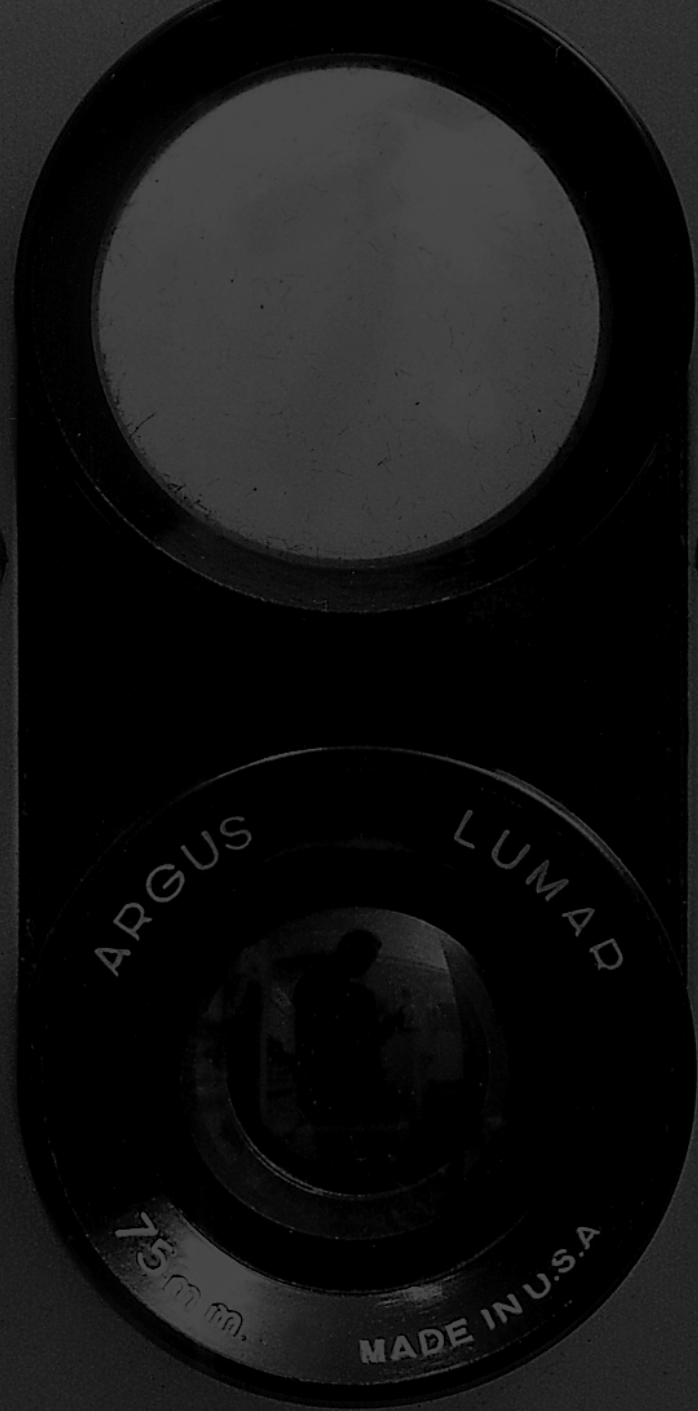# PATTERN PLAY

"Keeping your clothes well pressed will

keep you from looking hard pressed."

—COLEMAN COX

Creating Patterns and Textures

Patterns are ubiquitous. Patterns surround you

in your home or office, and you don't even

notice them because you are so used to seeing

them. They are on your walls, on your floor,

and on the clothes you wear. They shape your

life as you speak of "patterns of thought"

or "patterns of behavior." Patterns don't just

happen. Someone needs to create them.

After you open your eyes to the patterns that

surround you, you'll be amazed at the design

possibilities they contain.

Project 15

Pattern Play

by Sherry London

With head, hat, and jewelry images by Kelly Loomis, and brushes and two pattern source images by Joni Ruethling

GETTING STARTED

Photoshop 6 has a new feature that makes *using* patterns easier than ever before. It doesn't, however, make *creating* the patterns any easier. Photoshop can still use a rectangular repeat only and blindly duplicate it again and again. The standard pattern types in wallpaper and fabric design (the brick and the half-drop pattern) are impossible to create automatically in Photoshop. Photoshop still lacks Corel Painter's ability to create seamless repeats with a minimum of fuss. In this project, you'll learn ways to minimize the fuss required. You'll create a quilt of Victorian women and learn how to create, apply, and adjust patterns to fill their clothing. In the process, you'll learn a dozen different pattern-creation techniques (which is still only scratching the surface of what's possible).

Pattern-making has a strong mathematical component, and knowing the size of your tile is a very important part of making pattern seams match up. You'll use the Offset command and precise selection methods to help build the pattern units. After you understand the variety of pattern types that you can create, you can use these skills to create seamless patterns to take into 3-D applications, to use as backgrounds, or to mix into your work.

Almost as important as the pattern-repeat methods is the knowledge of how to prepare images for use as patterns. As you create the patterns, you'll learn a variety of ways to find or create the pattern content. You can work with photographs, paint random images, or develop geometrics. You can also use filters to stylize or make abstracts from photographs that you decide to use for pattern content.

CREATING A PLAIN-MOTIF REPEAT

The easiest form of pattern-making in Photoshop is to simply select a rectangular piece of an image and define it as a pattern. You'll take a photograph, load the pre-created alpha channel, and define the result as a pattern.

Note: Because all of you might not share my love of patterns, I've included some of the key pattern-making techniques in this chapter and have placed a number of other pattern-creation techniques on the accompanying CD-ROM. You can open the **15_extras.pdf** file from the Projects/15 directory on the CD-ROM and re-create all of the various patterns if you wish, or you can to try a few patterns here and then add the final quilting to a flattened version of the image that contains all of the patterns already applied to the image.

Note: If you have not created any patterns before, you can try creating a plain-motif repeat by working this section on the CD-ROM.
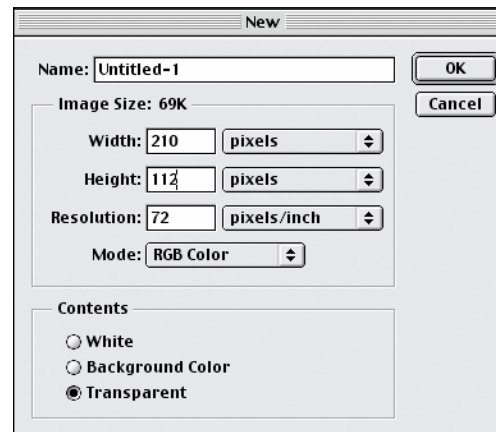
CREATING A HALF-DROP REPEAT

The half-drop repeat is the most common pattern type in both fabric and wallpaper design. In this repeat system, the motifs appear to be in columns with the motifs in the "even" columns falling halfway between the motifs in the "odd" columns. To define a half-drop repeat pattern so that it forms the necessary rectangular pattern unit, you need a file that is twice the width of your original motif. You'll use the **FlowerBug.psd** tile from the Companion CD-ROM as your source pattern. The pattern definition technique that you'll use to prepare this new pattern shows you how you can make any motif-based rectangular pattern into a half-drop pattern.

**1** Create a new 210×112-pixel file at 72ppi with a transparent background.

These dimensions are twice the width of the original FlowerBug tile and use the same height. A transparent background saves you the trouble of removing or hiding the Background layer of the image.

2 Choose Edit/Presets Manager and the select the Patterns presets. Click on Load and Load **Ladypattern.pat** from the CD-ROM. Choose Edit/Fill and fill with the **FlowerBug.psd** pattern from the Companion CD.

You'll get two perfectly spaced copies.

Create a new document that is 210 pixels wide by 112 pixels high.
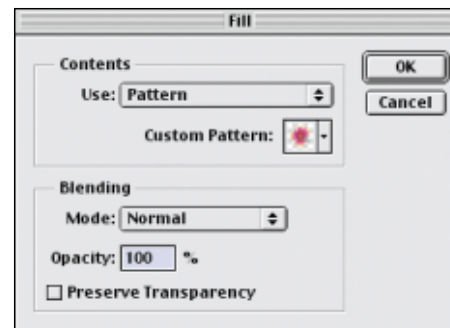
Fill the new image with the FlowerBug pattern.

Note: If you want to use your own image to make a half-drop repeat:

1 Make sure the file only contains the image you want to use as the pattern.

2 Duplicate the layer that contains the image motif so you have two layers with the same motif.

3 Use the Canvas Size command to double the width of the tile. Place the anchor for the image in the center-left anchor spot in the Canvas Size dialog box.

4 Use the Offset filter (Filter/Other/Offset) to move the copied layer the same number of pixels to the right as the *original* width of the image (before you used the Canvas Size dialog box).

3 Set your foreground and background colors to the default of black and white. Choose Filter/Sketch/ Photocopy and set Detail to 10 and Darkness to 12.

This is another way to develop pattern content from photographic images. The Photocopy filter changes the image to a slightly stylized version that uses the foreground and background colors in the Toolbox. You could have chosen any two colors and the results from the Photocopy filter would have used them instead. For this example, however, black and white give you the most control over the Blend mode when you apply the finished pattern.

4 Select the flower on the right with the Rectangular Marquee tool, and cut it to a new layer (Shift+Ctrl [Cmd]+J).

You need to remove the rightmost motif from Layer 1 and place it onto Layer 2 so that you can offset it in the next step.

5 Choose Filter/Other/Offset. Set the Horizontal pixels right to 0, and the Vertical pixels down to 56. Click the Wrap Around radio button.
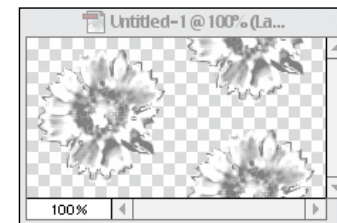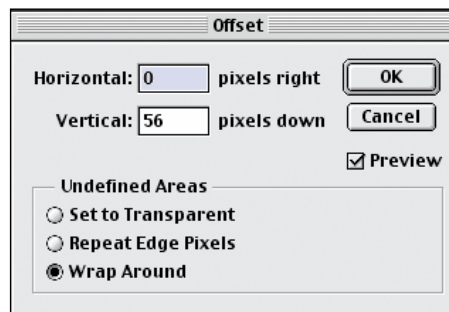
The Offset filter does the half-drop pattern for you. To make certain that the pattern drops halfway, set your vertical offset to half of the image height.

Note: If you wanted to create a pattern that took four steps before it repeated and in which each motif moved 1/4 of the image width, you would set your file to be four times the original pattern width. You would offset the left-most image not at all, the second copy 25% of the image height, the third copy 50% of the image height, and the fourth copy 75% of the image height.
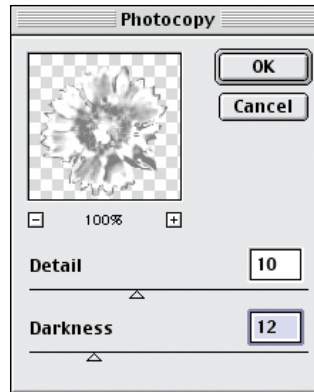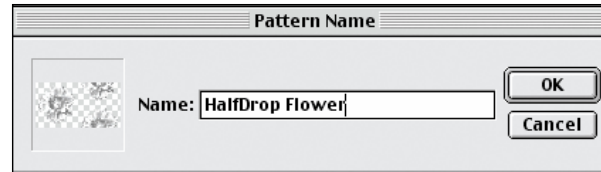
Choose Filter/Sketch/Photocopy to change the image to a black and white version.

Note: If you simply want to make a half-drop pattern, you don't need to include Step 3 in the process. It is merely a way of changing pattern content. You could have used any filter you wanted, and, had you not started with a pattern as the original source, you could have applied the filter to the motif before you duplicated it.

Note: Step 4 is not strictly necessary because Photoshop 6 seems to do a decent job of offsetting images within a selection Marquee. Earlier versions of Photoshop, however, had trouble with the wrap-around feature of the Offset filter, so this is a "safety" precaution to avoid potential problems.

Offset the rightmost copy 56 pixels down.

6 Choose Edit/Define Pattern. Name this HalfDrop Flower.

Define the pattern tile as HalfDrop Flower.

7 Load **LadyQuilt.psd** from the Companion CD, add a Pattern Overlay effect to the Bustle layer of the BustleLady dress. Choose the HalfDrop Flower pattern at 25% Scale in Overlay mode.

Overlay mode enables the black and white in the pattern to take on the color of the original Bustle layer.
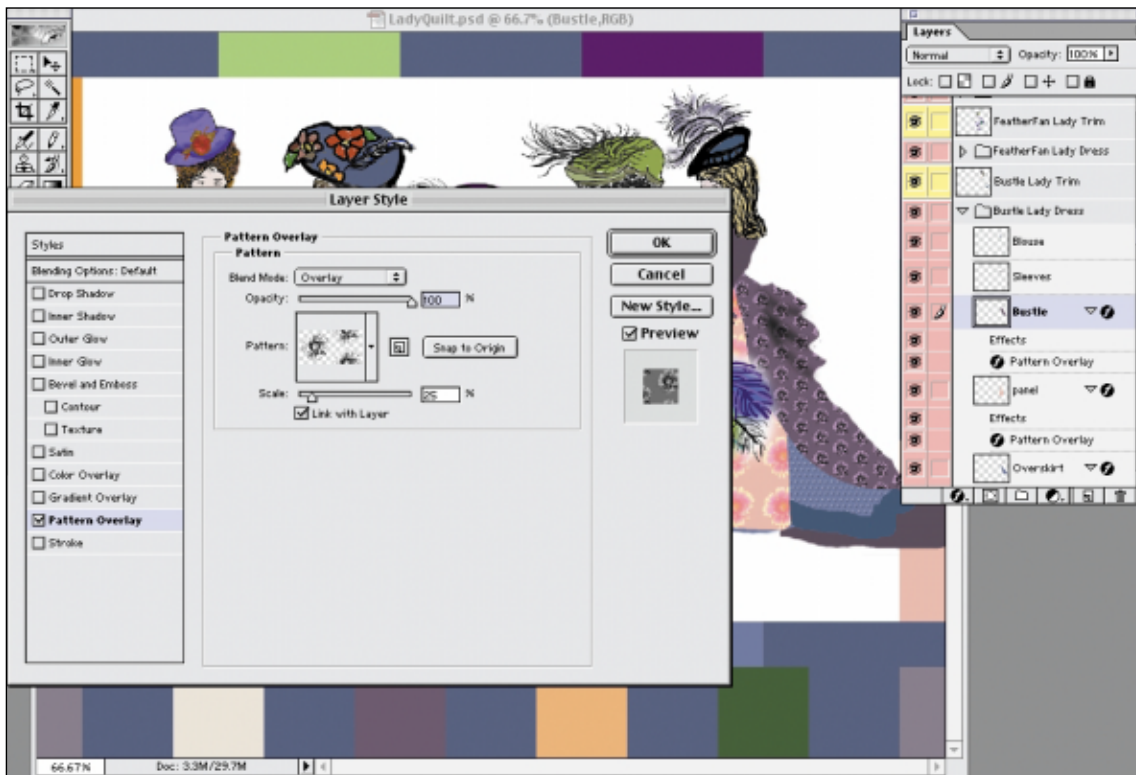
Fill the Pattern Overlay effect with the HalfDrop Flower pattern on the Bustle layer of the BustleLady doll.

CREATING A SEAMLESS REPEAT

Have you ever admired a pattern made up of endless jellybeans, or cookies, or whatever, and wondered how you could create one from your own photos or images? The Brushed Mask seamless method does an almost magical job of making "endless" patterns from photographic or textured sources. You have total control over the results. You can also make a seamless pattern repeat from two different images at the same time. This method uses the Offset filter and a layer mask to position the tile and make it seamless. You'll see how you can use a photo for this technique.

**1** Open the image **FLOWERPHOTO.psd** from the accompanying CD-ROM.

Open the FLOWERPHOTO.psd image.

2 Duplicate the Background layer. With Background copy layer active, select Filter/Other/Offset with Wrap Around selected. Set the Horizontal pixels right to 100 and the Vertical pixels down to 75.

The original image is 200×150 pixels. The offset needs to be one-half of the image dimensions. The seam lines are centered and very obvious.


Offset Background copy layer by 100 pixels right and 75 pixels down.

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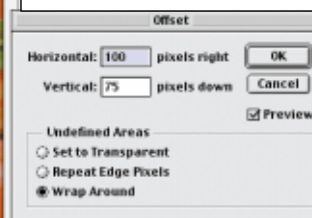
3 Create a layer mask. With black as the foreground color, and a fairly large, soft paintbrush, paint over the center seam of the image in both directions until you create an image with no seams.

Try to make as few changes to the edges of the image as possible. Fix as much as you can inside of the image perimeter. The actual image or photo that you use dictates exactly what you brush in or out in the mask. To make this floral image seamless, for example, you might want to reveal an entire flower from the layer beneath even if it means removing more from the top layer than just the center seam line area.
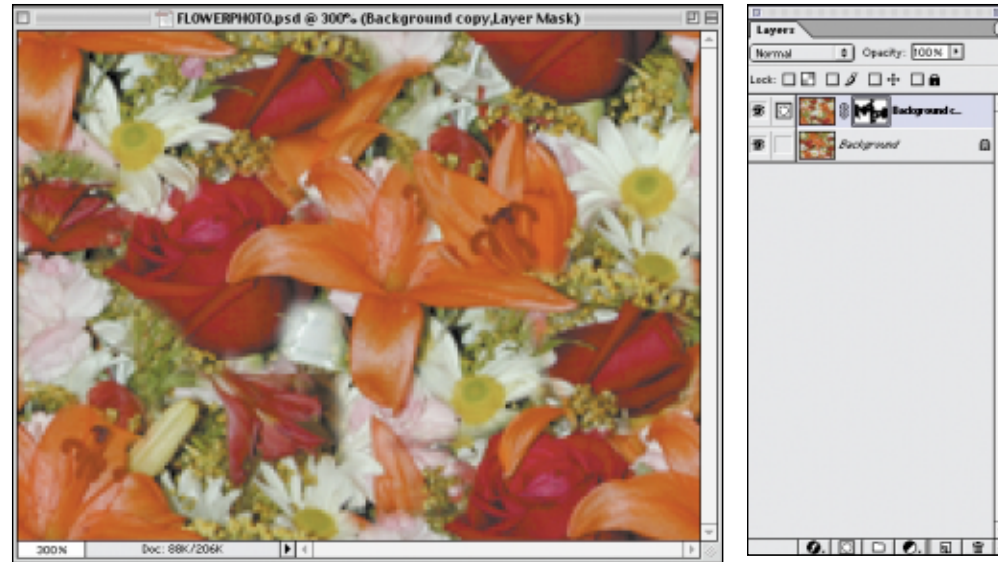
Create a layer mask that hides the center seam line and partially reveals the image beneath the top layer.

4 Add a new, empty layer at the top of the layer stack and leave the new layer active. Press Alt (Opt) and choose Layer/Merge Visible to merge the visible layers into this new layer. Reapply the Offset filter using the same settings as before. Check the image for seams.

Your image might have looked seamless at the end of Step 3, but that doesn't mean it really is seamless yet. You need to "test" it. When you press the Alt (Opt) key as you select Layer/Merge Visible or use the shortcut Shift+Alt+Ctrl+E (Shift+Cmd+Opt+E), Photoshop places a copy of the combined image into the new, empty layer that you previously created. In this example, the problem areas are at the center–top and the center–bottom seam lines.
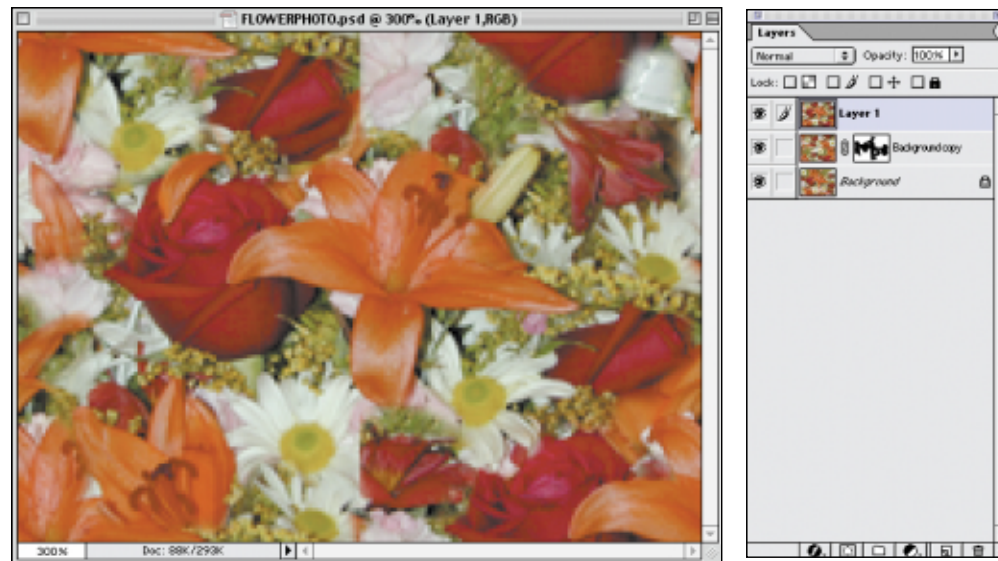
Use Alt(Opt)+Layer/Merge Visible to combine the layers into a new layer and reapply the Offset filter.

5 Create a layer mask on Layer 1. Repair the seam as you did in Step 3.

6 Define the image as a pattern. Accept the default name of FLOWERPHOTO.

Make sure the image rather than the mask is active when you define the pattern. Otherwise, you won't define the color image as the pattern. There is no need to merge your layers as Photoshop automatically defines a pattern from all of the visible layers.
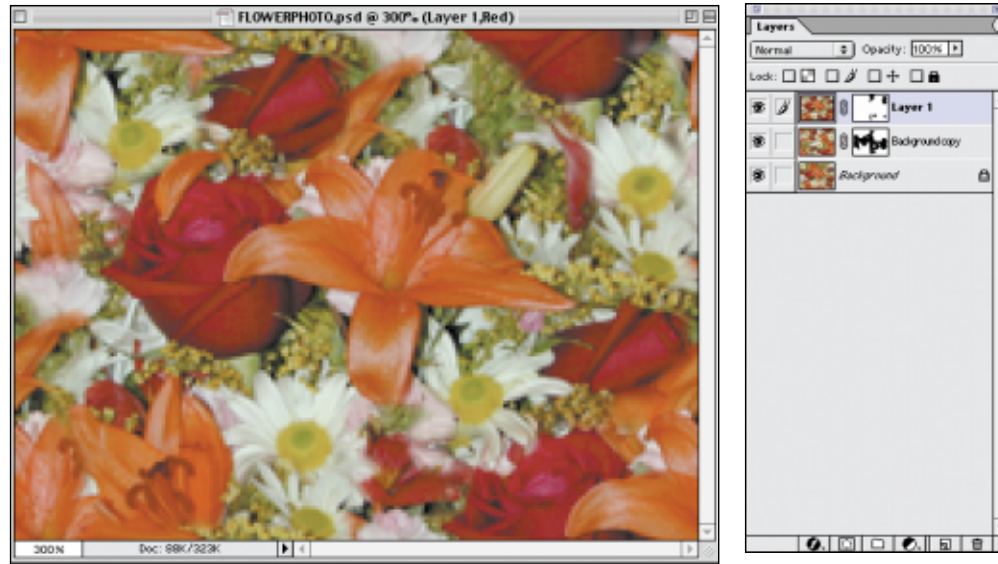
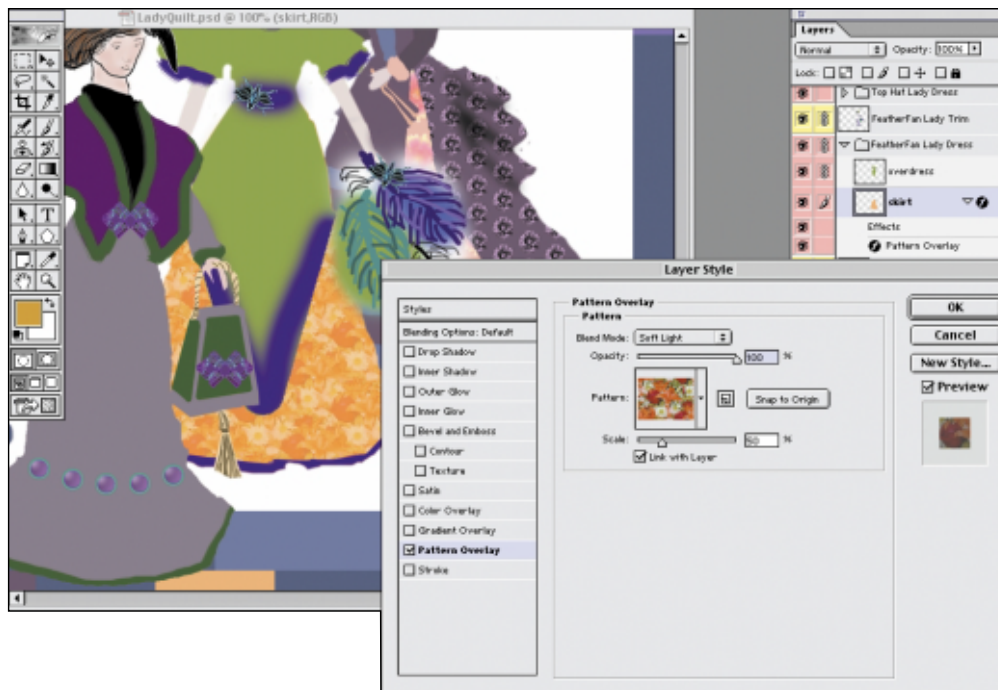

Remove any remaining seams by painting in the Layer Mask.

7 In the LadyQuilt image, set a Pattern Overlay effect on the Skirt layer of the FeatherFan Lady dress. Use the FlowerPhoto pattern with the following settings:

Opacity: **100%**

Blend Mode: **Soft Light**

Scale: **50%**

Soft Light mode makes the color of the dress shine through the pattern and softens it.

Use the FlowerPhoto pattern in Soft Light mode at 50% Scale as a Pattern Overlay effect on the Skirt layer of the FeatherFan Lady doll.
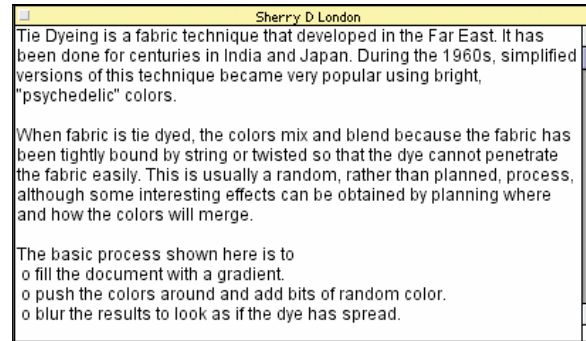
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CREATING A MOSAIC REPEAT

The mosaic repeat is the easiest seamless method to learn. In this repeat system, you can make any image seamless by turning it into a four-way pattern similar to those used on tile floors. You copy the starting tile and flip it horizontally, and then flip the resulting half-tile vertically. The final repeat is twice the original height and width. You'll use a computer-generated piece of tie-dye "fabric" in this section. The complete instructions for creating a tie-dye are embedded in the starting file. To read these instructions, you need to click on the Notes icon in the image with the Marquee or Move tool selected.

Sherry D London

Tie Dyeing is a fabric technique that developed in the Far East. It has been done for centuries in India and Japan. During the 1960s, simplified versions of this technique became very popular using bright, "psychedelic" colors.

When fabric is tie dyed, the colors mix and blend because the fabric has been tightly bound by string or twisted so that the dye cannot penetrate the fabric easily. This is usually a random, rather than planned, process, although some interesting effects can be obtained by planning where and how the colors will merge.

The basic process shown here is to
  o fill the document with a gradient.
  o push the colors around and add bits of random color.
  o blur the results to look as if the dye has spread.

Use the Notes tools to read the tutorial embedded in the file.

1   Open the image **TIEDYE1.psd** from the accompanying CD-ROM. Read the note embedded in the image if you want, and then deselect the Annotations option on the View/Show menu.
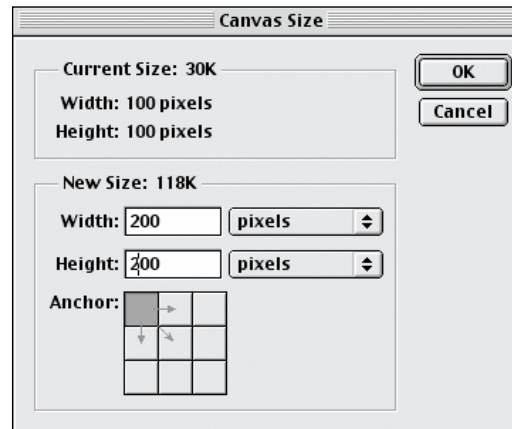
Turning off the annotation makes the image easier to see. If you haven't tried it yet, Annotations is a cool addition to Photoshop 6. You can leave notes to yourself as you create an image so you can remember what you did.

2   Double-click the Background layer to create Layer 0. Use the Canvas Size command to change the Width and Height of the image to 200 pixels each. Set the Anchor in the top-left corner of the dialog box.

The original image is 100×100 pixels. You need to double those dimensions. Change the background into Layer 0 before you use the Canvas Size command so the area around the original tile stays transparent when you enlarge the canvas.

Canvas Size

Current Size: 30K
Width: 100 pixels
Height: 100 pixels

New Size: 118K
Width: 200 pixels
Height: 200 pixels
Anchor:

OK
Cancel

Double the image Width and Height in the Canvas Size dialog box.

3 Duplicate Layer 0. Choose Filter/Other/Offset. Set Horizontal to 100 pixels and Vertical to 0 pixels.

You need to duplicate your original layer and offset it into the right corner of the image. The offset amount is the original width (or one-half the current width).
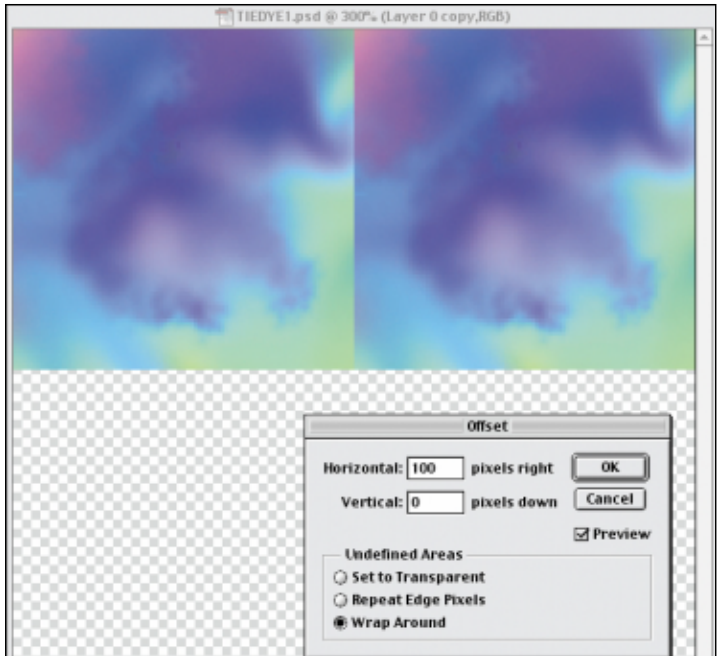
Duplicate Layer 0 and offset it 100 pixels horizontally.

4 Choose Edit/Transform/Flip Horizontal. Merge the layer into the preceding layer.

This step makes the top half of the image seamless. You might find it easier to create the bottom half of the tile if you merge the layers (Layer/Merge Visible).
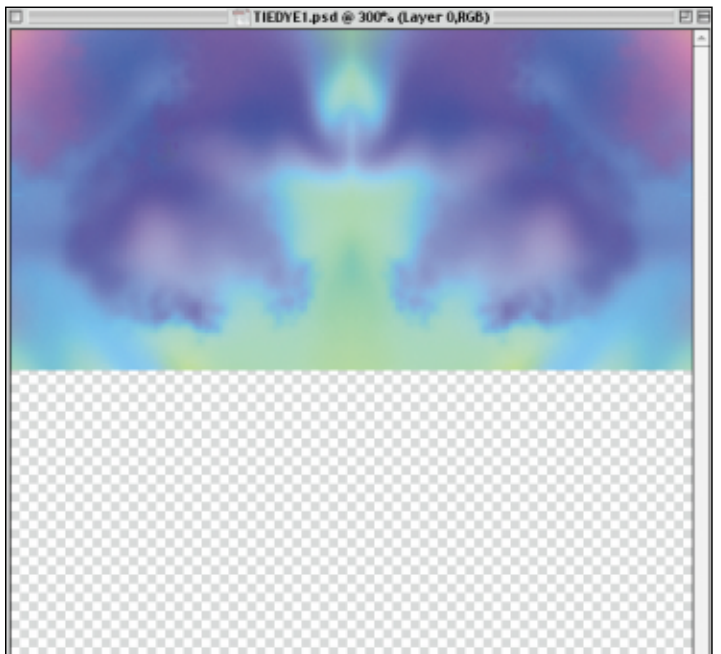
Flip the new layer horizontally and merge down to the layer below.

5 Duplicate Layer 0. Choose Edit/Transform/Flip Vertical. Offset Layer 0 copy 0 pixels Horizontally, and 100 pixels Vertically.

This step finishes the pattern repeat by creating the bottom half of the pattern. The offset amount is one-half the current height.

6 Define the pattern as TIEDYE1.
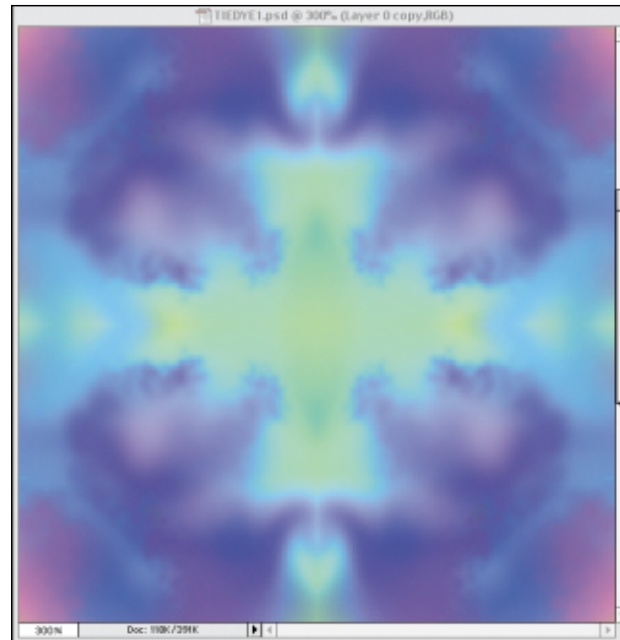
Flip a duplicate of Layer 0 vertically and offset it by 100 pixels down.
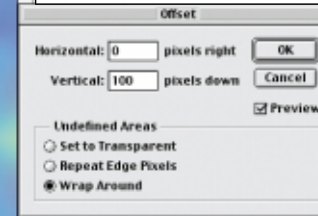
7 Add a Pattern Overlay effect to the Dress layer of the Pocketbook Lady. Use the TIEDYE1 pattern in Normal mode at 50% Opacity and 100% Scale.

Lowering the opacity of the pattern is another way to blend it into the base color of the layer. In this case, lowering the opacity makes the dress look more in tune with the 1860s than the 1960s.
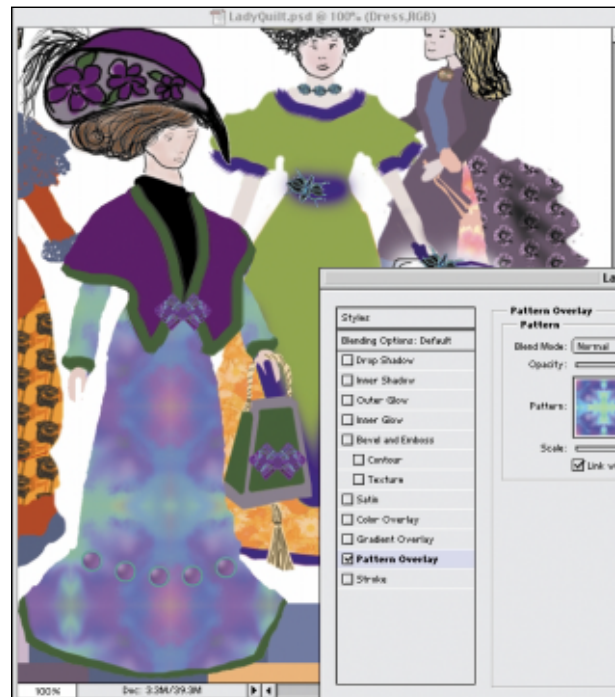
Use the TIEDYE1 pattern in Normal mode at 50% Opacity and 100% Scale as a Pattern Overlay effect on the Dress layer of the Pocketbook Lady doll.
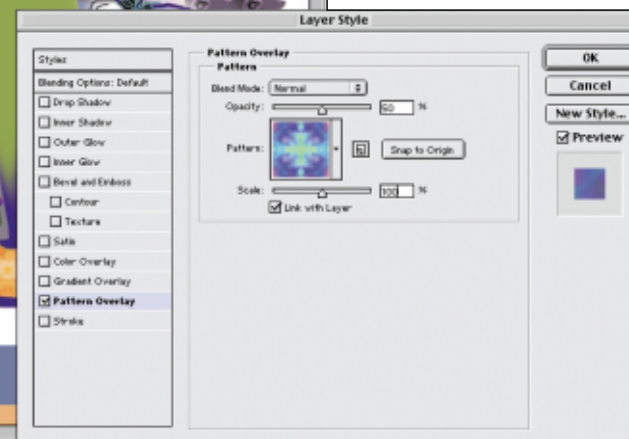
At this point, you've had a chance to create several patterns and to fill areas of the LadyQuilt.psd image with them. The PDF for this project on the CD-ROM contains instructions for creating a brick repeat, an overlapped repeat, a diamond repeat,a diaper repeat, a sateen repeat, a plaid repeat, and a kaleidoscope repeat. It also has instructions for using patterns as masks, filling the quilt squares, and painting the background. If you are enjoying this project, I urge you to work the rest of it on the CD-ROM. You can then return here for the final steps. If you just want to see how the project ends, you can continue on with a flattened version of the entire image in the next section.

ADDING THE QUILTING

You will create quilting lines as a final method of applying patterns. You'll copy an area of the image, alter its values, and emboss it. You'll then create a pattern from the embossing and fill a Hard Light layer with it. To begin, open the image **LadyQuiltFlat.psd** from the CD-ROM. This is the flattened version of the image for which you've created pieces in this project. If you have followed along in both the book and the CD-ROM to complete the entire image, you can use your working image that is still layered.

1   Set the Fixed Size of the Rectangular Marquee tool to 400×400 pixels. Drag the marquee into the image to enclose the area of interest. Choose Edit/Copy (or Edit/Copy Merge if you are using the layered version of the image).

This step grabs a random piece of the image to use as a texture.
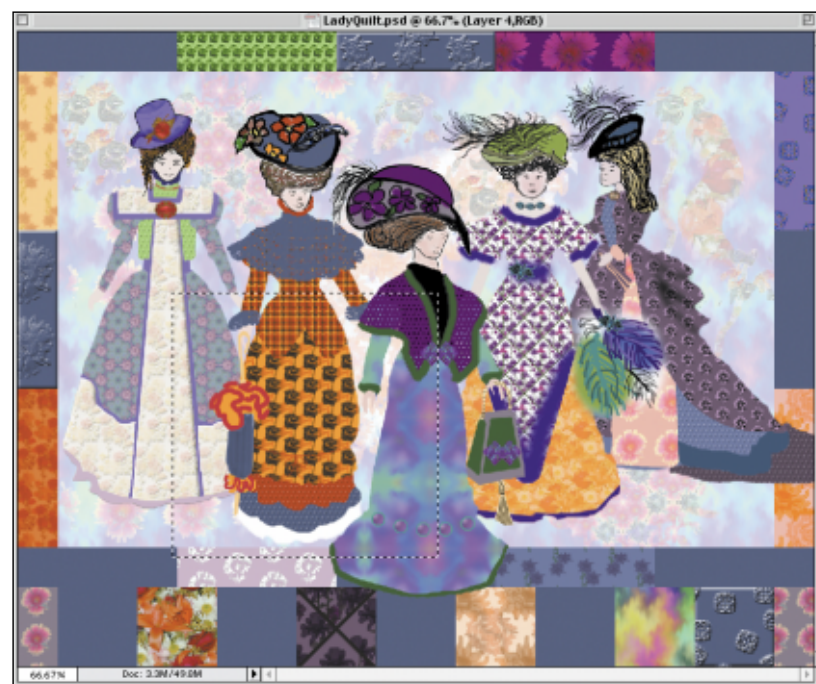
Choose Edit/Copy Merge for a 400-pixel square selection.

2 Open a new file at the default 400-pixel square that's on the Clipboard. Paste the copied image and choose Layer/Flatten Image.

3 Choose Filter/Stylize/Find Edges.

The thin lines left by the Find Edges filter do a wonderful job of looking like quilting when you are finished.

4 Choose Image/Adjust/Threshold. Set the Threshold Level to 69 or wherever you have a small amount of detail left.

You need a mostly white image with black lines. Try to keep the main lines in the image solid black.
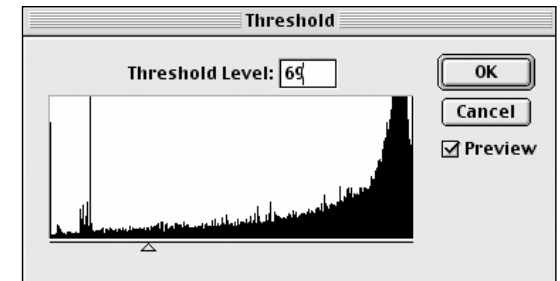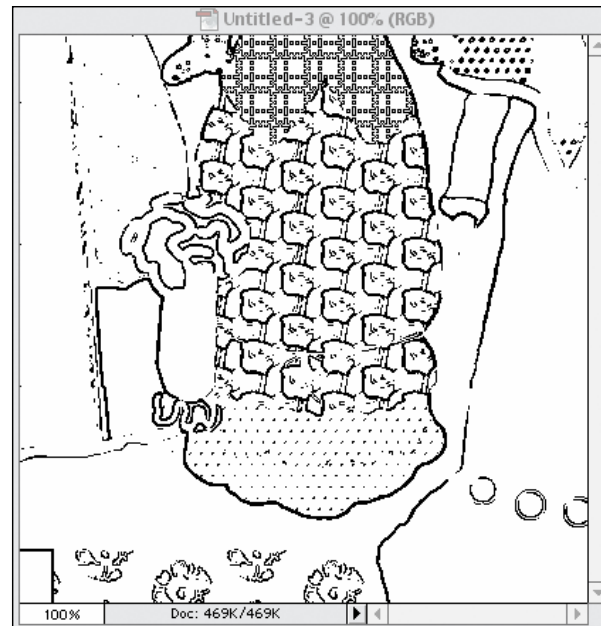
Use the Threshold command to reduce your image to black and white.

5 Choose Filter/Stylize/Emboss. Set Height to 1 pixel and Amount to 100%. Set the Angle to –61 degrees.
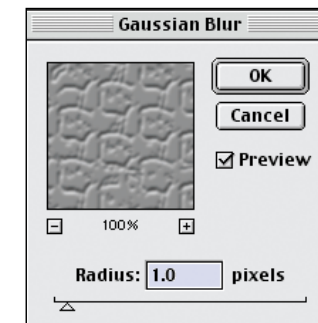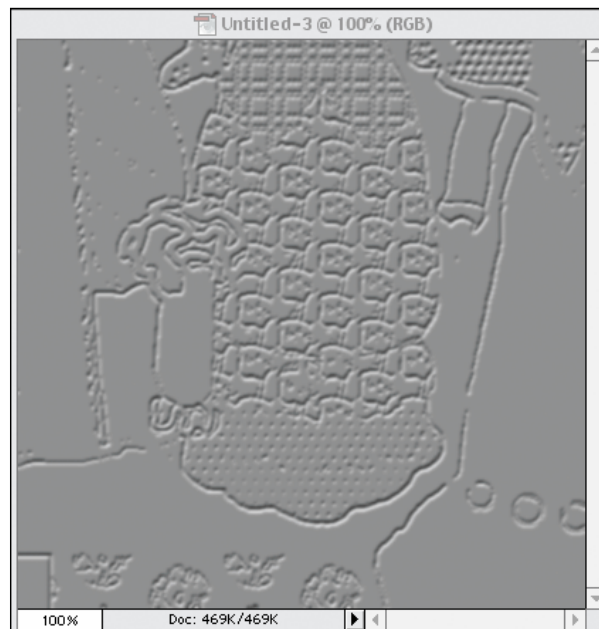
The embossed lines need to go in rather than out. The other settings keep the embossing from becoming too harsh.
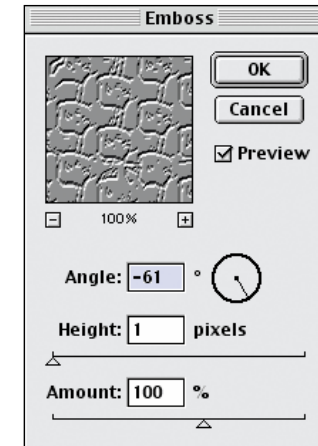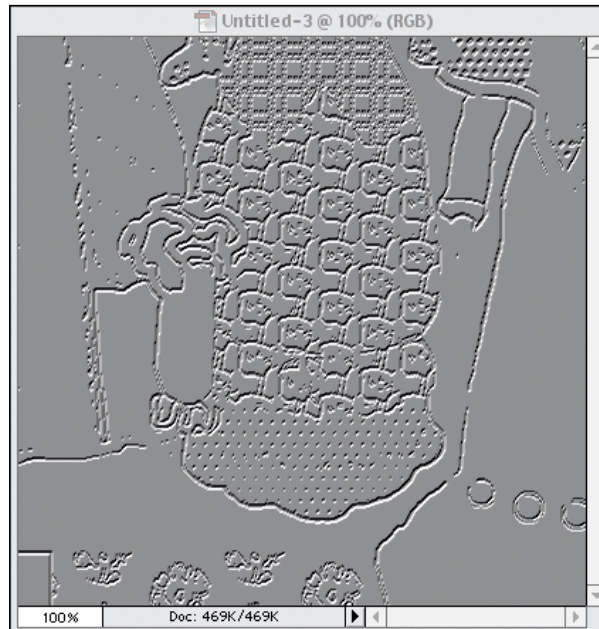
Emboss the image.

6 Choose Filter/Blur/Gaussian Blur and set a Radius of 1 pixel.

This step softens the embossing. You only need a small amount of blur.

Apply a Gaussian Blur of 1 pixel.

7 Define the small image as a pattern named Quilting.

8 Create a new layer at the top of the layer stack in the LadyQuilt image. Choose Edit/Fill and fill the layer with the Quilting pattern. Change the Blend mode to Hard Light. Set Opacity to 68%.

Hard Light mode enables you to add texture to any image with an embossed layer. The neutral gray in the embossing disappears in Hard Light mode and allows only shadows and highlights to show through.

9 Add a layer mask and paint out any inconvenient areas of quilting, such as anything on the faces of the dolls.
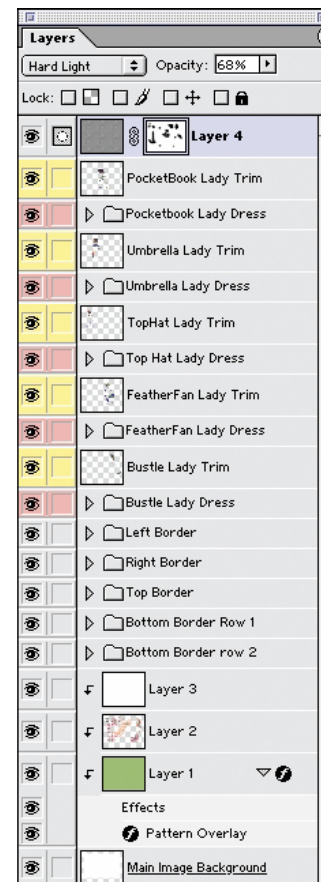
Add a layer mask to remove undesirable areas of quilting.

MODIFICATIONS

You've learned many pattern techniques and additional ways to use patterns. You have learned how to take many different grid repeat schemes and force them into a rectangular pattern that Photoshop can apply. You have learned how to use Pattern Overlay effects and change Scale and Blend mode. You can apply patterns with the Pattern Stamp, apply patterns to a layer mask, apply patterns in a Pattern layer, or apply patterns directly to a layer.

After seeing so many different ways to modify patterns, you should have a great idea at this point how to vary patterns in almost any direction that you want.

Patterns are very useful for Web pages, so long as they are not allowed to dominate the page. You can take photographs and enhance them, and then create natural textures, such as repeating grass, bricks, stones, siding, or architectural detail. By creating seamless patterns from these textures, you can develop texture maps to bring into 3-D programs.