographics, the various software to handle RAW files, grain and noise reduction software, unsharp masking software: if you understand and can handle all of this, your prints can be spectacular.

digital printmaking can mean whatever you wish it too but is generally limited to inkjet technology. Printmaking is a hallowed tradition for centuries. Printmaking is not precisely the same as printing. Printing is mundane reproduction, books to signs. Prints tend to be single sheets to begin with, and tend to be relatively limited in number per design. With an Iris printer you truly had to be a "master printer." With an Epson, it is the software you have

to master, not really the printer. Today, if you can master **digital imaging software**, your images can be outstanding on any acceptable printer.

dithering Creating halftone-like dots with the ink drops. A good dithering pattern hides the dot pattern. When the color is light the early printers simply spaced the color drops further apart, but you could see each individual dot against the light background. A dithering pattern attempts to hide these dots. Hiding them is aided when the dot size itself gets smaller.

- Epson has an excellent dithering pattern.
- Encad has a poor pattern though this may also be the fault of the unimaginative Lexmark printheads.

Fortunately, the dot pattern is not visible at a 10-foot distance, therefore, you need to decide whether you are willing to pay the extra cost required to achieve a good dithering pattern.

Doe, John, that is his real name. His various companies produced giclee in mass production and showed the world that big money could be made in this business. But a thousand people got this message; they all bought Epson, ColorSpan, HP, Mimaki, Mutoh, Roland, even Encad printers. With so many artists printing for themselves, business for the original giclee producers declined somewhat. Doe then formed a **Tru Giclee** association to distinguish his company and those who used the same printers and media that his company either sold or used. Although somewhat downsized, a visit to Doe's factory-sized facilities is eye-opening: entire rooms filled with Iris printers, another room filled with Roland printers, another area filled with workers adding retouching. This is definitely the largest such facility in the world (outside of China).

dpi, dots per inch. The "dpi" rating of a camera or scanner is really the pixels (samples) per inch (ppi) but few people use the ppi designation. The dpi rating of the printer tends to have to do with the distance a printer mechanism can advance the printer. Hence true dpi of most Epson printers was 180 dpi for models 7000, 9000. Dpi of current Epson, Roland, Mimaki, and Mutoh is closer to 360 dpi. 720 is created by software controlling multiple passes over the same area. Software is what results in claims of 1440 and 2880 dpi. Dpi in the images themselves is actually ppi, pixels per inch since of course there are no dots in an image on a monitor. Ppi may also be judged as "samples per inch," based on how many samples a CCD scanner or scan camera has taken of the image. "dpi" is an old-fashioned term that got stuck in the new digital millennium referring to so many kinds of measurement that it has become confusing. FLAAR will be discussing all this in our upcoming course on digital photography (open to the general public by sign-up; details on www.digital-photography.org).

See also **addressable resolution**, **apparent resolution**, and **optimized dpi**.

drivers, as in printer drivers for your inkjet printer. A printer driver is basic software to control the basic functions of the printer. A **RIP** in distinction is more sophisticated software to access additional features of the printer not reached by the basic driver software.

drum scanner is the absolute highest quality technology, uses a PMT instead of a CCD. Unfortunately most good drum scanners are very expensive (cheap drum scanners may produce poor results). Although the best **flatbed scanners** today (Fuji, Creo, Screen) truly produce excellent quality, the consensus is that a good drum scanner is still significantly better.

dry mount tissue is thin paper-like material with a dry adhesive. You put this tissue on the back of the photograph and add a mounting board and apply heat in a dry mount press. Voila your photo is stuck nicely to the mounting board. Kodak is a main source of dry mount tissue.

dry mounting is done with normal photographs; dry refers to the fact that the glue is not wet.

dry mount press is the simple desktop press which applies heat so the dry mount tissue becomes sticky and binds the photo to the board you wish to apply the photo to.

drying time is the time it takes for the chemicals in the ink to dry on and within the substrate or media. Drying time on glossy media can take several hours.

Epson inks on some paper can cause full drying to take several days and possibly longer. Sometimes the surface appears dry but inside other chemicals have still not finished outgassing.

Duganne, Jack **Duganne** originated the word giclee in 1991. He now runs Duganne Ateliers in Santa Monica, California.

duotone is printing in two tones, may be two levels of black or black toned lightly with a color of your choice. See also **quadtone**

dye ink consists of molecules of dye colorant dissolved in a vehicle, usually water. There are two basic families of dye ink: relative long lasting dye ink, such as that used by Ilford, ColorSpan, and the new HP dye ink for their DesignJet 30 and 130. But most other dye ink fades within a few months, such as that of Epson (may fade in a day or so outside) and all dye ink used by HP until 2004. HP dye ink for their DesignJet 500, 800, 1050-series, 2000-series, 3000-series, 5000-series printers may last up to 6 months; in hot humid weather or with ozone possibly noticeably less. Dye ink has advantages, such as brighter color, over **pigmented ink.** Dye ink tends to run if affected by moisture. Indeed humidity is a major cause of deterioration of the image quality of dye ink prints, in many cases causing more "fading" than light. The highest rating for longevity for a new-generation dye ink is that for the HP 30 and 130, rated several decades which means that in a room with normal light (if not subjected to high humidity) it should last many years.

E

edition, is the batch of prints from the same artist or photographer. With giclee or any digital print you don't have to create the entire edition in a single print run. You can print a few one day, and the rest when there is demand.

embellishing an inkjet print means adding enhancements after the print is out of the printer. Most embellishments are adding brushstrokes or gobs of ink, especially colors that you can't print, such as white. Sometimes you have to coat the print first so that the embellishment does not leave a mark.

enhanced by the artist, means adding something by hand which is not (usually cannot be) rendered by the printing machine (such as a raised dab of white paint on the crest of a wave). Such enhancements are supposedly done by the artist but at the giclee shops where I visited there were several employees adding the enhancements. Probably the real artist came at the end and added a few more. Collectors nonetheless value an enhanced print more than an un-enhanced print. Ads for giclee prints tout such enhancements. However before you enhance an inkjet print you may need to seal it with some kind of protective coating. See also **remarque**

error diffusion is a screening option for inkjet printing, usually selectable in your RIP software.

F

fading, see also image permanence

fine art. You may also define fine art as distinct from commercial art, crafts, decorative art, religious art, and amateur art (www.cosshall.com). I would add ethnographic art but consider much of that and historical religious art as fine art. After all, most of the great Renaissance paintings are in churches. And amateur art, if indigenous, borders on ethnographic art and hence is potentially collectable. As always, beauty is in the eye of the beholder. However you can produce a salable giclée print from any variety of art, including commercial art (graphic design). Movie posters would be a good example of a viable collectable, even when reproduced, since there are not enough originals to go around any more.

fine art photography encompasses those photographs where the intent of the photographer is to make an artistic statement rather than merely record an image.

finish, attributes of the surface of a paper or media.

finish or **finishing**, is the stage of trimming, cutting, and mounting a print. Lamination is included in this phase of work but giclée prints are not laminated in the normal sense of the word. Giclee prints are **top coated**. See also **curating.**

flatbed scanner; you place the object to be scanned directly (face down) onto a glass plate. The scanner scans through the glass. So you immediately have two potential situations: first, the scanner sensor has to see through the glass. The glass may be scratched or simply not completely clean. And the delicate surface of your painting has to be in direct physical contact with the scanner. Most savvy museum curators would not allow their paintings to be rubbed on a glass surface. The alternative is a reprographic stand. Here the painting is never in contact with anything; the photograph is taken from above. You can even leave the painting in the frame (but you may have problems with side lighting). The patented synchron lighting of the Cruse may overcome the side lighting problem. However you may desire side lighting to bring out texture in the canvas or even original watercolor paper and brush strokes. With a scanner you have no opportunity for controllable side lighting whatsoever.

fractal art is a kind of **computer generated art** based on algorithms or mathematical formulae.

FTP, file transfer protocol, a means of sending large files, much larger than e-mail will hold as attachments. So FTP is the preferred method of sending your digitized art to a giclée print shop. You just need simple and low cost FTP software (about $25 for Fetch, the standard for Macintosh) or Cute FTP for PC. Somewhere there has to be a server to receive these files (or a server from which you seek to upload the files from). FTP is how web pages are sent from the web designer to the server which hosts the web site.

G

gamut, means color gamut, the range of colors your **device** can produce. Usually the original painting has a wider gamut than an inkjet (or any other printer) can reproduce. This is a fact of technology that is tough for artists to recognize.

gas fading means when an inkjet print fades as a result of ozone or other contaminants in the air. This was first noticed with Epson inks and media; caused a great scandal because at that time (circa 2001-2002) Wilhelm's longevity claims had not yet taken ozone fading into account (since regular photographic prints don't suffer this form of fading).

generic profiles are the same as canned ICC profiles. When possible, it is almost always better to do the profiling yourself because only your personal profiles can take into account the heat, humidity, and conditions of the printheads on your particular machine.

gesso, plaster-like material in glue, is used to coat a canvas as a base (ground) for painting.

giclee; variously defined as "to spray" in pseudo-French. The word was publicized by Jack **Duganne** in 1991. For better or worse the word was never copyrighted or if it was it was not defended. Today the word is long ago in the public domain. Minor nonsense has grown up around the word. Some web sites attempt to make the process go back to the 19th century (when jetting was first defined in England). Another definition states that an Iris printer can use acrylic or oil paints (best left uncited it is so incorrect). However some French consider that giclee is slang for "to squirt" as in "to ejaculate." Others consider it entirely a made up pseudo-word, like Häagen-Dazs (ice cream). That word is not European at all, it was made up to suggest a sophisticated European food. Same with giclee; its not a real word and it is not a standard French word either. Since it is made up, it should be no surprise that the definition has been emasculated ever since. Giclee is a flexible definition because beauty is in the eye of the beholder. If your client accepts the image as giclee and especially if the original artist accepts the copy as giclee, then you should term the print what you and the client and the artist accept. Many artists prefer any other designation besides giclee. I tend to spell the word without the phony French accent since many laser printers are not set to print accents anyway.

It would not be appropriate of us to certify any individual situation as to whether it is giclee or not. Depends on the media and many other factors. See also "**Tru Giclee**" a trademark for one group of print makers led by John **Doe**.

gloss finish, a shiny finish, often mirror-like. Many people prefer satin or matte finish.

grainy, sandy appearance results from being able

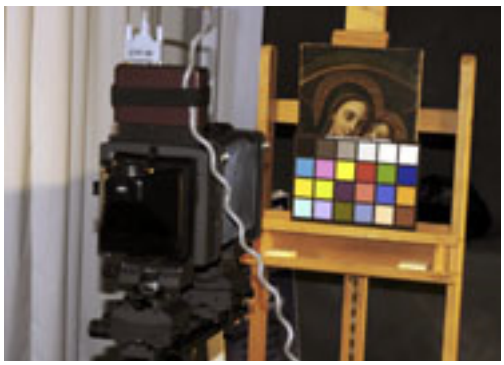
to see the individual ink drops. 300 dpi printers in the 1990's had grainy appearance, as do all six-color Encad NovaJet printers and HP printers of the 2000 and 3000 series through 2001. The least grainy appearance would be the Epson 7600 and 9600, as a result of their extra black.

gray balance, the process of removing color tint from a color. In digital photography or scanning you tell the software what in your image is true gray (usually the gray patches on a GretagMacbeth ColorChecker). Once that is balanced to gray, all other colors are automatically balanced too (in theory at least).

grayscale means several things in digital imaging: the primary meaning is jargon for black and white. A secondary technical meaning has to do with the grayscale vs binary printing method employed by industrial piezo inkjet printers. Xaar printheads employ a grayscale technique. We describe industrial printing technology in the FLAAR glossary on UV-curable ink flatbed printers.

greeting card has a greeting pre-printed inside. An art card has no pre-printed greeting, but is otherwise the same size and shape, and potentially also used for events.

GretagMacbeth, a leading company in color management. Gretag is a Swiss company; which bought Macbeth who makes the ColorChecker for photography. They also own Munsell, famous in past decades for the Munsell color charts, for geologists and archaeologists not replaced by Pantone and other modern color systems. http://www.gretagmacbeth.com/Source/Gm.asp



ground, the substance to prepare an area to be painted on. **Gesso** may be used to create this ground. This does not really apply to inkjet paper or inkjet canvas unless you consider the precoating as the ground on which the jetted ink will be received. That is not a traditional meaning however.

H

handmade paper is literally that, paper made by hand, something that talented (and patient) artists and master printers could achieve if they wish to. To create a giclee print you would then need to coat the paper (with Ink-Aid or comparable such as MIU 555A from APSS Mastermind) and tape onto the drum of an Iris printer. You could run it through the sheet-fed mechanism of a wide format printer also. Just be prepared for the usual wastage that is part of wide format inkjet printing.

hard copy means a copy on an actual material as opposed to an electronic copy. Hard copy usually means a print on paper, such as a laser print, and inkjet print. Does not have to be on actual paper: can be on silk or plastic.

Holbert, Mac Holbert, tour manager of Crosby, Stills, and Nash. Holbert was a partner with Graham Nash in Nash Editions, one of the first giclee printing companies. Holbert is considered one of the founding pioneers of giclée printing. In their era (1990's) almost all giclee prints were created with an **Iris** 3047 printer.

honorary copy is a term not usually mentioned. Seems to be another way to crank out extra copies outside the main numbered edition. According to www.sportsoncanvas.com/glossary.htm an honorary copy is a present to the artist or photographer outside the artist proofs and also outside the main edition.

horizontal defects (usually meaning horizontal banding) is differentiated from **vertical** defects such as ripples.

hors d'commerce proof (HC) is a sample, used to show around, supposedly not to sell. Of course sooner or later all these prints are sold, so the "limited edition of 100" is actually 150 or 200 by the time you add up all the classes of unnumbered proof prints that are floating around.

hot pressed paper is pressed between heated rollers to result in a smooth surface. **Cold pressed** paper is pressed between cold rollers which results in a slightly textured surface.

I

IAFADP stood for the International Association of Fine Art Digital Printmakers. Founded in 1997, this was a great concept and their trade magazine was a source of official points of view of the leaders in the industry. Unfortunately IAFADP did not survive past 2002. The closest thing to their continuation would probably be the Digital Printmakers group of DPI (Digital Printing & Imaging Association).

ICC, International Color Consortium, an entity whose committees establish color profile standards.

ICC profile, information in mathematical format which allows converting color spaces between two devices. The goal is to keep the color consistent from scanner or digital camera through the monitor into and out of the printer. ICC is the acronym for International Color Consortium, www.color.org.

inkAID is a clever substance that allows you to print (with an inkjet printer) on a wide range of substances such as metal, wood, etc. Check it out at www.inkaid.com.

imaging, as in digital imaging, usually implies working the scanned or digital photographic image in Adobe Photoshop or comparable software. But "digital imaging" is now the umbrella term to define everything from scanning through printing with inkjet printers.

inkjet A printer technology where ink is jetted out a nozzle onto precoated paper to form an image or character. The paper generally has to be covered with a special inkjet ink receptor coating prior to printing.

inkjet receptor layer is a pre-treating, pre-conditioning of the surface of paper, canvas, or other material synthetic or nature so that this base material can handle the amount of water in the ink. The chemicals in the inkjet receptor layer also react with the chemicals in the ink to form more brilliant colors. So when you print on inkjet canvas or inkjet watercolor paper, you are not actually printing onto the canvas or watercolor paper, but rather you are printing onto a chemical layer which is atop the artist's material. Yes, you can print on untreated material, such as rice paper. But the ink will go deep into the fibers and spread in a potentially uncontrollable manner.

inkset is literally a set of ink, the ink that works together to form the colors or grayscale range of a given printer. So UltraChrome is a 6 to 7-color inkset for Epson (six colors for Epson 10600, seven colors for Epson 7600 and 9600). Not sure the Oxford English dictionary provides such flexibility, but can be written probably as one word or two words or with hyphen.

input is what goes into a printer to produce **output**. So in effect, input is what comes from a digital camera or scanner, en route to the printer so to speak.

input device would be a scanner or digital camera, as compared to an **output device** such as a printer.

IRIS 3024, a printer for proofing, image size limited to roughly 24 x 24 inches.

IRIS 3047, a continuous ink printer using Hertz technology for proofing. The Iris 3047 was transformed to accept thicker media and renamed the IRIS 3047G; then renamed IRIS GPRINT. Shortly thereafter Iris stopped making this line of printers all together, in part due to world renowned recognition of the inherent design flaws. Image (printable) size area is roughly 34 x 46 inches.

IRIS giclée printer, originally this as the Iris 3047 proofing inkjet printer, At the height of its popularity circa 1996-98, the Iris printer reportedly cost over $100,000; its RIP cost over $10,000. No wonder Scitex did not survive into 2002 because long before then people could buy a RIP elsewhere for $3,000 and a capable inkjet printer for $10,000, not $100,000. At some point in time the original Iris 3047 proofer was modified slightly to accept thicker paper. This became the Iris G series. The Iris 3047 uses Hertz continuous inkjet printhead technology, so no pigmented ink can fit through the nozzles. The original dye ink for proofing has been replaced by a longer lasting dye ink, but still is unlikely to last as long as a pigmented ink.

Iris print was for several years synonymous with giclee. But now that Iris printers are not used as often fewer people use the word Iris prints. If you have the Ixia model of Iris, the printheads and quality are identical to the original Iris 3047. The only difference with an Ixia are the improved mechanical parts.

J, K

Kerr, Gary, an experienced photographer and master giclee printer that we recommend. He photographs, and prints, giclees for artists across the USA and around the world. His website is www.FineArtGiclee.com.

L

Lab, also written L*a*b* or Cie L*a*b*, a color space. Although most digital imaging is done in RGB and printed in CMYK, in fact you can achieve improvements to the image if you work some aspects in Lab, as detailed by Dan Margulus in his books on Adobe Photoshop.

lacquer a clear, glossy varnish material originally made from the sap of a tree in Asia, used for surface lamination. see also **coatings, clearcoat, topcoat**

lamination means covering the top, or both sides, of a print with a protective layer. This protection may be sprayed on, applied via a laminator machine; or the image may be dipped into a vat of liquid laminate. Other means of application exist. Most artists do not like the plastic look of sheet lamination so they tend to spray their work instead. If you don't laminate at least with spray or dip, then your print surface may easily become scratched. Or the inkjet receptor coating layer may simply peel off the surface of the original material (especially off of canvas).

landscape orientation means a horizontal orientation, see also **portrait orientation**

lightfastness implies the degree and length of time that a print will not fade in light, either sunlight or room light.

LightJet is an impressive RGB laser light digital imager made by Cymbolic Sciences, now part of Oce. LightJet is a wide format printer but prints on photo sensitive paper which must be processed in a darkroom (in actually in an automatic machine). LightJet prints are the absolute highest quality, but would not be considered a giclee print for several

reasons, one being that they are not created with ink but with light. Durst Lambda and ZBE Chromira are other comparable kinds of RGB photo printers. The Fuji Pictrography is a slightly different technology but equally stunning quality, albeit only at tabloid size (not wide format size). Cibachrome or Ilfachrome were correspondingly attractive darkroom prints in the era before digital printing such as the LightJet. To be considered a giclee, a photograph should be printed on canvas or watercolor paper though there is no hard and fast rule or certification to any of this.

limited edition means that a specified number of prints have been printed. In theory, an ethical artist or print shop will not violate this trust.

linen paper tends to be with superficial appearance of woven linen.

linters are left over cotton after ginning. Since linters are not as usable for fabrics, they are used as a source of cellulose to make paper. see also **rag paper**.

liquid laminate may be applied by a liquid laminator, or you may dip your print into a vat.

lithography, **lithograph,** see also **offset lithography.** Each color is produced by one plate. Originally the plates were a special kind of stone. So this stone eventually wore out. Today the lithographic plate is metal and the process is offset lithography. So a lithograph (today) is an ordinary mass produced print. One of many differences between a lithograph and a giclee is that it is generally too expensive to produce an edition of thousands of inkjet giclees. Whereas with offset lithography you had to produce thousands because the press printed so fast even by the time you turned the OFF switch it would have cranked out a thousand prints.

longevity claims to mean how long a print will avoid being faded. But the tests are not accepted by all specialists such as Kodak. In real life most inkjet prints fade before their rated longevity. This casts doubt on the whole scheme.

luster finish (also spelled lustre) see also gloss finish, matte finish, and satin finish. A luster finish is definitely not matte, and not as mirror-like as glossy. In some aspects luster is almost synonymous with satin finish.

Lux, a measurement of light intensity. It is hotly debated how many lux you should shine on a test print to get realistic results.

M

Macbeth ColorChecker is a color reference target consisting of 24 squares of different matte colors. This GretagMacbeth color chart is now the international standard for digital photography and inkjet printing, replacing the earlier Kodak color chart (Kodak Q-13 Color Control Patches) and Kodak grayscale (Kodak Q-13 Gray Scale).

matte, a dull finish as opposed to glossy. Also spelled just matt.

mat, is a thick paper material called mat board. A mat is put around a painting to frame and accent the painting but for a watercolor mainly to keep the glass from touching the surface of the paint. Canvas paintings may be matted but not covered with glass.

matting, an effect of reduced gloss; what happens when the original gloss fades when the ink becomes drier.

media, in the world of inkjet printing, means printable material covered with an inkjet ink receptor coating. With no coating the material is a substrate. So media can be paper, canvas, or synthetic: the minute it has inkjet receptor powder on top, it is correctly called media. This word tends to be informally both singular and plural though sometimes the plural “medias” is used. See also substrate. The word media also has many other meanings in digital imaging, for example, the CD disk.

metamerism is the common situation where a color seen under one kind of light (say fluorescent) appears to be a different color under sunlight, or under incandescent light. Metamerism was especially a problem with prints from pigmented ink with Epson 7500 and 9500 printers.

microporous, effectively the same as nano-porous: small pores in the media grab the water from the ink so the media is dry to the touch instantly. Downside is that porous media suffers from ozone deterioration.

mixed media is a work of art created using more than one medium.

moiré is an undesired pattern of wavy lines caused when the parallel linear pattern of the CCD sensor is confused by the thin lines of hair, fibers in cloth, or any repeated thin linear pattern such as a shirt with parallel lines. You can sometimes avoid moiré pattern by turning the object or camera a few degrees.

montage, see also collage, artistically combing various pieces or sections of materials (or of photographs) to create a new work of art.

mould made paper, is literally made in a mould. Obviously originally this was time consuming and hence costly. But today mould made paper is produced by cylinder mould machines. www.artpaper.com/glossary.html In other words, mould made paper is not hand made today.

mount you may wish to use a roll laminating machine or a dry mount press to mount a print (usually to a foamcore, other comparable board, or other stiff material). This may, or may not, entail any lamination whatsoever. See also dry mounting

multiple original a euphemism for reproduction which in turn is a euphemism for copy.

N

nano-porous, essentially the same as microporous

Nash Editions, one of the early giclee publishing companies, Graham Nash, of the music group, Crosby, Stills and Nash

O

offset lithographs are produced by the screen pattern of traditional offset.

oil painting means a work of art, usually on canvas, painted with pigments in oil. Traditionally the oil has been linseed oil. See also acrylic paint, watercolor paint.

open edition, printing copies with no declared limit, the true definition of a reproduction. Most serious artists have numbered editions which, in theory, limits the quantity so that a value as a collectable can be better established.

optimized dpi. An HP website states: “An HP printing innovation that can greatly improve image quality… precisely positioning drops of ink so that the unwanted visual artifacts that can have an impact on image quality can be virtually eliminated.” I must admit that faced with a word and a definition of this nature, that my degree from Harvard and then a PhD in art history fail me here, and I will need help understanding the technology, and especially the method of counting the drops.

original art is the original painting or work of physical art. Merely “enhancing” a print still leaves it a print, which is enhanced. If you use the print as the underpainting, that may indeed result in the final opus being an original, albeit probably mass produced one after the other.

I would personally consider the first photographic print from a negative or a digital file to be an original work of art. All subsequent copies, are, based on norms of the English language, considered copies, and hence reproductions. However in the art world reality is in suspension, so you get reproductions which are spoken of as if they were originals. See also reproduction

original print is sort of a misnomer. A print by its very process tends to be a mechanical reproduction.

outgassing, the emission of an odor or even a fog as the chemicals in the ink on the substrate or media continue their evaporation or chemical reactions. In extreme cases this may result in fogging, a phenomenon that happens when you enclose a giclee

printed with Epson Ultrachrome inks under glass before the print is fully dry. To see what causes this problem, go to Google.com and type in the keywords Epson fog glass problem. Solvent ink outgases; UV-cured ink outgases too (for up to a week), especially when set to print a glossy finish.

output is what comes out of the printer. Input is what goes into the printer. It is still input (for the printer) even the image comes ”out” of a scanner or digital camera. Output is thus roughly comparable to hard copy.

output device is a printer or something that puts out an image. An input device is a scanner or digital camera, among others.

oversaturation Too much ink deposited onto a printed image which causes the media to buckle.

ozone is emitted by refrigerators, some air purifiers, laser printers, plate burners (for pre-press), and other sources. Ozone causes destruction of some inks on some media. Dye ink on microporous media suffers the most deterioration from ozone.

P

palette was originally the wooden surface on which the artist held and mixed his paints. Today palette means the range or assortment of colors available or typical of a situation.

photographs as giclée prints. Whether or not your photographic print may be considered a giclée depends on its quality, the kind of media it is printed on, the kind of printer used, and the intent of the artistically inclined photographer. A photographic composition, a stunning B&W photo, an artful photo with outstanding colors, printed on an Iris or top quality regular inkjet, especially if on canvas, watercolor paper, or the absolute best photobase material, could be considered a giclée (by some, but not necessarily accepted by painters). Fine art photographs are collected by museums but otherwise tend to be used for décor.

photo realistic means different things to different people. Also depends upon viewing distance. Output from the better Vutek solvent ink printers is photo realistic at a distance of 20 feet. Output from an Encad is photo realistic from 10 feet. Output from a ColorSpan and HP is photo realistic up close. Output from an Epson, Mimaki, Mutoh, or Roland is closer to continuous tone, except when it has horizontal banding line defects.

piezo, same as piezo electric

piezo-electric, or simply piezo. A kind of inkjet printhead. An electrical pulse in a piezo crystal causes a flexible membrane to oscillate. That flexing pushes out a droplet of ink. Epson makes the piezo printheads used by Mimaki, Mutoh, Roland, Gradco, and naturally Epson itself. The competing printhead technology would be the thermal printhead of Hewlett-Packard or Lexmark and Encad, similar to the bubble-jet printhead of Canon.

pigmented ink has finely ground particles of pigments in suspension rather than dissolved as dye molucules. UV light can not break these pigments down as fast as light can destroy dye molecules. Good pigmented ink on appropriate paper may last several years, depending on heat, humidity, light levels, and protection such as glass. Pigmented ink is occasionally called UV ink, a misnomer by Hewlett-Packard because of inadvertent confusion with UV-curable inks. UV inks are not UV-curable whatsoever. Today some “pigmented inks” such as Epson’s Ultrachrome, really is a mixture of pigments and chemicals that provide more color but less longevity. The depigmentation provides the color gamut missing in the original Epson pigmented inks. These mixed inks last about half as long as true pigmented ink.

pixel is supposedly the abbreviation for picture element, the basic unit of measurement of a scanned image or a digital photograph. A pixel is the image produced by a single photo site on a CCD sensor. I am guessing at CMOS sensor is comparable.

pixelization is when you can see the individual pixels because the image is enlarged more that it should be.

polymer is a compound consisting of lots of smaller monomers, see also acrylic paint

portrait orientation means vertical; landscape orientation means horizontal, for those people who do not understand what vertical and horizontal mean.

PMT, photo multiplier tube is the form of sensor used in a drum scanner, as opposed to a CCD sensor used in a flatbed scanner or most digital cameras.

prestretched canvas, when you stretch inkjet canvas you run the risk of stressing or even popping off the inkjet receptor layer. This layer is applied (by a coater) to special kinds of artist's canvas.

priming the artist's material is no longer the meaning of priming in the world of inkjet printers. Priming a printer means filling the entire tubing system with ink so there is a continuous flow of ink from the ink source (cartridge) to the printhead.

print, noun, is the resultant printed material, usually paper or canvas, with the image on it. In the context of giclee, a print (or at least the image on it) is considered a work of art.

print engine is a term used primarily by Epson. Basically it is the printer mechanism (hardware) other than the printer controller.

printmaking, years, in the last century this was an art, with a Master Printer working for decades to deserve this title. An artist had to pay a specialist to do the prints. Now almost any person with acceptable intelligence, and considerable patience, can be a printmaker of their own art or photographs, or can print the work of family, friends, or clients.

print mode(s), are usually combinations of speed and quality. Fast = less quality; slow = higher quality. Modes may depend on selected dpi and what material is being printed on. For example, 1440 dpi won't work on cheap coated bond paper and although it works on canvas is overkill since the rough surface texture would nullify the extra dpi. 600 or 720 dpi is plenty on canvas.

profiles (usually meaning ICC profiles) . A profile is a characterization, a description of a device in numerical manner. "Input profile describes range of a device used to capture images." "Display profile describes the on screen color space of a specific monitor." "Output profile describes the range of the output device. "Print Publishing (p. 424). Used to match colors which start out from one device and have to be reproduced in another totally different device. The profile tells the color how to restructure itself (by the numbers) so it will reproduce in the new device as close as realistically possible to the color of the origin device. All this requires a source profile and a destination profile, and assumes a transform between the two. A profile could be considered a colorspace definition (James King, Adobe Systems Inc.) See also **custom profile**, **canned profile** (generic profile). Defined in various analogous ways by Brües 1999:13. If you want a totally simplistic explanation: a profile is a mathematical definition of the color, usually starting out in RGB. Since you have to print in CMYK, the profile has a transformation through a neutral intermediate color space, namely CIE Lab. From CIE Lab the color is transformed to the numerical definition of the closest matching color in CMYK.

profiling, the process of obtaining a mathematical description (**profile)** of a device as in profiling a monitor, doing an **ICC color profile** of a particular ink-media combination.

process colors Colors whose components are cyan, magenta, and yellow. Black is added to achieve better results. See also **spot colors**.

proof is a sample on paper or on the monitor (soft proof) of a print job to show what it will look like when printed on the main press. Since it is very expensive to turn on the press for a single sample, a hard proof has traditionally been made by a more economical printing machine. Today proofs are increasingly done with an inkjet printer, usually Epson or Hewlett-Packard, although other brands are also capable. A contract proof is the proof signed by the client as what he/she will accept in the final printed work. See also bon-a-tirer, cancellation proof, ***hors d'commerce*** proof, Iris proofer soft proofing, trial proof.

pro-sumer is usually someone who has the money to spend on their hobby, namely to buy expensive equipment. A pro-sumer can be a hobbyist with good taste or at least with adequate income to afford better than entry level. A pro-sumer is often a person who avoids cheap low-end equipment. However a pro-sumer does not have to be a technology geek (some pro-sumers have all the toys but may not always know how to use them yet). A pro-sumer is usually not a full-time commercial artist, photographer, or printer.

provenance or provenience, where a work of art comes from, and where it has been since it was created. In the history of art, an art historian always has to do their best to identify the provenance of a work of art, and its author, or at least the culture that produced it.

purge is when the printer forces ink through the printhead nozzles to force air or gunk out of the way. Virtually all piezo printheads have to be purged to keep from blocking up. Trouble is, that if you are printing a long banner, some printers such as Roland get piezo clogging half way through the image, leading a defective printing path across the print. Canon imagePROGRAF W7000-series printers also purge which is not as common among thermal printheads. If a printer forces a lot of ink through the nozzles in this process, then the printer must have an ink collection system. Only early Epson systems this ink collection system was sort of hidden and required an expensive service call to empty and replace.

Q

quad black inkset means four different strengths of black. Ilford, ColorSpan, and other companies offer quad bacl inksets for inkjet printers.

quadtone, quad tone or quad-tone, four tones, usually to refer to four levels of black (one black and three levels of gray). However quadtone can also mean extra color tones, line a double duo-tone so to speak. Quadtone is used loosly and not often fully described or consistent. See also quad black inkset

R

rag, as in rag paper. As with other 21st century art terms, rag today is a misnomer. In the old days good paper was made with rags, as a source of cotton. See also linters.

raster image, a bit map, namely a map in rows and columns of where the bits of information is to be placed in a digital image. Pixels are bit-mapped.

Raster Image Processor, see RIP software.

remarque, an extra sketch-like work of art by the artist in a lower margin of a print. If done by the artist this is an original. May be thought of as a separate original or as a true enhancement of the main print. Either way it tends to raise the value of the print.

reproduction, noun, a reproduction is when an original painting or photograph is reproduced by printing multiple copies (even if one by one, the end product is multiple). Reproduction can be printed by any technology from lithography, serigraphy, or inkjet, among others. See also original and multiple original

repro camera, is a reprographic camara set up with a copy stand. The advantage is that you can photograph your painting face up, which means you don't have to put the delicate surface of the painting down onto the glass of a flatbed scanner. Besides, most flatbed scanners are not large enough to digitize a painting. In distinction reprographic stands can be large enough for all but mural-sized paintings. The Cruse scanner/camera is a digital reprographic camera.

resolution really means pixels per inch in scanned images and digital photographs and dots per inch only in printed images. FLAAR has an entire report on digital image resolution.

restrike originally meant a second use of the original plate or block, after the original print run. By a twist of fate, in essence, any digital print made after the first run is technically a restrike. But no one would define digital prints as restrikes since there is no original plate to begin with.

RGB, Red, Green, Blue, the colors used by a scanner, most digital cameras, your computer monitor, and laser-light digital imagers such as Durst Lambda, LightJet, and ZBE Chromira. See also CMYK.

RIP is the abbreviation for Raster Image Processor software. RIP is the software which translates a vector based image into a bit-mapped rasterized image which the wide format printer can reproduce. Most RIPs nowadays also add extra features to your inkjet printer. So a modern RIP software is a product that operates a printer with more features

and sophistication than possible with most printer drivers offered by the printer manufacturer. FLAAR has an entire series of reports which explain what RIP software does and why you might need it.

S

satin finish, a surface with reduced glare, so not as mirror-like as glossy, but not as dull as a matte surface. See also glossy, luster and matte finish

saturation The amount of color in a specific hue.

screen printing, each color is squeeged through a silk screen. This process is centuries old. Each color has to be printed separately with its own screen. Hence the set-up and production cost is considerable. As a result you have to print lots of prints to cover the preparation and production costs. This is not a cost effective way to print anything less than hundreds of copies. Another less-talked about downside is that screen printing ink is toxic and has a noxious odor. See also the synonym serigraphy

Scitex, an Israeli company which bought IRIS Graphics. Creo in turn bought Scitex and named the company CreoScitex for about a year. Then Creo dropped the venerable name Scitex and the company is now just Creo. IRIS 3047 faded from the scene when many other inkjet printers got to the same quality, or higher level, than the original IRIS. Today Creo does not make most of their printers themselves but instead rebrands the printers of Canon, Epson, and Mutoh but packaged with Creo prepress workflow software. Scitex also produced the EverSmart models of high quality flatbed scanner such as the EverSmart Supreme. These are now still sold under the Creo label.

serigraph is the artsy name for screen prints which are silkscreen prints. Each color is produced from a single screen. Serigraphs are mass produced as are lithographs. Giclees could be mass produced, but tend seldom to be due to the high cost of each print.

service bureau is a company that accepts outside digital work such as scanning and printing.

sheet fed means feeding a printer paper or media one sheet at a time. Larger industrial printers such as Vutek have auto sheet loaders. Some printers do not take sheets at all, or only thin sheets, or only with difficulty. HP DesignJet printers do accept thin art sheets but clearly come from a heritage of pen plotters for CAD and GIS. ColorSpan and Mimaki have good systems for accepting thick media.

shelf life is how long an ink or media will last on the shelf before it has a physical or chemical breakdown. Often the shelf life is only about 6 months to a year on ink and only two or three years for media. You have to check with each manufacturer.

shellac, originally, natural shellac was the resin-like secretion of the lac insect, found from India through Cambodia.

silkscreen, synonym for screen printing because the screen used to be made of silk. Now there are synthetic materials which are more practical and cost less.

solid areas of fill, of one single color. When you image has areas of large spaces of just one solid color, the ink tends to react differently than if the design is busy with lots of different colors. Large solid areas of fill tend to be unattractive and otherwise exhibit defects such as ink pooling.

soft proofing means seeing what an image looks like on the computer monitor. Hard copy means printing something on paper.

spectrophotometer A device (usually called a color measuring tool) that measures colors in terms of their radiation of energy at various wavelengths across the visible spectrum. Measurements may then be expressed on a spectral plot (that compares energy to wavelength) or may be integrated into device-independent color space values, such as L*a*b* (also written simply Lab or LAB). Spectral reflectance data is the most accurate form of color measurement data. A spectrophotometer is typically used in the creation of ICC device profiles for output devices. A spectrophotometer differs from a colorimeter in that measures 16 or more colors. From Adobe Technical Guides Glossary of Color Management. A spectrophotometer can also take the place of a densitometer, as can a colorimeter.

Be aware that only certain brands of spectrophotometers work with the more popular ICC profiling software. Spectrophotometers made for other fields of science besides digital imaging normally are not accepted by popular ICC profiling software. The other terms mentioned here should be in the FLAAR glossary of color management terms, in a separate FLAAR Series (on color management).

spot color is a special color that is formulated separately and supplied to the printing machine already mixed to a certain specification, usually to a Pantone color designation. A spot color may be a special logo color, or any color which would be not easy to reproduce by merely mixing normal CMYK inks. Most inkjet printers do not have enough ink lines to support use of spot colors. ColorSpan would be one possible exception though today Mimaki and also Roland have dual sets of six colors. However ColorSpan today is about the only printer still being manufacturer that takes up to 12 different colors. That is very different than dual sets of six colors. The 8 color Roland is no longer manufactured. Encad is one of the few remaining 8-color printers, but it is made primarily to run dual sets of four colors.

spray laminate is laminate that is sprayed on rather than rolled, dipped, or sheet-laminated.

sRGB, a simple Red Green Blue color gamut for use on the Internet and sending photos as e-mail attachments. sRGB came into renown as part of Adobe Photoshop v.5.somethingorother. Caused uproar by professional artists and photographers; as a result Photoshop 5.5 and then 6 came out rather quickly. sRGB is not for professional use for enlargements on inkjet printers.

stepper motor is the motor which causes the media to be fed through the printer. How precise, or imprecise, this stepper motor is becomes a factor in the print resolution number claimed in advertisements.

stochastic screening, a screening option usually selected in the RIP software

stretch, stretched, is what most artists do with their canvas. If the canvas has inkjet receptor coating, you have to be sure that this microscopic layer does not pop off or otherwise suffer damage during stretching. See canvas and pre-stretched canvas.

studio canvas is HP's designation for their inkjet artist's canvas. See also artist's canvas, canvas.

substrate is material to be printed on that is not coated with inkjet ink receptor coating chemicals. However some substrates may still have to be treated for certain kinds of inkjet printer. Most giclée is printed upon pre-coated canvas or coated watercolor paper, generically known as media. However some people using Iris printers print on various forms of rough art paper which may be untreated.

T

texture (surface texture of the material). Artificial canvas has a canvas-like texture, usually imprinted. Some watercolor paper has a texture which may cause problems with delicate inkjet printheads. So if you use anything other than traditional inkjet media, then you need to learn about the surface texture as an aspect of printability and usability.

thermal printhead uses heat to cause a bubble of air to expand to push out a droplet of ink. Canon calls their thermal system "bubble-jet." Hewlett-Packard and Lexmark also make thermal printheads. HP heads are used also by ColorSpan. Lexmark heads are used by Encad. Most other brands of printers use a different technology called piezo-electric; these heads are made by Epson and used by Roland, Mutoh, and Mimaki, among others. Encad and now Kodak has to use Lexmark printheads since Encad itself owns no patents in this field.

TIF, see TIFF

TIFF stands for Tagged Image Fine Format. Since extensions have to be limited to three spaces it is usually written .TIF as an extension.

topcoat may also be spelled as two words, top coat. A topcoat is a layer of sealant and preservative (hence a form of lamination). The topcoat may be used as a surface on which to add individualized enhancements, such as gobs of real point to add colors not achievable by the inkjet printer or to provide raised relief not possible on the flat surface of

inkjet media. See also coatings, clearcoat, lacquer, lamination, finishing

trial proofs is usually just called a proof. Test print would be the vernacular. See also artist's proofs.

trimmer is a tool, usually mounted on a table or if vertical than with a special stand. A trimmer cuts an inkjet print down to size.

Tru Giclee (a trademark), is a designation used by the Giclee Printers Association (GPA), founded in 2001. Otherwise there is no such thing as a true giclee or an untrue giclee. Giclee is a made up word to avoid having people think that the beautiful image was just a good inkjet print.

U

Ultra Chrome is Epson's name for their ink for the 7600, 9600, and 10600. In order to make this ink not as lacking in color gamut as earlier Epson pigmented ink, they had to add chemicals to improve the color but which appear to have lowered the longevity (by half).

uni-directional printing is when the printer is laying down ink only when traveling in one direction. This may result in better quality than bi-directional printing,

unique edition is a name evidently registered by Digital Atelier. Artists and printers anguish over how to make reproductions (copies) have a perceived value close to that of the original work of art. Inkjet prints by their very nature are mechanical copies. If you substantially alter such a reproduction you might get away by claiming multiple originals. But merely daubing a little extra highlights is not seriously creating an original; it is merely an enhanced copy.

UV-cured inks, UV-curable inks are pigmented inks which dry instantly upon contact with UV light which is supplied by UV lamps on the printer. More environmentally friendly than solvent inks. UV cured inks are gradually replacing solvent inks in industrial and grand format printers due to new environmental protection laws against solvent inks. The quality of UV printing is grainy, like sand, and nowhere near as fine a resolution as with water-based inks. UV-inks are not yet of giclee-like quality.

UV inks: this can have two meanings. UV-curable inks are special inks used in industrial printers or grand format printers. These special inks are cured with high intensity heat from special lamps. For some reason Hewlett-Packard calls their water-based pigmented inks "UV inks." Yes, they are UV resistant but they are not UV curable (nor does HP intend that meaning). HP pigmented inks are stated to be from DuPont and are the same basic long-lasting inks as you get from those other printers that also get their ink from DuPont (Encad up to after Kodak replaced DuPont with Kodak ink). Epson pigmented inks come from a company other than Epson, as do the inks for Mutoh and Roland. Those pigmented inks for the Roland especially are reportedly poor on some reds and blues. In this respect the color gamut of the HP pigmented inks is considered notably better. However dye inks in general have a wider color gamut than pigmented inks.

V

variable droplet technology is a combination of software and printhead design. However the printhead hardware has to be capable of forming variable sized droplets (something not possible, so far, with thermal (bubble-jet) printhead technology. Roland was the first company to promote variable droplet technology, at least by 2002, on an Epson printhead. The next generation of Epson printheads offered variable droplet on all OEMs such as Mimaki, Mutoh too. Actually you might consider the Iris 3047, years before Roland, as the first variable drop printer: an Iris printer is claimed to be able to produce 32 different dot sizes (Bret Lortie, "Giclee: The Short History of Inkjet Digital Printmaking."

vertical defects are probably ripples are caused by too much ink, often on a cheap bond paper (heavy coated bond). Thermal printers, especially Encad and ColorSpan, lay down so much ink that it causes cockle of the cheaper media. However same thing with Epson and other piezo printers: they too do not print well on cheap coated bond paper.

viewing distance is a factor in judging apparent resolution quality. A 25 dpi print, seen on a billboard while driving down the highway, may be fully photo-realistic in quality. But an image printed by a LAC brand airbrush printer, if seen close enough to

notice, the output is quite splotchy. The output by most Encad printers looks lovely at a viewing distance of 10 feet, as does the output of any thermal printer such as HP, Canon, and ColorSpan. But at a closer viewing distance of 2 feet, you see the dot pattern of the Lexmark printheads of the Encad. HP, ColorSpan, and Canon are slightly higher quality. The HP 30, HP 130, Canon w6200, Canon w8200 and Epson 4000 have the least problem with viewing distance, but neither Epson nor Roland is true continuous tone, especially when printed at 720 dpi on regular material.

W

water based is synonymous with aqueous, meaning that the ink colorant is in a vehicle of water. Other kinds of inks would be solvent-based or UV-curable, neither of which are used to make art, exhibit photos, or giclée prints.

watercolor is traditional coloring material of pigmented color dissolved in water.

watercolor paper is the old-fashioned traditional rough paper used by people painting with watercolors. Many inkjet printers accept watercolor paper. But because watercolor paper is thick, some printers don't accept it at all, or if so only up to a certain thickness.

waterfastness, the ability of an inkjet print not to run if wet. Best if this term is refined as to waterfastness merely sitting in a tub of water, or waterfast if hanging in a shower.

weight, of paper, is based on the weight of a ream. A ream is 500 sheets. So hundred pound paper is paper, at that size, what 500 sheets of it weighs.

Wilhelm, Henry, the world's expert on longevity of photographic prints. He used his experience with fading rates for photographic prints to attempt to gauge the longevity of inkjet prints. Unfortunately inkjet prints fade for reasons very different than traditional darkroom photo prints fade. So there were several upsetting snafus, such as ozone, humidity, heat: all of which caused inkjet prints to fade in months (not the decades of longevity first claimed). Nonetheless, Wilhelm is a knowledgeable person, and open in discussions when you meet him at trade shows and symposia.

workflow is jargon for the flow (the sequence) of actions and events and list of what equipment is involved in producing a finished print from a source image.

working space has come to mean the color space in which you work your image either in Adobe Photoshop or in your color management software.

X

X-Rite is a company that makes color measurement tools such as spectrophotometers. X-Rite bought Monaco, a company that makes ICC profiling software. X-Rite is the main competitor of Gretag-Macbeth.

Y

years before noticeable fading is the guestimate based on supposedly standardized test protocols. At technical conferences Kodak argues that most longevity estimates are not acceptable due to the principle of reciprocity failure. See also archival and longevity. We discuss the flaws in longevity estimates in a separate FLAAR Report by Nicholas Hellmuth.

Z

Zig-align, a clever system of mirrors to help align a painting with the film plane (or with the sensor of a tri-linear digital camera back). The Zig-align system is easiest to use with a large format camera. FLAAR has a complete report on how to set up and use this alignment system.

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If you intend to quote any portion of a FLAAR review in a PowerPoint presentation, if this is in reference to any product that your company sells or promotes, then it would be appropriate to license the report or otherwise notify us in advance. FLAAR reports are being updated every week sometimes, and our comment on that product may have been revised as we learned more about the product from end users. Also, we noticed that one company cited the single favorable comment we made on one nice aspect of their printer, but neglected to cite the rest of the review which pointed out the features of the printer which did not do so well. For them to correct this citation out of context after the fact was rather embarrassing. So it is safer to ask-before-you-quote a FLAAR review on your product.

Books on related subjects
which also cover giclée printing to some degree

JOHNSON, Harald
2002 Mastering Digital Printing. Muska & Lipman, Cincinnati, OH 45208.

Written by a person with several decades of experience in fine art and printing. As moderator of an on-line fine art discussion group he is most likely exposed to about everything that end-users chat about on-line.

The book covers digital printing in general, so mentions dye sub, RGB laser light (Durst Lambda, LightJet), Fuji Pictrography and inkjet, especially desktop size (13 x 19 inch). Covers primarily printing of photographs and art: this is not intended to be a book on solvent-ink printing of billboards.

There is now a more recent edition, probably dated 2004.

MARGULIS, Dan
2000 Professional Photoshop 6: The Classic Guide to Color Correction. John Wiley & Sons, New York.

2002 Professional Photoshop. The Classic Guide to Color Correction. Updated for Photoshop 7. John Wiley & Sons, New York.

Other Recommended Books

SMITH, Lawrence B.
1997 The Art of Displaying Art. The Consultant Press, Ltd., New York.

Sources and Resources on the Internet

Sites and pages come and go. These pages existed when we read them, but by the time you click on these links a few of them may have disappeared into Cyberspace.

www.artcafe.net/artcenter/studio/printglossary.htm
A glossary of art print-making terms.

www.artinside.com/blue/education/printing-terms.html
A glossary of art printing terms.

www.artlex.com/
Warning, this web site has aggressive pop-ups, and annoying flashing banners. However it is one of the longest, most thoroughly illustrated, and relatively unpedantic glossaries of art I have seen so far. By no means dedicated to giclee or even digital art. The advertisers on this site use every slick and slimy trick possible to get you to click on their commercial messages, even mimicking fake messages just for you.

www.arttekstudios.com/TECHNICAL/ACRYLIC/acrylic.html
Thorough definition of acrylic paint.

www.artistswoods.com/askart/DigitalGlossary01.htm
A mixture of words related to giclee and digital printing.

www.artpaper.com/glossary.html (Glossary of paper-related terms.)

www.cofa.unsw.edu.au/schools/art/printmaking/GlossFiles/glossaryA.html#AstartsHere Comprehensive glossary of printing and paper terms.

www.collectorsguide.com/fa/fa020.shtml
A glossary of art print terms for collectors.

http://pro.necmitsubishi.com/Calibration_Glossary.pdf
There are many companies that make color measurement tools but these do not coordinate with the software of GretagMacbeth of X-Rite. We only recommend those color tools and software that work with these two industry-leading solutions. This does not mean the others are “bad” or even inadequate, nor that those we list are “better.” But the two we list are the international standards and work quite well.

http://craiggoldwyn.com/links/color/glossary.html
“Glossary of color management jargon,” by Craig Goldwyn. No illustrations; incomplete, and not in alphabetical order. But his site has an informative list of links to photographers sties, complete with critique on their web design.

www.crosshall.com
“What is Digital Fine Art,” by Wayne Cosshall.

www.csuchico.edu/art/contrapposto/contrapposto00/pages/themecontent/chan.html “The Evolution of Digital Prints – Is it an Original?” by Myra Chan.

http://dequim.ist.utl.pt/lti/docs/hpdesignjet/printres_141_en.pdf
HP DesignJet Technical Brief on true vs addressable resolution.

www.dpreview.com/learn/?/Glossary/Digital_Imaging/Color_Spaces_01.htm
“Color Spaces,” one long page by Vincent Bockaert, illustrated in color.

http://eartzone.com/cgi-bin/MasterFrameReunion.cgi?http%3A//www.eartzone.com/glossary.htm
Has only about 5 terms described.

www.etalentstudio.com/GlossaryPage.html
A few terms related to collecting of art prints.

http://giclee.netfirms.com/
An honest review of how marketing has twisted the use of giclée to try to mean an original work of art instead of a reproduction.

www.gordongallery.com/articles/glossary.html
A glossary of digital giclee.

www.gretagmacbeth.com/mac/index/colorlibrary/glossary.htm?c=S
Seemingly a recent (2004) addition to their website. No illustrations.

www.heatoncooper.co.uk/aboutpaper.htm
A brief description of hand-made, mould-made, and machine-made paper.

www.hunterediitions.com/html/digital-print-faq.html
Misc info on giclee; not a glossary.

www.inkjetart.com/news/dot_comp.html
"Epson Print Quality Comparison."

www.inkjetart.com/lyson_spray.html
Lyson archival top-coat spray.

www.inkjetart.com/art_papers.html
Archival inkjet fine art photo papers.

www.inkjetart.com/pro/7600_9600/faq/print_quality.html
Distinguishes between horizontal defects and vertical print defects in Epson printers. Mentions that you may have to purge liquid money through your Epson printheads up to eight times to clean them. We agree since we had to do this on our Epson 7500.

www.inkjetart.com/news/gassing.html
"Solving the Out-gassing 'Fog' Problem."

www.laroche-gallery.com/glossary.html (
Seven terms are described.

www.lebanonart.com/eng/print/pindex.htm
Uses Encad NovaJet 850 for giclée.

www.monoprints.com/info/techniques/glossary.html
A glossary of printmaking, but related to art prints.

www.monoprints.com/info/techniques/glossary2.html
Art terms.

www.mwords.co.uk/pages/supportGlossary.htm
A helter-skelter mix of words, but nicely described.

www.museumofcomputerart.com/labadie02.htm
Discussion by John Antoine Labadie on what is an original print. Very nicely written.

www.nbm.com/digitalgraphics/past_articles/glossary_of_digital_terms/learning_the_lingo.pdf (6 pages, Digital Glossary 2000, "Learning the Lingo." This appears to be the source for some terms and definitions in the Encad glossary.

www.omniguard.com/glossary-prints.html
A glossary of art print-making.

www.onlineartmall.com/artterms/
A glossary of art terms.

www.onlineshoppingexpress.com/detail/electronics/B000067V0A/
Lists problems with Epson 2200 printer.

www.outbackphoto.com/tforum/viewtopic.php?TopicID=176
User group discussion of banding; varies from the sad to the unfortunate. Few seem to realize what really causes it. One apologist says they have never seen it. That is possible on some media but such a rare event does not make the systematic banding defect go away on the thousands of other piezo printhead users who have it, primarily owners of Epson and Rolands, but also HP and ColorSpan, albeit less often with those thermal printers and easier to overcome.

http://palimpsest.stanford.edu/don/dt/dt0090.html
Dictionary of bookbinding.

www.portphoto.com/html/digital9.html#why
Miscellaneous on Iris printers and giclée.

www.skoury.com/Pages/glossary_terms.htm
Art printing terms.

www.skydancers.com/store/main_pages/_about_digital.html
A discussion of original vs reproduction.

www.spanishprintmakers.com/english/giclee.htm
"The Short History of Inkjet Digital Printingmaking" by Bret Lortie.

www.sportsoncanvas.com/glossary.htm
A glossary of prints on canvas.

https://web.mcn.org/d/paperpage/glossary.html
Glossary on paper-making; very brief but to the point.

www.zerkall.com/English/Info/MouldMadePaper.E.html
Comes the closest to making some of the paper-making terms understandable.

Specific Citations to glossary definitions that were pertinent to our research.

Acrylic paint (www.arttekstudios.com/TECHNICAL/ACRYLIC/acrylic.html)

Alum www.artpaper.com/glossary.html; http://palimpsest.stanford.edu/don/dt/dt0090.html

Artist proofs (www.skoury.com/pages/glossary_terms.htm). www.onlineartmall.com/artterms/ also has an honest assessment of artist proofs today being just an extension of the regular edition.

Deckle edge (www.skoury.com/pages/glossary_terms.htm). www.artpaper.com/glossary.html also provides a good description.

Gouache (www.skoury.com/pages/glossary_terms.htm).

Hand made paper (www.sportsoncanvas.com/glossary.htm and www.artpaper.com/glossary.html).

Linen paper (artistswoods.com/askart/DigitalGlossary01.htm)

Mould-made paper (www.zerkall.com/English/Info/MouldMadePaper.E.html).

Optimized dpi(http://h30015.www3.hp.com/hp_dpc/learn/digital_glossary.asp).

Rag www.artpaper.com/glossary.html

Remarque (www.onlineartmall.com/artterms/)

Serigraphy (www.artinside.com/blue/education/printing-terms.html) www.sportsoncanvas.com/glossary.htm has a quick and easy-to-understand description of screen printing. Of course there are hundreds of screen printing web sites too.

Specific citations

Alum www.artpaper.com/glossary.html

Artist proofs (www.skoury.com/pages/glossary_terms.htm). www.onlineartmall.com/artterms/ also has an honest assessment of artist proofs today being just an extension of the regular edition.

Deckle edge (www.skoury.com/pages/glossary_terms.htm). www.artpaper.com/glossary.html also provides a good description.

Fine art (www.etalentstudio.com/GlossaryPage.html).

Gouache (www.skoury.com/pages/glossary_terms.htm).

Hand made paper (www.sportsoncanvas.com/glossary.htm and www.artpaper.com/glossary.html).

Linen paper (artistswoods.com/askart/DigitalGlossary01.htm)

Linters (www.cofa.unsw.edu.au/schools/art/printmaking/GlossFiles/glossaryA.html#AstartsHere)

Rag www.artpaper.com/glossary.html

Remarque (www.onlineartmall.com/artterms/)

Serigraphy (www.artinside.com/blue/education/printing-terms.html) www.sportsoncanvas.com/glossary.htm has a quick and easy-to-understand description of screen printing. Of course there are hundreds of screen printing web sites too.

Humerous glossary mis-identifications

"giclee… printed by special ink jet, using ink, oil, or acrylic paint." www.artcafe.net/artcenter/studio/printglossary.htm
Don't we all wish we could do giclee, with an inkjet, jetting oil or acrylic paint. Only the Pixation printer will do that and it is an airbrush contraction, not with the finesse or dpi required for giclee.

"Giclee is a French colloquialism, coined in the 17th century." www.sportsoncanvas.com/glossary.htm Sorry, but giclee is a made up pseudo French word invented in the 1990's in the USA to make a dye-ink printed (and hence fading) inkjet print sound like something special.

"Canvas Transfer – Art reproduction on canvas which is created by a process such as serigraphy, photo-mechanical, or giclee printing." This is so hopelessly lacking in basic understanding of any of these processes that out of compassion I don't cite the name of the web site.

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