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GLOSSARY OF GRAPHIC ARTS TERMS

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A

accordion fold—A binding term for two or more parallel folds that open like an accordion. Brochures and maps often use accordion folds.

acetate—A high-quality, transparent sheet of plastic commonly used as a layer in multi-layer artwork or composition. Acetate is also used for overhead transparency printing.

aliasing—The pixelated or stair-step appearance of slanted or curved lines on low-resolution, computer generated images. Also called jaggies. Ragged edges on computer-generated elements are less visible when output on a high resolution output device.

alkaline paper—A stable, acid-free paper used for products that must resist deterioration and preserve their images for as long as possible. Archival photographs, high-quality books, and fine art prints are made on alkaline paper.

American National Standards Institute (ANSI)—Pronounced *an-see*. ANSI is a nonprofit organization that provides administrative support to standards development activities within the United States. It is the sole U.S. member body to the International Organization for Standardization (ISO) and is the organization through which all official U.S. input to ISO takes place. It has four basic functions, (1) facilitate U.S. standardization policy developments, (2) accredit national standards developers, (3) promote U.S. standards interests globally and (4) provide information and training on standardization.

apparent dot area (ADA)—The dot area of a printed halftone.

APR—See Page Layout section.

author's alterations (AAs)—Corrections made in proofs (galley proofs, bluelines, color proofs) that are not caused by printer error.

B

binder—An adhesive component of paper designed to hold the paper together.

binding—Binding begins after a printer has laid the ink on the paper. It includes cutting, folding, trimming, gathering (collating), stitching, pasting, inseting, casing-in, etc.

bit—Abbreviation for *binary digit*. The smallest unit of information in a binary system, a bit is the fundamental unit of information used in computers. A bit element is a 1 signaling *on* or a 0 signaling *off* in a data string. Most computers work with 8-bit strings called bytes.

bitmap—A computerized image made up of dots or pixels. While satisfactory for pixel-based screen displays, bitmap images give a jagged appearance on paper or film. For high-quality print output, bitmap images must be translated to raster images.

black plate change—Changes made to black text and headlines in process printing. The changes are made on the black plate and thus do not affect the color.

blanket—A fabric-reinforced sheet of rubber used on offset presses to transfer the impression from the plate onto the paper.

bleed—Printed colors that run all the way to the edge of a page. To accommodate the bleed, the printer must make the bleed area larger than the final trim size. The page is then trimmed right through the bleed area. The extra bleed area absorbs normal production variation.

blind folio—Page numbers are not printed on the page.

blueline—A photographic proof for checking the accuracy of layout and position before printing plates are made.

brightness—Also called *value*. (1) One of the three attributes of color, the other two being hue and saturation. Brightness describes differences in the amount of light reflected from or transmitted through an image regardless of its hue and saturation. This is a difficult word to use in marking color correction. People use it for both the addition and subtraction of color. Correctly used, it refers to the amount of light (paper white) apparent in an area. (2) When speaking about paper, brightness is the light reflectance or brilliance of the paper at a specific wavelength, often perceived as whiteness. Generally, the higher the brightness rating, the better quality the paper.

C

C1S—A trade acronym for coated 1 (one) side. Commonly card stock used for postcards and fliers or cast coated sheets often used for covers coated on one side only.

camera-ready—Artwork that has all type, line art, and graphics in place and ready to be photographed or digitally transferred to film in preparation for making printing plates.

card stock—Also called *cover stock*. A stiff paper often used for postcards, catalog covers, and other items that require rigidity. Card stock is usually described by point sizes that give the thickness of the sheet in thousandths of inches. For example, 10-pt card is 0.010 inch thick. Card stock can also be described by pound weights based on the weight of 500 sheets measuring 20 inches x 26 inches each.

case binding—Casebound, or cased-in, books are typically hardbound books. The book covers, called "cases," consist of rigid or flexible boards that are covered on the outside and on the edges with cloth, leather or other material.

character generation—The process of using master font information to create type images as a series of dots or lines on a computer or typesetter. The type images can be sent either to a screen for display or to an imagesetter for final output.

characters per inch (cpi)—The number of characters that fit within a linear inch in a particular font. Standard measurement units for typewriting are pica (10 cpi) and elite (12 cpi).

CIE—Abbreviation for *Commission Internationale de l' Eclairage*, or International Commission on Illumination. CIE established several visual color models that have become the basis for all colorimetric measurements.

CIP3—The International Cooperation for the Integration of Prepress, Press and Postpress, better known as CIP3, is a consortium of vendors in the prepress, press and post-press industries formed with the goal to find ways to make their products work together better. This group has developed the Print Production Format, or PPF, a uniform, vendor-independent file format intended to move the industry closer to computer-integrated print production. Based on PostScript, the PPF format is designed to use prepress digital information at the press and finishing stages.

coated paper—Paper coated with clay, white pigments, and a binder.

colorant—A pigment or dye which is the color portion of ink, toner, proofing films or paper.

color cast—An unwanted dominant color present in the original image or in its reproduction. Color cast usually results from lighting variance during photography or improper processing or proofing conditions.

color electronic prepress system (CEPS)—A high-quality, proprietary computer-based system that may include equipment for page make-up, scanning color separations, displaying color, and making color corrections. This is to be contrasted with PC-based color scanning and manipulation systems often referred to as desktop publishing systems (DTP).

color gamut—The range of colors that can be formed by all combinations of a given set of light sources or colorants of a color reproduction system. The normal human eye can perceive a wide gamut of colors—colors within the full range of the visible spectrum, including detail in very bright light and deep shadows. Transparencies and monitors, which display color using transmitted light, can hold some of that color range, or gamut. Due to such limitations as reflected light, ink impurities, and paper absorption, a conventionally printed image is limited to a much smaller range of colors. Much of the work done in color correction arises from the tonal compression of the color gamut that occurs during color separation.

color separation—The photographic or electronic means of separating artwork into cyan, magenta, yellow, and black components.

Committee for Graphic Arts Technologies Standards (CGATS)—The accredited standards development committee under ANSI responsible for graphic arts industry standards. The mission of CGATS is to have the entire scope of printing and publishing technologies represented in one national standardization and coordination effort, while respecting the established activities of existing accredited standards committees and industry standards developers. It is charged with the overall coordination of graphic arts standards activities and the development of graphic arts standards where no applicable standards developer is available.

composite film—Also called *final film*. Color separations ready for plate imaging.

contacting procedure—The method of exposing a sheet of photosensitive material (graphic arts film/paper, proofing film or printing plates) by placing it in direct contact with an imaged sheet of film in a vacuum frame using a light source. This is part of the photomechanical process.

contract proof—A color proof approved by a customer with the expectation that the colors and images can be printed as they appear on the proof.

contrast—The difference of tonal gradation between light and dark values within an image. A high-contrast image is predominantly highlights and shadows with few gray tones. A low-contrast image has few highlights and shadows with predominantly even tones. Image contrast is sacrificed somewhat when tones are compressed to bring an original's density down to a range that can be reproduced on a printing press.

contrast range—The amount of variance between highlights and shadows in an original or reproduction. Quantified as the difference between the top highlight and deepest shadow density readings as measured by a densitometer.

creep—In a saddle stitched document, a stair-step condition caused because inside pages creep away from the spine and push out on the opposite edge. Creep is a concern especially when using thick paper or too many pages.

crop mark—Markings that show where a page, photograph, illustration or transparency is to be trimmed.

D

data compression—The translation of a computer file into a format that uses less disk space. Compressed files must be decompressed to be used. *See also lossless compression and lossy compression.*

desktop publishing (DTP)—The process of creating fully composed pages using a computer, off-the-shelf software, and an output device such as a laser printer.

dpi, or dots per inch—*See Image Capture* section for description of dpi, lpi and ppi.

duotone—A halftone image created by overprinting two different halftone screens of the same image with different colors and tonal ranges. Duotones are commonly printed using black ink and a colored ink and sometimes with two black inks (also called a double-hit, or double-bumped black) to increase the detail and saturation of the black part of an image.

dynamic range—The range of tones from lightest to darkest a scanner can see and resolve.

E

electronic mechanicals—Digital page layout files created on a desktop publishing system. Electronic mechanicals commonly contain text and graphics in EPS, TIFF, or similar file formats. They are a replacement for conventional paste-up boards.

embossing—Raised letters or designs on paper or other material. The effect is produced by uninked dies or blocks. Any colors to be used are put on first by regular printing methods.

F

file format—A set of instructions that describe how to store, access, or transmit digital information. Being able to match the format of data created in one program to what can be received by another is the basis for file compatibility.

fluorescence—The ability of a substance, such as paper or ink, to absorb ultraviolet light waves and reflect them as visible light.

fold marks—Markings at the top edge of a page showing where folds should be.

folio—A page number.

font—The complete assortment of upper case and lower case characters, punctuation and numerals of one typeface.

form—The assembly of pages on a printed sheet. When folded, the form is called a *signature*.

furnish—The mixture of fibers, water, dyes, and chemicals that become paper during the papermaking process as approximately 95% of the water is removed. Also called slurry and stock.

G

gamma—(1) In photography, the degree of contrast in an image. Film types are listed as creating certain

gamma ranges appropriate to different uses. (2) In electronic color correction, the difference in the status of the color curve. The color curve represents highlight to shadow values between current values and corrected values. Changing the color curve (making a gamma correction) increases or decreases the highlights, midtones and shadows relative to the original points on the curve.

gloss—A shiny coating on paper. Gloss coatings allow very little ink absorption, thus providing excellent color definition and contrast.

ghost—A faint, unwanted image on a printed sheet that is a result of the printing system itself. A ghost usually appears as a lighter image printed as a repeat of an image and is caused by the layout of the press form and inability of the press's inking system to compensate for a large change in ink coverage.

grain—(1) In photography, the speckled appearance in prints or transparencies produced by clusters of silver particles in photographic emulsions. Frequently considered undesirable and apparent when an original is enlarged too much, grain can also be emphasized for special, softening effects. (2) In paper making, the direction in which most wood pulp fibers lie within the sheet due to the direction of flow as the paper is made. Folding paper against the grain breaks more wood pulp fibers than folding with the grain, resulting in an uneven, less precise fold.

gray component replacement (GCR)—Also called *achromatic color replacement (ACR)*, *integrated color removal (ICR)*, and *polychromatic color removal (PCR)*. Removing the achromatic (also called contaminant or graying) component of cyan, magenta, and yellow when they all combine and replacing it with black. Gray component replacement is distinct from under color removal, which reduces process colors in only dark, neutral areas and adds black. GCR separation is done with specialized software on electronic scanners.

grayness—A function of the unwanted absorption of wavelengths of light by process color inks. The portion of a process ink that makes it deviate from a pure saturated hue. To calculate percent grayness of a process ink using a densitometer, multiply 100 times L (the lowest of its densities to red, green and blue wavelengths of light) then divide that number by H (the highest of its densities to red, green and blue wavelengths of light).

gutter—The inside space between pages; that is, the inside margin toward the back or binding edge of a book.

H

halftone—Ink-printable image produced photomechanically or electronically to convert a continuous-tone image (for example, photograph, drawing, print, etc.) into a regular grid pattern of various-sized dots with equidistant centers to simulate shades of gray when viewed from a normal reading distance. This reproduction method contrasts with line art (no shading of tones), mezzotints (irregular shapes in random placement), and stochastic screening (same-size microdots in a controlled random placement within a given area).

hard dot—A halftone dot that has a hard, crisp edge without the fringe seen with the soft dot. The halftone dot also has a fairly uniform density over its entire surface.

hickey—A speck or imperfection in printing, most visible in areas of heavy ink coverage, caused by dirt on the plate or blanket. This prevents ink from being applied in the area, resulting in a characteristic donut-shaped effect.

HTML (Hypertext Markup Language)—Computer language used to describe the contents of documents on the Internet. HTML has become established as the international standard for structuring Worldwide Web documents.

hue—One of the three attributes of color, the other two being saturation and brightness. Hue is determined by the color's dominant wavelength within the visible spectrum.

hue error—Characterizes colorants used as process colors. Expressed as a percentage, hue error indicates the deviation from a theoretically pure process hue. It does not, however, indicate any error or problem with the process inks. To calculate hue error using a densitometer, multiply 100 times the difference between M and L (the middle and lowest of its densities to red, green and blue wavelengths of light) then divide that number by the difference between H and L (the highest and lowest of its densities to red, green and blue wavelengths of light).

I

imagesetter—A general term used for devices that generate graphic arts films or paper from electronic data sources.

imposition—Arrangement of pages so they print correctly on a press sheet and the pages are in proper order when the sheet is folded.

impression—The result of one cycle of a plate cylinder on a printing press.

inserts–Extra printed pages inserted into printed pieces.

interleaves–Extra blank pages inserted loosely into printed pieces.

Institute of Electrical and Electronic Engineers (IEEE)–An international society that issues its own standards and is a member of ANSI and ISO.

International Federation of Publishers Press (FIPP)–The group in Europe responsible for creating specifications for magazine color proofing and printing.

International Organization for Standardization (ISO)–A worldwide federation of national standards bodies from over 100 countries. Its mission is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity. The ISO Technical Committee responsible for the graphic arts is TC 130.

J

Jaggies–See aliasing.

K

Kelvin (K)–A thermometric scale used to measure light temperature. 0° K is absolute zero (a hypothetical temperature representing the complete absence of heat); water freezes at 273.15° K, which is 0° C or 32° F. The most common use of Kelvin temperatures in the graphic arts is to describe lighting sources for viewing and analyzing color. The color of light sources is measured in Kelvin temperatures. A standard balanced light source (neutral in hue and with the brightness of midday sunlight) measures 5000K.

knockout–When type or line art is to be printed over a photograph or other variable color background, the best way to produce a consistent color is to first reverse the type or artwork out of the background and then drop in the desired color. This process is referred to as knocking out. *See also* reverse type.

L

laser–Abbreviation for *light amplification by stimulated emission of radiation*. It is the amplification of only one frequency of light within the spectrum to create a directional, intense beam. The beam has a very narrow bandwidth capable of producing images through electronic impulses.

lossless compression–Data compression methods that rearrange or re-code data in a more compact fashion and lose no information when decompressed. Because all data are preserved, there is a distinct limit to the amount of compression that can be achieved (for example, 3:1 or 5:1). *See also* data compression and lossy compression.

lossy compression–Data compression methods (for example, JPEG) that selectively discard repetitive information to decrease file sizes. Depending on the amount of compression requested, the lost information may or may not be noticeable. At rates of 25:1, the results are easily seen. *See also* data compression and lossless compression.

lpi, or lines per inch–See *Image Capture* section for description of dpi, lpi and ppi.

M

makeready–Also called *set up*. All work done on a printing press before running a job. Make ready includes adjusting the plate, feeder, grippers, side guides; putting inks in the fountains; registration; and matching the printed result to the supplied proof (bringing it *up to color*). For short runs of a few thousand, the make ready costs are a significant percentage of the total printing costs.

matte–Surface finish of a substrate that is not shiny like a gloss.

mechanicals–Commonly used to designate the paste-up boards that camera-ready artwork is mounted on. A second layer, often a sheet of acetate, contains the photographs or transparencies mounted in position. A sheet of tracing or other semitransparent paper is often attached and includes special information or instructions; for example, make this type blue or that logo red.

metamerism–The phenomenon that results when the color of two objects match under one lighting condition and not under another.

moiré–An undesirable optical pattern that happens when two or more grid patterns overlap, such as the halftone dots produced by an angled screen. A moiré pattern may also occur when a pattern in the artwork, such as a herringbone weave or window blinds, interferes with a halftone dot pattern. Manipulating artwork when scanned or using stochastic screening may eliminate the moiré.

N

nanometer—One-billionth of a meter. The wavelengths of electromagnetic energy, which includes visible light, is measured in nanometers.

Newton's rings—Irregularly shaped patterns, similar to oil on the surface of water, that appear in a color separation. They are caused by the varying amounts of air between the scanning cylinder and transparency surfaces as they come into contact. The light refracts into a rainbow pattern as it passes from the cylinder through the air pockets to the transparency. This is avoided by applying a coat of oil (to make airless contact) or a thin mist of powder (to prevent any contact) between the two surfaces.

nonrepro blue—Also called *nonphoto blue*. A light blue color often used to make crop marks or notes on mechanicals.

O

off-press proof—Commonly, a proof generated before the production press run and before, or instead of, a press proof. An off-press proof can be produced photomechanically, electrostatically, or electronically.

offset lithography—A printing method that uses the repellent properties of oil and water to reproduce an image on a flat surface that contains both the image and non-printing areas. Lithographic plates are dampened with water that is repelled by the image area. Ink is then applied to the image area by ink rollers. An intermediate blanket cylinder picks up and transfers the ink image from the plate to the paper. The intermediate blanket cylinder is why this process is called *offset*. The bulk of publication and commercial printing is produced using the offset method.

OPI—See Page Layout section.

orthochromatic—Referring to a film that is sensitive to two colors of light. Panchromatic film is sensitive to all colors of light.

output—Processed optical or electronic data transferred to another device such as a secondary storage unit, a laser printer, an electronic manipulation station, or an analog or digital proofing device.

P

perfect binding—A binding method where the binding edge of a book or magazine is ground down about 1/8 inch and coated with a fast-drying glue. Then, a flexible cover is attached, creating a squared-off backbone.

photomechanical process—The image reproduction process that involves photosensitive imaging products (paper, film, proofing materials and plates) that react to light. During the photomechanical process these materials are imaged using a contacting procedure. See *contacting procedure*.

pica—A typographic measurement. There are 12 points to a pica and approximately 6 picas to an inch.

PICT—A common data format for graphics popular with illustrations encoded on the Macintosh. PICT data can be created, displayed on the monitor, and printed.

pixel—Abbreviation for *picture element*. The smallest unit that can be sensed, manipulated, or output by a digital system or displayed on a computer screen. More pixels per inch mean better resolution.

plate—Reproduction of type and images on metal, plastic, rubber, or other material to form a printing surface.

platesetter—A device used to expose metal plates (sometimes paper or plastic plates) directly from digital files. Some platesetters also produce proofs from the same file.

point—(1) In measuring type, 1 point is 1/12 of a pica or 1/72 of an inch. In other words, there are 12 points to a pica and 72 points to an inch. (2) In measuring the thickness of heavy paper stock such as bristol board, a point is 1/1000 of an inch. Thus, 10-pt stock is 10/1000, or 0.010 inch.

porosity—The open or closed characteristics of a paper's surface that allows air to pass through and ink to penetrate. Generally, coated papers have very closed surfaces, low porosity, and hold ink on the surface well. Some papers used for blow-in cards are porosity rated for bindery use.

PostScript®—A page description language for medium- to high-resolution printing devices. Consists of a specific set of software commands and protocols that form images on output printers and film recorders when translated through a raster image processor. The key feature of PostScript is device independence, allowing different output devices from different manufacturers, which may not be compatible through any other means, to print the same file in more or less the same way.

ppi, or pixels per inch—See *Image Capture* section for description of dpi, lpi and ppi.

R

random proof–Also called first submits, scatters, or loose proofs. A press proof or off-press proof of unstripped images randomly placed on a page. Generally the first proof to be evaluated, a random proof can be used for preliminary color OKs and color correction.

raster image processor (RIP)–The process of interpreting a page description language, such as PostScript, to a raster format at the resolution and in the format required for a specific output device or imagesetter/platesetter. The RIP may also incorporate machine-specific instructions, and the RIP may occur either in the imaging device or in a separate computer system. Some RIPs permit trapping and proofing prior to imaging.

registration–Also called *register*. Two or more images positioned in predetermined alignment. *Out of registration* refers to an element reproducing slightly above or to the side of the matching one underneath it.

registration marks–Marks outside the main image area on hard-copy or electronic mechanicals and film that help keep film mechanicals (flats), plates and printing in register.

resolution (res)–The degree of image sharpness that can be reproduced by a piece of equipment. Resolution is measured in dots per inch (dpi), or pixels per square millimeter. On high-end scanners, resolution is counted both vertically and horizontally; for example, res 12 is counted as 12 x 12 = 144 pixels per square millimeter. Desktop publishing equipment usually measures resolution in dots per dpi; for example, a 300 dpi printer. The higher the resolution, the better the image detail appears and the larger the file becomes, requiring more computer memory and longer processing times.

reversed type–Type knocked out or reversed in a colored field, such as white type in a black background.

RGB–Red, green, blue.

rosette–A regular circular pattern created by the halftone dots of process colors when reproduced in register and at the correct screen angles: K (black) at 45° , Cyan at 105° , Magenta at 75° , Yellow at 90° .

S

saddle stitching–A binding method where a signature is opened up and stapled at the center. Pamphlets, folders, leaflets and magazines (of a maximum thickness) that consist of folded sheets bound by staples through the centerfold are called saddle stitched.

saturation–One of the three attributes of color, the other two being hue and brightness. Saturation is the intensity of a hue at a given lightness. The closer a color is to neutral gray or white, the less saturated the color. The farther away it is, the more saturated it is. Thus, bright red is a saturated color and pink a less saturated color.

self cover–A publication format where the cover stock is the same weight as the text stock, as opposed to attaching a separate cover of heavier paper. Self covers are commonly used for booklets and similar small publications.

sharpen–(1) In color correction and platemaking, to make halftone dots smaller by adjusting the exposure of the film or plate. Sharpening dots to decrease color is one of the dry dot etching techniques for color correction. Sometimes printers will sharpen incoming film ready for platemaking to counteract mechanical dot gain (tone value increase, or TVI) on press. (2) In detail enhancement, to electronically exaggerate the difference between tones or colors at their edges. During scanning, the function of unsharp masking can be adjusted to increase edge contrast and artificially enhance the detail overall. Certain paint and color manipulation programs have special tools to selectively sharpen isolated areas of an image.

sheetfed press–A press that prints images on sheets of paper.

shingling–Adjustment of inside margins, or gutters, made during page layout, paste-up or stripping to compensate for creep. Creep occurs when inner pages of a saddle stitched document creep away from the spine and push out on the opposite edge.

side stitching–A binding method where two or three staples are passed through the signatures, usually on the left side of the book.

signature–Printed sheet folded to become part of a publication. Signatures always contain pages in increments of four, such as 4, 8, 12, 16, 24 or 32 pages.

silhouette–Eliminating the background from behind an object in a photograph or piece of art.

slur–An undesirable printing condition where the printed image is smeared. Slur can result from insufficient blanket pressure due to improper packing (offset), slippage of a press part during the printing stroke (screen printing), mechanical problems on the press, or lack of ink tack. In offset printing, slur causes halftone dots to enlarge dramatically and affects color fidelity. Type can become blurred and difficult to read. Print control targets containing microline slur bars can be placed at the edge of a form to

spot and diagnose the problem. Slur is distinguished from a similar press problem called *doubling*, where the image is printed again next to the correct version instead of just smearing the ink.

soft proof (monitor proof)—An image displayed on a color video monitor that visually simulates the expected printed results from the same digital data.

Specifications for Non-Heatset Advertising Printing (SNAP)—A set of guidelines developed by industry volunteers and supported by the Non-Heatset Web Section of PIA for consistent and predictable printing of advertising by non-heatset, offset presses, usually on newsprint and similar uncoated stocks. SNAP specifies color standards, film densities, screen rulings, reverses, surprinted type, proofing, color bars, and proofing stock.

Specifications Web Offset Publications (SWOP®)—SWOP specifies film densities, screen rulings, reverses, surprinted type, proofing, color bars, and proofing stock. The purpose of SWOP is to encourage uniform communication among the those involved in the production workflow and to promote quality color in web offset publications.

stochastic screening—An alternative to conventional halftone screening that creates tonal gradations by placing same-size microdots (typically 12 to 30 microns) in a computer-controlled, random order within a given area. The computer uses frequency modulation to vary the number and placement of same-sized dots. The random dot pattern eliminates many moiré problems and allows more than four colors to represent the tones in an image (primary aspect of high-fidelity printing).

stripping—The process of assembling and combining film or negatives to create the final four pieces of film used for four-color process printing. Stripping completes the films, which are then used to create the actual printing plates.

substrate—A base upon which something is applied. This can include paper that is printed with ink, acetate that is coated with a photosensitive emulsion, and proofing material (paper-based or plastic) that is laminated with colorant. Because the graphic arts industry repeats an image at different stages of reproduction onto various materials (originals, proofs, final printed pieces), the use of the term *substrate* permits a discussion of the characteristics of those materials as an element in the perception of that image.

surprint—To print over another image. In photography, two images are exposed on one piece of film creating a double exposure. In a layout for printing, an image (usually type) would be planned to print over another area of an image. For instance, a black headline could surprint a light area of an image instead of removing all color below the type (dropping out). That would eliminate the need to mechanically trap (create overlapping edges) the type to the image.

T

tack—The stickiness of an ink. Tack is the relative measurement of the cohesion of an ink film which is responsible for its resistance to splitting between two rapidly separating surfaces.

text stock—Paper stock used for the pages of reports, books, and other printing where the stiffness of card stock is not required. Text stock is described by pound weight determined by the weight of 500 25" x 38" sheets. For example, 500 sheets of 80-lb. text stock cut 25" x 38" weigh 80 pounds (standard US text pound).

thermal dye sublimation—Also called *thermal dye diffusion transfer*, or *D2T2*. A digital proofing technology that vaporizes solid process dyes with either a heated print head or a laser beam and floats them onto a special stock where they become solid again.

thermal wax transfer—Digital proofing technology that fuses process colored wax from a ribbon by heating it with pinpoint print heads and melting it onto a special stock.

tolerance—The acceptable range of error from a measured standard.

tone compression—Reduction of an original tonal range to a tonal range achievable through the reproduction process.

touch plate—An additional printing plate that adds a matched color to a process color image.

transparent copy—Products such as color transparencies or positive film, viewed by light passing through them, as opposed to reflective copy.

transpose—To exchange the position of a letter, word, or line with another letter, word, or line.

trapping—(1) **IMAGE trapping** is a technique in which abutting colors are slightly overlapped to minimize the effects of misregistration of the printing plates. (2) **INK trapping** refers to the way various colors of ink on a press adhere to one another when wet compared to the way one layer of ink adheres to the paper.

U

uncoated paper—Paper that has not had a final coating applied for smoothness. Uncoated paper is absorbent and soft in appearance.

under color removal (UCR)—Reducing the cyan, magenta, and yellow inks independently within the darkest neutral shadow areas in an image reproduction and replacing them with a controlled amount of black to reduce the total tonal density. The three colors are reduced so the shadows have better detail, improved trapping, and more consistent reproduction.

unsharp masking—A function of the scanner or image editing software that increases the overall contrast at the edges of density or color changes by exaggerating the differences. In the scanner or color manipulation workstation, the computer reads the digital signals to locate where the color changes occur and then adjusts the tones and colors to create a more sudden change. If carried to an extreme, the exaggeration can result in an outline effect between some colors. During photographic color correction procedures, an unsharp mask simultaneously compresses the tones and makes the corrections. In either case, unsharp masking, despite its name, globally increases the detail of an image.

V

value—*See* brightness.

varnish—A clear, liquid, resinous coating, either matte or glossy, that is applied to a printed product for protection and appearance.

vignette—Color manipulation effects in which all or a portion of an image fades gradually away until it blends into the non-imaged area. Sometimes used to refer to a graduated background tone.

viscosity—Thickness or thinness of a fluid as measured by its resistance to flow. Ink viscosity is adjusted to maintain a proper flow through the ink train of a press and on to the paper.

visible spectrum—That portion of the electromagnetic spectrum to which the human eye is sensitive; wavelengths of approximately 400 through 700 nanometers. Due to the characteristics of cone sensing (color reading mechanism of the retina), it is generally agreed that humans detect only red, green, and blue. All perceived colors are combinations of those sensitivities (hue) in relation to the strength of the transmitted or reflected light (brightness) and the intensity of the light hitting the retina (saturation). Ultraviolet wavelengths are shorter and infrared wavelengths are longer than the sensitivity range of the eye.

W

web press—A press that prints images on rolls of paper.

ENGLISH/METRIC MEASUREMENT EQUIVALENTS PAPER SIZES
