



**Fig. 10-2-a** This mid-1960s color photograph is yellowed and significantly faded but otherwise is in very good physical condition. A careful scan can correct most of the fading.

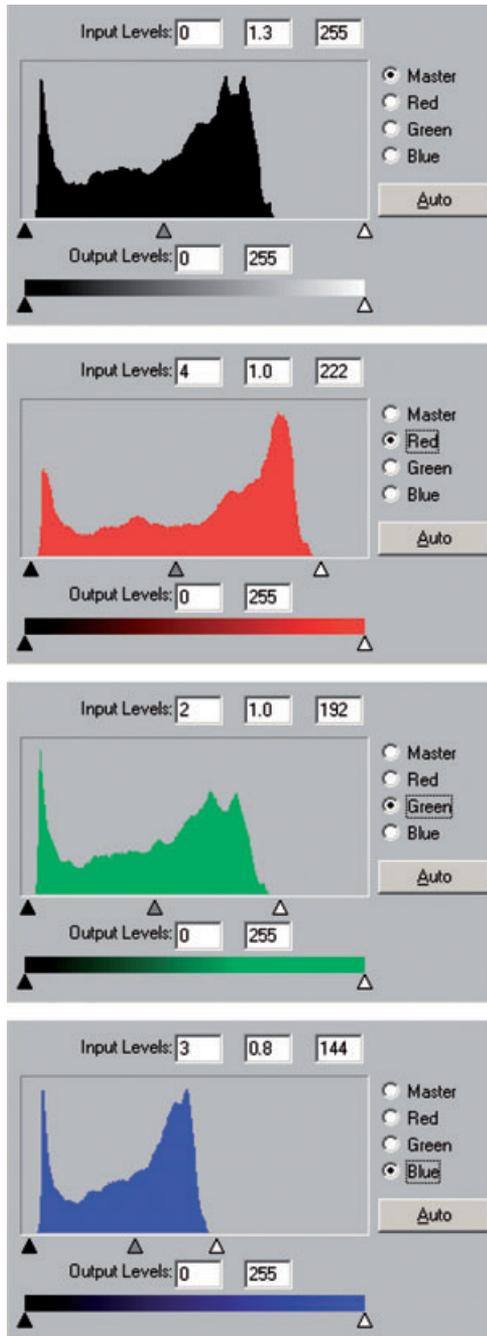
### Example 2: Repairing Color with a Good Scan

Throughout this book I've emphasized the importance of getting a good scan to make your restoration job easier and better. This example is a most extreme case of that; getting the scan right got me 90% of the way to great tone and color (see also Chapter 6, Restoring Color, page 183). The original was a 3-inch by 5-inch color snapshot made in 1966

(Figure 10-2-a). It was in very good shape for a 40-year-old color photograph. It was little bit dirty and slightly cracked, and there were some paper fibers stuck to the surface but little physical decay. The print had a moderate amount of yellow staining and overall had faded considerably but uniformly.

I scanned the photograph on my flat-bed scanner with the Input Levels settings shown in Figure 10-2-b. I set the sliders for the black and white end points in the red, green, and blue channels so that they tightly bracketed the histograms. That wiped out the highlight stain and gave me a good range of tones from near-white to near-black. Pulling in the blue channel's "white" point far enough to eliminate the yellow stain, however, made the print come out too blue overall, so I raised the mid-point on the blue levels to make the color balance more neutral. The finished scan, in Figure 10-2-c, is an amazing improvement, just from a carefully adjusted scan!

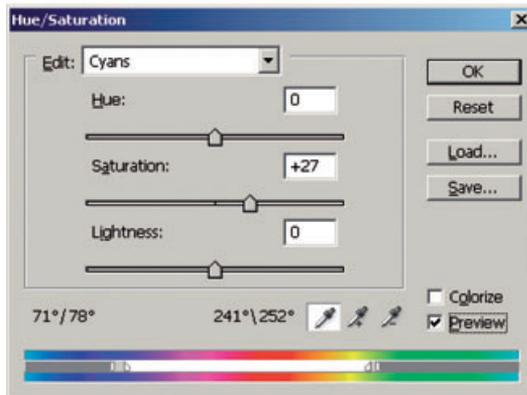
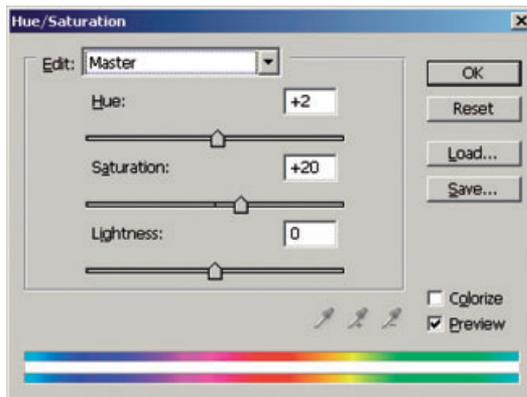
I decided that the color was not saturated enough and the overall hue was a little bit pink for my taste. So I added a Hue/Saturation adjustment layer (Figure 10-2-d) and played around with the settings until I got



**Fig. 10-2-b** These are the scanner software histograms and Input Levels settings that produce Figure 10-2-c from Figure 10-2-a. I adjusted the black and white sliders to bracket the range of tones in each color channel. I also shifted the midtone slider for the blue channel to 0.8, which improved the color balance.



**Fig. 10-2-c** This corrected scan of Figure 10-2-a looks very good. It's most of the way toward having fully restored and corrected color.



**Fig. 10-2-d** These Hue/Saturation adjustments, applied in an adjustment layer, further improve the color, producing Figure 10-2-e. The Master adjustment improves the overall saturation and makes the skin tones a little less pink by shifting the Hue +2 points. The Cyans adjustment substantially increases the saturation in the greens and blues because they were very weak even in the corrected scan.

**Fig. 10-2-e** Improved saturation helps this photograph a lot. The color balance, though, is just a bit off—it's a little too rosy. The Curves adjustment in Figure 10-2-f fixes that.

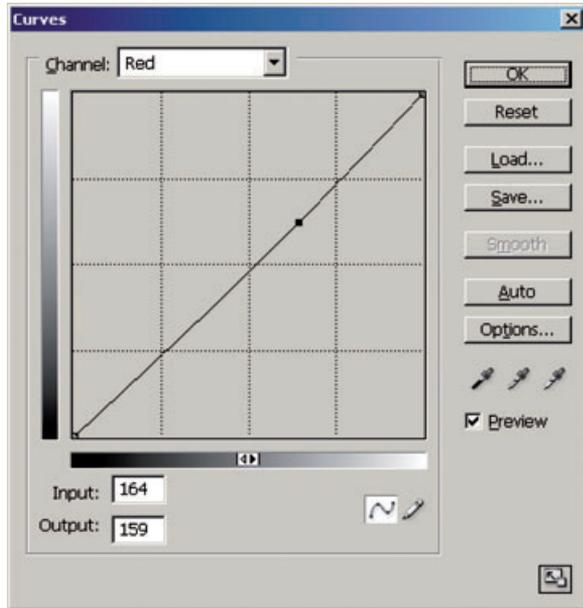


Figure 10-2-e. The Master saturation is up 20 points, and I shifted the hue by +2 degrees, which moved the pinks and the reds a little bit toward the yellow and warmed up the print. That Hue adjustment would also move the greens and blues a little bit toward the purple, but there was so little of that in the photograph that I didn't care about them. The greens and blues, though, were still undersaturated, so I went to the Cyan channel and moved the spectrum sliders at the bottom so that all colors from green through blue were selected. Then I increased the saturation by 27 points. This pumped up the colors in the quilt and added a bit more variation to the background (Figure 10-2-e).

I didn't have to use an adjustment layer for this, by the way. It made it easier for me to fiddle around with the Hue/Saturation settings to figure out what I wanted.

The color was almost there, but it was a bit too rosy for me. Moving the eyedropper around the picture confirmed that impression; even the white shoes had red values that were substantially too high (meaning there wasn't enough cyan in the image). So I launched the Curves tool, pulled up the red channel, and made the single-point adjustment you see in Figure 10-2-f. That tempered the rosiness a bit to give me the very natural color you see in Figure 10-2-g.

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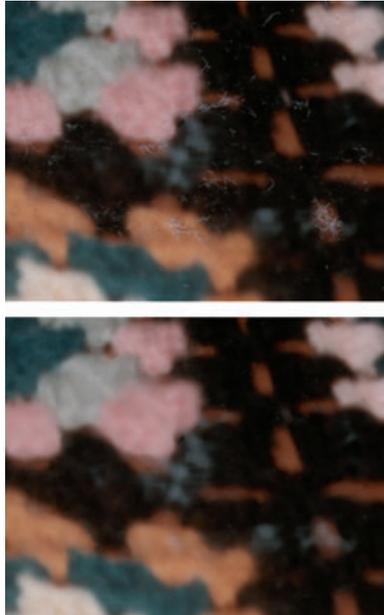


**Fig. 10-2-f** This single-point Curves adjustment gets rid of the excess pink from Figure 10-2-e, as shown in Figure 10-2-g.



**Fig. 10-2-g** This photograph has excellent color. The Curves adjustment from Figure 10-2-f makes the whites neutral and gives the tot a natural, childlike complexion. Everything is done except a small amount of damage repair and detail enhancement.

**Fig. 10-2-h** This enlargement from Figure 10-2-g shows the white paper fibers that are stuck to the print (top). It took very little work to clean them up with the Dust & Scratches filter. I just assigned the filter to the History Brush, reverted to the previous History State, and brushed out the clumps of fibers. The result is shown in the bottom figure.



The next-to-last thing I had to do was clean up the garbage. I used my favorite tool for that, the Dust & Scratches filter applied via the History Brush. I set the filter for a radius of 10 pixels with a threshold of 4. That aggressively wiped out all of the dust and dirt and most of the paper fibers. Setting the History Brush to that state, I painted the filter over the background. I could use a very large-radius brush because the background was out of focus and the filter had no effect on it except for correcting the damage.

Cleaning up the child and the quilt required the usual small-radius brush so that I didn't accidentally wipe out real details, but since the background constituted more than half of the photograph, I spent relatively little time on cleanup. Figure 10-2-h is an enlarged section of the photograph that shows what the dirt and paper fibers looked like before and after cleaning up with the Dust & Scratches filter brush. The filter didn't erase larger fiber clumps, but it wasn't much work to obliterate those using the Clone tool.

This file was ready to archive and print out at its original size, but I decided to add one last refinement—enlargement. When I saw what a high-quality, clean scan I could get from this photograph, I decided to scan it at 1200 ppi instead of the 600 ppi that would've been more appropriate. The 1200-ppi scan didn't hold more image detail than a 600-ppi scan would; there wasn't any finer detail to be captured. What it did was capture four times as many pixels for Focus Magic to chew on (Figure 10-2-i).

I set the Focus Magic image source to "Grainy Image" because that minimizes the filter's sharpening of fine grain and noise. I didn't want to exaggerate textures in that smooth baby skin. I turned on "Remove Noise" just in case there were some dirt specks I missed, set the Blur Width to 7 pixels, and let the filter run. What a difference that filter made (Figure 10-2-j)! Now the photograph is sharp enough to take up to 6 inches by 10 inches and still stand up to close inspection.



**Fig. 10-2-i** Focus Magic can improve the sharpness of this photograph to make it even better than that of the original print. Setting the source for Grainy Image minimizes enhancement of noise and film grain. That's important in this photograph because I want the child's skin to remain baby smooth.



**Fig. 10-2-j** This enlargement from Figure 10-2-h shows the photograph before (top) and after (bottom) running the Focus Magic filter from Figure 10-2-i. See how much better the detail in the eyes and mouth is! This photograph can be enlarged 50% to 100% when it's printed out, and it will still look nice and sharp.