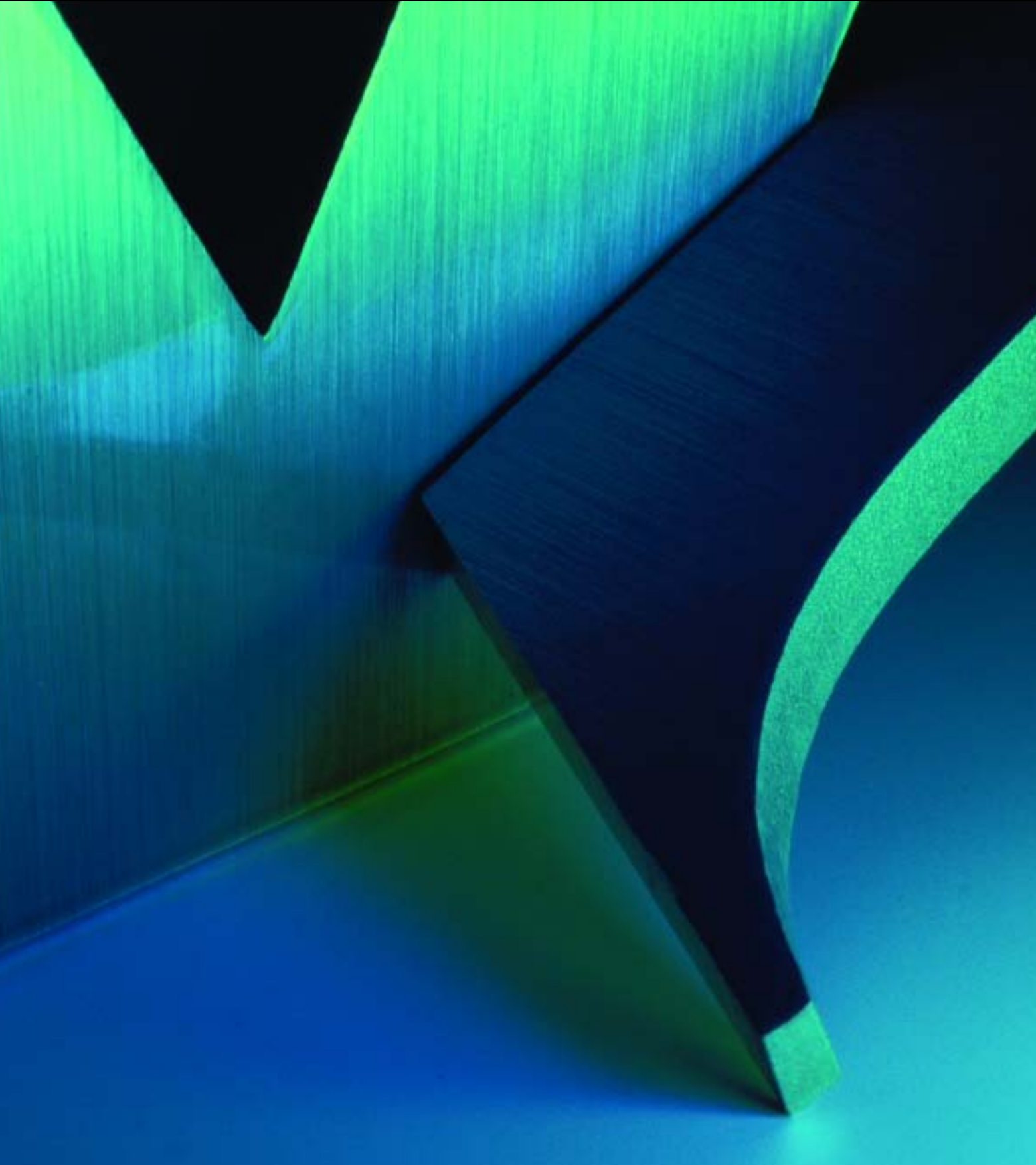


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Learning About QuarkXPress Trapping

BY STEPHEN BEALS

When you are printing documents on your laser or ink-jet printer, trapping is hardly an issue. The ink-jet heads and toner are calibrated to eliminate any possible misregistration between colors, and you are generally dealing with an 8.5 x 11 sheet of paper, so issues such as paper stretch or blanket stretch become non-issues. In traditional- and digital-offset printing, registration can become a big issue. Paper is a relatively unstable material, and when you are pulling a 40" press sheet through a series of rotating cylinders at 10,000 sheets per hour, temperature, humidity, material instability, and other factors can wreak havoc with registration. Given all of the variables, it is almost a miracle that process-color jobs register as well as they do. Today's presses are remarkably good at registering four, five, six, or more colors — in spite of all the factors working against them.

Why Do We Need Trapping?

Printing presses are not perfect, and that is why printers still use — and may always use — trapping. What trapping does is extend an image, graphic, or type to an adjacent image, graphic, or type so the images overlap. The overlap is called the *trap amount*. The amount of overlap is usually tiny, a couple thousandths of an inch, but without it the viewer of the printed sheet is likely to see a sharp white line where images are slightly out of register. With a proper trap even a slightly out-of-register image will appear correct to the eye.

It used to be that trapping was done mechanically. Pre-press operators would over-expose film with a sheet of mylar plastic in-between to spread the image. When a positive film image is made the effect is the opposite and is called a choke. Spreads and chokes are also referred to as fats and skinnies. Today the effects

are created digitally, but the idea is the same. What has changed in the digital world is that the effects can be done with much greater precision. Not only can the dimensions and areas of trap be varied according to the image data of the file, but the tone value can also be varied to limit the appearance of unwanted hard lines where the traps meet.

The amount of trap is based on the type of press you are running. Generally, web presses use a bigger trap than commercial sheet-fed presses because they run at high speed and under more intense environmental conditions that limit the press's ability to maintain accurate register. For the same reason, some flexographic and silk-screening printing processes use extremely wide trap: often wide enough to be seen without a loupe (a magnifying glass used by printers).

A Fine Line

Most commercial printers use trapping programs built within their Raster Image Processing (RIP) software. Trapping programs make every effort to make intelligent decisions. Consider the difficulties of making those decisions. Generally speaking, a lighter color should spread INTO a darker color, because it would not be seen, but what happens if the dark color is a 20% tint and the lighter color is solid. In such a case, the lighter color should be choked not spread. What should happen if a vignette needs to trap into a tint? It is a real challenge to develop software intelligent enough to make all of the correct trapping decisions.

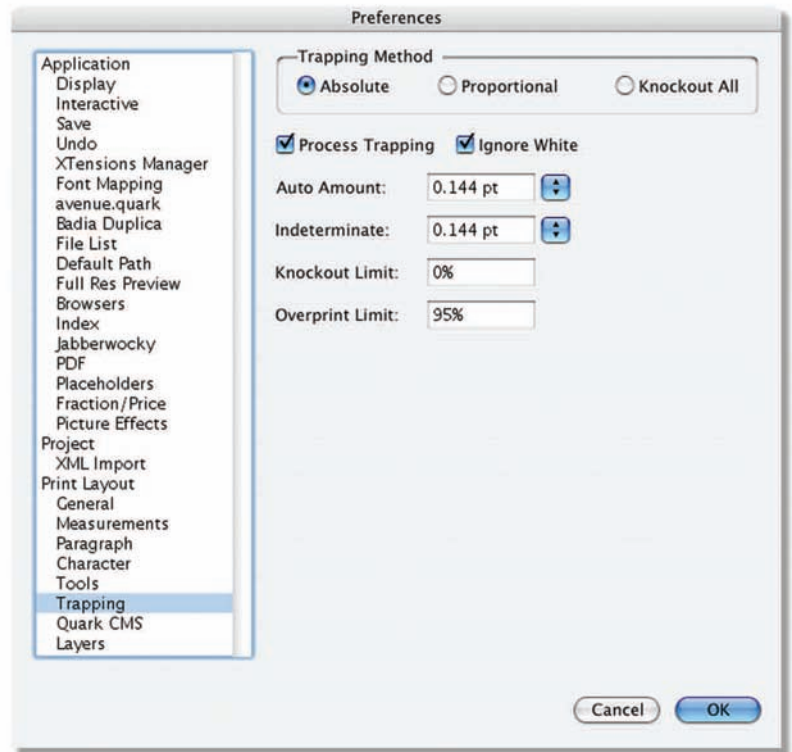
There are other decisions to make. Sometimes you don't want objects to trap at all; you want them to *overprint*. Generally black ink overprints other colors, but sometimes you don't want that to happen. For example, if there is a solid black circle that overlaps a 50% blue tint square. At the point of intersection, you will see the blue square under part of the circle, but not under the rest of the circle, causing a noticeable color shift in the shape of the square tint. There are many other trapping decisions to make, and the honest truth is, QuarkXPress can't make all of them correctly in all cases. It takes a very highly specialized program to do that, and the RIP is usually the proper time and place for trapping. In fact, many trapping programs will ignore the trapping instructions in a QuarkXPress document and use the rules of the RIP software instead. Since most designers really aren't fully qualified in trapping rules and exceptions, that's not a bad thing.

What QuarkXPress Can Do

QuarkXPress comes with some powerful tools for assisting in the trapping process, and knowing how to use them can be helpful.

The first thing to look at is the default trapping preferences, which are, of course, editable.

In the trapping dialog box (figure 1), you are presented with several choices, the first of which is



▲ fig. 1 Document preferences dialog box showing the trapping tab (On Windows EDIT ▾ PREFERENCES ▾ DEFAULT PRINT LAYOUT ▾ TRAPPING and on Mac OS QUARKXPRESS ▾ PREFERENCES ▾ DEFAULT PRINT LAYOUT ▾ TRAPPING, in QuarkXPress 4.x/5.x, choose EDIT ▾ PREFERENCES ▾ DOCUMENT ▾ TRAPPING).

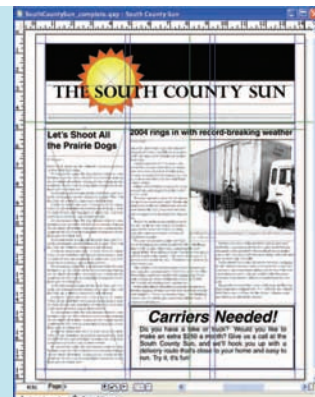
trapping method. The pop-up offers absolute, proportional, and knockout all.

1. The default is absolute, which in turn uses the values typed in the auto amount and indeterminate field boxes to determine the amount of trap.
2. Knockout simply turns all trapping off.
3. The auto amount figure is applied when the colors involved have been specified in the trap specifications dialog EDIT ▾ COLORS ▾ EDIT TRAP.
4. The indeterminate value is invoked when object colors are in front of multiple colors with conflicting trapping relationships. It is also used when an object is layered over certain color images, such as a CMYK TIFF or any EPS.

On this page in QuarkXPress 7...

This text box with rule above and below appears on each page in the same position. Even though it's not a component of my master pages, it took no time at all to place it on each page by copying and using PASTE IN PLACE. This was much quicker than snapping to guides or using coordinates.

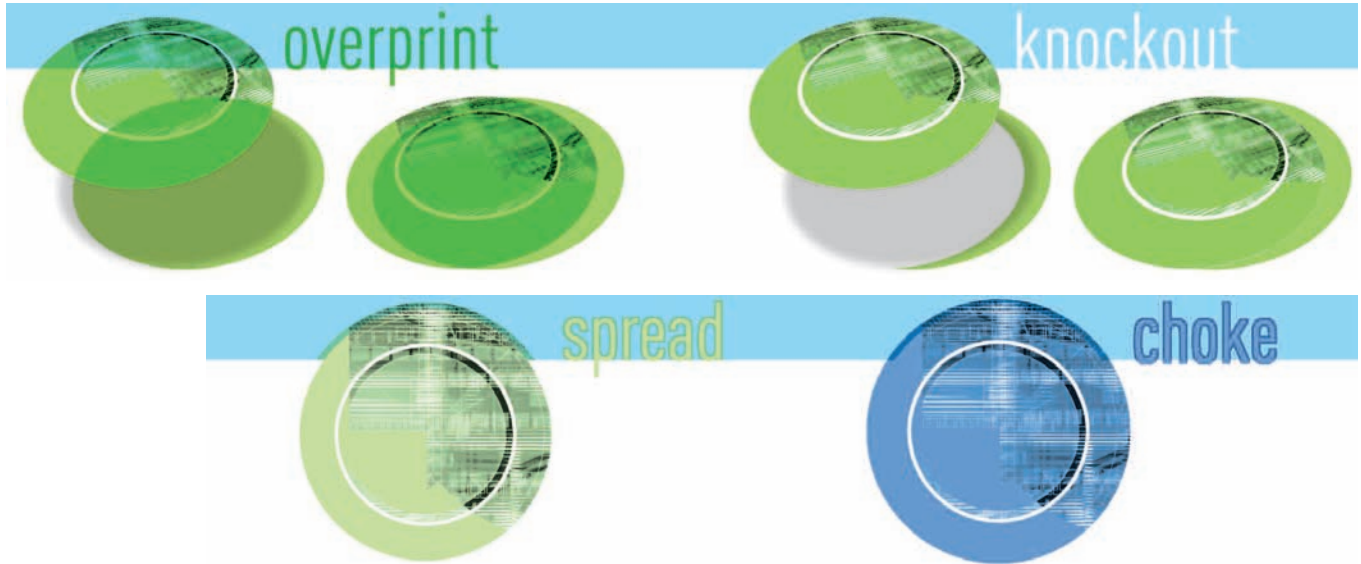
The picture in the title banner can become a composition zone as well with a photo across the top that also is viewed through the letters in the title as if it's an alphabet-shaped window offering glimpses to the photo behind.



5. You can choose **OVERPRINT** from the drop-down menu if you want an object color to overprint an indeterminate background, or entering a negative number to create a knockout.
6. The default settings are .144pts, but the user can enter any point value here, or select **OVERPRINT** from the pull-down menu.
7. Overprint will cause all colors to print on top of any color under it and will neither knockout nor trap (usually undesirable).

The overprint limit determines at what percentage (shade) a color will be forced to overprint the background color. It always applies to black, but it also applies to colors that have been set to overprint in the trap edit dialog box.

You will also find a pair of check boxes in the preferences trapping dialog: **PROCESS TRAPPING** and **IGNORE WHITE**. Both are enabled by default. The **PROCESS TRAPPING** boxes makes QuarkXPress deal with each color in a process-color separation individually and



8. The proportional method sounds more scientific on the surface. It uses a formula derived from the value in the amount field multiplied by the object luminance minus the background luminance. The idea of this is that factoring in the luminance of the objects to be trapped will yield better results.

This was the first method QuarkXPress used for trapping in early versions. The problem is that trapping is much more complicated than that and the result of applying the proportional trapping method was often worse than using a simple absolute trapping method. QuarkXPress recommends using the absolute trapping method, and it's probably a good idea.

More Buttons

There are two more radio buttons to determine the point at which objects will overprint or knockout. The knockout limit default is 0%, which basically turns the function off, but when used, QuarkXPress considers the color's *gray value* (determined from the color's RGB value) to decide if one color should knock out of another. QuarkXPress figures out if the gray value specified is less than or equal to the gray value of the background color. If it is, QuarkXPress will knock the object out of the background.

should be left on if there are any process color objects in your layout. **IGNORE WHITE** simply makes sure QuarkXPress doesn't think a trapping relationship is indeterminate when it sees white.

Trapping Individual Objects or Text

The first thing you should know about trapping individual objects is that QuarkXPress is capable of showing the trapping data for each object. You cannot see the result of the trap on screen; you can only review the data being applied. Preflighting the trapping can be time consuming, but it's really the only way to know if you have done it correctly. To do this, select an object or text block and choose **WINDOW ▾ SHOW TRAPPING**. A negative number in the dialog box indicates the selected object will choke. A positive number means it will spread into the object beneath it.

RASTER AND VECTOR FRAMES
 QuarkXPress will spread or choke vector object frames and can even trap differently on the outside and inside borders of a frame depending on the content and background, but QuarkXPress cannot apply trapping to bitmapped frames: your only choice is knockout or overprint.

TRAPPING TEXT

You will be happy to know that QuarkXPress can trap characters individually or line by line, *but*, an object will trap based on the background color of the text and not the text itself, and if the background object is not a single color, you cannot choke text you wish to knockout. Text that partially overlaps paragraph rules is considered to have an indeterminate background. Text that is completely surrounded by a paragraph rule will trap to the rule; however, the default trapping relationship cannot be altered in the trap information palette, but can only be altered by editing the color relationship in the trap specifications dialog box.

TRAPPING IMAGES

Vector images will be trapped based on the setting from the original application and cannot be altered in QuarkXPress. Scaling a vector image in QuarkXPress will change the trapping based on the enlargement or reduction factor, and pages exported as an EPS from QuarkXPress can only knockout or overprint unless they are saved in DCS format, in which case you can apply trapping. As you would expect, black and white line art will overprint based on the overprint-limit settings. They can be forced to knockout using the trap information palette. A grayscale TIFF image will overprint the background (subject to overprint limits) but a grayscale EPS image will knock out.

Issues That Arise in QuarkXPress Trapping (Exceptions to the Rules)

Here are a few of the most common reasons trapping *rules* need to be flexible. Already mentioned was a case where black should *not* overprint and where a light color should not spread into a dark color. Here are a few more exceptions to the rule:

9. Normally text will spread into a photograph, and QuarkXPress will, by default, trap text into a photo. However, if the type prints on top of a light area of the photo, a spread will be undesirable.
10. In QuarkXPress 6.5 adding a frame to a box will gray out the background overprint settings in

the trap information palette. If you remove the frame, the setting is no longer grayed out. You can apply your desired setting to the object and then reapply the frame. Your new settings will stick even though the trap information palette reverts to displaying default and the setting is again grayed out.

11. QuarkXPress will not trap some fonts that have been bolded in QuarkXPress or fonts that have been created by the printer driver from the screen font.
12. You cannot trap a box with a blend, you can only apply knockout and overprint selections.

There are many other exceptions to the rules; trapping is a rather complex business. For this reason, RIP programs used by printers and service bureaus often ignore the trapping instructions in QuarkXPress and use their own trapping tables and rules. This is generally a good thing because the programs are highly specialized and quite good at what they do. They were created only to do the trapping function: nothing else. They are very good at recognizing blends and performing minor miracles, like making different traps within a photo that goes from light to dark and applying different color values to traps to make them less apparent to the eye.

Even these programs are not perfect and sometimes require operator intervention to take care of exceptions when they arise. If you have special trapping needs on a print job, it is a good precaution to mark it clearly on the proof or order-entry information sheet (job ticket). Many workflows are fully automated and special exception requirements could easily be missed and cause major problems in the printing and finishing process.

As always, the best defense is a good working knowledge of what trapping is all about, and a good working relationship with your printer or service provider. ☒

On this page in QuarkXPress 7...

Every editing option is now easily accessible within the measurements palette. I didn't need to open an additional window to set tabs, make format changes to a paragraph, or change the color of my text.

To ensure the accuracy of archived issues, this composition zone could be saved as an EPS for the back issues — thereby freezing the content — and edited for use in current and future issues.

