



SCIENCE of Scrapbooking

Preservation in the Digital Age

The goal of both digital and traditional scrapbook preservation is to ensure the long-term accessibility of memories in photographs, art, and journaling.

CUSTOMERS OFTEN ASK, “WILL MY DIGITAL prints last as long as traditional prints?” This is a difficult question with no simple answer. The correct answer is “it depends,” and to get a sense of why, we need to understand the diversity of digital print materials as well as what makes these images fade and yellow. All things change over time, sometimes quickly, sometimes slowly; we often try and prevent changes and degradation in prints. Just like we did for traditional photographic prints, we now try to save and preserve our memories with digital materials. The goal of both digital and traditional scrapbook preservation is to ensure the long-term accessibility of memories in photographs, art, and journaling.

GENETICALLY GIFTED

My aunt Susan has just as much sparkle at 80 as she did at 20. Why is that? Is Aunt Susan just luckier than the rest of us or did she manage to take better care of herself? Was it a matter of inheriting a “strong constitution” from her parents? Photographs are much the same way: to a certain extent “genetics” (the print’s chemical makeup) do play a role, but how you take care of them can make a big difference.

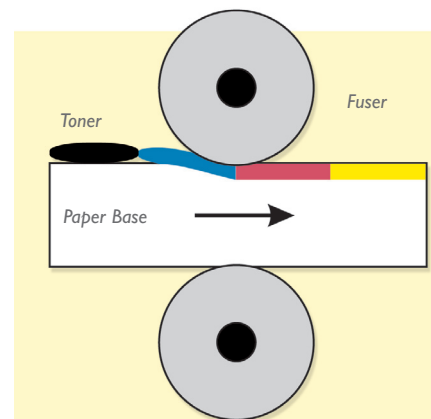
You can’t choose your own genetics, but you can decide what types of materials you use to create your prints. Years ago a digital print was considered to be one taken by a digital camera and printed at home with a personal computer and desktop printer. Today, a large number of digital prints are brought to local or online photo labs and printed on the same type of equipment that film camera negatives are printed with. These are considered “traditional prints” because they require light exposure and development in wet chemistry.

Traditional photographic prints can be made from digital files at photo labs and some kiosks. Since these are what photos have been printed on for the last seven decades, this process is now used as the yardstick that digital print materials are measured against. Traditional prints are made with a chemical development process involving layers of colored dyes embedded in a paper coating. In general, if these prints are taken care of (sort of the photographic equivalent of my Aunt Susan avoiding sunburns, eating healthy and exercising), they should still look acceptable in 40 to 50 years. However, the newer “digital” printing methods don’t require wet chemistry to

process. Each of these methods is created with a very different technology, which means they last for varying lengths of time. The following is a discussion of the key details for each digital print process.

PRINT PRAGMATICS

Color copiers and laser printers use a technology called electrostatic printing. These prints can be made at home or in a retail store or copy shop. They are made with pigment toners laid down onto and then fused into an uncoated paper. Though these prints generally last longer than traditional photo prints both in albums and



Electrostatic Print Process

on display, they have not been the dominant print method for photographs because of their usually poor image quality. They are, however, very useful for fliers, labels, clip art and other line or text-based copies.

The next process is called thermal dye transfer (sometimes referred to as “dye sub”). This process uses heat to transfer the color dyes from a donor ribbon into a special coating on the print paper. When taken care of in preservation-quality scrapbooks and albums, they are expected to last as long as traditional prints because they are made of similar materials. However, when they are exposed to light, such as on display in a picture frame or on a refrigerator, they may not last as long as traditional prints. These prints are often the type made from kiosks in stores, but they can also be made on some home printers. The home printers using this method usually make small prints (5x7 or less) and lay down one color at a time—one pass through for magenta, a second pass for yellow, and a third for cyan.

INKJET ISSUES

The last and most common digital printing method is inkjet. Because this is mostly done at home, many of your customers may have questions and will seek information in your stores. The two primary factors that determine the longevity of inkjet printing systems are the inks and the papers. The colorants in the ink can be either pigments or dyes, depending on the brand and type of printer chosen. Note, however, that once the printer has been selected you can't change the colorant type that goes with it. In general, pigment inks tend to last longer without fading, but dye-based inks can sometimes print a larger range of colors. Multi-purpose color printers tend to have four ink colors, are often used for printing color reports and graphs, and are not always optimized for making images. Some printers, however, can do a reasonably good job. Photo-specific printers have a larger number of ink colors, usually at least six, which allows them to print a greater variety of colors over a larger range of tints. This results in higher

quality images. If one of your customers is having difficulty printing satisfactory images, it may be their printer.

The second factor in inkjet printing is the paper type. Copy papers and other non-photo papers do not have the special surface coatings required to make a high quality image. When liquid-based inks are sprayed by the printer head onto an uncoated paper, the ink tends to spread out slightly on the paper's surface. This causes each drop to “feather” and not appear sharp, sacrificing detail in the image. Photo papers have special coatings on them to receive the inks from the print head and keep them from spreading as they do on uncoated papers.

The one ink and paper combination that has been found to have a relatively consistent longer lifespan than traditional images is pigment inks on porous paper. Because of their different properties both in making and preserving photographs, it can be useful to identify swellable and porous inkjet paper coatings. Swellable papers feel slippery, while porous coated papers feel sticky. Also keep in mind that inkjet prints, because they involve liquids in their creation, should be thoroughly dried before being placed in an album or plastic page protector. It is best to wait at least 24 hours to make sure the print is

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Inkjet prints should be thoroughly dried before being placed in an album or page protector.

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completely dry before framing or scraping a print. This may be particularly important if you and your customers live in a humid area.

CARE CONSIDERATIONS

Carefully choosing the initial print material cannot guarantee long-term success by itself. Photographs need to be cared for throughout their lives, or they will age before their time. The difference is that unlike a person that can care for himself, photographic memories are at the mercy of their owner.

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The following additional tips may be helpful for specific customer uses:

1. If your customers have had problems with mold on their prints, suggest they use inkjet prints on microporous paper if they can't keep their humidity consistently below 65% RH. Because the coating on these prints is inorganic, it isn't quite so prone to mold growth.
2. If your customers want to make prints for a very temporary use, such as flyers advertising the sale of a car, choose electrostatic prints. Photocopies are cheap and hold up well to outdoor or brightly lit displays.
3. If you have customers that want to display their prints at home, suggest a pigment inkjet or a traditional photograph framed behind glass.

