Print Spotting

Closing in on perfection with a bit of cleanliness

fig.1 There is usually a remarkable difference between unspotted and carefully spotted prints, especially when considering how minute the alterations often are. Print spotting removes disturbing visual defects, which disturb the print enjoyment and lessen its visual impact.

Few freshly made prints are completely free of visual defects. Unavoidable dust and tiny scratches on the negative, plus the occasional emulsion damage and fingerprint, create unwanted spots, lines and other blemishes on the print. These imperfections must be concealed, because they spoil a clean presentation and distract from the image. Print spotting is the process in which unwanted spots are disguised by adjusting their tonality to match the surrounding tones.

Print spotting is not just cosmetic. Its main function is to remove disturbing visual noise, which gets in the way of print enjoyment and lessens its impact. There usually is a remarkable difference between unspotted and carefully spotted prints, especially when considering how small the alterations often are (fig.1). This makes spotting a highly effective and rewarding task, but it can also be a labor-intensive, time-consuming and sometimes frustrating task,

particularly when it does not work as well as we had hoped. As always, prevention is better than repair, and consequently, it is best to eliminate the need for spotting as much as possible. The less spotting your prints require, the better off you are. The root cause for print blemishes is dirt and dust. To minimize the need for spotting, keep your negatives clean and handle them with care to prevent scratches. Make sure your entire camera equipment and darkroom are as tidy and dust-free as possible. Remove dust from work surfaces, cameras and film holders on a regular basis. Gently remove all loose dust from the negative and the enlarger's negative holder with compressed air or an anti-static brush before printing them. Carelessly stored, ill-treated or much-printed negatives may benefit from a gentle wash prior to using them again.

White Spots and Black Spots

There are two types of print imperfections that require spotting, white spots and black spots. Most blemishes are much lighter than their surroundings. Most are caused by small dust particles stuck to the negative or to the glass of the negative carrier. They are highly distracting but easy to remove. Others are telltale signs of small fibers and hair, leaving thin, bright trails on the print. They need a bit more patience and practice to disguise. Dark spots are typically caused by dust on the film during in-camera exposure or by damage to the negative emulsion. Some literature recommends etching the print surface to remove blemishes that are darker than their surroundings. However, etching requires scratching and irrevocably damaging the print's surface. I will demonstrate how this is completely avoidable when print spotting is combined with other retouching techniques.

Spotting Equipment and Materials

Print spotting is accomplished by using a small brush and repeatedly applying a darker dye to a lighter spot, line or blemish, until its shade closely matches the surrounding tones and blends into the rest of the print. The goal is not to eliminate the imperfection altogether, but to move it from attention-grabbing boldness to inconspicuous obscurity.

The ideal work area for spotting is dry, uncluttered and dust-free. It also provides bright and even lighting, has a good-size sturdy table and comfortable seating. Typical spotting tools include a large magnifying glass or extra-strong reading glasses, a set of very small, fine-tip, high-quality brushes, a pair of clean, lint-free nylon or cotton gloves, some blotting paper or a paper towel, a few spare pieces of mount-board and a saucer or porcelain palette to mix and dilute the spotting dye (fig.2). Make sure to also have a cup of distilled water and an eyedropper handy.

fig.2 Typical spotting tools include a large magnifying glass, a set of high-quality brushes, some blotting paper, a porcelain palette to mix and dilute the spotting dye, a cup of distilled water and an eyedropper.

Spotting Brushes

Your set of fine-tip brushes needs to include only the smallest sizes. Start with a #000 (3/0) brush for larger spots, and attack smaller imperfections with a #00000 (5/0) brush. Be sure to buy only the best, evenly shaped, animal-hair brushes available, or your spotting efforts will be more tedious and frustrating than necessary. A high-quality brush features enough bristles to readily absorb the spotting fluid, while still forming a fine-point tip and allowing full control over the fluid amount released by varying the pressure applied to the tip of the brush.

Spotting Dyes

The best-suited materials for spotting monochrome prints are light-stable, black dyes and pigments, which are suspended in a quick-drying, water-soluble solution. This way, the spotting dye can be diluted with water to create any shade of gray from a barely visible light tone to a deep dark black. Once applied to the print, the dye is absorbed by the paper emulsion and penetrates into the fibers without appreciably changing the surface texture or its reflectance.

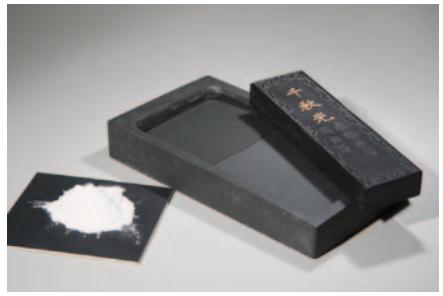
One prominent brand of spotting dye was Spotone, made by Retouch Methods, Inc., but unfortunately, the company no longer exists. They produced dyes of various colors, and by mixing them, one could match any print color, regardless of paper brand or toner used (see fig.3a). You may still be able to acquire a bottle of Spotone through a secondhand source, in which case, you will be glad to know that a single bottle will most likely last you a lifetime. The most useful color in the Spotone line of shades is #3 (neutral-black base), which has a colorless, black tone. By mixing #3 with small amounts of #2 (selenium brown), the tonality can be changed to closely match the tones of a typical sulfide or selenium-toned print. Further color matching is

a)

fig.3a Spotone is, unfortunately, no longer available, but it is still possible to acquire this once-prominent brand of spotting dye through secondhand sources. By mixing various colors, any print tone, regardless of paper brand or toner used, can be matched.

b)

fig.3b Marshall's Spot-All dyes are still available, very similar to Spotone and work on the same principle. The dye is readily absorbed by the emulsion and paper fibers without appreciably changing the surface texture or its reflectance.



c)

fig.3c Going back to the very roots of ink making, grind some solid India or China ink, mix it with an equal amount of gum arabic and dissolve together in distilled water. Gum arabic promotes print adhesion and controls the gloss level of the spotting dye.

d)

fig.3d Special opaque liquids are used to cover up small holes in the negative emulsion. This way, they convert hard to remove, dark print spots into bright white spots, which are much easier to spot and blend into their surroundings.

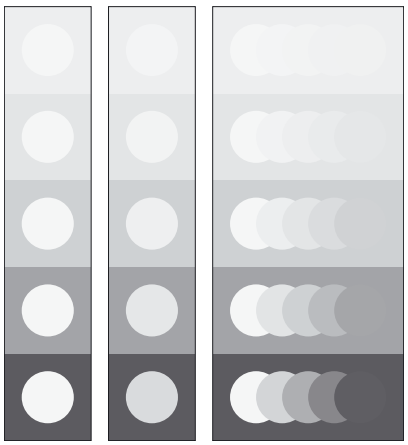


fig.4a A light dye is mixed and applied numerous times to carefully build up the density required to fill the spot.

possible with #0 (olive black) and #1 (blue-black), but most spotting needs are adequately covered with Spotone #3 and #2. Marshall's manufacture an alternative line of spotting dyes, called Spot-All (fig.3b). It is available in neutral-black, selenium-brown and blue-black. As of this writing, they are still available and just as easy to mix and apply as the Spotone products.

fig.4b Using a small brush to repeatedly apply a slightly darker dye to a series of lighter spots, a blemish is disguised and blends into the surrounding tones.

I would not hesitate to work with either of these ink-based materials. Conversely, I had little success with products containing egg white, shellac or other glazing agents and lacquers. Their ingredients are not absorbed by the print, but build a hard, shiny layer on top of the emulsion, similar to a coat of paint. They alter the surface reflection and make tonal blending far more difficult than with penetrating inks.

If you are concerned about photographic product availability in general and monochrome, fine-print products in particular, spotting dyes should be the least of your worries. In the absence of specially made retouching products, one is well-served with archival inks as they are used in drafting and calligraphic applications. You might even go back to the very roots of ink making and produce your own spotting dyes from solid India or China Ink sticks (fig.3c). Grind some ink off the stick, mix it with an equal amount of gum arabic and dissolve together in distilled water. Alternatively, fill an ink rubbing stone with some water, rub the ink stick against the stone until the water turns deep dark and add some gum arabic to it.

Gum arabic promotes the adhesion between spotting dye and print emulsion while also controlling the gloss level of the dye. Therefore, use more gum arabic for spotting glossy prints than for spotting matt prints, and always try to match the surface reflection

fig.5 An initial enlargement of the print revealed numerous imperfections of different origins. On the left, typical white spots and lines, caused by dust on the negative, are joined by a dark blemish (arrow), which was actually a tear in the paper of the studio background. On the right, there are more dust spots, together with a large dark spot, caused by a small emulsion defect in the negative.

fig.6 After retouching the negative and turning the dark spot into a white spot (right), a new enlargement was made. The dark blemish, caused by the tear in the paper, was bleached with Farmer's Reducer during wet processing until it was lighter than its surroundings (left). These actions eliminated the need for etching, and the print is now ready for spotting.

fig.7 After making sure that all print imperfections are lighter than their surroundings, the print was carefully spotted. The goal is not to eliminate the imperfections altogether, but to move them from attention-grabbing boldness to inconspicuous obscurity. The telltale signs of spotting are only visible upon close inspection and by knowing where to look for them.

of the surrounding print area. Gum arabic can also be applied to professional spotting dyes in order to increase their inherent gloss levels.

Dark spots on the print create a unique challenge to retouching efforts. They cannot be covered up with spotting dyes, because the dyes are made to build up density in the emulsion and not to paint over it. One way to remove dark spots is to bleach the print locally, while still wet, until the area is slightly lighter than its surroundings and spot it back in when dry. This is rather difficult with dark spots approaching maximum black, in which case, the blemish is best removed by turning a black spot into a white spot first. This is done by covering the corresponding negative area with an opaque liquid on the substrate-side of the film. This way, what printed as a black spot now prints as a white spot and can be easily disguised through print spotting. Any damage to the print emulsion, which is

fig.8 Print spotting is not limited to removing dust and other print blemishes. As this example shows, it can also be used to retouch image-based imperfections. A few tiny holes in the stockings have been successfully repaired by simply correcting the damaged stitches with a small brush and some spotting dye.

an unavoidable result of etching, is prevented by this method. Special opaque liquids are on the market (see fig.3d), but any near-opaque ink will work as well.

Print Spotting Process

Professional print spotting takes a lot of practice and experience, but it does not take too long to learn the basic steps and improve the appearance of a print significantly. The main challenge is to understand the need to resist the initial impatience. Print spotting is not something that should be done in a rush, or the results will look rushed.

I do all my spotting after print mounting, because this has the benefit of being able to work with a perfectly flat print. However, it has the disadvantage of potentially wasting a mount-board if something goes terribly wrong during spotting, a risk that gradually diminishes with increasing spotting skills.

Clean up your work area, and make certain that it is dry, uncluttered and dust-free. Provide for bright and even lighting and get a comfortable chair. Get a large magnifying glass or use extra-strong reading glasses in addition to your corrective eyewear. Have all your spotting tools and materials ready, put on your gloves and continue with the following general steps:

1. Place a single drop of undiluted spotting dye into the saucer or porcelain palette (see fig.2). Using a mixing brush and distilled water, dilute the dye and create several drops of decreasing strength.
2. Place a spare piece of mount-board on top of the print, close to an area that needs spotting. Start with the lightest spots and the weakest dye.
3. Dip the tip of your brush into a dilution significantly weaker than the spot seems to require.
4. Blot the wet brush tip gently against some blotting paper. You have more control over spotting with a dry brush than with a wet brush.
5. Carefully touch the print with the tip of the brush. Aim for the center of the blemish. Do not stroke the brush; you are spotting, not brushing.
6. Compare the first spot you made to the tone of the surrounding area. If it is darker, quickly blot off what you can before it dries, apply a drop of distilled water to what is left and blot that off too. Repeating this a few times will not remove the stain at all, but it will make it less obvious.
7. The first spot application should look significantly lighter than the surrounding area. The goal is to start with a light dye and gradually build up density. Spots that are too light are easily darkened, but spots that are too dark are hard to remove and can ruin an otherwise perfect print.
8. Once you have the correct tone of dye, hold the brush straight up, and keep spotting the rest of the blemish by repeatedly applying tiny spots until it is filled in. Again, do not paint, spot. Be patient, and give the dye time to dry between applications.
9. After the first blemish is completely filled in, examine the print for blemishes of similar tone, and spot them next. While working on increasingly darker spots, slowly increase the strength of the dye. Repeat this procedure until all print imperfections are sufficiently disguised.

Final Hints

By far the most common spotting mistakes are to work with too wet of a brush and to use too dark of a dye. Until a certain spotting proficiency has been obtained, work with an additional copy of the print to practice and fine-tune the tonality of the dye, before spotting the actual print. When you feel more confident, simply use the trimmed white borders of the print itself to verify the tonality of the dye.

Correcting large blemishes takes a lot of tiny spots and effort. Resist the temptation to make larger spots. It quickly turns professional spotting into amateurish painting, and results will be perceived accordingly.