

From Gutenberg through much of the last century, the only way to check a printing job was to set up a press and run a proof. Even this was not an infallible way to predict the final results due to variances in press speeds and stocks or because the printing was done on presses other than the press for the final production run.

Then manufacturers developed prepress proofing. In the recent past, a handful of proofs made from the printing press plate film were familiar to all those involved in the printing process and served us well for film-based workflows. These prepress proofs made from film used to make plates are called *analog proofs*. Now, color prepress proofing has changed dramatically with the advent of digital image preparation.

- **ANALOG PROOFS**

Analog proofs are further classified as *overlay proofs* or *laminated proofs*. Overlay proofs show a single color (CMYK) on each of four film sheets, which, when viewed in register, give an approximate image of the final reproduction. Generally they are not considered contract proofs. Laminated proofs show the final reproduction on a single base and are considered contract proofs.

- **DIGITAL PROOFS**

Proofs made directly from electronic files without film as an intermediate step are called *digital proofs*. Digital proofing systems use various imaging technologies including dye sublimation, inkjet, thermal wax, laser dry toners, or other proprietary technologies. Generally, dye sublimation may have been considered higher quality but other technologies have developed as equally reliable digital proofing systems.

PROOFING BASICS

All prepress proofs, whether analog or digital, must meet basic requirements. Questions to be asked include: Are some proofs good for some purposes and not for others? Does the proof fit the basic representation of the final printing process? Is the chosen proof accurate, reliable, consistent, predictable, and cost effective? Can proofs be adjusted to match more closely what the press can deliver?

Proofs may be classified by function.

- **POSITION PROOFS**

Position proofs or *Preview proofs* are used for evaluating position of elements in a page or press imposition. They may serve for *preliminary* color judgments. Such proofs should not be considered for critical color matches, principally because the colorants used in the proofs may not be representative of CMY ink pigments used in mechanical printing processes. Position proofing systems include dozens of color output devices, from less expensive desktop units to color copiers.

- **CONTRACT PROOF**

A *contract proof* is one that also represents correct positioning of elements, but more important, accurately represents the color rendition of the final press run. However, no proof, whether analog or digital, can precisely match what the printing press can deliver.

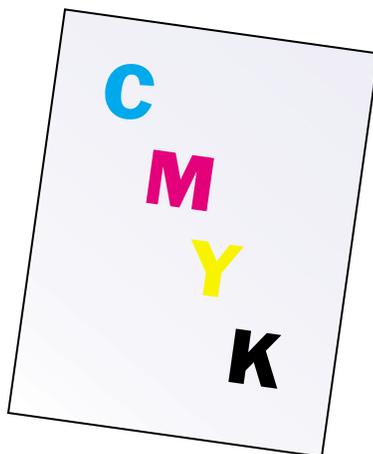
The only exception to this is proofing off short-run digital presses, such as Indigo and Xeikon engines, then using the same technology for the press run itself. The contract proof is, therefore, the first print off the press. All other proofs require some interpretation. Buyers should work with their printers to establish what degree of interpretation is necessary.

- **PROOF EVALUATION**

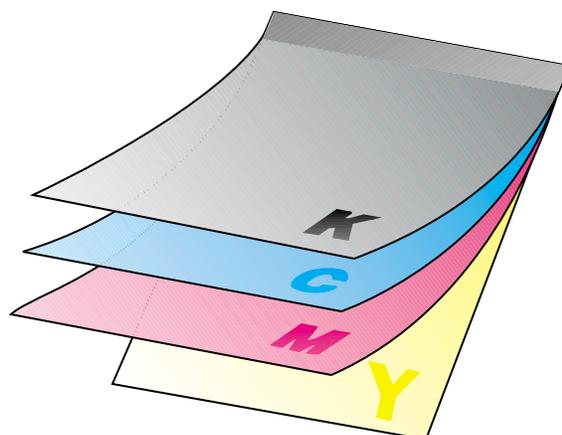
Today, as digital workflows replace film-based workflows, the means to get a “proof” becomes easier and less expensive but somewhat more complicated. It is important to understand just what a proof is supposed to be, what it is supposed to accomplish, and how to critically evaluate the proof against how it predicts the final press run.

As more computer-to-plate (CTP) technology is used, the proof becomes even more important since no steps between file preparation and platemaking exist to catch errors in the file.

ANALOG LAMINATED PROOF



ANALOG OVERLAY PROOF



Once again, buyers and their printers are in the midst of a technology shift that will require more development plus new technical skills and clear communication.

PROOF INTERPRETATION

We might say that some proofs, both analog and digital, are too good. That is, they do not take into account the physics of laying printing ink on paper on a mechanical printing press. Some proofs use dyes or foils that place an image on the surface of the paper (maximum ink holdout), thus not allowing for effects of normal absorption of the ink into the paper that occurs during the printing process and may affect the final image. This situation can result in disappointment in the final printing, especially in the fine highlight and deep shadow portions of an image. Highlights may tend towards hue shifts, and the shadows may fill in on press. In addition, midtones tend to gain (dot gain) on press, which may or may not be adjustable in certain proofing systems.

In addition, colorants used in some proofs do not match the printing ink pigments used in CMYK reproduction. Some colorants, including dyes, dry toners, proprietary inks, and transfer foils, may be purer, more saturated, than color hues that can be achieved

with CMYK printing inks. Proof colorants that do not match ink hues are referred to as “out of gamut.” If the colorants are out of gamut, the final reproduction may not correctly reflect what the proof has shown.

Some proofing systems offer special colorant matches to industry specifications, especially for periodical publications and newspapers. These specifications are reflected in SWOP (Specifications for Web Offset Publications) and SNAP (Specifications for Non-heatset Advertising Printing) and must be followed when providing advertising materials to publications. Proofing systems are certified by SWOP Inc. as acceptable for prepress proofing for publications.

However, because commercial printers have more latitude in the inks they choose, they must make a conscious effort to select a proofing system that will most closely reflect both the inks and presses they run in their plants. Many contract proofing system manufacturers offer choices of bases that compensate optically for dot gain on press. Some also allow proofing to be done on the actual papers used in the final printing process. Proofs with these capabilities assist in replicating the final press run.

DIGITAL CONSIDERATIONS

Some digital contract proofs are continuous tone, that is, they do not show the typical printing screen rulings. Others show the printing screen replication. Such screened proofs may be used to predict objectionable moiré patterns in the image.

Digital output proofing units may be profiled using color management systems. While still in its infancy, such color management is used to predict reproduction of images with consistency from the computer graphics monitor to the final mechanically printed product.

Recent developments in computer-to-plate technologies have added new requirements for proofing. Generally, it is advisable to deliver a contract proof from the same RIP used for the plate setting. This avoids problems that may arise due to PostScript errors when the files are imaged for proofing and platemaking from different RIPs. Several new proofing systems that output through a platemaking RIP are now available.

Position proofs of color work output in a single color are generically referred to as *bluelines*, sometimes *brownlines*, and are used to review final copy, image positioning, and cropping, but obviously not color quality. Digital “bluelines” actually come in color, frequently printed on a large-format inkjet machine. However, this color does not represent the color in the final production run and therefore cannot be considered a contract proof.

CORE FUNCTIONS

No matter what proofing system is used, reviewers of the proof must understand that it must be evaluated not only for image quality but also for accuracy of text, images, and all information necessary to be present in the final reproduction. Proofs are provided to avoid costly mistakes or disappointment in the printing press run. Great savings may result from examining them carefully. Signing off on a proof is a contractual approval between the buyer and the provider that everything reflected in the proof is acceptable to the buyer. This acceptance means the printer is responsible to do no more than run to the proof within acceptable industry standards.

REPRESENTATIVE TYPES OF PROOFING BY NAME AND MANUFACTURER

Note: this is NOT a complete listing since proofing systems continue to be introduced. It is important to understand that printers may choose other systems that work well in their workflows.

<p>ANALOG PROOFS: * Imation Matchprint III Kodak Approval Fuji First Proof DuPont WaterProof DuPont Cromalin</p>	<p>DIGITAL CONTRACT PROOFS: Laser Matchprint * Kodak Approval * Iris Realist Polaroid PolaProof * DuPont Digital WaterProof TrueRite Digital (Screen) *</p>
<p>DIGITAL PROOFS THAT MAY UNDER CERTAIN CONDITIONS BE USED AS CONTRACT PROOFS: Imation Rainbow Kodak DCP series Tektronix Phaser Epson 5000</p>	<p>POSITION “BLUELINES” DuPont Dylux DuPont Digital Dylux</p>
<p>* Replicates mechanical printing screen rulings.</p>	