Designing for White on the C942

A Practical Guide to Designing and Printing Documents Using Spot Color White on the OKI C942
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Part 1: Understanding White
Introduction

The OKI C942’s ability to print white toner on a broad range of colored media has opened the door for creative professionals like yourself to explore the possibilities it offers. Colored invitations, posters, signage, envelopes – your designs will never look the same once you’ve experienced the power of white.

Whether printing standalone white elements or using white behind color as a means to preserve its hue on dark media, the 5-Station Digital Production Printer is capable of creating extremely precise, controlled output.

This guide will take you through the process of designing and preparing documents that take full advantage of the C942’s ability to create unique and impressive and finished pieces.
Why White?

The importance of white in color printing is often overlooked. The foundation of color printing is based on applying Cyan, Magenta, Yellow and Black (CMYK) onto white paper. The paper’s white surface reflects a wide range of color back to your eyes.

However, as you can see in the sample above, applying color toner directly onto colored media creates extremely dark, dull results because only a narrow range of colored light is reflected back to your eyes.
When white is laid down underneath color, it provides a protective, reflective surface similar to white paper. The result is brilliant color when printing on colored media.

And beyond laying down 100% white to preserve hues on colored media or to create standalone white elements, the OKI C942 is able to control the amount of white toner laid down on different areas of the printed page, enabling for advanced techniques which will be explored later in this document.
Printing Methods

There are two ways to send print files to your C942. While this document focused on the Driver method, the Fiery C9 Server contains similar settings for controlling white, though the setting names and locations may differ slightly.

PostScript Driver
You can print through your computer’s Driver, controlling settings from the dialogue box that appears when you select Print from your application’s main menu.

Fiery C9 Server
If you’re using a Fiery C9 Server, you’ll have additional capabilities like increased color control, the ability to gang-up jobs, advanced finishing options, and many other high volume production techniques. Please consult the server documentation for specific instructions on how to fully operate that device.
Driver Settings

To get the best results from your printing efforts, it’s important to understand a few of the C942’s settings. While the C942 User Guide covers the product’s full settings more comprehensively, the overview below focuses on the critical areas you’ll be working when using spot color white on colored media.

Paper Feed

All Pages From: Multi-Purpose Tray is strongly recommended when printing on heavy media. The Multi-Purpose Tray is located on the right side of the printer and using it instead of the internal trays will greatly reduce the chance of jams or misfeeds when printing on thicker or textured paper stock.
**Spot Color Usage Methods**

The most common Spot Color settings you’ll be using are **Prints Only Spot Color Toner, Data Portion - Including White and Application Specification**. The setting chosen is based on how the file is prepared and the next section of this document will cover these options in greater detail.

**Print Options**

**Quality**

**Trapping** - Trapping is used to prevent white edges from showing under colored elements, and it has two components: The *Spread* of CMYK elements over White can be set to Off, Narrow, or Wide. *Choke White Chokes* or *contracts* the White elements, and it can be set to On or Off. A more detailed overview is included in the Trapping section of this document.

**Feed**

**Media Type** - *Card Stock* is the most common setting when printing on heavier media, *Rough* is helpful when printing on textured media, and setting Media Type to *Envelope* is when printing Envelopes will avoid wrinkling.

**Media Weight** - this will vary, but *Ultra Heavy 2* is a good general setting to use for heavier media.

**Paper**

**Output Bin**: *Stacker (Face-up)* reduces page curl by sending media straight through the unit. The Stacker is on the left side of the printer – make sure it’s opened when using this setting. *(see the image on the previous page)*
Printer Menu Settings

The C942’s operator panel menus contain settings that allow full control of the printer. As with Driver and Server settings in the previous section, the Printer Menu settings are fully covered in your C942 User Guide. The selected menu settings below are highlighted as being the most useful in improving results when printing documents using spot color white on dark media.

Print Adjust

Paper Color Setting  Goes from -3 to +3 – adjust up or down if Spot Color toner isn’t fully settling into the media

SMR Setting  Goes from -6 to +3 – adjust individual colors up or down when print quality is uneven

Calibration

Color Density  - Goes from -6 to +3 - adjust individual colors (typically White) up when toner isn’t fully settling into media (this setting is especially helpful with textured media)

Adjust Registration  - Execute this to force the C942 to automatically correct its registration. Doing this at the start of each day before printing will ensure improved print quality.
Choosing Your Spot Color Setting

The way in which you set up your file and the Spot Color Usage Methods setting (from here on referred to as the Spot Color setting) are interdependent. Because of this, it’s ideal to first identify the type of document you’ll be printing by how white will be used before selecting the Spot Color setting you’ll need to use to print that document.

Though each of the lessons found later in this document includes the Spot Color Setting to be used for that particular exercise, it’s helpful to understand how each setting differs before using them.

Driver Setting:
Prints Only Spot Color Toner.

Document Style:
Only white toner is printed (no black/color) – white percentages or gradients are allowed.

Creation Tool(s):
Any application.

How This Setting Prints:
Black or color elements in the original document are printed using white toner. The darker the element in the original document, the more opaque the white will print. This setting causes the C942 to behave like a mono printer except white toner is used instead of black.
**Driver Setting:**
Data Portion - Excluding White.

**Document Style:**
Combination of black/color – white toner is applied underneath color elements.

**Creation Tool(s):**
Any application.

**How This Setting Prints:**
Prints 100% white behind all elements (except true black elements), allowing printed colors to remain vibrant on dark or colored media.

Actual white elements in the original document do not receive white toner (for example, a .jpg logo with a white background will only print the color portion of the logo).

Does not print isolated white elements – white is only used behind color.

*Note: Because this setting is primarily used to avoid printing white backgrounds in logos and other images, it isn’t commonly used by creative professionals, so it won’t be covered in the lessons.*
**Driver Setting:**
Data Portion - Including White.

**Document Style:**
Combination of black/color and white (but no subtle white).

**Creation Tool(s):**
Adobe Illustrator, Photoshop, InDesign, CorelDraw, or any other application that can specify a true white.

**How This Setting Prints:**
Prints 100% white behind all elements (except true black elements), allowing printed colors to remain vibrant on dark or colored media.

Also prints elements that are defined as the color white in the original document.

However, percentages of white below 100% are not possible.
**Driver Setting:**
Application Specification.

**Document Style:**
Any combination of black/color and white in any percentages (white is defined as “SpotColor_White”).

**Creation Tool(s):**
Adobe Illustrator, Photoshop, InDesign, CorelDraw, or any other application that can utilize named spot colors or spot channels (for example, Pantone colors).

**How This Setting Prints:**
White only goes where it has been defined in the original document, using the spot color name for OKI’s white toner (SpotColor_White).

Subtle white effects (gows, gradients, percentages) are able to be achieved with no restrictions.

This setting allows color elements to have any amount of white behind them or none at all, which isn’t possible with any other Spot Color driver setting.
Exporting to PDF

Exporting documents from Adobe Illustrator, Photoshop, and InDesign to PDF and printing from Acrobat or Adobe Reader will streamline the printing process and reduce errors. And because Photoshop isn’t able to directly print files containing spot channels, exporting to PDF is necessary when designing your document in that application.

Additionally, files using the Spot Color setting of Application Specification require PDF type X-1a (either X-1a:2001 or X-1a:2003) for the named Spot Color to be transferred correctly from the source file to the PDF.

One helpful feature in Acrobat is the Output Preview mode under Print Production. This allows you Simulate Overprinting which is useful in making sure that Spot Colors are set up to overprint correctly. Acrobat Reader has a Simulate Overprint setting under Advanced Print Setup.
Orange represents Spot Color White in this file. Simulate Overprinting is turned off in the image at left and turned on in the image at right. The darker overlap of green and orange show where white will be printed under the green.

Another benefit of Acrobat’s Output Preview is the ability to view the spot color that you’ve defined in your file, which must be named SpotColor_White. Check under Separations to make sure this name is listed correctly.

You can also mouse over areas within your file to see where the Spot Color has been placed as well as the percentage used in each area.
Trapping

Trapping is a feature that helps to hide unintended white edges that sometimes appear around color objects being printed on a page. Trapping helps to resolve imperfect registration.

The concept of trapping dates back to old ink presses that needed methods to hide imperfect registration of two different colored objects printed next to each other. For example, a text headline printed inside a color box.

There are two approaches to trapping: Spread and Choke. Spread slightly expands CMYK elements over white, while Choke shrinks or contracts the white areas underneath in an attempt to hide their edges.

Because the C942 is able to apply white toner behind colored elements to improve their visibility on dark paper, Trapping helps to ensure that the white toner doesn’t peek out from under the edges of those colored elements.
The OKI trapping feature offers different combinations of Choke and Spread:

- **Off** - Print without any trapping features
- **Narrow** - Slightly spread color objects
- **Narrow/Choke White** - Slightly spread color objects AND contract areas of white toner
- **Wide** - Expand color objects more
- **Wide/Choke White** - Expand color objects AND contract areas of white toner
- **Choke White** - Contract areas of white toner

You can use this chart for reference:

<table>
<thead>
<tr>
<th></th>
<th>SPREAD</th>
<th>CHOKE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NARROW</strong></td>
<td><img src="gray" alt="Gray" /></td>
<td></td>
</tr>
<tr>
<td><strong>NARROW/CHOOSE WHITE</strong></td>
<td><img src="gray" alt="Gray" /></td>
<td><img src="black" alt="Black" /></td>
</tr>
<tr>
<td><strong>WIDE</strong></td>
<td><img src="black" alt="Black" /></td>
<td></td>
</tr>
<tr>
<td><strong>WIDE/CHOOSE WHITE</strong></td>
<td><img src="black" alt="Black" /></td>
<td><img src="black" alt="Black" /></td>
</tr>
<tr>
<td><strong>CHOOSE WHITE</strong></td>
<td></td>
<td><img src="black" alt="Black" /></td>
</tr>
</tbody>
</table>
Part 2: Spot Color Lessons
Lesson 1:
Prepare a Document That Uses Only White Toner

You are cordially invited to attend Atheron Associates' annual holiday party. Please join us on Tuesday, December 23rd at the Victorian Plaza on 722 6th Street in downtown Los Angeles. Cocktails begin at 6 pm with a buffet at 7 pm. Please R.S.V.P. to Camille Banks by Friday, December 18th at camille@atheronassociates.com

Application: Adobe Illustrator, Photoshop or InDesign
Microsoft Word,
Spot Color Setting: Prints Only Spot Color Toner
If you’re planning to create a document that uses only white toner on the page, you’ll be using the Driver Spot Color setting of Prints Only Spot Color Toner.

Prints Only Spot Color Toner is the simplest method of printing with white. Darker areas of your file, whether in grayscale or full color, will be printed with more white toner, while lighter elements will be printed with less. Meanwhile, white or transparent elements, including image backgrounds, will be ignored completely.

If you’re working with mostly type and vector elements, open Illustrator or InDesign and create your layout using black to represent white. Because setting up files for Prints Only Spot Color Toner doesn’t require custom white swatches or channels to be defined (as you’ll see in later lessons where white and color are used together), you can even use programs like Microsoft Word to create these all-white documents.

The image at left is the original file, while the image at right shows how the file will print using the Prints Only Spot Color Toner setting on black media.
For printing black and white photos on dark media, simply open the image file in Photoshop and select Image > Adjustments > Invert. Then, save to PDF and print using the Prints Only Spot Color Toner setting.

Another example of printing only spot color white toner – the image at left is the original image after being inverted and the right is the printed output on black media.
Lesson 2: Prepare a Document That Uses White Under Color Using Illustrator

Application: Adobe Illustrator
Spot Color Setting: Data Portion - Including White
One of the easiest ways to apply white behind color as well as to standalone white elements is by setting up your file for the Spot Color setting of Data Portion - Including White. This setting doesn’t work with files created in Photoshop, so we’ll focus on Illustrator.

Using the Data Portion - Including White setting automatically lays 100% white toner behind every element in your file (this is the data) - including the white swatch.

Note that the sample design shown doesn’t include any subtle white elements – white toner is always applied at 100%, both under color and for standalone white elements. Data Portion - Including White doesn’t allow for a percentage of white to be applied, so if your design requires total control of white, you’ll need to prepare your file for Application Specification which will be covered later in this document.

To begin, create a new document sized to your media. Create a layer and fill it with a rectangle approximating the color of your intended media color. Name the layer “Media” and under the Layer Options, turn Print off and Lock the layer. This avoids accidentally printing the simulated media background layer – it won’t even be exported to PDF.

Next, create a new layer named “Other Elements” and begin creating your design using both colored swatches as well as white. The Media layer allows you to see those white elements as they’ll appear on the printed page.

Once your design is finished, export your file to PDF X-1a and print from Acrobat or Adobe Reader using the Data Portion - Including White Spot Color setting. Your printed results should look like your design, with white toner
Setting up the simulated media background – turn off Print and Lock the layer.

automatically laid down for standalone white elements as well as behind all color elements.

This is all that’s required for simpler designs that combine both white and color elements. If you need to achieve a greater level of control for determining where white is and isn’t placed on the printed page, you’ll need to move past Data Portion - Including White and onto the Application Specification Spot Color setting.
Lesson 3:
Prepare a Document That Uses Varied White Under Color Using Illustrator

Application: Adobe Illustrator

Spot Color Setting: Application Specification
So far you’ve learned that the easiest way to print with only white toner is to use the Prints Only Spot Color Toner Spot Color setting. And the simplest way to combine both white and color is to use Data Portion - Including White.

But when your design calls for a subtle use of white – gradations, tints, etc. – or requires elements to print onto the media with a percentage of white with less than 100% behind them (often no white at all), you’ll need to use the Application Specification Spot Color setting to give you full control of where white does and does not go in your document.

The Application Specification setting works differently from Data Portion - Including White in that you won’t be using the white swatch. Instead, you’ll need to create a custom Spot Color swatch that will represent white. Regardless of where white or colored elements are placed within your file, white toner will only print where this custom white spot color swatch is used.

Create a Spot Color swatch, naming it as shown.
To create the swatch, open your Swatches palette and select a color of your choice that you don’t plan to use in your document. Double-click and rename the swatch `SpotColor_White`. Then change the Color Type to Spot Color.

Create the same Media layer as you did in the previous lesson, filling the rectangle with the approximate color of your intended media before opening the Layer Options panel and turning Print off and Lock on for the layer.

Then create a new layer, name it “Colored Elements”, and begin laying out your design elements. Wherever you intend for a standalone white element (white without color on top) to go, use the SpotColor_White swatch you’ve
created. For this exercise, be sure to include colored elements that print directly on the media (the red petal borders on the sides of this example), colored elements that will have white printed behind them (the flowers and yellow text), and standalone white elements (the white text).

Once you’ve finished creating your design, you’ll need to create a layer that contains spot color white elements to print under your colored elements. There are many ways to do this, but the simplest is to Duplicate your Colored Elements layer and rename it “White Overprint”.

Duplicate the Colored Elements layer and rename it White Elements. Then, delete all elements except those whose colors you want to preserve with white. Convert all remaining elements’ fills and strokes to the SpotColor_White swatch.
Temporarily Turn Off the Visibility of your Colored Elements layer to avoid confusion. Then, working in the White Overprint layer, delete everything except for the elements whose color you want to preserve on dark media with white underprinting. Once only those elements remain, change all fills and strokes to your SpotColor_White swatch.

Next, and most importantly, under Attributes, set Overprint Fill and Overprint Stroke (when a stroke is used) to On for all of the elements on your White Overprint layer. This will prevent these white elements from knocking out the colored elements below, instead allowing both white and color to print.

Turn on Overprint Fill and Overprint Stroke for all fills and strokes in the White Overprint layer.

Turn your Colored Elements layer back On, export your file to PDF X-1a and print from Acrobat or Adobe Reader using the Application Specification setting under Spot Color Usage Methods. Your results should match your original design, with white toner replacing SpotColor_White swatch.

As you begin to further explore creating Illustrator files to be printed using the Application Specification Spot Color setting, you may want to turn on View > Overprint Preview within Illustrator to get a better idea of how your final
design will print. This can also help troubleshoot errors before exporting and printing.

And when using Overprint Preview, it may also help to change the CMYK values of your SpotColor_White swatch to 0, 0, 0, 0 so that it appears white. Just be careful as this can lead to confusion – it’s easy to select the real white swatch instead of the custom SpotColor_White when both look the same on the screen.

Turn on Overprint Preview and change your SpotColor_White swatch to CMYK values 0, 0, 0, 0 to see an accurate view of the file’s setup within the application before exporting and printing.
Lesson 4:
Prepare a Document That Uses White Under Color Using Photoshop

Application: Photoshop
Spot Color Setting: Application Specification
While a vector-oriented program like Illustrator works with Spot Color swatches, a raster-based program like Photoshop instead uses a **Spot Alpha Channel** to define the white toner channel when exporting to PDF. This step is best saved until the end of the process.

To develop a layout in Photoshop that uses elements that can’t be created in a vector environment, open a new document and fill the background with the same color as your media (unfortunately, unlike Illustrator and InDesign, the printing/exporting of this simulated media layer can’t be disabled, so you’ll need to remember to turn off its visibility before exporting).

Begin creating your design using white, black, and colored elements. For more complex files, organizing your Color and White layers into separate groups will be helpful.

*Create layers of color and white elements, grouping each separately for easier creation of the Spot Alpha Channel.*
Once your design is complete, set the Blend Mode of all the color layers to Multiply (this will help you see which areas need white underneath). You'll then need to create additional white layers for any colored elements you want to protect from the media color. In this design, the clouds, spout, bubble highlights, and sky are are all standalone white layers – but an additional white layer has been added for the non-black parts of the whale.

You may want to mask or delete portions of your white layers where the color overlaps when you want those elements to print directly onto the media. In general, darker colors print better with less or no white behind them.

One special note – changing the opacity of a white layer won’t affect the final output once a Spot Alpha Channel is created. Though it will look correct on screen, in the end the printer will still apply 100% white coverage. To correct this, use the Eraser tool to manually reduce the opacity of white layers.

Once your layers are set, make sure you have nothing selected. Then, one by one, Load each white layer’s selection by Control- or Command-Clicking on the thumbnail of each layer.

Next, go into the Channels palette and create a New Spot Channel, naming it SpotColor_White. Photoshop will show you a red overlay representing the

Create the New Spot Channel.
Spot Alpha Channel. This shows where the Spot Color toner will be placed on the page.

Name the New Spot Channel. Once created, the red overlay represents where the Spot Color toner will be placed on the page.

Go back into your Layers palette and turn off the visibility for the Background Layer. Then Save As a Photoshop PDF (again, as type X-1a once the selection box appears). Then print your file from Adobe Acrobat or Reader.
One additional note – when you export from Photoshop to PDF, it’s easy to accidentally lose your original PSD file. After you’ve saved to PDF, go back and do another Save As, turning off “As a Copy” and replace your original PSD file. Getting into this habit will prevent Photoshop from replacing your layered file with a merged image.

Save as PDFX-1a.
Lesson 5:
Prepare a Document With a Subtle Background Texture Using Illustrator and Photoshop

Applications: Adobe Illustrator and Photoshop
Spot Color Setting: Application Specification
This lesson will combine all techniques you’ve learned so far by incorporating both raster and vector elements into one file. This is necessary when you want your printed piece to include vector elements (like small shapes and type) as well as subtle raster images like semi-transparent textures and photos.

It makes sense to work within a vector environment, so begin by opening Illustrator and creating a layout of type and vector elements based on the instructions in Lesson 3. Create your SpotColor_White swatch and use it to represent white, then create the White Overprint layer and set all fills and strokes to Overprint for the appropriate elements.

Create a layout using colored elements as well as SpotColor_White elements.
Next, open Photoshop and create a new document the same size as your Illustrator layout. Turn Off the background layer and on a new layer, create a texture.

When your texture is finished, use the techniques in Lesson 4 to create the SpotColor_White Spot Alpha Channel. To use only white in your texture, Turn Off the original texture layer after creating the Spot Alpha Channel. Or, leave the texture layer on if you’d like color elements over white. You can even create new colored layers to be printed directly onto the media for a more complex effect.

Create your texture, then create the SpotColor_White Spot Alpha Channel.

Now Turn Off the Background Layer and Save as a PSD (Photoshop) file.
Go back to your original Illustrator document and **Create a New Layer** named “Texture”. Under **File > Place**, browse to the Photoshop file containing your texture. Once this new file is in your Illustrator file, the Spot Alpha Channel within it will take on the same color that you’ve defined as your Spot Color Swatch.

![Illustrator interface with a layer named “Texture”](image)

*Place the texture PSD file into your original layout file.*

As you’ve done previously, export your file to **PDF X-1a** and print from Acrobat or Adobe Reader using the **Application Specification** setting under Spot Color Usage Methods. Your final output should be a seamless blend of the raster texture and vector elements.
Lesson 6:  
Prepare a Photo That Uses Varied White Using Photoshop

Application: Adobe Photoshop  
Spot Color Setting: Application Specification
While photographs with mostly bright or light tones work well when printed on dark media with a full block of 100% coverage behind them, images that contain a broader tonal range will benefit from applying a varied amount of white behind them.

The amount of white used based on the tonal range of the image. This advanced technique will give you best results when printing photos on dark media.

First, Open your image in Photoshop. Since we’ll need to work with the full information from all layers, Flatten your image if necessary or create a composite layer to work with.

![Open the image in Photoshop and flatten if necessary.](image)

Next, Duplicate the Background Layer and rename it Grayscale. Then, from the main File menu, select Image › Adjustments › Desaturate to remove all color from the layer.
Now, under Image › Adjustments › Curves, move the handle in the top right to the halfway point at the top. This will allow the top half of the dynamic range – the lighter portions of the photo – to retain 100% white toner beneath them when printed.

Desaturate the Grayscale layer, then modify the Curves as shown.

Use Select › All, then Copy the Grayscale layer. In your Channels palette, create a new Spot Alpha Channel named SpotColor_White (as described in Lesson 4) and Paste in the copied Grayscale information. Then select Image › Adjustments › Invert.

What you’ve accomplished in the steps above is defined a channel that will lay 100% white under the top half of your photo's dynamic range, and a proportional amount of white under the darker half of the image.
Next, **Turn Off** the SpotColor_White Channel and go back to your Layers palette. **Turn Off** the Grayscale layer, and make another **Copy** of your Background layer, this time naming it “Dark Removed”.

Under **Image > Adjustments > Shadows/Highlights**, use the **Amount Slider** under Shadows to select the range of dark to be removed. 50% is a good starting point, though this may take some readjustment after you’ve printed the image.

Finally, **Save As a Photoshop PDF** (again, as type X-1a once the selection box appears). Then print your file from Adobe Acrobat or Reader.
This process has taken the darkness out of the image and will instead create that darkness by printing less or no white toner behind those areas in the final printed piece. Using this methods, your photos will look as clean as possible when printed from the C942.
Lesson 7: Working With White in Adobe InDesign

Adobe InDesign has many of the same capabilities as Illustrator when used to design documents that incorporate white printing elements. Using InDesign, it’s possible to create designs that print in only white (using Black to represent white and printing with the driver set to Prints Only Spot Color Toner) or incorporating 100% white behind color elements as well as solid standalone white elements (using the Data Portion – Including White setting).

It’s also possible to create more custom pieces that incorporate OKI’s custom SpotColor_White swatch and using the Application Specification setting. However, working with InDesign for these types of pieces becomes a challenge when elements must be set with the overprint property. InDesign allows for native elements (text, lines, and shapes created natively in InDesign) to have their fills and strokes set to Overprint, but raster and vector elements created in Photoshop and Illustrator are automatically placed into frames, and neither these frames nor their contents are able to be set to overprint from within InDesign. The Overprint Fill and Overprint Stroke boxes will be greyed out for all placed graphic elements (the exception for this is frames filled with a solid color).

Because of this limitation, it is not recommended to use InDesign for complex files that require elements to be set to overprint (for example, the piece demonstrated in Lesson 3).

If you do choose to work with InDesign in setting up these kinds of files, you’ll need to create and/or modify any overprinted SpotColor_White elements
Both Overprint Fill and Overprint Stroke are unavailable in InDesign for placed objects, which limits the ability to create complex files using white elements in the application.

within their native applications. This means that each vector element placed within an InDesign layout that requires overprinting will need to be opened and modified in Illustrator (using the SpotColor_White swatch), and each raster element that requires overprinting will need to be opened and modified in Photoshop (using the SpotColor_White Spot Alpha Channel).

Working this way can be time-consuming and tedious, which is why InDesign is only recommended as a design tool for the simpler types of documents incorporating white. For all other files, working in Illustrator is recommended.
Additional Tips

Once you’ve mastered the basics of preparing and printing files on the C942, you’re more likely to encounter unexpected results. The information below will help prepare you for issues you may encounter as you create your spot color files.

Driver

- The Application Specification option for Spot Color Usage Methods is only available through the PostScript driver. If you’re not seeing Application Specification as an option, you likely have the PCL driver installed. Downloading and installing the PostScript driver will fix this.

Selection (Illustrator)

- Using the Selects Similar Objects tool in Illustrator is a big time saver when changing white elements to the Spot Color swatch and separating them onto their own layer. If you’re having a hard time selecting one element of a grouped object, create a rectangle off the boundaries of your artboard, then use the eyedropper tool to match its color to the object you want to select. With this object selected, use the Selects Similar Objects tool and make your modifications to the selected elements.
**White Opacity**

- Try combining the media color with toner color to create new colors by blending directly onto the media – for example, printing 100% Cyan (with no white behind it) onto red media creates a dark purple color.

- Darker colors (colors that contain a percentage of Black) will print better if the black is removed and the percentage of behind them is lessened – for example, printing 0% C 100% M 100% Y 25% K on black media with 100% white behind the element will look muddier than printing 0% C 100% M 100% Y 0% K (black removed) over 75% white – this is an advanced technique the requires more effort, but can greatly improve results when printing white under color on dark media.

**Trapping**

- When printing designs that contain many small letters or thin elements, it may be easier to use a manual trapping method for colored elements printed over White rather than using the Driver’s methods. Try adding a 0.25 pt stroke of the same color as the fill around your element and print with Trapping set to Off. This will preserve the fine lines that Choke White Trapping setting will lessen or eliminate.

**Textures and Patterns**

- Adding a light pattern or texture that prints directly onto the media can be a convincing effect – try a light texture the same color as the media at a lighter
opacity, and fade toward the edge of the printable page (approximately .2" from the page borders).

- For advanced raster effects (especially subtle textures) in Illustrator, create a texture with a transparent background in Photoshop, create the Spot Alpha Channel naming it appropriately, then import the PSD file into its own layer in Illustrator. The Spot Color will carry through.

- Printing a flat image directly onto the media in a percentage of white or the media color will create a clear watermark effect.

**Spot Color Swatch**

- Though the earlier instructions suggest creating the Spot Color swatch in Illustrator after you’ve started working on your design, you can also do so immediately after you’ve created your document. This will save you from having to find and replace elements later.

- When using Illustrator or InDesign, it is possible to create a Spot Color swatch that’s actually white instead of using a color like Magenta – this will be less distracting when designing the file, but it also makes it harder to tell if a PDF was set up correctly for Spot Color printing.

- Overprinting the Spot Color swatch onto another Spot Color (like a Pantone color) in Illustrator or InDesign will not work. To fix this, select all Spot Color elements besides white and under Edit > Edit Colors and select Convert to CMYK.

- Though the C942 typically places White under CMYK, the instructions in Lesson 3 for the Application Specification Spot Color setting describe
placing the White overprint layer on top of the color layer – while this method may seem counterintuitive, it eliminates problems that come from compound elements (for example, a logo that contains blue text over a yellow oval) overprinting elements onto themselves – however, for simpler designs, placing the Spot Color white layer under the color elements and having color elements Overprint will also work.

• When printing files that use the Application Specification Spot Color setting directly from Illustrator, an additional setting must be set to ensure that elements using the custom SpotColor_White swatch which require overprinting are rendered correctly. Under the Advanced tab, set the Overprints dropdown to Simulate. (the White Overprint checkbox has no effect on the custom SpotColor_White swatch)

**PNG Files with Transparent Backgrounds**

• Transparent backgrounds contained in PNG files are still seen as Data when using the Data Portion - Including White Spot Color setting. Because of this, the entire image will print with white behind it. To correct this issue, Control- or Command-Click on the thumbnail(s) of each layer, then create a Spot Alpha Channel (following the instructions in Lesson 5) and print using Application Specification Spot Color setting.

**Spot Alpha Channel (Photoshop)**

• When working in Photoshop, you can create your Spot Alpha Channel and immediately turn it off, then review and rework the color elements in your file (as long as the White information doesn’t change) without the visual
distraction of the channel. When you save to PDF, the Spot Alpha Channel will still be exported even with its visibility is turned off.

• The Spot Color Usage Methods setting of Spot Color - Do Not Use will not work correctly on a file that was created from Photoshop and includes a Spot Alpha Channel. The printer will still print that white channel.

• When saving a Photoshop file to a PDF, be sure that the Spot Colors box is checked in the first dialogue box. This is usually on by default, but accidentally turning it off will cause your file to print incorrectly.

**Media**

• Let the media breathe. Too much coverage – especially around the edges of the printable area – can take away the benefit of printing on colored media. The best results come from keeping elements toward the center of the page and allowing the media to show through as much as your design will allow.

Finally, be aware that printing white and color on dark media is both a creative and technical process. It’s rare that a piece comes out looking as the user expects the first time it’s printed. Experiment with driver settings, printer settings, various types of media, and file setup (especially opacity) to continue to understand the process and improve your results.