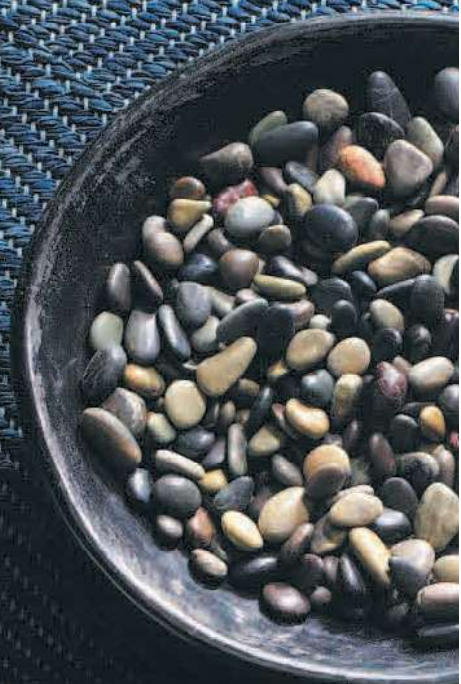


# Diagonal Delight

*Fancy Twill Rugs on Four Shafts*

DEBORAH HARRISON



*Deborah Harrison, of San Antonio, Texas, has been weaving since 1986. Fabric strips are her favorite weft material. She lives and weaves with four beloved and very spoiled cats.*



**T**his clever rug technique appears in a 1987 issue of *VävMagasinet* (number 2) and in *Swedish Rag Rugs, 35 New Designs* (FörlagsAB Väv-hästen, Glimåkra, 1995).

The technique produces a fancy plaited twill on only four shafts that would normally require many more. Two sheds alternate during the pass of a single weft; the shuttle is brought out of the shed and then reinserted after each change. One shed forms a twill diagonal in one direction, and the other a twill diagonal in the opposite direction. These mid-pick shed changes are made in only two of every four picks, no matter how complex the design.

### Preparing the weft

The rag weft used for the rug on page 33 is torn from hand-dyed Balinese fabric. It is an ideal fabric for a rag weft—it has no right or wrong side, it is woven tightly enough to tear easily, and the irregular mottled coloring adds interest.

Select a suitable fabric (40 yards of 44"-wide fabric are required for this 28" × 146" rug; adjust amounts for a different sized rug). After machine washing and drying, tear the fabric into lengthwise strips 2" wide (I usually cut the fabric into 8-yard lengths before tearing). Reserve enough fabric to tear 60 yards of 1"-wide strips for hems. Remove loose threads from each torn edge and sew the strips end-to-end at a 45-degree angle with seam allowances all on the same side. Iron the strips to flatten the wavy edges that result from tearing and then fold in half with the seam allowances inside the fold and iron again.

Wrap on a rag shuttle with smooth pointed ends. I usually wrap about three layers in the same spot on the shuttle, then move to wrap three layers next to the first stack, and then move again to wrap three layers next to the second stack, etc. When I've filled the width of the shuttle, I begin again, wrapping three layers over the first stack, then moving to the second stack, etc.

### Preparing the loom

Wind the warp and prepare the loom following Figure 1 and Project at-a-glance. Wind the floating selvedges onto the warp

beam with the warp to avoid twisting, and weight them. Note that the two adjacent ends on each shaft are threaded in separate heddles (see Figure 1) to keep them from twisting into a single thread, thereby making them more visible in the rug.

Weave a firm plain-weave header with rags or scrap yarn and insert a stretcher (temple) to prevent draw-in and abrasion of warp threads; use the temple throughout (see *The Answer Lady*, page 28).

### Weaving the hems

For the hem, weave ½" of plain weave (to turn under) using the warp yarn doubled as weft, 14 picks of basket weave using the 1" strips folded in half lengthwise, 4 picks of plain weave using the warp yarn doubled (for turning), 14 picks of basket weave using the 1" strips, and 4 picks of plain weave using the warp yarn doubled (for stitching). Begin and end all rag wefts as described below.

Reverse the steps above for the hem at the other end of the rug. Use a relatively light beat for the rag picks in the hems. The hems should be soft and pliable and half the thickness of the rug. (An alternative to the rag hem is to weave 2½–3" of plain weave using 4 strands of the warp yarn as weft—12/6 cotton quadrupled draws in less than when it is used singly.)

### Weaving the body of the rug

Use the 2" strips for weft. For each rag pick, place the folded strip flat in the shed with the fold always toward the fell. Beat with a closed shed; use a hand beater frequently in addition to the beater on the loom. Handle the shuttle so that the fabric strip folds upwards at the selvedge; see Figure 2.

When you're inserting the first rag pick, cut the starting end at an angle, from the folded edge to the two loose edges (about a 4" cut on the folded 2"-wide strips and about a 2" cut on the 1"-wide strips). Wrap this tapered end around the outside warp thread and back into the shed.

When you come to the end of the weft on a shuttle, stitch the ends of the new and old wefts together the same way you stitched the strips together initially.

Raise shafts 1-2 and weave from right

to left; raise 1-4 and weave from left to right.

■ **Sequence 1** begins with Row 1 in Figure 3 (for all picks, enter the shuttle over the floating selvedge; exit under it). Raise shafts 1-2. Pass the shuttle under the two doubled ends at the right edge and bring it up out of the shed just to the left of the doubled end on shaft 2 (see "•" in Figure 3). Raise 3-4; re-enter the shuttle at the same point and complete the row.

For Row 2, raise 2-3 and weave from left to right.

The shed is changed twice for Row 3 (and for all subsequent right-to-left rows until the point is formed in the center). Raise 3-4. Weave right to left and bring the shuttle up out of the shed at the mark (•) to the left of the doubled end on shaft 4. Raise 1-2 and re-insert the shuttle; remove the shuttle at the mark two doubled ends from the left selvedge. Raise 3-4 and complete the row.

Raise shafts 1-4 and weave from left to right for Row 4.

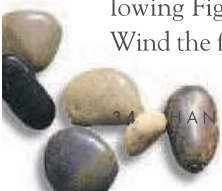
For Row 5, raise 1-2, weave to the first mark, remove the shuttle, raise 3-4, weave to the second mark, remove the shuttle, raise 1-2, and complete the row. Raise 2-3 and weave from left to right for Row 6.

Repeat this process following the 4-pick repeats in Sequence 1 until the point is formed in the center (all of the picks are not shown in Figure 3). Raise 3-4 and weave right to left with no shed changes. Raise 1-4 and weave from left to right.

■ **Sequence 2** is different from Sequence 1 only in that the left diagonal begins before the right diagonal. Raise 1-2. Weave from right to left and bring the shuttle out of the shed at the mark to the right of the two doubled ends at the left selvedge. Raise 3-4 and complete the row. Raise 2-3 and weave from left to right.

Follow the 4-pick repeats in Sequence 2 in the same way as for Sequence 1 until the point is formed in the center. Raise 1-2 and weave right to left with no shed changes. Raise 1-4 and weave left to right.

Alternate Sequences 1 and 2 six times, for twelve twill points (measure and adjust as you go to achieve desired length). Weave the second hem as you did the first.




repeat									
4	4			4	4	4			
		3	3		3	3	3		
				2	2			2	
			1	1	1		1	1	
plain weave, hem				/					
basket weave, hem						/			
to begin						/			
repeat until first point reaches center				/	▶	/			sequence 1 4-pick repeat
center				/	▶	/			
repeat until second point reaches center				/	▶	/			sequence 2 4-pick repeat
				/	▶	/			

▶ = one shed change  
 ◆ = two shed changes

The diagram illustrates the left and right selvages of a fabric piece. On the left, the 'left selvage' is shown with a blue trapezoidal shape representing the 'current pick' and a smaller blue trapezoidal shape below it representing the 'previous pick'. On the right, the 'right selvage' is shown with a blue trapezoidal shape representing the 'current pick' and a smaller blue trapezoidal shape below it representing the 'previous pick'.

Remove the rug from the loom. Secure ends by tying a square knot with each group of four warp ends (two in each bout) to hold the weft in place. Trim  $\frac{1}{2}$ " from the knots. (A serger can be used instead of knots.) Fold the  $\frac{1}{2}$ " plain-weave section toward the back of the rug (the side with the 4-span weft floats). Fold again at the next 4 picks of plain weave, tucking the knots and plain-weave edge inside the fold. Stitch the hem into place, stitching into the plain-weave section next to the body of the rug; stitch the sides closed.

To block, lay flat on a covered floor; steam or mist with spray bottle areas that need to be smoothed or flattened; allow to air dry. Store rolled in a tube. 

Brackets indicate 4-pick repeats in Figure 1. Not all rows are shown (since not all warp threads are shown); continue 4-pick sequences until reaching the center point for the omitted rows.

**Weave structure for twill runner**  
2/2 plaited twill.

Very sturdy 4-shaft loom, 33" weaving width; 12- or 6-dent reed; 32" stretcher (temple); weighted hand tapestry beater; 1 rag shuttle; 1 boat shuttle.

Warp: 12/6 cotton rug warp (1,450 yd/lb), color #31, blue-gray, 2,328 yd (1 lb, 10 oz).

Weft: 40 yd of 44"-wide quilting fabric, torn lengthwise and sewn end to end: 2"-wide strips (840 yd); 1"-wide strips (60 yd); 12/6 cotton rug warp, color #31, blue-gray, 75 yd ( $\frac{7}{8}$  oz).

Tear fabric lengthwise into 2" strips;

sew end to end. Tear and sew together 60 yd of 1" strips for weft for the hems.

12/6 cotton rug warp is available from Nordic Studio. Quilting fabric is available from quilt shops and fabric stores.

388 ends (includes 4 ends for doubled floating selvages) 6 yd long.

Warp: 6 working ends per inch (each working end is two threads of 12/6); sley one 12/6 end/dent in a 12-dent reed or two 12/6 ends/dent in a 6-dent reed. Width in reed: 32 $\frac{3}{8}$ ". Rag weft: 6 ppi.

13% in width, 17% in length.  
Amounts produce one rug 28" x 146".