HANDWOVEN'S MASTER WEAVER COLLECTION

Favorite Projects and Lessons From

Sharon Alderman

Like the shaker weavers to whom she pays homage in her Simple Gifts towels (page 18), Sharon Alderman has a gift for making fabric that is simply elegant. Sharon's intimate understanding of weave structure and her prodigious knowledge of yarn structures combined with a finely tuned sense of style and color have made her articles, projects, and swatch collections must-haves for weavers the world around. Those who have had the good luck to meet Sharon will also appreciate the lively wit and tireless curiosity that shows throughout this collection. I hope they serve to fuel your lively curiosity as well.

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Silk Scarf with a Supplementary Warp

by Sharon Alderman

Originally published in ***Handwoven***®, January/February 1988, p. 69; instruction supplement, p. 12.

This sensuous scarf, woven of dyed spun silk, is intended for wear on dressy occasions (the floats are not well suited for rough-and-tumble wear). Both sides of the fabric are designed to look the same, since scarves turn and present both sides in use. This silk is lovely and slithery, but the very qualities that make it so enticing also make firm construction crucial. The supplementary-warp floats are tied securely to the cloth by areas of plain weave on both sides. The float blocks stair-step down the cloth, one color moving into another, showing off the rich luster of the silk yarn. The warmer colors of the supplementary warp play against the cooler light purple ground.

Although this scarf can be woven on six shafts (by threading the purple threads on shafts 1 and 2 only), an 8-shaft draft spreads the ground warp to four shafts to prevent warp threads from sticking and ensure that sheds open easily

Warping and weaving

Wind a warp of 712 ends 2½ yd long following the warp color order. Thread the shafts following the draft. Allowing 2½" for fringe, weave 2 picks alternating treadles 9 and 10 (these two treadles cause all warp threads to interlace) and hemstitch allowing 2 stitches per warp stripe (1 at each selvedge). Weave the scarf following the treadling repeat in the draft for 60" (45x). End with 2 picks alternating treadles 9 and 10 and hemstitch over these 2 picks as at the beginning.

Finishing

Trim the fringes to 2½". Wash the scarf gently by hand in warm water with a mild liquid detergent, rinse thoroughly, blot, and allow to air-dry until the scarf no longer drips. While still damp, press well, using a piece of well-washed thin muslin as a press cloth and pressing in the direction of the warp floats, not across them.

Weave structure

Plain weave with a supplementary warp.

Finished dimensions

9" × 56" plus 2½" fringe on each end.

Warp and weft

30/2 spun silk at 7,250 yd/lb: 1,565 yd light purple #114 (905 for warp, 662 yd for weft), 420 yd dark coral #116, 245 yd wine #103, and 210 yd light coral #106.

Yarn sources

30/2 Gemstone silk in the color numbers given here is available from Halcyon Yarn.

E.P.I

72 (36 plain-weave ground ends and 36 supplementary warp ends), 6/dent in a 12-dent reed (3 ground, 3 supplementary warp), except 3/dent at the selvedges.

Width in reed

10"

Total warp ends

712 (362 light purple, 168 dark coral, 84 coral, and 98 wine) following the warp color order.

Warp length

2½ yd (allows 3" take-up and 27" loom waste; loom waste includes fringe).

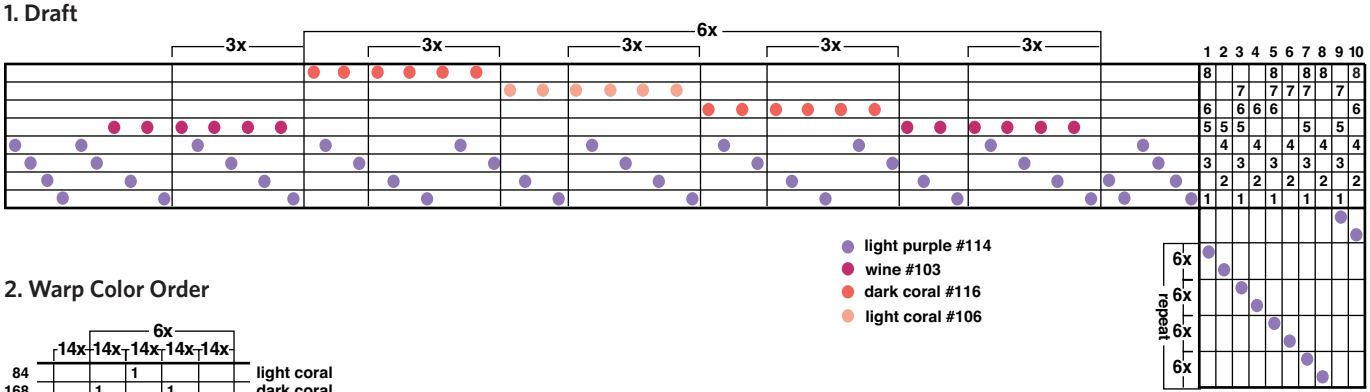
P.P.I.

36.

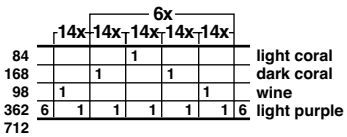
Take-up and shrinkage

10% in width, 11% in length

1. Draft



2. Warp Color Order



Silk Scarf with Twill Stripes

by Sharon Alderman

Originally published in ***Handwoven***®, January/February 1983, cover and pp. 43, 82–83.

This scarf was designed to be a luxury item. It is made of silk yarns that drape beautifully; they are heavy-feeling, lustrous, and richly colored. The vertical twill stripes emphasize the length of the scarf and richly gleam against the stripes of matte plain-weave. Other colorways could be used with equal success.

Although twill takes up at a different rate from plain weave, differences in warp tension between the plain-weave and twill stripes are not likely to be a problem for the length of a single scarf. If you decide to weave two scarves, cut off the first one and re-tension the warp for the second scarf. (If you find the twill stripes do become a little loose as you weave, weight them at the back of the loom.)

Warping and weaving

Wind a warp of 378 ends following the warp color order. The yarn that comes on the minicones is very easy to use. The yarn that comes in the skein requires a little more attention. Put the skein on a swift and either wind direct to your bobbins or wind the yarn onto a spool to use for winding the warp. As you prepare the warp, be sure to avoid including knots because it is difficult to mend them so the repair doesn't show. Thread the shafts and sley the reed following the draft.

Weave the scarf for 60" following the draft. Do not beat too firmly or the scarf's drapability will be affected. Use moderate tension and advance the warp frequently by small increments. Hemstitch with sapphire on both ends, making 2 stitches per stripe over 2 weft rows.

Finishing

Remove the scarf from the loom, inspect for flaws, and repair as necessary. Wash by hand in lukewarm water with a mild liquid soap or detergent. Rinse well, blot dry, and press while slightly damp using a press cloth. Press from the wrong side to avoid flattening the twill stripes.

Weave structure

Plain weave and 3/1 twill stripes.

Finished dimensions

One scarf 8⅝" × 56" plus 3" fringe on each end.

Warp and weft

30/2 silk at 7,300 yd/lb. 975 yd sapphire (color #113, 450 yd for warp, 525 yd for weft) and 165 yd each garnet (#112), amethyst (#114), and carnelian (#103).

Yarn sources

30/2 silk (item #157) is available from Halcyon Yarn in 250 yd minicones and 3½ oz skeins.

Notions

Small latch hook or blunt tapestry needle.

E.P.I 36 in plain-weave stripes, 48 in twill stripes.

Width in reed 9½".

Total warp ends 378.

Warp length

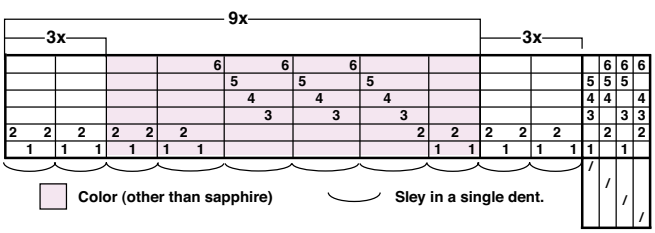
2½ yd (allows 3" for take-up and 27" for loom waste; loom waste includes fringe).

P.P.I. 30.

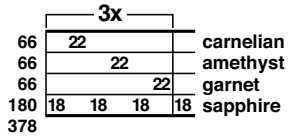
Take-up and shrinkage

About 9% in width, 12% in length.

1. Draft



2. Warp Color Order



A Shawl from Minus 1K or 1000 B.C.

by Sharon Alderman

Originally published in ***Handwoven***®, January/February 2000, pp. 66-68.

In *The Mummies of Ürümchi*[1], Elizabeth Barber describes the artifacts and clothing of a people who lived 3,000 years ago in western China. These Caucasian people were accomplished spinners, weavers, and dyers who used wool for the garments buried with them. Barber describes the land in which the burial sites were discovered:

"In color and terrain as well as vast extent, it reminds an American of the high red deserts of Utah and Arizona and of the Great Basin . . . with its rocky crags protruding above a deep, choking porridge of sandy-looking fill."

No words could have drawn me in more surely. I live on the eastern edge of the Great Basin in Utah. The land where these phenomenally well-preserved mummies were found—like the Great Basin—is salty and arid, qualities that Barber credits with preserving the textiles and their bright colors.

The colors are shocking in their intensity. Comparable textiles from bog burial sites in Denmark are all brown, some lighter, some darker, but none show anything like the glowing colors in the color plates of The Mummies. I was particularly charmed by a photograph of a cobalt blue shawl with cherry red stripes (at top left, page 8). The text does not describe the width, length, or other particulars of the shawl, but reports that the red stripes are slim and the long edges are brown and hemmed neatly with a long running stitch in white yarn. The detail of one end of the the shawl shows red and blue wefts alternating to make a ribbed edge above the fringes. This shawl from 1000 B.C. is the inspiration for the project shawl on page 8.

The project shawl

In the project shawl, the red stripes are woven in a 6-shaft double-faced twill in which the red warp predominates on both sides, providing strong contrast to the adjacent blue plain-weave areas; see Figure 1, next page.

At each end, picks of red and blue alternate as in the original. In the original, the alternating colors weave a half-basket structure (over two, under two) to achieve the ribbed effect. To weave this half basket with the navy ends in the project shawl (without using pick-up), this section would require four shafts, bringing the total shaft number to ten if six shafts are used for the twill stripes. The project draft therefore produces a border of plain weave with the navy warp and 3/3 half basket with the red.

On four shafts (which omit the six shafts used for the twill stripes), the weave structure of the original shawl can be reproduced exactly. Both the blue areas and the red stripes are plain weave; the ribbing of half-basket weave is woven at each end with the draft in Figure 2, page 68.

The project shawl is small, soft, and lightweight; it can be used either as a light wrap or as a luxuriantly large scarf or muffler. Although it is more firmly woven than the original, it probably won't last 3,000 years! When I wear it, I think of a weaver who lived very long ago in a place very far away that is a lot like where I live now.

Weave structure

Plain weave and double-faced 2/1 twill for body of 8-shaft shawl, plain weave and 3/3 half-basket for borders. Plain weave for body of 4-shaft shawl; 2/2 half basket for borders.

Equipment

8-shaft or 4-shaft loom, 22" weaving width; 12-dent reed; two shuttles.

Yarns

Warp: 20/2 worsted wool (5,600 yd/lb, Maine Line, JaggerSpun), raspberry, 440 yd for 8-shaft shawl, 176 yd for 4-shaft shawl; navy, 840 yd for both shawls.
Weft: 20/2 worsted wool, rasp-berry, 10 yd; navy, 650 yd.

Yarn sources

Yarns are from Halcyon Yarn.

Warp order and length

640 total ends (220 raspberry, 420 navy) 2 yd long for 8-shaft shawl following color order in Figure 3. 508 total ends (88 raspberry, 420 navy) 2 yd long for 4-shaft shawl following color order in Figure 4.

Warp and weft spacing

Navy warp for both drafts: 24 epi (2/dent in a 12-dent reed). Raspberry warp for 8-shaft draft: 60 epi (5/dent in a 12dent reed). Raspberry warp for 4-shaft draft: 24 epi (2/dent in a 12-dent reed). Width in the reed: 21⅛". Weft: 22 ppi.

Take-up and shrinkage

After washing, 6.5% in width, 8.1% in length. Final dimensions are 19¾" × 65" not including fringes; fringes are about 5" long.

Weaving the shawl

Note that the draft in Figure 1 threads wider stripes at the selvedges so that after weaving and washing they will be the same width as the stripes in the body.

Wind a warp and prepare the loom for either a 4-shaft or 8-shaft shawl following Figures 1 and 2 for the 8-shaft shawl or 3 and 4 for the 4-shaft shawl.

Weave following the treadling in Figure 1 or 2. Alternate red and blue for 1" at the ends only. Weave with navy for about 70". Allow 7" for fringe. Maintain an even beat, especially essential for a light cloth.

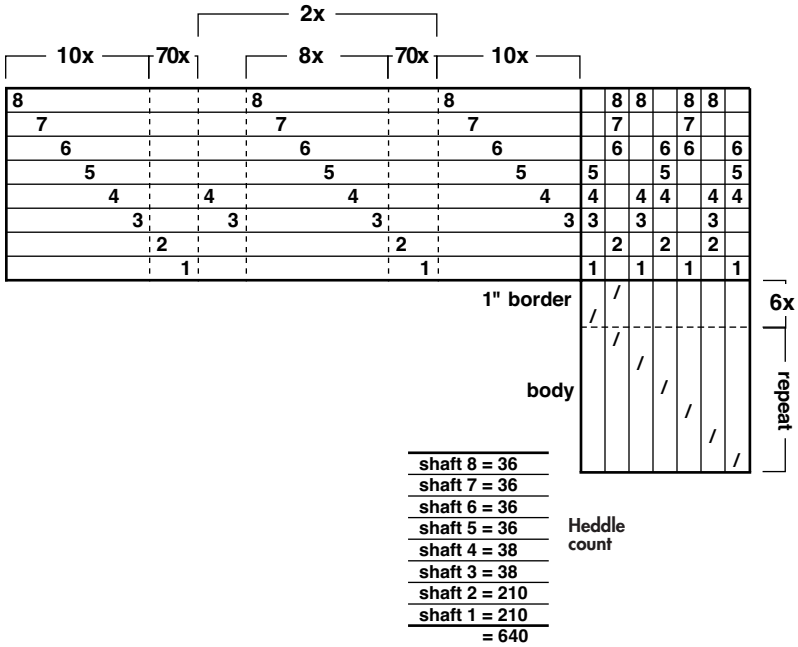
The warp can be a bit sticky, so make sure each shed is completely clear before throwing the shuttle.

Finishing

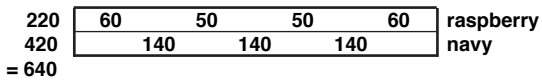
Remove the shawl from the loom and check for flaws, correct them, and prepare twisted fringes. Divide the blue areas of fringe into six sections and the red stripes into two sections each. Wash the shawl gently by hand in very warm water using a mild detergent such as Dawn liquid; rinse well, blot in a towel, and press until dry.

[1]Elizabeth Wayland Barber. *The Mummies of Ürümchi*, W. W. Norton & Company, New York, 1999.

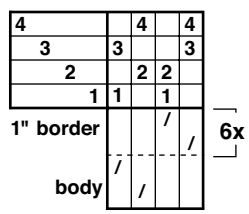
1. Draft for 8-shaft shawl

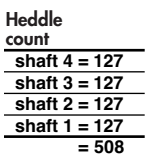


2. Warp color order for 8-shaft shawl

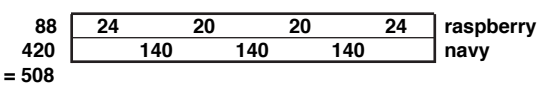


3. Draft for 4-shaft shawl





4. Warp color order for 4-shaft shawl



Twill is for Towels

by Sharon Alderman

Towel A, bottom; Towel B, center right; Towel C, top.

Originally published in ***Handwoven***®, January/February 2001, pp. 24-25.

These linen towels owe their design to a very simple idea: When you use a straight or point threading order and a straight or point treadling order, what you see in the tie-up is exactly the pattern in the cloth.

If straight threading and treadling orders are used, exact repeats of the tie-up appear throughout the cloth. With point orders, the design in the tie-up is mirrored in both directions to become almost four times its original size. These patterns are symmetrical, formal, and often very beautiful.

If we begin with point threading and treadling orders as a given, we can create a variety of lovely designs simply by working in the tie-up. The larger the number of squares in the tie-up, the more elaborate the pattern can be.

The number of squares in the tie-up is directly related to the number of shafts and treadles on the loom—unfortunately! The four-by-four square of a 4-shaft tie-up does not provide room for designing.

Inventing designs

Begin with a square composed of as many columns and rows as you have shafts, eight columns and eight rows for eight shafts in Figure 1, for example. The resulting pattern will pivot (reflect) on the first and last horizontal rows and on the first and last columns to create the full design. Figure 1 shows the pattern produced in the cloth by lifting two shafts with each treadle in the tie-up. This tie-up, however, would create very long floats!

Filling in some of the blank squares on either side of the initial diagonal line is where the fun begins. If diagonal lines paralleling the original diagonal are placed in one of the empty areas, a series of concentric diamonds results; see Figure 2. The other blank area of the tie-up must not be left empty, however, if we are to avoid long floats between diamonds. Filling in narrow diagonals in the opposite direction adds a motif to the spaces and corrects the floats; see Figure 3.

The same general tie-up design principles applied to 16 shafts give the motif between the diamonds greater definition, forming a circle; see Figure 4 and Towel A, previous page. Similar tie-up designs can produce "x" motifs (Towel B, previous page) or a feathered look (Towel C). There are many, many pattern possibilities.

In addition to graph paper and a pencil, use a pair of small mirrors with straight edges and no frames. If you place one on the outermost column of the tie-up you have created and the other on the uppermost or lowest row, looking into the corner they form you can see what your pattern will look like when it is reflected by the points in the threading and treadling.

The wonderful thing about these patterns is that the threading is the same for all of them, so by changing the tie-up between items, you can weave many different patterns without rethreading the loom.

Weave structure
Fancy twills.

Equipment
16-shaft loom, 16" weaving width;
12-dent reed; 1 shuttle.

Yarns
Warp: 40/2 wet-spun line linen (6,000 yd/lb), boiled, 2,020 yd.
Weft: 40/2 wet-spun line linen, half-bleached, 1,800 yd.

Yarn sources
40/2 wet-spun line linen is available from Webs.

Warp order and length
577 ends 3½ yd long (for three towels, loom waste, and about 18" sampling).

Warp and weft spacing
Warp: 36 epi (3/dent in a 12-dent reed).
Width in the reed: 16". Weft: 36 ppi.

Take-up and shrinkage
After washing, 11% in width and 14% in length (5% take-up, 9% shrinkage). Amounts provide three towels each 14¼" × 23" hemmed.

Straight twill threaded on each side and/or treadled at the beginning and end of point twill designs usually makes a successful border.

Notes on fiber and color choices

These delicate but formal designs are especially effective woven white-on-white—they make wonderful wedding presents! Linen and ramie are ideal fibers for towels, although cotton also works well. Fine worsted yarns can be used for lovely shawls or scarves. Yarns that are very hairy, thick-and-thin, variegated, or that tend to full a lot are best saved for another project. High value contrasts between warp and weft or stripes in warp or weft tend to be distracting. These towels use a contrasting warp and weft to show the patterns when photographed, but they would be very successful in the same color for both.

Warping and weaving the towels

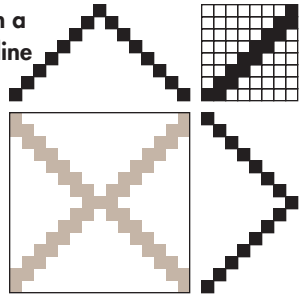
Wind a warp and prepare the loom as in Figure 5 and Project at-a-glance. Weave a header with scrap yarn. Begin and end each towel with ¾" plain weave for hems. Separate the towels with a contrasting color weft. Weave each towel for 27" following Figure 5 using the tie-ups designated for each one with the treadling sequence given for Towel B.

Finishing the towels

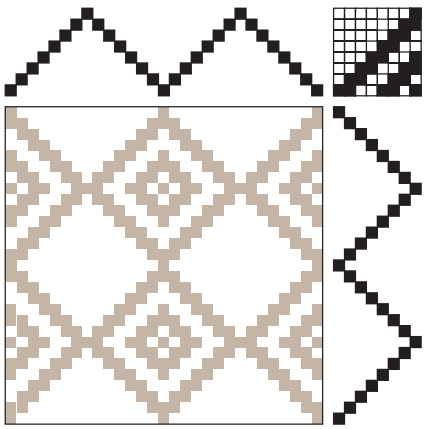
Cut the fabric from the loom and secure the ends with machine stitching. Machine wash twice using the hottest possible water for washing and a cold rinse both times. Immediately upon removing the fabric from the washer, iron on both sides until dry using a linen setting (use the iron to polish as well as to dry the surfaces). Each time the towels are laundered they will become softer and more beautiful.

Serge or machine zigzag on both sides of contrasting color threads and cut towels apart. Turn ends under twice and slipstitch by hand. A final touch-up pressing makes them ready to go!

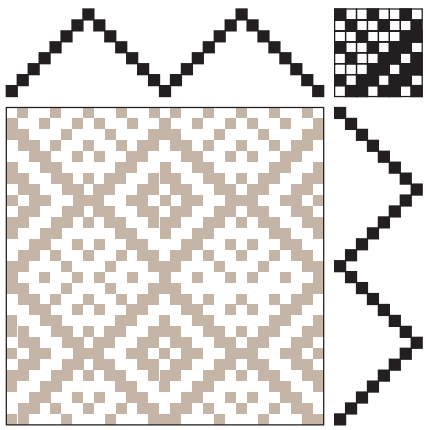
1. Begin with a diagonal line



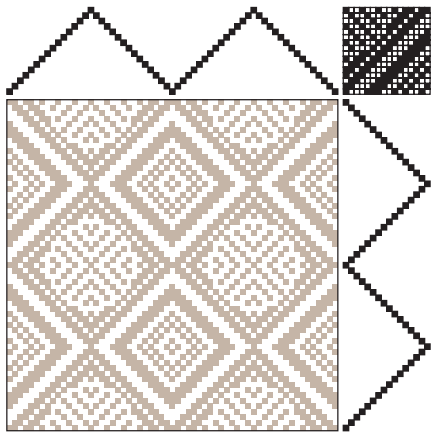
2. Add parallel diagonals



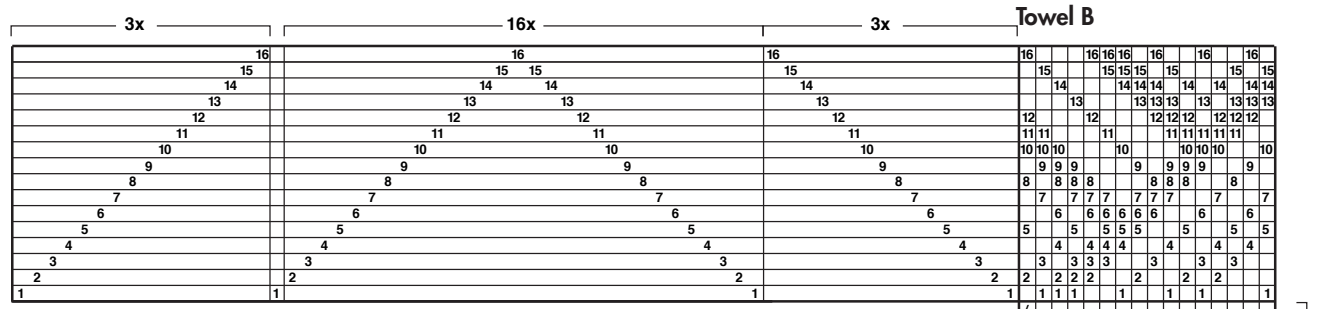
3. Add opposing diagonals



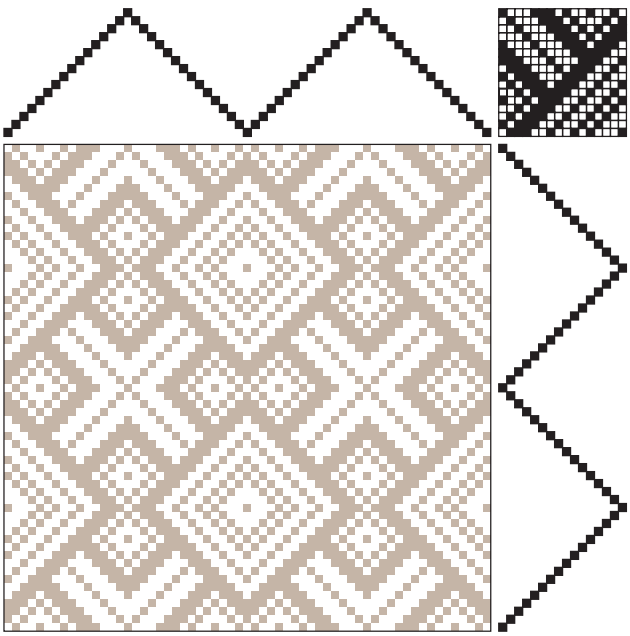
4. Expand the design to sixteen shafts



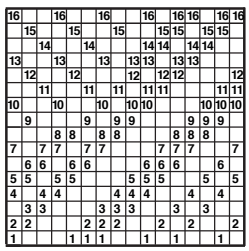
5. Draft for towels



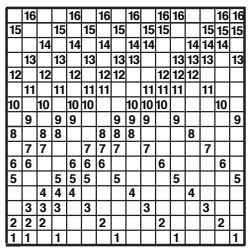
6. Drawdown for Towel B



Towel A



Towel C



Cottonwood Leaf Towels

by Sharon Alderman

Originally published in ***Handwoven***®, January/February 1998, pp. 30–31, 73–74.

The graceful curve of a cottonwood leaf inspired this undulating twill pattern. Warp and weft colors also reflect the leaves, bark, and twigs of a cottonwood tree in early spring. Sewing thread is used as weft for the hems to reduce bulk.

Weaving

Following the treadling order in the draft, weave ¾" with yellow sewing-thread weft for hem. For the striped border, weave 22 picks yellow, 16 picks light brown, 6 picks yellow, 16 picks light brown. Weave 25" yellow, weave the striped border in reverse, and end with ¾" yellow sewing thread for the second hem. Weave the second towel the same way using pale yellow-green weft in place of yellow.

Finishing

Machine stitch raw edges. Machine wash in hot water with mild detergent; tumble dry until damp. Press dry with a hot iron. Cut the towels apart. At each end, turn the fabric under twice to make a rolled hem. Stitch the hem by machine.

Weave structure

Undulating twill with straight twill borders.

Finished Dimensions

Two towels 15½" wide by 24½" long each with rolled hems.

Warp and weft

8/2 unmercerized cotton at 3,360 yd/lb: 960 yd beige for the warp and 270 yd pale yellow-green for the weft. Cotton flake at 3,000 yd/lb: 240 yd light brown (Lichen) for the warp and weft. 22/2 cottolin (50% cotton/50% linen) at 3,170 yd/lb: 270 yd yellow for the weft. Cotton sewing thread: 30 yd each pale yellow-green and yellow for weft in hem areas

Yarn sources

8/2 unmercerized cotton and cottolin are available from most weaving retailers. Cotton flake is available from Webs.

Notions

Beige sewing thread for hems.

E.P.I

24. Width in Reed 17¾".

Total warp ends 429

Warp ;ength

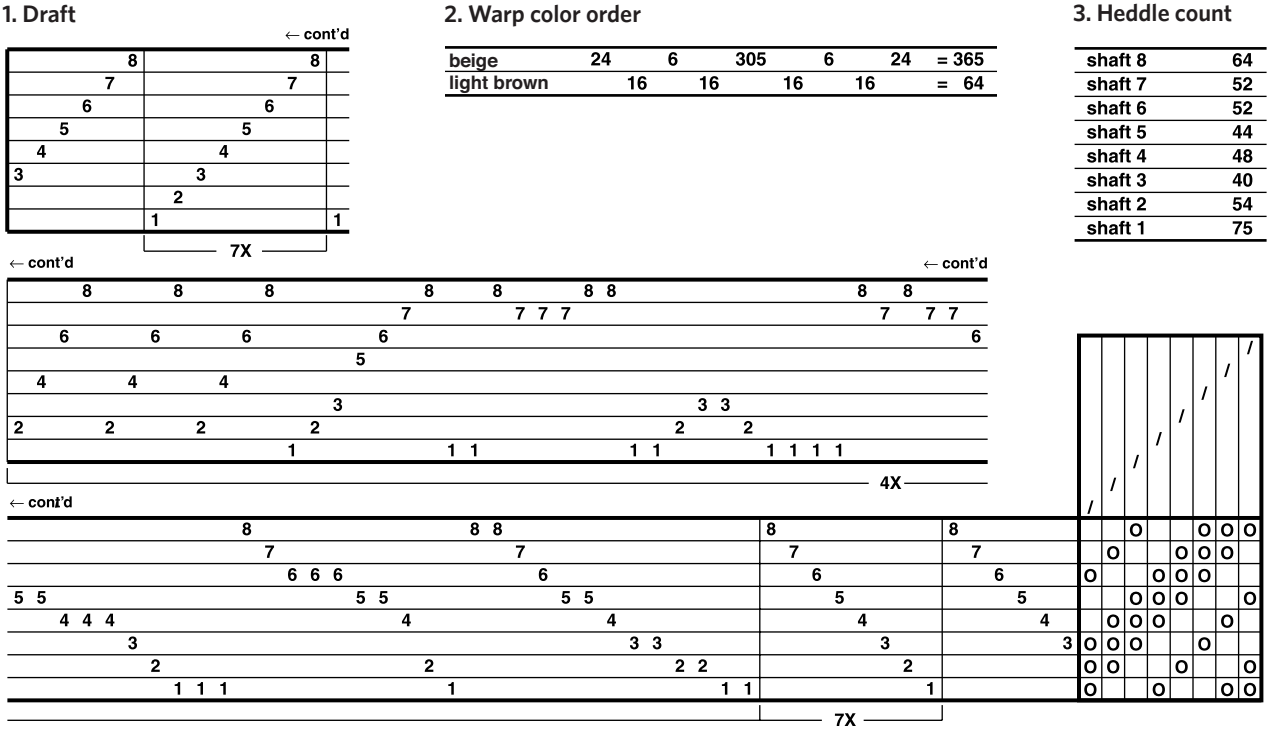
2½ yd (includes take-up, shrinkage, and 27" loom waste).

P.P.I. 18.

Take-up and shrinkage

20% in width and 18% in length.

1. Draft



2. Warp color order

beige	24	6	305	6	24	= 365
light brown	16	16	16	16		= 64

3. Heddle count

shaft 8	64
shaft 7	52
shaft 6	52
shaft 5	44
shaft 4	48
shaft 3	40
shaft 2	54
shaft 1	75

Color Tricks for Striped Cotton Placemats

by Sharon Alderman

Originally published in ***Handwoven***®, March/April 1983, pp. 41, 84.

The stripes in these placemats look like ribbons of color laid over a neutral ground. Stripe size is the same throughout, but the color changes from stripe to stripe. The warp and plain-weave picks between the colored stripes are a neutral beige and the stripe colors are a range of soft desert hues. Consider a more dramatic set of mats by using a black warp with brilliant weft colors or try different blues against a navy warp.

The colors in the stripes do not follow a regular repeat. You can use the photograph to choose weft colors or you can arrange them the way I did: Wind a bobbin with each color and line the bobbins up in an order you like. Use them in that order and then rearrange them for the next color repeat.

Two color juxtapositions were jarring to me: gray next to orange and rose next to yellow green. The gray contains a lot more blue than the sample card suggested and the orange seems brighter when surrounded by other colors than gray. It would be simple to omit colors that don't seem to work, but the resulting fabric would be less lively. Studying how colors work together this way will help develop your skill in using them!

The stripes are woven in a weft-faced (1/3) broken twill to emphasize the color but avoid a strong twill line. A broken twill also helps to combat the tendency for the edges of a weft-faced fabric to curl. The selvedges still curl a little so they are hemmed with the smallest possible hem.

Weaving

Follow the color order in the photograph or plan your own using the suggestions given here and weave the placemat fabric for 115". Carry the beige weft along the selvedge where it will float between uses for ⅜–½", the width of the colored stripes. Change bobbins according to your color rotation, leaving the weft tails for the color stripes hanging from the selvedges.

Finishing

Hemstitch over the first and last 2 picks of the placemat fabric while it is on the loom (this hemstitching will not show in the final mats). Cut the fabric from the loom and mend any flaws. Trim weft tails at the selvedges. Machine wash the fabric, warm water, regular cycle. Iron the cloth with a hot iron while it is still slightly damp.

Mark cutting lines in the cloth for six 17" lengths. Machine stitch along both sides of the cutting lines. Cut mats apart between rows of stitching; trim to stitching if necessary. Turn the selvedges to the back and machine stitch. Turn the stitched ends of the cut edges to the back and machine sew the hems so that the mats are 16" × 16" each.

Weave structure

Plain weave and 1/3 broken twill.

Finished dimensions

Six hemmed placemats 16" × 16" each. (For more rectangular mats, plan a weaving width of 18–20".)

Warp and weft

10/2 pearl cotton at 4,200 yd/lb. Warp and weft for plain-weave (and occasional twill) stripes: 2,100 yd of beige (#107). Other twill weft colors: 190 yd each of med. gray (#104), rosy beige (#116), lt. yellow (#110), darker rosy beige (#117), yellow green (#111), pale orange (#118), gold (#112), rose (#119), and med. rust (#115).

Yarn sources

All yarns are from Halcyon Yarn. The colors are available on 2 oz minicones. One minicone cone of each color is enough (plus a ½ lb cone of beige).

Notions

Beige sewing thread for hems.

E.P.I 24.

Width in reed 18½"

Total warp ends 444.

Warp length

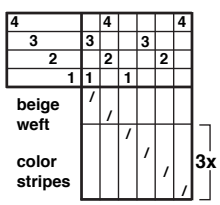
4 yd (includes take-up, shrinkage, and 27" loom waste).

P.P.I. 30 in colored stripes, 24 for plain weave.

Take-up and shrinkage

11% in width and length.

1. Draft



A Winter Celebration Table Runner

by Sharon Alderman

Originally published in *Handwoven*®, January/February 1994, pp. 24–25, 83–84.

The morning after an overnight snowfall is silent and oddly bright. The light, even at winter's low level, is intensified, amplified by reflection off fresh white surfaces. My first perception on looking out the window is that the world is white, with no color at all. A closer look reveals that all of the colors are there but that they are very muted.

The rose hips, a deep brownish red, stand out against the snow. Withered, freeze-dried rose leaves have faded from their various shades of green to dark browns and lighter grayed browns. The gray-brown backs, black caps, and warm buff flanks of the chickadees at my feeders contrast with snow and shadow. These feathered acrobats entertain me and my bird-watching cat as we watch them from my studio window. They provide motion and their breast feathers a touch of warm color in an otherwise still, chilly landscape.

I find so many colors around me in the natural world in winter that in order to weave them into cloth, I have to edit them. If I were to combine all of them into one winter-celebrating textile, their variety would make the fabric gaudy—and winter is elegant in her subtlety, never gaudy.

Weaving

Begin and end the runner with 1" hem in plain weave using sewing thread (this will reduce hem bulk when the ends are turned under). Weave the body of the runner with white cottolin for 61½". To minimize the number of shafts that must be raised, the fabric is woven face down.

This fabric is a joy to weave with only one shuttle. I have found when weaving a cloth with plain weave at the edges that the selvedges are better if the shuttle passes over the first end as it enters and under the last one as it exits.

Finishing

Hemstitch the fabric on the loom or machine zigzag raw edges after it has been cut from the loom. Machine wash in hot water on a regular cycle and iron the cloth dry.

Assembly

Turn the sewing-thread hem sections under twice so that the machine-stitched edge is completely hidden; sew hems invisibly by hand. Press with a hot iron.

Weave structure

This runner is woven using some of the colors from a winter landscape: the white of snow, greenish gray of aspen bark, medium gray of cherry bark, dull yellow of withered grasses, grayed lavender of shadows on the snow, and deep red of red osier dogwood twigs.

Fabric description

Plain weave with 3/1 twill stripes.

Finished dimensions

One hemmed runner 11¼" by 53½".

Warp and weft

22/2 cottolin (60% cotton/40% linen) at 3,170 yd/lb: 890 yd white #020, 44 yd silver gray #263, 77 yd greenish gray #281, 88 yd medium gray #265, 44 yd lavender #276, 110 yd dull yellow #300, 66 yd deep red #259; about 30 yd white cotton sewing thread for hems.

Yarnsources

Borgs cottolin is available from Halcyon Yarn.

Total warp ends 296.

Warp length

2¾ yd (allows take-up, shrinkage, and 27" loom waste).

E.P.I. 18 in plain-weave stripes; 24 in twill stripes.

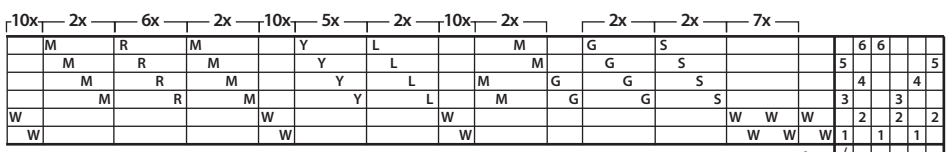
Width in reed 14⅓".

P.P.I. 18.

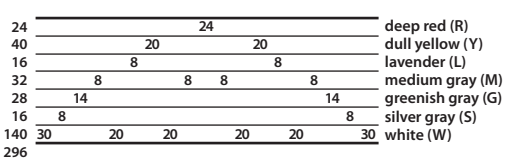
Take-up and shrinkage

21% in width and 15% in length.

2. Draft



1. Warp Color Order



Towels for Simple Gifts

by Sharon Alderman

Originally published in ***Handwoven***®, November 1982: pp. 39, 90–91.

When most of us think about our American heritage as weavers, we usually think of overshot or summer and winter coverlets. Perhaps we don't think of the Shakers immediately because none of us are descendded from them. As a celibate sect, the Shakers left no descendants, but they have left us a legacy of good design in textiles as in their well-known furniture and architecture.

I was pleased to be able to work on Shaker textiles for [the November 1982] issue of *Handwoven*. I had read Beverly Gordon's excellent book, Shaker Textile Arts, with pleasure and had been even more interested in Shaker things because of it. I wrote to Beverly and talked with a local friend who had spent some time in the Shaker Community, Inc., in Massachussetts. It was through her that I obtained photographs of several linen face towels that inspired me to design the towels presented here.

14/1 bleached linen at 4,200 yd/lb, about 2½ oz per towel. Allow 28" warp length per towel plus loom waste. (14/1 bleached linen is available from Halcyon Yarn.) White sewing thread is used for hand-sewn hems on all towels.

E.P.I. and P.P.I. for all five towels 24.

Towel 1 (left towel, previous page)

Fabric description
A variation of M's and O's.

Finished dimensions
Each towel is 14½" by 20½" after hemming and washing.

Notions
Sewing thread.

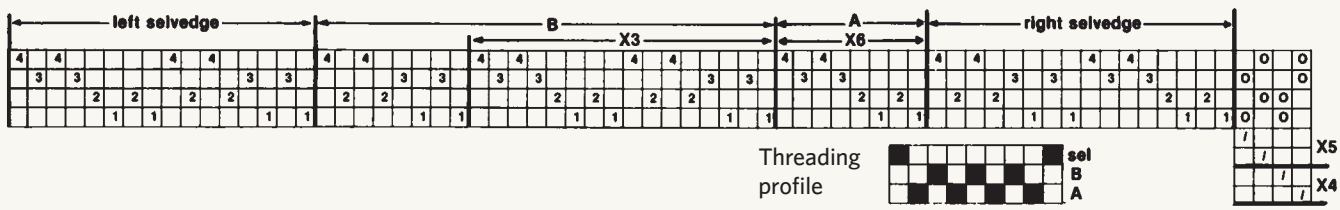
Width in reed 16⅓".

Total warp ends 392.

Weaving
Weave following the Towel 1 draft for 23" each towel.

Finishing
Cut towels apart and machine staystich raw edges. Turn each end for a rolled hem and sew by hand. For a hanging loop for each towel, make a 3-strand braid 3" long using 6 threads of 14/1 linen for each strand. Machine stitch ends of each braid and tack ends to towel hem. Machine wash towels.

1. Draft for Towel 1



Towel 2 (right towel, previous page)

Project notes
This towel has a cross-stitched monogram.

Fabric description
Spot Bronson and plain weave.

Finished dimensions
Each towel is 14½" by 19½" after hemming and washing.

Notions
Blue 16/1 linen or embroidery floss for monogram.

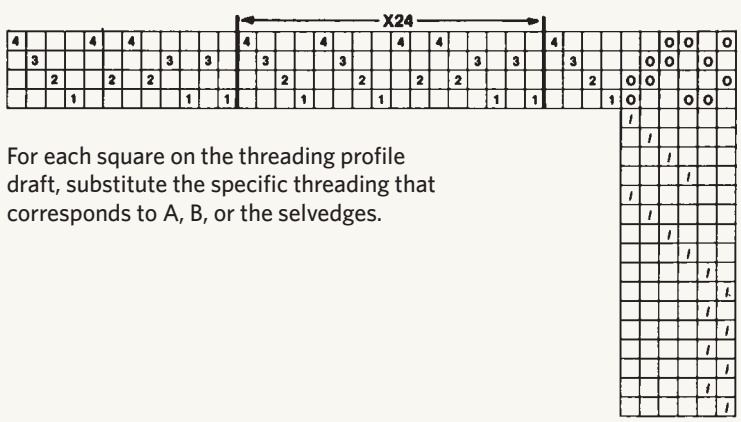
Width in Reed 16¾".

Total warp ends 400.

Weaving
For each towel, weave plain weave for 2½", pattern for 19", and plain weave for 2½" following the draft for Towel 4.

Finishing
Machine stitch raw ends and wash the fabric. Cut apart the towels, turn ends under, and sew hems by hand. Work the cross stitch following a graphed design. Machine wash towels again; press with a hot iron.

2. Draft for Towel 2



For each square on the threading profile draft, substitute the specific threading that corresponds to A, B, or the selvedges.

Towel 3 (top towel, previous page)

Project Notes This towel features a braided hanging loop at each end.

Fabric description
A variation of M's and O's.

Finished dimensions
Each towel is 15¾" by 21".

Notions
Sewing thread.

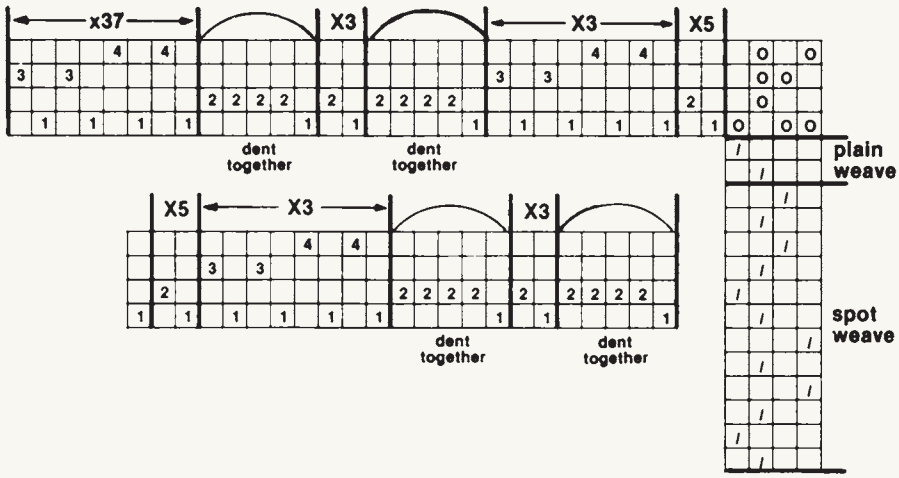
Width in reed
16⅔".

Total warp ends
400.

Weaving
Weave following the Towel 2 draft for 25" each towel.

Finishing
Cut towels apart and machine stay-stitch raw edges. Turn each end for a rolled hem and sew by hand. For a hanging loop for each towel, make a 3-strand braid 3" long using 6 threads of 14/1 linen for each strand. Machine stitch ends of each braid.

Draft for Towel 3



Towel 4 (bottom towel, previous page)

Project notes
Cross-stitch is worked in the plain-weave section of this towel following a graphed design (each graph-paper square equals two warp threads and two weft threads).

Fabric description
Spot Bronson and plain weave (see draft on page 17).

Finished dimensions
Each towel is 14" by 20" after hemming and washing.

Notions
Medium blue 16/1 linen or embroidery floss for cross-stitch.

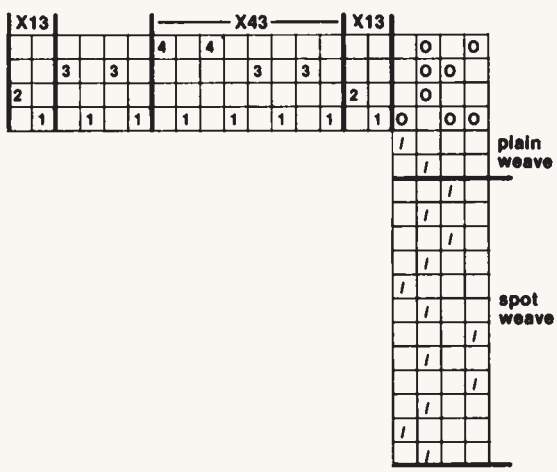
Width in Reed
16¼".

Total Warp Ends
400.

Weaving
For each towel, following the draft for Towel 3 (above) weave 3" plain weave, three repeats of spots, one quadrupled plain weave pick (four plain-weave picks in the same shed), ½" plain weave, one quadrupled plain-weave pick, ¾" of spots, one quadrupled plain-weave pick, ½" plain weave, one quadrupled plain-weave pick. Weave 11" plain weave and reverse the above for the border at the other end of the towel.

Finishing
Machine stitch raw ends and wash the fabric. Cut towels apart, turn ends, and sew hems by hand. Work the cross-stitch following a graphed design. Machine wash again and press.

Draft for Towel 4



Towel 5 (middle towel, on page 20)

Towel 5 (middle towel, page 16)

Project Notes
Although spot Bronson can be woven on five shafts, this 6-shaft draft spreads threads between shafts 1 and 2 for easier shed formation. The towel features a hanging hole.

Weave Structure
Spot Bronson.

Finished Dimensions
Each towel is 15" by 22" after hemming and washing.

Notions
Sewing thread.

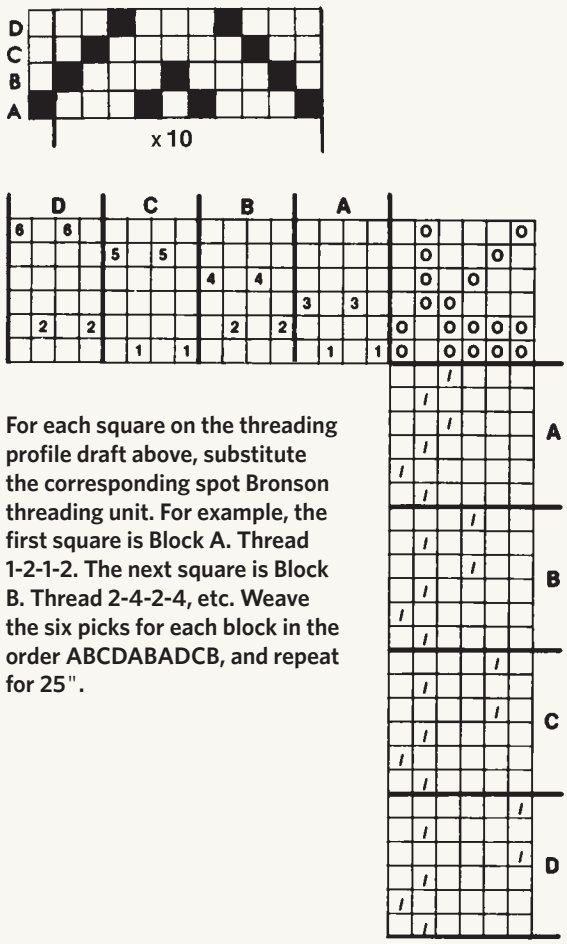
Width in Reed
16¾".

Total Warp Ends
404.

Weaving
Weave pattern for 25": Treadle A, B, C, D, A, B, A, D, C, B and repeat.

Finishing
Secure raw ends with machine stitching. Machine wash the fabric. Cut towels apart, turn ends, and sew rolled hems by hand. Machine stitch a ⅜" circle in the center of one end of each towel using very small stitches. Cut away the center with tiny, very sharp scissors. Bind the edges of the hole with a buttonhole stitch using 14/1 bleached linen.

Draft for Towel 5



For each square on the threading profile draft above, substitute the corresponding spot Bronson threading unit. For example, the first square is Block A. Thread 1-2-1-2. The next square is Block B. Thread 2-4-2-4, etc. Weave the six picks for each block in the order ABCDABADCB, and repeat for 25".

Use Waffle Weave for a Thirsty, Cushy, Crinkly Bath Set

by Sharon Alderman

Originally published in ***Handwoven***®, May/June 2010, p. 51-52.

Weave a Sampler!

The crisp look of these towels is due in large part to the bleached-white cotton yarn. But waffle weave is also effective in color. Choose yarns to match your bath or kitchen (these hand-towel instructions make perfect dish towels). Notice that the long warp floats on the face are produced by shaft 1, long warp floats on the back by shaft 6. The weft floats are produced with treadle 1 on the face, treadle 6 on the back. Use a different color for these ends/picks to frame the cells. Use a darker color for the other ends/picks to emphasize cell depth.

Both sides of a waffle-weave cloth look the same, with squares outlined in the longer warp and weft floats that ensure its absorbency. Using waffle weave and an absorbent yarn such as unmercerized cotton results in a super-absorbent cloth.

Finishing Observations

Wet finishing a waffle-weave cloth produces a dramatic change in dimension and texture. These cloths and cells become anywhere from 25 to 40 percent smaller with washing. Most of that "loss" is not yarn shrinkage, because in use, once the towel gets wet, it stretches out again, only to draw back up as it dries.

You can weave plain weave on this threading, but plain-weave hems will ruffle. If you prefer that, weave deeper hems in plain weave, instead of the basketweave variation used here. The finer 20/2 cotton weft also minimizes ruffling.

1 Warp and weft amounts provide two washcloths, two hand towels, and two bath towels using three separate warps. (Cutting smaller pieces out of a large fabric makes securing the cut edges problematic, though it could be done.) Use your preferred warping method to thread the loom following Figure 1.

2 Begin and end each piece with 1¼" in 20/2 cotton using treadles 7 vs 8 for hems. With 6/2 weft, weave 16" of waffle-weave repeat for each washcloth, 40" for each hand towel, and 76" for each bath towel. Separate pieces with 2 picks of a contrasting color.

3 Cut the cloth from the loom and serge along contrasting-color picks (or use a fine machine stitch and cut pieces apart). Turn raw edges under twice and machine stitch close to fold. Machine wash, regular cycle, hot water, and machine dry, regular.

Weave structure

Waffle weave.

Equipment

6-shaft loom: for washcloths, 18" weaving width; hand towels, 26" weaving width; bath towels, 44" weaving width; 10-dent reed; 1 shuttle, 2 bobbins.

Yarns

Warp and weft: 6/2 unmercerized cotton (2,520 yd/lb, I Love Yarn), bleached white.
Washcloths: 1,025 yd; hand towels, 2,900 yd; bath towels, 9,000 yd.
Weft for hems: 20/2 pearl cotton (8,400 yd/lb), white, 330 yd total.

Warp length

Washcloths: 341 ends 2 yd long (3" take-up, 32" loom waste).
Hand towels: 501 ends 3⅓ yd long (6" take-up, 28" loom waste).
Bath towels: 871 ends 5½ yd long (8" take-up, 33" loom waste).

Setts

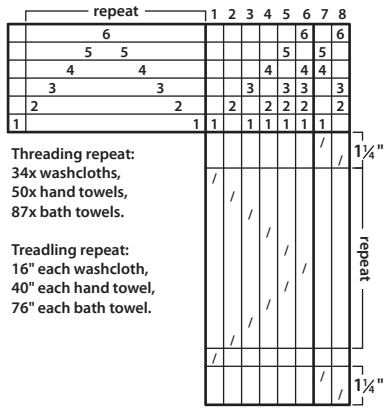
Warp: 20 epi (2/dent in a 10-dent reed).
Weft: 20 ppi (for 6/2); 25 ppi (for 20/2 hems).

Dimensions

Two washcloths: width in the reed: 17⅒"; woven length: 18½" each; finished sizes: 10⅞" × 10¾" each.
Two hand towels: width in the reed: 25⅒"; woven length: 42½" each; finished sizes: 16" × 26½" each.
Two bath towels: width in the reed: 43⅗"; woven length: 78½" each; finished sizes: 32" × 49⅛" each.

TIP: 6/2 unmercerized cotton is the perfect fiber for washcloths and towels (an unmercerized yarn is more absorbent than a mercerized yarn, such as pearl cotton). 6/2 is also a good weight for waffle cell size, but you can use other yarns. Choose a sett about 1⅓ closer than for plain weave.

1. Draft for bath set



Blue Plaid Lap Robe in Dornick Twill

by Sharon Alderman

Originally published in ***Handwoven***®, January/February 1999, pp. 58, 76–77.

Dornick twills, similarly to herringbone twills, are designed with changes in twill direction in both the threading and treadling. In dornick twills, however, a shaft is skipped at the reversal points. The skips provide pattern breaks that add interest to the overall patterning. In the lap robe, because the reversals coincide with color changes, these breaks are subtle.

This lap robe's edge finish is especially neat, and there are no fringes, hems, or binding to tangle or wear out. The robe is woven in a woolen-spun yarn that fulls beautifully to produce a thick, cozy fabric.

Weaving

Avoid draw-in at the edges, especially at the beginning and the end of the lap robe, because the warp ends will be needle-woven back into the edge of the weaving. Use a temple, if available. Allowing about 6" for fringe including amount used to tie on, maintain an even beat at about 9 picks per inch and weave following the draft, about 73".

Finishing

Hemstitch over the first and last 2 picks of the placemat Relax the tension on the warp slightly and begin the first needle-woven edge with the lap robe still on the loom. Having the cloth stretched and under some tension makes the process easier. Cut 1 warp end about 4" from the fell and using a small latch hook or blunt tapestry needle, go around the last pick and weave the end back into the fabric for about 2" following the path of the warp end next to it. Cut and weave every other (every alternate) warp end into the edge of the lap robe in the same manner. Cut the remaining warp ends (the alternate threads you have not worked in) to 4" and remove the lap robe from the loom. Turn the lap robe over and darn in the cut ends for about 1". Staggering these ends helps to make them less visible. Trim excess yarn.

Removing the lap robe from the loom, untie the ends from the apron rod and cut all of these warp threads evenly to about 4". Place the lap robe on a table and weight it with books or other heavy objects. Darn each of the cut warp threads into the lap robe in the same way as for the other end of the lap robe.

Correct any flaws. Machine wash the lap robe in very warm water with a mild detergent until the lap robe is fulled almost as much as you like. Rinse three times. Spin out the water and air-dry over a rod. Brush lightly, if desired.

Weave structure

Dornick twill.

Finished dimensions

33" by 51" (note that 2" unwoven warp at each end is needle-woven back into the edge).

Warp and weft

2-ply wool at 900 yd/lb (Harrisville Highland): 1,050 yd Iris (reddish blue), 150 yd Emerald (green), 150 yd Peacock (blue-green), and 900 yd Lupine (reddish-blue tweed).

Yarn sources

Harrisville Highland wool by Harrisville Designs is available from most weaving retailers.

Notions

Small latch hook or blunt tapestry needle.

E.P.I 10.

Width in reed 45⅗".

Total warp ends 456.

Warp length

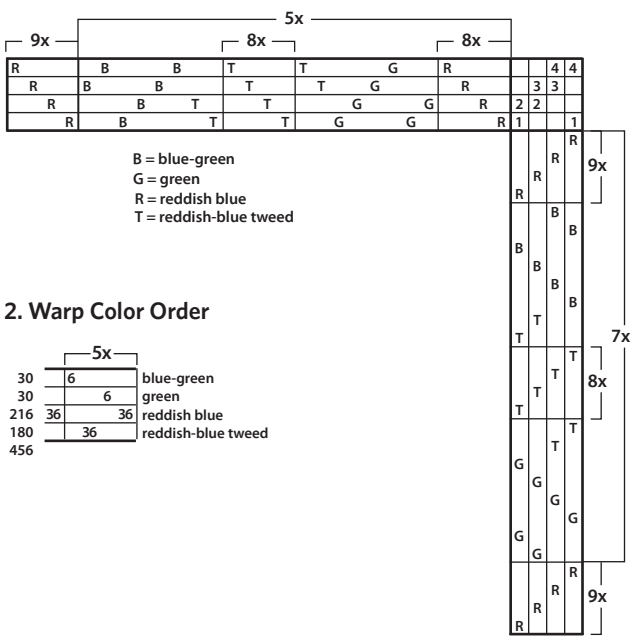
3 yd (allows take-up, shrinkage, and 27" loom waste).

P.P.I. 9.

Take-up and shrinkage

28% in width and length (less fulling will result in less shrinkage).

1. Draft



2. Warp Color Order

Easy As Pi

by Sharon Alderman

Originally published in ***Handwoven***®, January/February 1998, pp. 30–31, 73–74.

For years I have admired the color-and-weave patterns that can be made using very simple interlacements, plain weave in particular. The only trouble is that unless you weave them with rope you can only see the patterns when you look at them up close. Weaving garment or upholstery fabric out of rope is not appealing! This throw is the result of a wish to enlarge the scale of color-and-weave designs while using yarns of appropriate diameter for the intended hand of the fabric.

Weave structure
Turned twill (also called twill damask or twill blocks).

Equipment
8-shaft loom, 57" weaving width (width can be modified by reducing the number of repeats; one repeat = 6"); 8-dent reed; two shuttles.

Yarns
Warp: 8/3 wool (1,490 yd/lb, Maine Line, JaggerSpun), Deep Purple, 1,872 yd; Cinnabar, 864 yd.
Weft: 8/3 wool, Deep Purple, 710 yd; Cinnabar, 710 yd.

Yarn sources
8/3 Maine Line JaggerSpun wool is available from most suppliers.

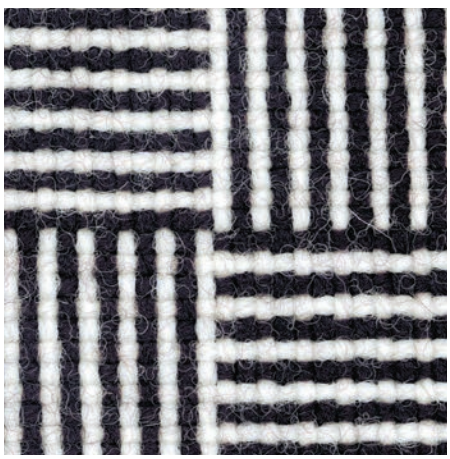
Warp order and length
912 ends 3 yd long in color order: [48 Deep Purple, 16 Cinnabar, 16 Deep Purple, 16 Cinnabar] 9×; end with 48 Deep Purple to balance. Warp length includes 36" loom waste and fringe.

Weft color order
[16 Deep Purple, 32 Cinnabar, 16 Deep Purple] 13×.

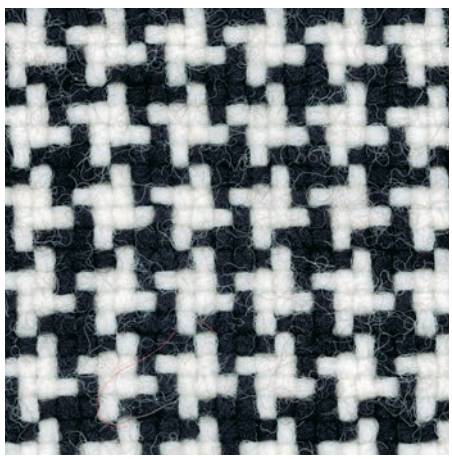
Warp and weft spacing
Warp: 16 epi (2/dent in an 8-dent reed). Width in reed: 57".
Weft: 15 ppi.

Take-up and shrinkage
After washing, 15% in width and 18% (5% take-up, 13% shrinkage) in length. Amounts produce one throw 48½" × 55"

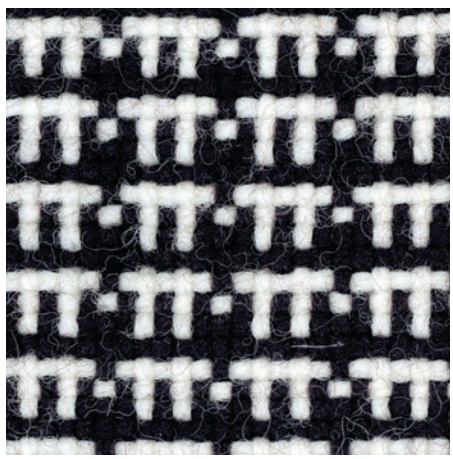
1. Color-and-weave samples: D = dark, L = light



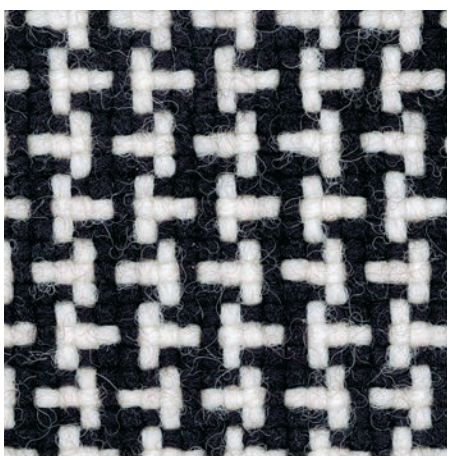
a. Warp: 1L/1D; 1D/1L; weft: 1D/1L; 1L/1D



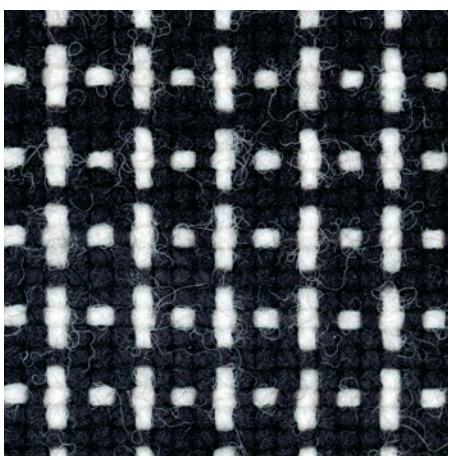
b. Warp and weft: 2D/2L



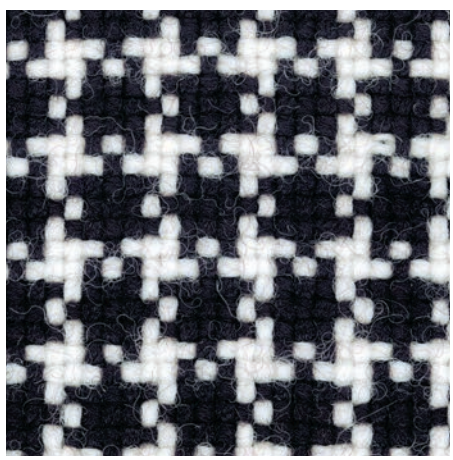
c. Warp: 3D/1L/1D/1L; weft: 2D/2L



d. Warp: 2D/2L; weft: 2D/1L



e. Warp and weft: 3D/1L



f. Warp and weft: 3D/2L

Color-and-weave

Color-and-weave is the term given to fabrics in which dark and light (or warm and cool or other contrasting) colors alternate in both warp and weft. The visual designs are created by the interaction of the warp and weft color sequences with the weave structure. If the colors contrast strongly, the structure is nearly invisible and one sees only the dark/light designs (see Swatch Collection #28, *Handwoven*, September/October 1993, pages 46–47, and May/June 1993, pages 30–31).

The color-and-weave samples in Figure 1 are only a few of the many designs that can be produced on a plain-weave threading. The dark/light alternation in these examples varies from one dark and one light end or pick (1D/1L), to 2D/2L, to other ratios. Note that different ratios can be used in the weft from those in the warp to produce different designs on the same warp ratio.

The "pi" design

One particularly compelling design looks like a repetition of the Greek letter "pi"; see Photo 1c and Figure 2. Note that each square in the drawdown in Figure 2 shows either a purple warp or weft thread or a red warp or weft thread. In the drawdown—as in the cloth—it is not obvious whether the color in a particular square is from the warp or from the weft. Our eyes see the dark/light design, not the interlacement.

Expanding design scale

Since pattern comes from either a warp thread or a weft thread showing, it dawned on me that I could create the same designs with threads of a smaller and therefore more practical size by replacing a visible warp thread with four threads of warp-dominant twill and a visible weft thread with four threads of weft-dominant twill. Granted, the coverage is not absolute as it is in plain weave and the design is therefore not quite as distinct (compare the throw, page 21, with Photo 1c), but it works!

The plain-weave draft for the "pi" design repeats structurally in two threads, so transformed into twill blocks, it repeats in two blocks. Block A is threaded 1, 2, 3, 4 and Block B 5, 6, 7, 8 (see Figure 3). Each dark or light end or pick in Figure 2 becomes four dark or light ends or picks. For the throw, each block is expanded to sixteen ends to further increase design scale. Designs can be increased to any scale desired!

The throw

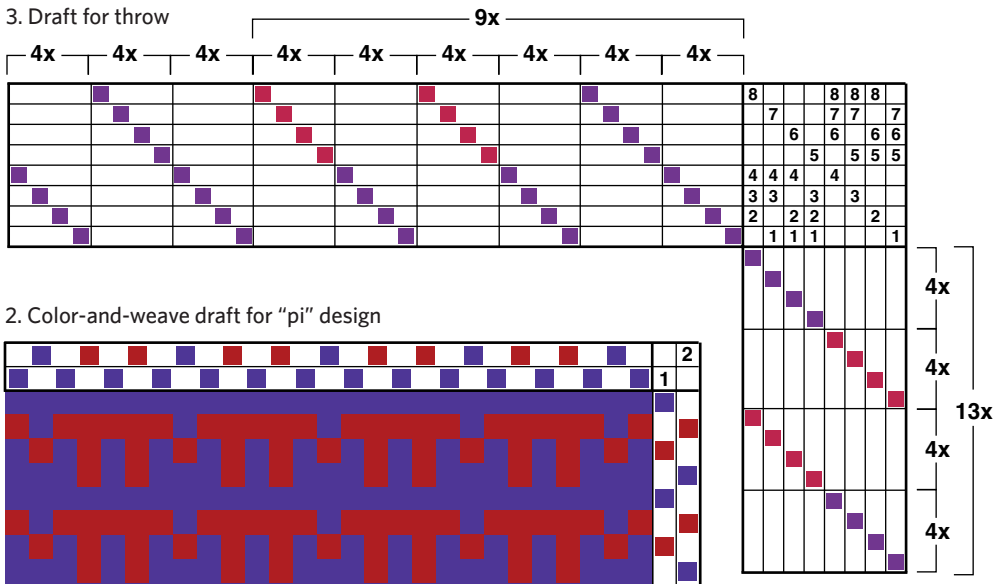
Prepare the loom and weave the throw following Figure 3. Allowing 9" for fringe, hemstitch both ends on the loom in groups of eight threads (two groups for each color stripe). After the throw is removed from the loom and errors corrected, prepare twisted fringes with two groups of eight ends each.

Handwash in warm water using Dawn liquid detergent (a mild detergent that is easy on your hands and has the pH that is best for wool) and rinse well. Spin out the excess water in the washing machine and allow the throw to air dry until nearly dry to the touch. Steam press. The worsted wool used for this throw will not become fuzzy unless overfulled; to maintain the clean lines of the de-sign launder gently, by hand.

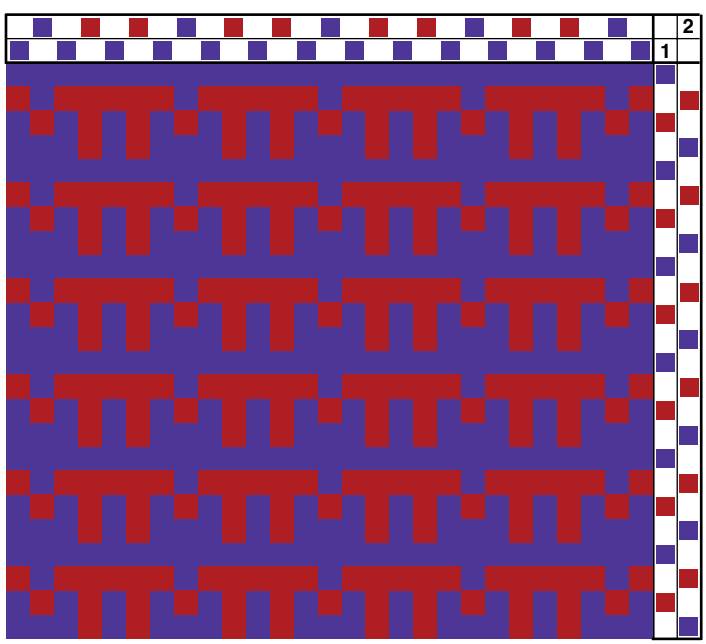
Pushing the idea

Any color-and-weave draft for plain weave can be translated as shown above into two twill blocks on eight shafts—or to two blocks of five-end satin on ten shafts. Color-and-weave drafts for 4-shaft twills can be expanded to four blocks on a 16-shaft loom by following the same steps. It's fun to see how far an idea—in this case, color-and-weave—can be pushed and what delightful fabrics can be produced when you do!

3. Draft for throw



2. Color-and-weave draft for "pi" design



You're Not Finished Until It's Finished

by Sharon Alderman

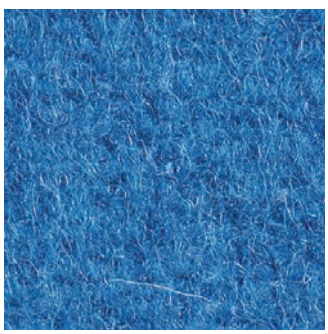
a. plain weave, 8 epi, 8 ppi, unwashed

b. plain weave, 8 epi, 8 ppi, hand-washed

c. plain weave, 8 epi, 8 ppi, machine-washed

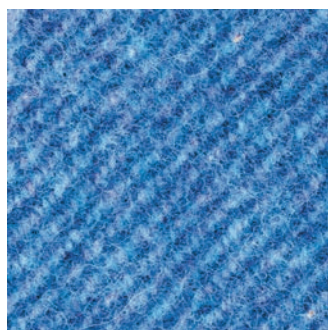
d. plain weave, 14 epi, 14 ppi, unwashed

e. plain weave, 14 epi, 14 ppi, hand-washed



f. plain weave, 14 epi, 14 ppi, machine-washed

g. twill, 14 epi, 14 ppi, hand-washed



h. twill, 14 epi, 14ppi, machine-washed

Here's a riddle for you: How is cloth on the loom like muffin batter? Answer: They are equally unfinished. The difference between cloth as it is cut from the loom and the same cloth after finishing is often as dramatic as the change that occurs when muffin batter is baked. Both are transformed. Both are made better.

Focusing on wool

Of all the fibers that weavers commonly use, the one that undergoes the most dramatic changes in wet-finishing is wool, particularly woolen-spun wool.

The more expensive worsted wool yarns are made from longer staple wools, which are painstakingly combed to align the fibers, producing a smooth yarn. Handwashing in warm water with minimal agitation preserves the smooth finish of cloth woven with worsted wool.

Woolen-spun wool is shorter in staple and not combed. To help control the fibers and facilitate spinning, the wool is oiled during the spinning process. The lack of alignment of the fibers and the addition of spinning oil are critical factors affecting the way the resulting cloth is finished.

The spinning oil must be removed from the woven cloth, because it dulls the colors and tends to attract dirt. It also makes the cloth feel harsh. When woolen-spun cloth is washed, the yarns become softer, brighter, and loftier. With increased agitation during washing, the spaces between the yarns fill so that the cloth becomes more insulating and wind resistant.

Finishing cloth woven with woolen-spun yarn

The samples shown here are all woven with Harrisville Designs Shetland, a 2-ply woolen-spun yarn, at two different setts in plain weave and twill. The samples in Photos a, b, and c, are sett at 8 epi and are woven in plain weave at 8 ppi (measured under tension). The samples in Photos d, e, and f are sett at 14 epi and woven in plain weave at 14 ppi. The samples in Photos g and h are also sett at 14 epi and woven at 14 ppi, but in 2/2 twill.

These fabric samples demonstrate the effects of two types of finishing for two different setts and two different weave structures. One plain-weave sample of each sett (see Photos a and d) is left unwashed to show how the cloth looks as it

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comes off the loom. The samples in Photos b, e, and g are washed by hand using very warm water (110˚F) and a mild dishwashing liquid such as Dawn. They are then rinsed well and allowed to air dry, laid flat.

The samples in Photos c, f, and h are washed in a front-loading washing machine for a full regular cycle using a hot-water wash and a warm-water rinse.

As you might expect, the end results differ dramatically. The unwashed samples are harsh, open, and rather raw looking. The hand-washed samples are much softer, and although they have shrunk somewhat, they are not very fuzzy.

The shrinkage is greatest for the machine-washed samples, and they are fulled to the degree that the surface is soft and fuzzy. Although the machine-washed plain weave samples have a softer hand than the twill sample, all of the machine-washed fabrics would make ideal blankets, coats, jackets, or vests.

Always keep in mind the intended use for a fabric and stop the finishing process at any stage to get the finish you want.

Brushing

A finish which raises a soft nap on woolen-spun cloth can be obtained by brushing the cloth while it is hot and steamy from a light pressing. Use a nylon- bristled hairbrush where the bristles are clustered in little bunches like a toothbrush. (But don't use a toothbrush—life is too short!) Always brush with the grain of the cloth and brush in the warp direction only because it is usually the strongest element in the cloth. Avoid brushing on the bias as it may pull the cloth out of alignment. If you prefer, you can have your woolen cloth brushed by a professional brushing service.

Go ahead, get your cloth wet and work with it. You'll be glad you did!

Weave structure

Plain weave and 2/2 twill.

Yarns

Warp and weft: 2-ply wool (1,800 yds/lb, Harrisville Shetland).

Yarn sources

Harrisville yarns are available from most suppliers.

Warp and weft spacing

Samples a, b, c, d: 8 epi, 8 ppi, plain weave.
Samples e and f: 14 epi, 14 ppi, plain weave.
Sample g and h: 14 epi, 14 ppi, 2/2 twill.

Take-up and shrinkage

Take-up and shrinkage
Sample b: 16% in width, 21% in length.
Sample c: 42% in width, 36% in length.
Sample e: 14% in width, 17% in length.
Sample f: 20% in width, 36% in length.
Sample g: 21% in width, 17% in length.
Sample h: 30% in width, 25% in length.

TIPS FOR PLANNING, HEMSTITCHING, AND FRINGING

TAKE-UP AND SHRINKAGE

Weft take-up and shrinkage. As you weave, extra weft length (beyond the width of the warp in the reed) must be placed in the shed to allow for weft take-up (in *Handwoven* projects, this amount is included in required weft yardage). The fabric then draws in as the weft bends over and under the warp threads, so that the width of the woven cloth is narrower than the width of the warp in the reed. The cloth narrows further after it is removed from the loom, and shrinkage narrows it even more if it is washed. To calculate the percentage of weft take-up and shrinkage, divide the finished width by the width of the warp in the reed.

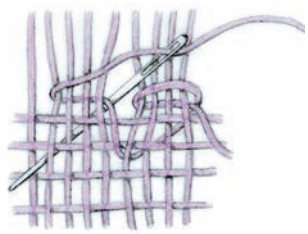
Warp take-up and shrinkage. As you weave, the warp bends over and under the weft threads so that fabric length is less than the length of the warp threads that produce it (*Handwoven* projects give the number of inches allowed for this take-up under Warp Length). When you release tension and remove the fabric from the loom, the fabric takes up in the warp direction. If you wash the fabric, shrinkage further decreases its length. To calculate the percentage of warp take-up and shrinkage, divide the finished fabric length by the woven length (measured under tension on the loom) plus the inches given for warp take-up.

To calculate how long to weave a fabric for a specific finished length, use the percentage derived by dividing the finished length listed in the project by the woven length measured under tension on the loom (for this percentage, do not include the inches allowed for take-up in the warp yarn).

TWISTING (OR PLYING) THE FRINGE

Divide the number of threads for each fringe into two groups. Twist each group clockwise until it kinks. Bring both groups together and allow them to twist around each other counterclockwise (or twist them together in that direction). Secure the ends with an overhand knot. (Use the same method to make a plied cord by attaching one end to a stationary object.)

SIMPLE HEMSTITCHING



Weave several picks of plain weave, ending with the shuttle on the right side if you are right-handed, left side if you are left-handed. Measure a length of weft three times the warp width and cut, leaving the measured length as a tail. Thread the tail into a blunt tapestry needle.

Take the needle under a selected group of ends above the fell and bring it up and back to the starting point, encircling the group. Pass the needle under the same group of ends, bringing it out through the weaving two (or more) weft threads below the fell. Repeat for each group of ends across the fell. Needleweave the tail into the selvedge and trim. (See * below.)

DOUBLE (ITALIAN) HEMSTITCHING

Weave several picks plain weave, ending with the shuttle on the right side if right-handed, left side if left-handed. Measure a length of weft four times the warp width and cut, leaving the measured length as a tail. Thread the tail into a blunt tapestry needle.

Take the needle under a selected group of warp ends above the fell and bring the needle back to encircle the ends. Next, pass the needle under the same ends but come up two or more weft rows down from the fell. Then bring the needle back around the same group of ends below the fell. Then begin again, encircling the next group of ends. (See * below.)

**For both methods: To hemstitch the first end of a piece, weave a header, weave four or five picks of plain weave (or of the basic weave structure used in the piece), and hemstitch over the top two or three weft rows. Weave the piece and then hemstitch the other end over the last two or three weft rows. Remove the fabric from the loom and discard the header and weft threads below the first hemstitching.*