

## Color Copies: Part II

by Chris A Paschke, CPF

This report explores the rest of the testing I began in last month's article. To briefly recap: all available four-color copiers within the city limits of a small town were used to duplicate a select grouping of original images. They were all copied on copier paper selected by the operator, on regular settings, or general copy modes, with no special instructions for the operator other than to duplicate as closely to the original as possible.

The copiers used in this last part of the study remained the same as in the first part of testing. They included Xerox 5775, Xerox Majestic 5765, Xerox Regal 5790, Ricoh NC 5006, Kodak 1525+ Coloredge, Canon 350 and Canon CJ17.



### Assorted Item Test

As noted in "Color Copies: Lightfastness to Laminates" (PFM March 1997), the project goal was first to determine which copier would most accurately duplicate the original (a Polaroid) in terms of color and detail using a controlled paper (20# 100% cotton rag), then establish if the findings would hold true for assorted commonly framed items. Pieces selected for the second part of the study included a black and white 1960 studio photo yellowed with age, a newspaper clipping, a contemporary certificate, and a 1947 marriage certificate license.

These were all meant to represent hypothetical framing projects. This report examines test results and gives a bottom line recommendation for framing. The potential scenario was that these original items were brought to a framer. As each of the items would be unique, they would require archival treatment. Since technology makes it easy for us to create excellent duplicates of such items, the framer could potentially frame copies and then store the original more safely.

### The Copyright Issue Again

Selecting items for part two of the study brought up the copyright issue. Studio photographs, newspaper clippings, and legal documents are *all* copyright protected. Most reputable copy/print shops are aware of the legal implications which surround copying of protected materials, and many will not make a duplicate under any circumstances. Others may ask that you sign a release form stating the need for the duplicate, which might better protect them from being charged with copyright infringement.

### General Impressions

It was anticipated the results of the black and white photograph, newspaper and certificate copies would follow on a similar scale as the earlier color Polaroid images. Surprisingly, the copiers that rated highest in color, detail and accuracy for the brightly colored photo (Xerox, followed by Canon,

# mastering mounting

Kodak and Ricoh) did not rank nearly as high when it came to the same requirements for subtly aged images (see chart below).

## Comparison Chart

Although each copier and individual test was rated on a 1 to 10 chart, the following chart compiles the results from best to worst with a “1” for the copier that delivered the most accurate duplicate of the original. Dashes indicate a lack of test copy due to copyright conflicts.

Xerox consistently ranked in the top three as far as color and accuracy, with the exception of the certificate test for textured paper. Kodak and Canon did well with black and white photo reproduction, while Ricoh registered subtle paper textures best.

## The Black and White 1960 Photo

A black and white fiber-based (silver gelatin) studio portrait from 1960 was selected for its aged, yellow coloring and gray tones. Considered “black and white,” it exhibited a strong cream tone, almost appearing color tinted.

Copiers may be set on a variety of copy modes, such as photo, text, color, auto or a combination of them. The test photo was copied on both full color mode and black

and white photo mode, attempting not to use special correction settings. They were all copied onto the copier paper of choice selected by each individual company, and all were instructed to make it look as much like the “yellowed” original as possible (photo 1).

## Recommendations

The color copies all had a tendency to appear rather fuzzy with a color intensification of yellow, sometimes green. Overall the result was a disappointment, white highlights were hot and detail was lost.

In any event, the results were generally not good enough to be used as a facsimile for an original aged photograph. A studio portrait reshot by a professional lab to match existing yellowed colors would be a suggestion.

Kodak 1525: in color mode created a decent black and white print.

Xerox 5790: black and white mode whites appear hot/grays pretty good almost photo appearance.

Ricoh 5006: Color mode has yellowed highlights/faded whites black and white mode lost crisps/fake looking.

Xerox 5775: black and white mode washed out/no good color mode fuzzy and yellowed.

Copier Brand Model Number	TEST RESULTS						
	Xerox 5765	Xerox 5775	Xerox 5790	Ricoh 5006	Canon 350	Canon CJ17	Kodak 1525
Overall Rating	3	1	2	6	4	7	5
Polaroid	2	3	4	6	7		5
B/W photo (full color mode)	2	1	—	3	4	5	—
B/W photo (B/W mode)	—	5	3	4	2	—	1
Newspaper	2	1	3	4	5	—	—
Certificate	7	5	1	2	3	6	4
Document	2	3	1	5	6	4	7

## mastering mounting

Xerox 5765: Color mode turns grays yellow-green/not good.

Canon 350: Color mode very fuzzy/yellow-blue black and white too dark/grainy/lost detail.

Canon CJI7: No/grainy/hazey/yellow-orange tints.

### Newspaper with Color Photo

Surprise! Newspapers have copyright on their articles. The concept of “buy more papers if you want more copies” seems the reason. Advise customers to purchase all the copies necessary for reframing if possible. If it is out of date or otherwise unavailable, however, copying is the only answer for duplicates.

Since newspapers rapidly deteriorate it has been suggested to copy them for framing. Newspapers are copyrighted material and many print shops will disallow duplications. They may offer a release to be signed, stating reasons for the copy and removing the shop from possible future liability. Then they may proceed with duplication, but not always.

An article was clipped from *USA Today* for its newsprint paper, color photo and need for detail. A strip of black was placed behind half to prevent ghosting and check for color change. Since there is the desire to reproduce items authentically, the appearance of newsprint paper and colors as well as crispness of photo image are important during duplication. Copying would be a great solution if the correct copier and copyright issues could be dealt with.

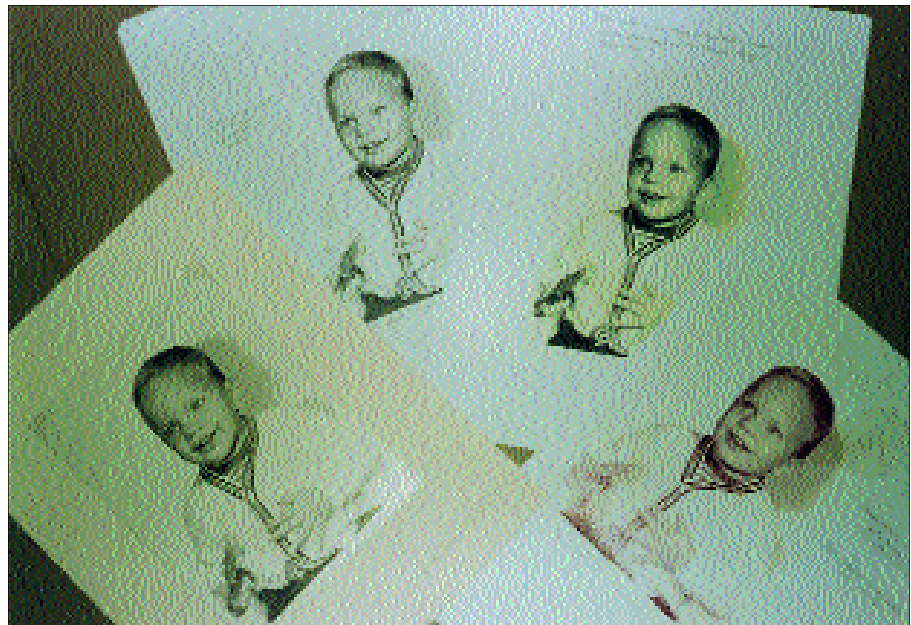


Photo 1: B/W studio portrait mounted on matching color Crescent Archival Photomount #2297 Cream (l to r) original; Xerox 5775 full photo/text mode is fuzzy and pale; Canon 350 with intense yellow and green distortion; Ricoh 5006 shows yellow highlights and faded whites.



Photo 2: Clipped from *USA Today*, a newspaper article was selected for its newsprint paper, color photo and need for detail. (l to r) Results show the original with black strip to control ghosting; Canon 350 showing corrected newspaper color; and Ricoh 5006 with corrected paper color and browned out black strip.

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## Recommendations

Copiers fell in all ranges of accuracy, and generally crispness was sacrificed for color or newsprint appearance. Ratings were based on the 1 to 10 scale for color, detail, and overall accuracy for duplication of the original (photo 2).

The list below reflects the seven copiers from most to least like the original. Canon CJ17 and Kodak 1525 were not reviewed, being disallowed for copyright infringement.

Xerox 5775: Most true to original colors and ghosting when printed on full color mode/but grainy photo.

Xerox 5765: Full color mode yellows newspaper/sharper photo.

Xerox 5790: Full color adds green to newspaper/photo OK/very intensified ghosting/excellent photo color dup.

Canon 350: Full color still blackens grays/hotter colors than original photo/more ghosting.

Ricoh 5006: Full color washed out newsprint to white/pink tint to black/red in all colors/no ghosting.

## Certificate of Completion

A gray textured certificate of completion, printed on Gainsborough Blueweave 80# Text Paper with a visual speckled flannel-like texture was selected. The printing ink was black with a pale 10% gray screened logo background running down the left side (photo 3).

The ball-point pen signature will fade by exposure to visible light, therefore decisions must be made as to whether the certificate should be exposed to framing.



Photo 3: Unfortunately no detectable difference is visible between paper color and texture in this photo. There is however, a variance in the logo screening down the left half of the certificate. Intensity and color both were effected.



Photo 4: The photo shows the color variations between copiers. Lower right front is the aged, yellowed original; (l to r) Xerox 5765 added blue; Ricoh 5006 ghosted all lines with distortions; Canon 350 created a black outlined all colors; and Kodak Coloredge 1525, yes the green border corrected to black.

Though glazing with UV protection will prevent the paper from rapidly fading it will not protect the ink signature from visible light. Since the customer would obvi-

ously want to exhibit the certificate, the problem is to duplicate the certificate as closely as possible to the original...paper and all.

## Recommendations

The challenge was to see whether a copier was capable of registering the textural gray paper, the pale 10% screen logo and still produce nice solid blacks with crisp edges. The results illustrated no copier was able to pick up the blue-gray paper color even in full color mode. The best duplicate was able to establish texture, crisp lines and solid darks, but not color.

Printing the copy onto a blank of Gainsborough Blueweave paper rather than white is a possible solution, but all the copiers duplicated the small flecked dot pattern to some degree which could fight with the paper. So, is it worth the headache and confusion to try to protect the ink by copying? Probably not.

Perhaps the best solution is to advise the customer of the ink fade, select a UV glazing material and proceed with the framing. You might want to add a note concerning the signature on the disclaimer or supply information on the back of the frame for future reference.

## Marriage Document

My parents' marriage license from St. Edwards Church, Chicago 1947, was selected because of yellow, aged paper, green currency border, blue fountain pen ink and delicate engraved line detailing. The test was to determine the best copier for duplication of original colors and detail while maintaining authenticity in appearance (photo 4).

## Recommendations

The copyrighted document from St. Edwards Church was a problem. Even though it was my parents' (now deceased), many printers did not wish to make duplicates. The question then arose, should this really be duplicated and framed or simply saved.

Once copied, the results were fairly extreme in the

color and detail variances between machines. Generally, any of the Xerox machines on full color mode created an acceptable duplication which would be fine for a shadow box creation of mementos, photos and documents. Ricoh and Canon intensified the colors creating a distortion and fuzziness in the border. The Kodak 1525, color corrected the currency green border to black, according to the operator this was automatic.

## Which Copier for Which Project?

So what does all this mean? It was hoped to be able to give a suggested copier for best general duplication for framing purposes. What was discovered was the selection of a four-color copier to best duplicate an original varies with the original. There is no simple answer. Some machines excel in line duplication while others are more true to color. Tests can vary within the same copier line (ie: all Xerox 5775s), the result of different copy papers, toners and if the copier is due for servicing. All were lightfast.

Get to know copier availability in your area.

Conduct a few basic tests on your own by copying a black and white photo, newspaper and document. Then be prepared to select the most accurate machine available based upon the requirements of original color accuracy, copyright infringement, as well as meeting mounting needs and laminating tolerances. Laminates should still probably not be suggested for these projects and mounting should remain limited to the lowest temperatures, cold mounting techniques or hinges.

Special thanks to Seal Products for allowing the ongoing research of copiers (and now, in 1997, printers), their tolerances and use in art and framing, by funding this long-term project. ■

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*Chris A. Paschke, CPF, owns Designs Ink, Oxford, Connecticut, featuring commercial and retail custom framing, product consultation, design and education. Specializing in mounting, matting and design creativity she works with numerous industry leaders including Bienfang, Crescent Cardboard, Fletcher-Terry, Ilford, Larson-Juhl, PFM, PPFA, and Seal Products.*