

# The Weaver's Journal

\$3.00    Volume VI    Number 1    Issue 21    Summer 1981



*In this Issue:*

Window  
Coverings  
Bead Leno Lace  
Table Covers  
Shaft Switching  
M's and O's  
Ecclesiastical  
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# The Weaver's Journal

Quarterly Journal for Textile Craftspeople

Volume VI, Number 1, Issue 21 Summer 1981 ISSN #0160-3817

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Looms—n Yarns, Inc. See page 9.

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## Letter from the Editor

It has become a tradition with *The Weaver's Journal* to devote quite a few pages of each Summer issue to home furnishings. This year we are featuring three different tablecloths, many window coverings and other projects for the home as well.

It is appropriate in this era of energy consciousness that most articles on window coverings are not only concerned with aesthetics but with thermal performance as well. Weavers have to be aware of the visual impact of a handwoven product but also of the development and use of window insulation materials such as thermal curtain liners, magnetic sealing strips and much more.

For the weaver who is concerned about designing window coverings that perform effectively as window insulation, I suggest the following book: *Movable Insulation* by William K. Langdon, © 1980 William K. Langdon, published by Rodale Press, Emmaus, PA, 379 pp., hardcover, \$14.95

A large section of this book deals with shutters, curtains, shades and draperies. By following the author's advice, the cost of curtains hung for decorative purposes can be returned to the owner in fuel savings. You will be surprised at the importance of the choice of fiber: Acrylic, polyester, nylon, and modacrylics are better than wool, linen or rayon because they make more durable and dimensionally stable fabrics. A fabric that doesn't stretch or shrink will give a better seal. You will be surprised at the choice of thermal liners on the market today.

The author discusses the economics of window insulation, gives plenty of information on products and sources and gives detailed information on the installation of various window coverings that give good thermal protection.

The other main subject featured in this issue is ecclesiastical weaving. These articles range from philosophical to practical. They include many ideas on designs and techniques.

At this time we have completed judging the Weaving Competition of articles to be published in *The Weaver's Journal*. We received 55 entries, including some from Holland, Belgium, Germany, Canada and Australia. The entries were in the following categories: rugs 3, home furnishings 11, handspun-handwoven 12, clothing 27, unclassified 1. Prize winners are announced on page 21, of this issue. I want to thank all who participated in the contest.

*Clotilde V. Barrett*

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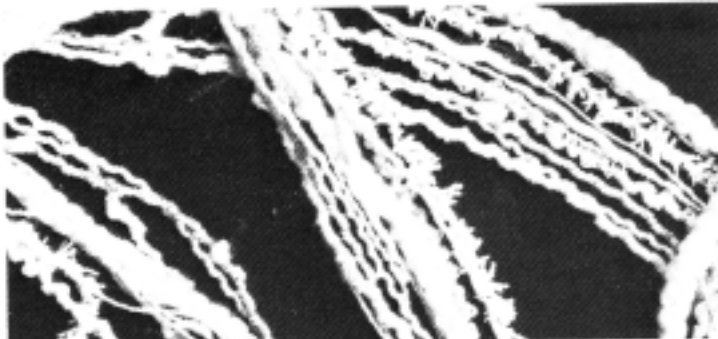
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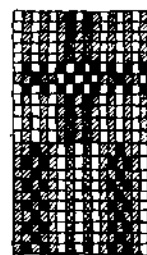
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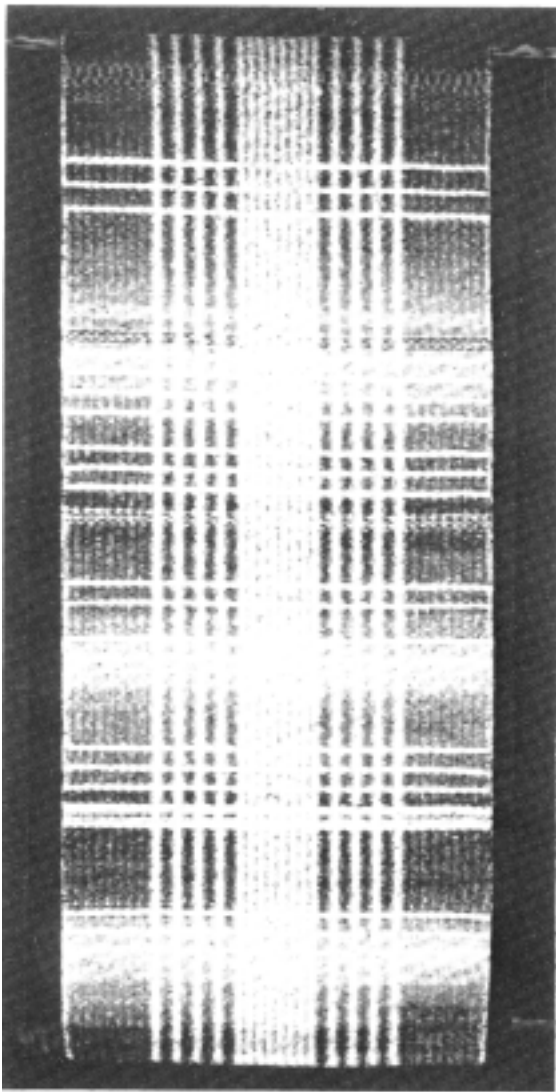
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WD-2



1. Rug by Janet Hanley



2. Tapestry with shaft-switching

# SHAFT-SWITCHING

## ON 3-END DRAFTS

### STRIPED PATTERNS - PART I

The principles of shaft-switching on a 3-end draft were discussed in the last issue of *The Weaver's Journal* (Vol. V, No. 4 pp. 24-26). That article includes a section on design. This design study will be continued in two follow-up articles dealing specifically with patterns involving two solid colors and vertical stripes.

In part I, the vertical stripes are so designed that each dark stripe or each light stripe is equal in width to one unit of

the threading, thus 3 ends wide. If shaft-switching is required, it is done between the pattern shafts. Thus, the floating warp end switches between shafts 3 and 4.

In part II, we will deal with patterning of two solid colors and finer vertical pinstripes. Both the dark and the light stripe lie within one threading unit. In this case the shaft-switching involves shifts between tie-down shafts and pattern shafts.

Coming back to part I and the broader stripes, the first example (Plate 1) shows a rug woven by Janet Hanley which is woven with the use of the safety snap shaft-switching mechanism but which does not require any shifting during the weaving process. The entire warp is threaded as in Fig. 1.

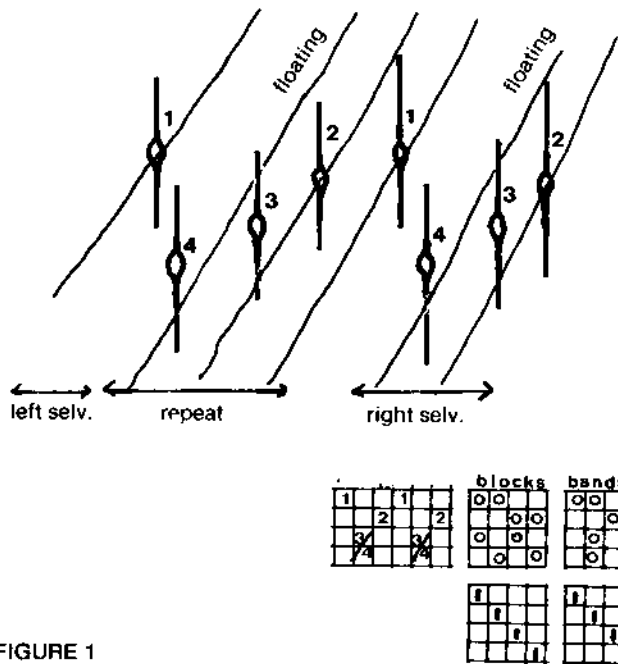


FIGURE 1

Every third warp end is floating between an empty heddle on shaft 3 and an empty heddle on shaft 4. A safety snap is threaded on each floating end. The two outer warp ends are doubled to reinforce the selvages. The warp is sett at 4 epi. (16/10 cm).

The design of the rug is drafted on graph paper as in Fig. 2. It is a two block draft. The floating ends of the dark units are pinned to shaft 4, the floating ends of the light units are pinned to shaft 3. During the weaving process the colors may be reversed by weaving shed 1 with light, shed 2 with dark, shed 3 with light and shed 4 with dark.

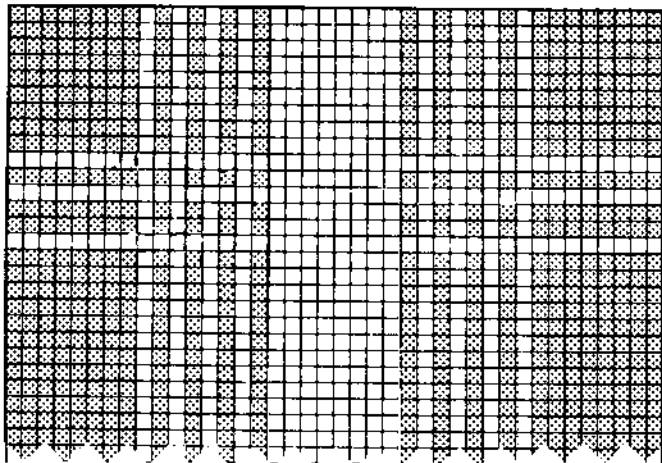


FIGURE 2

The advantage of this technique is that the loom can be dressed with a very long warp. The block design can be changed after each rug without rethreading. Of course, the same warp may be used when the design calls for shaft-switching during the weaving process.

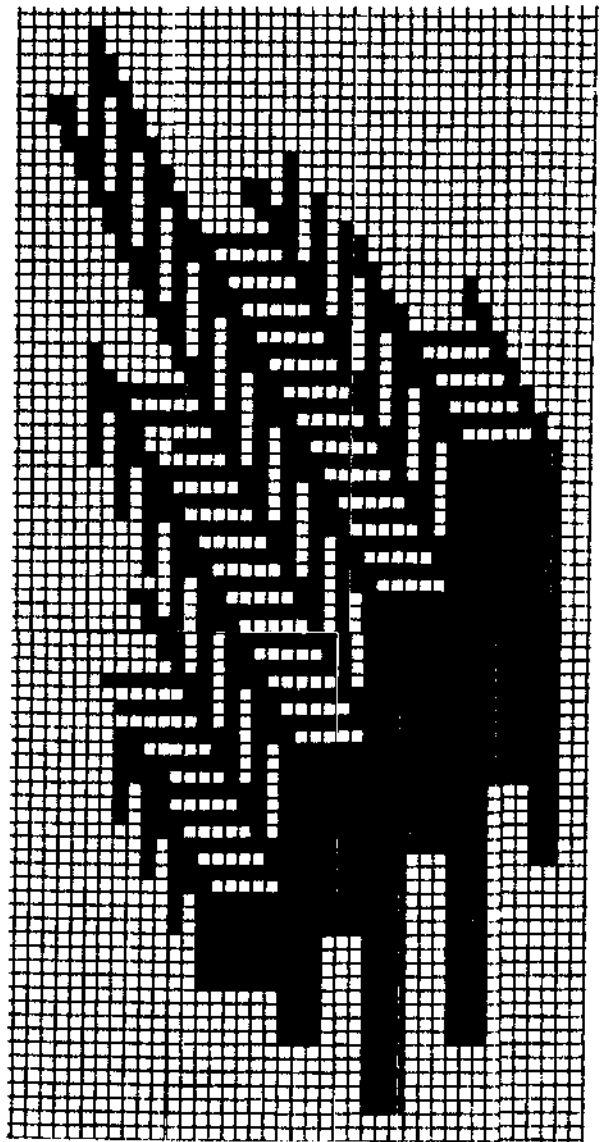
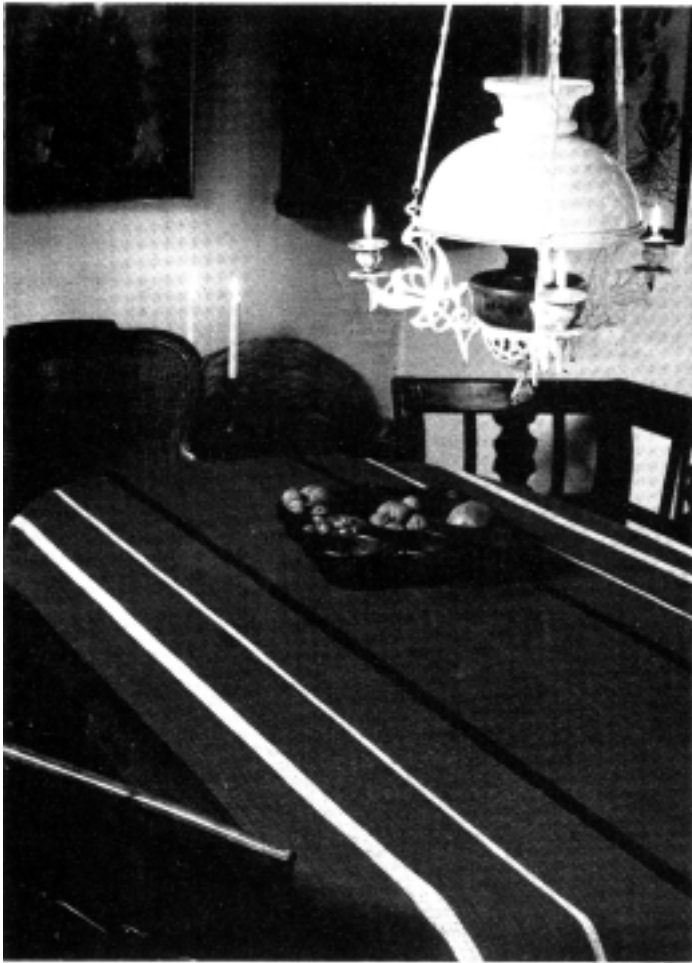


FIGURE 3

The second example (Plate 2) is a tapestry, 32" (81.3 cm) wide with a 10/6 linen warp sett at 5 epi (20/10 cm). The threading is as in Fig. 1 with 53 units, thus 53 floating warp ends. Fig. 3 shows the design graphed out on graph paper 53 squares wide.

The wefts are 2½/2 tapestry worsted and single spun Icelandic wool.





# NUTMEG TABLECLOTH

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This tablecloth is a rustic fabric of which the fibers are cotton and linen. It is woven in an unbalanced warp twill ( $\frac{3}{1}$ ) and a broken treadling. It may be woven in narrow strips on a small loom and sewn lengthwise with the brown strip either in the center or at the edges as in the cloth illustrated here.

**WARP:** 22/2 cottolin (Borgs), colors: dk. brown (224), nutmeg (223), cinnamon (321), and unbleached. The warp is used **twofold**. A double thread will be considered as **one** warp end (working end).

**WEFT:** Linen tow yarn (Borgs); color: nutmeg (594).

**SETT:** 18 (70/10 cm) working ends per inch. In a 12 dent reed they can be sleyed two, one, two, one, etc. In a 35/10 cm reed, sley two working ends per dent.

**WIDTH IN THE REED:** 24" (61.4 cm).

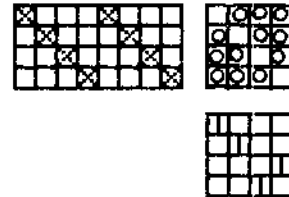
**LENGTH OF THE WARP:** 11 yards (10 m).

**COLOR ORDER OF THE WARP:**

dk. brown	80						16		total	96 double threads
nutmeg		16				77		60*	total	198 double threads
cinnamon			40		64			60	total	164 double threads
unbleached				16		6			total	22 double threads

\* 120 double threads, one of each color

**THREADING, TIE-UP AND TREADLING:**



**FINISHED WIDTH:** 22.5" (58 cm).

**YARN REQUIREMENT:**

**Warp:** 224: 0.350 kg.

223: 0.465 kg.

321: 0.510 kg.

unbleached: 0.090 kg.

**Weft:** 8/1 linen tow (594): 0.930 kg.

More than two panels may be sewn together for very large tablecloths. ■

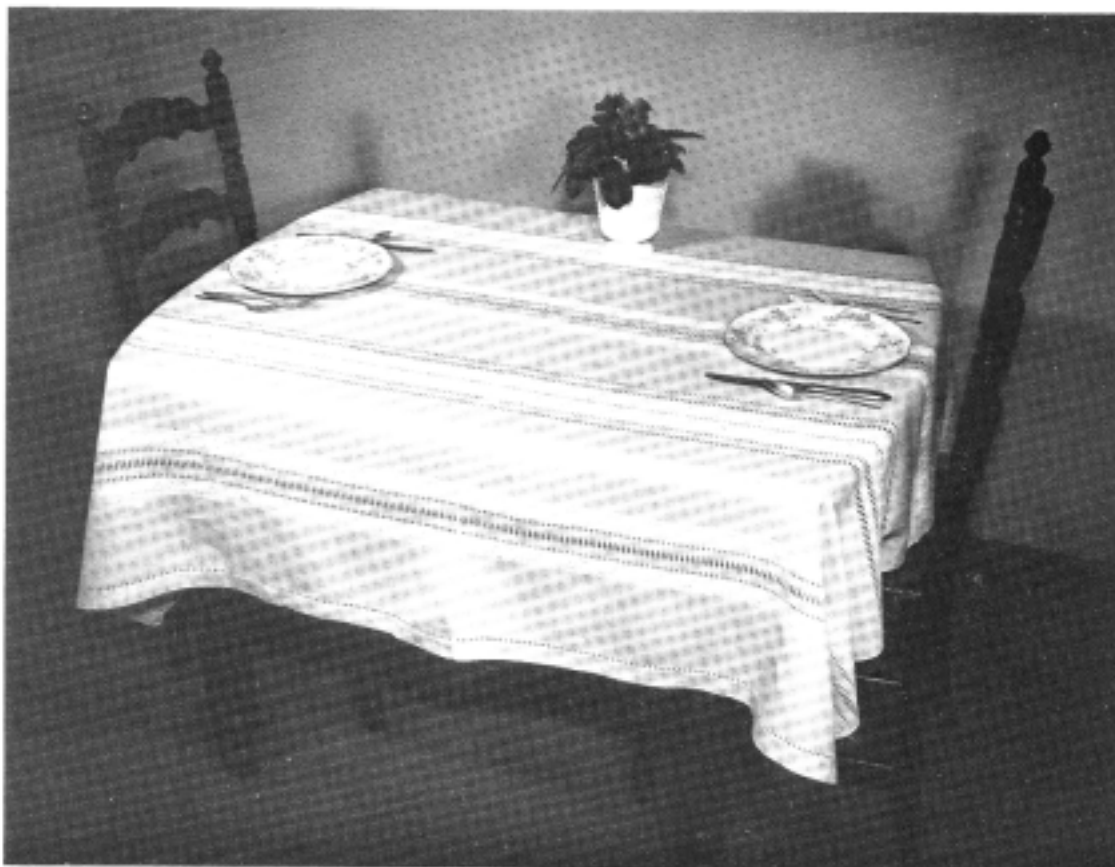


photo by Victor Hessler

## TABLECLOTH AND RUNNER DECORATED

Table linens that are going to be used for many years and that will be enjoyed as heirlooms are some of the favorite weaving projects of Ava Hessler. Ava, now living in Boulder, has been weaving since 1938 and has woven innumerable treasures to be used around the home.

### TABLECLOTH

This large tablecloth (95" X 62") is woven in two panels and has a lengthwise seam in the middle.

WARP: 20/2 cotton, white

WEFT:

**Tabby**—20/2 linen, natural

**Pattern**—cotton 4-strand floss, white

SETT: 30 epi (120/10 cm)

WIDTH IN THE REED: 47.6" (119 cm)

THREADING AND TIE-UP: See Fig. 1

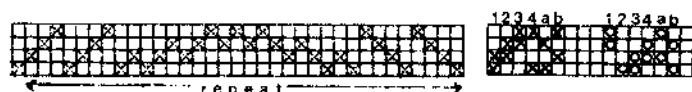


FIGURE 1

TOTAL NUMBER OF ENDS: 1429

The decorative bands in the cloth consist of overshoot patterning and pick-up leno.

For one row (2 picks) of leno, first open the shed for which the first warp thread on the right-hand side is up:

2/2 leno—pick up two lower threads and twist them with the upper two.

4/4 leno—pick up four lower threads and twist them with the upper four.

Insert a shed stick and weave from right to left. Then change the shed and weave plain from left to right.

### Description of one of the decorative borders

1 row of 2/2 leno (2 picks)

1 row of 4/4 leno (2 picks)

14 tabby picks

1 row of 4/4 leno

1 row of 2/2 leno

4 tabby picks

1 tabby pick with pattern weft

2 tabby picks

\* Treadle a (tabby), 1 (pattern), b (tabby), 2 (pattern), a (tabby), 3 (pattern), b (tabby), 4 (pattern).

2 tabby picks

Similar to \* except that each pattern treadle is repeated 4 times. Weave a tabby pick after each pattern pick.

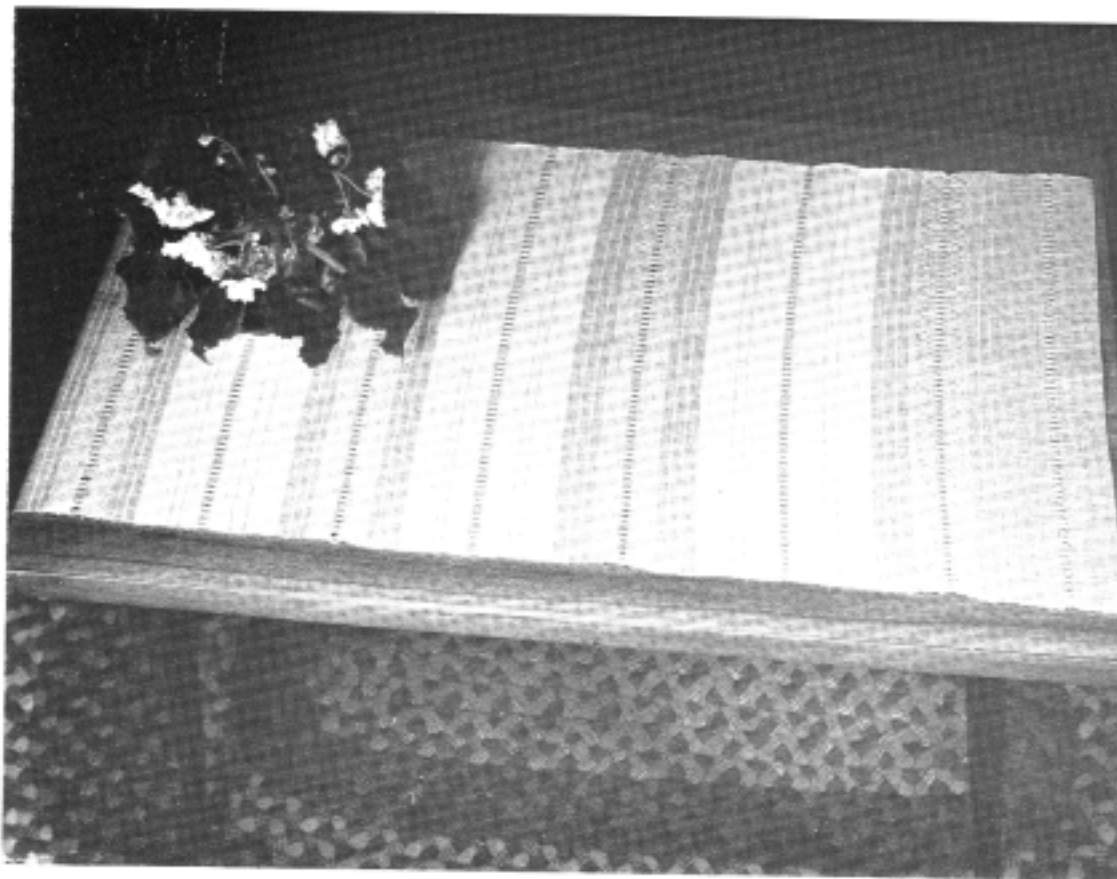


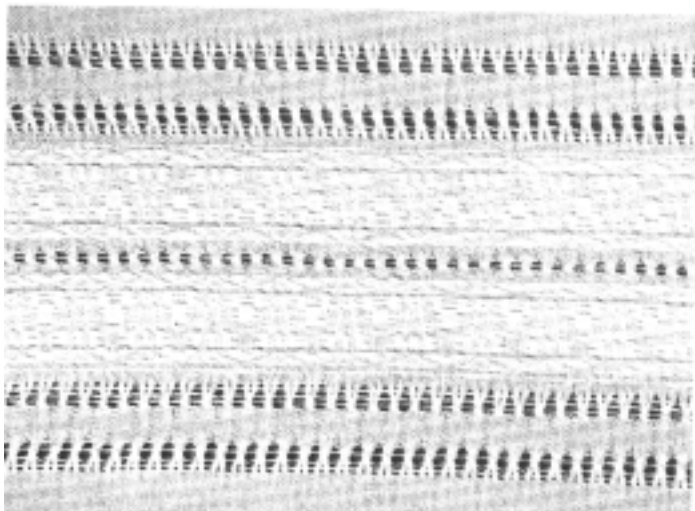
photo by Victor Hessler

## WITH OVERSHOT AND PICK-UP LENO

2 tabby picks  
Repeat \*  
6 tabby picks  
1 row of 4/4 leno

Reverse the entire sequence, taking note that now the pattern treadles will be read 4, 3, 2, 1.

Separate these decorative borders by bands of tabby.



### TABLE RUNNER

WARP: 20/2 linen, natural

WEFT:

**Tabby**—20/2 linen, natural; 20/2 linen, bleached

**Pattern**—4 strand floss, white

SETT: 30 epi (120/10 cm)

WIDTH IN THE REED: 15.9" (39.75 cm)

THREADING AND TIE-UP: See Fig. 1

Repeat the pattern 14 times and add 1 end to balance.

TOTAL NUMBER OF ENDS: 477

The runner alternates bands woven with natural linen and white linen. Each band has 4 single picks of the opposite color. In the middle of each band there is a row of 4/4 leno. In addition, overshoot patterning has been used to decorate the natural linen bands.

For the overshoot, treadle each pattern treadle 4 times. Weave these sheds with pattern weft but alternate each pattern pick with a tabby pick. After one row of 4/4 leno, reverse the pattern treadling. ■



# MOCK-LENO TABLECLOTH

This bright red tablecloth has a subdued striped pattern achieved through color and through a soft lacy texture. It was designed and woven by Ellen Champion.

The cloth is easy to care for (gentle cycle of washing machine, warm water) and after several washings it becomes so soft that it no longer requires pressing. However, the repeated washing and machine drying causes quite a bit of shrinkage and the dimensions given here are somewhat small for the 36" X 74" table for which the cloth was designed. It is shown here on a 28" X 60" table.

**WARP:** Linnay (Scott's Woolen Mills). This is a 50/50 linen-rayon blend that runs 1200 yards/lb.

3 lbs. tomato (warp and weft)

1 lb. tangerine

**WEFT:** Linnay, tomato

**THREADING, TIE-UP AND TREADLING:**



- means warp threads in the same dent
- ▲ means that a dent is skipped

**SELVEDGES:** Double 2 outer warp threads through the heddles and the reed.

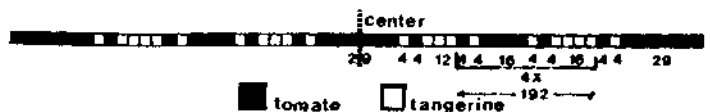
**SETT:** 12 epi (50/10 cm)

**WIDTH IN THE REED:** 45½" (110 cm) (547 dents)

**TOTAL NUMBER OF ENDS:** 527 + 4 selvedge ends.

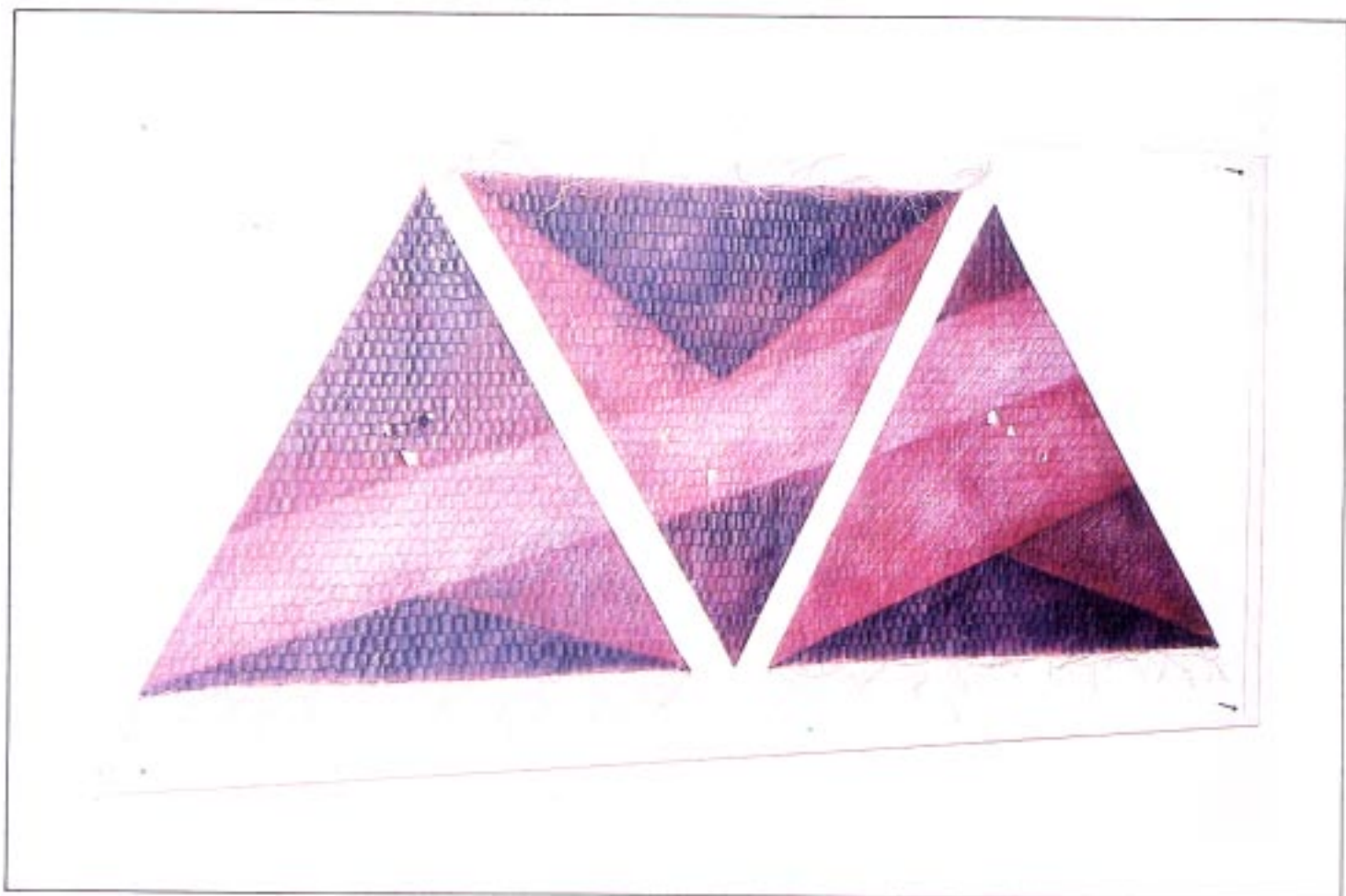
**LENGTH OF THE WARP:** 5 yards (4.57 m)

**COLOR AND PATTERN DISTRIBUTION:**



Dimensions on the loom: 45½" X 4 yards 3" (110 cm X 3.73 m)

Dimensions after the first washing and pressing: 43" X 4 yards 1" (104 cm X 3.68 m)



"Trinity", 28" X 54"

# WEAVING – DRAWING – PAINTING – PAPER

## A Profile of Lorelei Schott

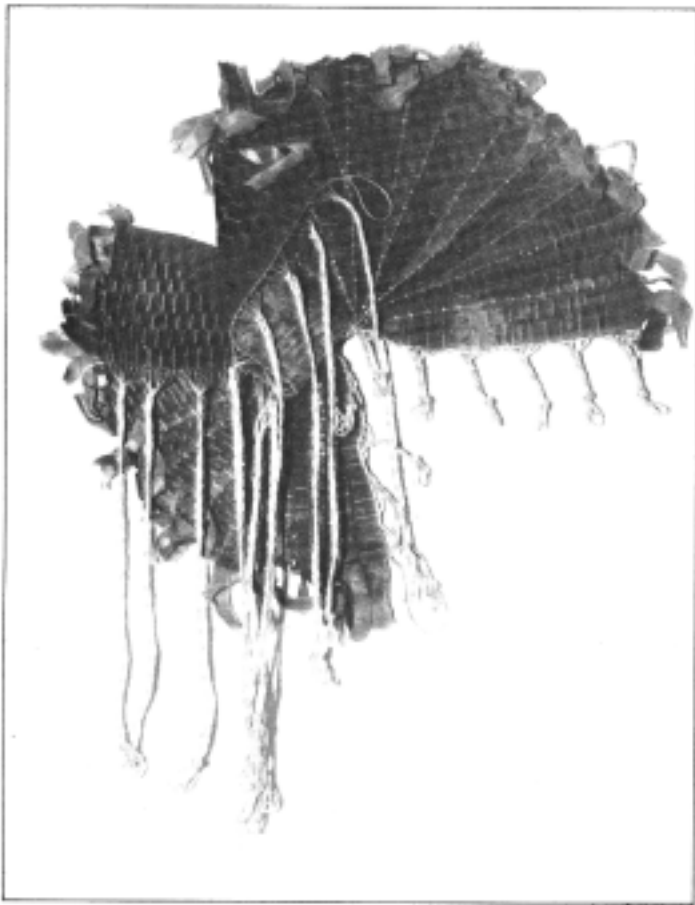
When I was growing up my family moved a great deal, and not being a person who made friends easily, I spent a considerable amount of time writing stories and drawing. My parents were always encouraging, and no matter how big the creative mess was I don't remember them complaining. Thus I began college planning to major in English (I wanted to be a journalist), but after a design course, which I took in my freshman year as an elective, decided to change my major to art! Seven years later after studying at Bethany College (Lindsborg Kansas), University of Illinois, and Wichita State University I received my BFA in painting with a minor in printmaking. During those seven years I also met and married my husband, DeLyle, and the first of our 3 girls was born. While we lived in Wichita I was able to complete several hours toward my MFA; unfortunately we moved to Florida before I finished.

In Florida I started to show my art work in juried shows and galleries; locally at first, then regionally. I mostly did

large canvases using acrylic paints with some collage techniques and some drawing on them. My fascination for space travel, which was becoming a reality in that era of the Apollo Space Program, influenced these paintings.

In 1969 we moved to Vestal, New York and for awhile I didn't do much with my art. There were now 2 small active girls and also some health problems. There were some times during that period of my life when I became discouraged and felt I wasn't growing as a person or an artist. But reflecting back upon those times I realize that actually I had been growing and my interest in fibers had begun to surface. Even though I didn't feel pleased with my painting at this time it was becoming increasingly more textural: I was incorporating unusually textured pieces of paper and cloth or even sand and dirt into my painting collages. Then, inspired by a visit to the annual New York State Craftsman show and a quilting workshop by Elsa Brown, I embarked upon a quilting and batiking

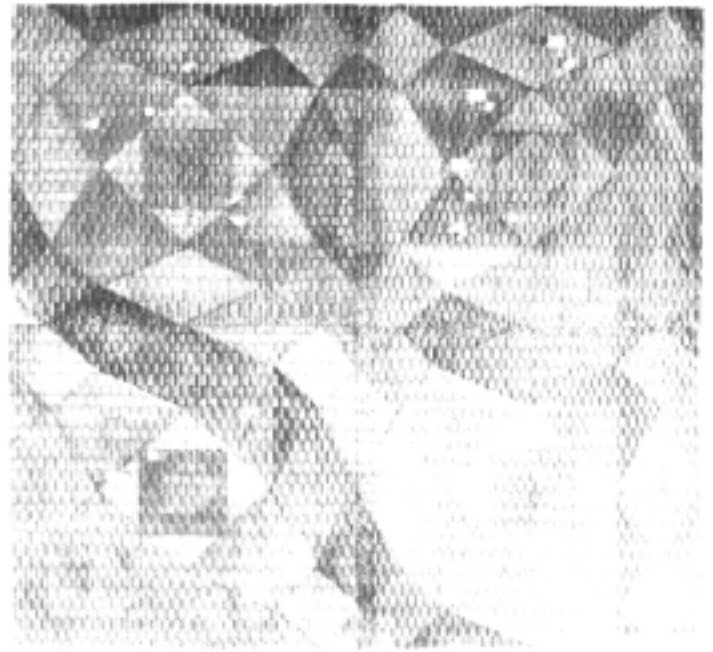




*"Lana", 18" X 18" X 6"*

binge that resulted in some small quilted, batiked velveteen pillows which I sold in a couple of small galleries. Then, in 1974 just prior to moving to Colorado, a friend who is a weaver talked me into taking a weaving class with her and I fell in love with the textural possibilities of the yarns.

In 1974 we came to Boulder and I joined the Boulder Handweavers' Guild hoping to learn more about weaving. I did, and continue to learn more all the time from this amazingly resourceful group of women! Since I didn't own a harness loom and was not sure that I wanted one, I decided to take a class from Clotilde Barrett on ethnic weaving. I realized then that I liked using a Navajo-style loom where I could see the whole piece as I worked, and also learned a lot about craftsmanship in Clotilde's class. For about three years I took several workshops in different aspects of fiber, ranging from ikat dying to papermaking, and also experimented at home with various fiber techniques. All were new and interesting to me but I didn't feel as comfortable with these traditional fiber techniques and was not as successful in using them as with my earlier paintings. However, I especially liked tapestry and it came the closest in feeling for me to painting. About this time I began doing a little drawing and painting again and began to think in terms of combining this somehow with the textural possibilities of weaving.

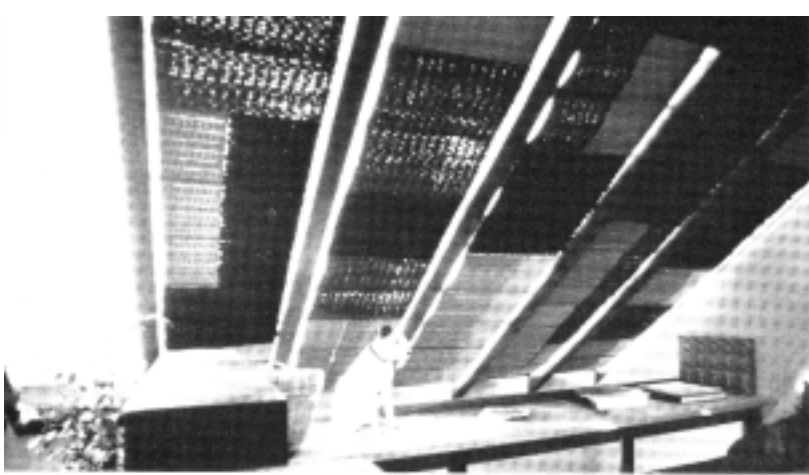


*"Tattered and Torn", 36" X 38"*

I don't know specifically what inspired me, though at this time I was becoming increasingly aware of the efforts of others within the fiber field, such as Joanne Mattera, Arturo Sandoval, Neda Al-Hilali, etc., to step over the boundaries that traditionally have separated art from craft. I became really excited about the possibilities of using fiber and fiber techniques in a new way to form my own personal statements. Thus my work has taken a new direction and at this point is largely experimental, mostly using papers and handmade papers with fiber techniques. Some of the pieces don't work but every once in a while one really works well and I become very excited when a piece equals or exceeds my expectations. A few of my experimental pieces have been shown lately and with an interested response; this makes me happy as I feel art is an experience, a form of communication and thus needs an audience. It doesn't matter if the response is negative or positive (art doesn't have to be "beautiful" in order to evoke some sort of response) as long as there is a response.

One of my immediate goals is to make some large woven paper pieces with the concept of paper as public art in mind. Also I am learning about making paper and using my handmade paper to do some smaller scale pieces. The biggest obstacle at this time is finding enough time to carry out all my experiments and ideas!

The textile pieces shown here are initially woven on a frame loom. The warp and sewing thread are linen. The weft is handmade Japanese paper, painted and torn into strips. The finishing includes additional painting, drawing, sometimes folding, and a protective coat of Liquitex medium. ■



1. Seven window panels for sloped roof windows, home of John and Annie Denver, Aspen, Colorado.



2. Window wall, home of Dick Sturgis, Aspen, Colorado

# HANDWOVEN TAPESTRIES BECOME PRACTICAL

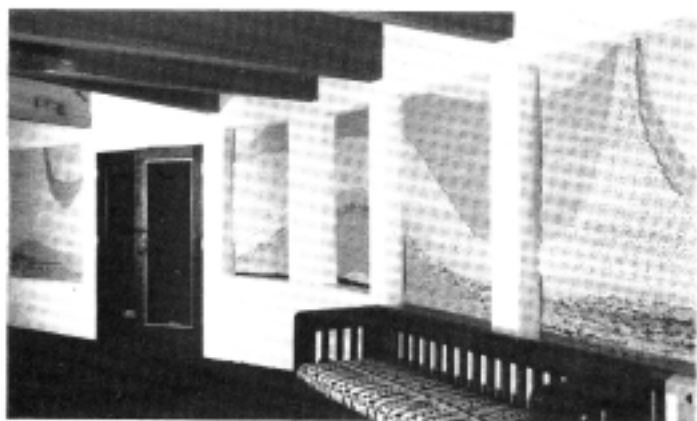
by Elaine P. Nixon

Throughout history weaving has always been appreciated as a practical, functional craft to which the maker has contributed artistic efforts to varying degrees. In today's era of industrialization, when the everyday need of woven articles has been taken over by machines, handmade products retain a great value for the many people who enjoy their sensitive creation and their beauty. Today, people look back at the artistic and functional qualities of the ancient tapestries on the walls of the stone castles and cannot separate the visual impact of these wallhangings from their acoustic and thermal insulating properties. It is therefore logical that people start to think of wallhangings as "movable insulation".

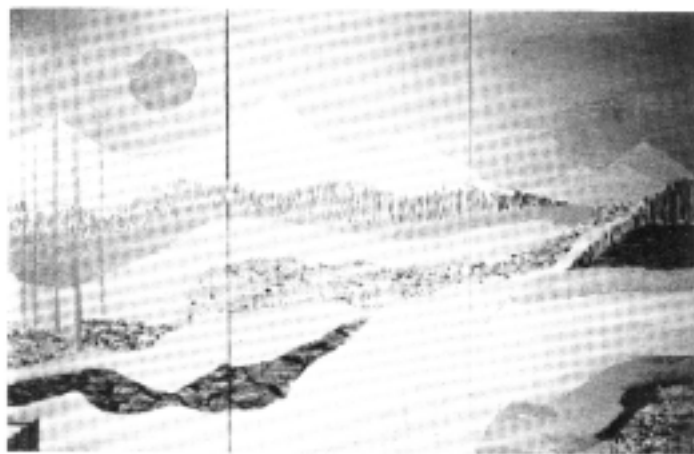
In 1975, Marilyn Miller, an interior decorator in Aspen, Colorado, my architect-husband Tom, and I became especially aware of problems connected with window covering as people wanted expansive views from their homes yet

had to avoid large energy sinks. We set out to find solutions to comments such as: "I don't like ordinary drapes", "I like tapestries but the windows take up just about all my wallspace", "I love lots of windows but I want to conserve energy".

Some of our first clients were John and Annie Denver (Photo 1). Their balcony den has seven 2' X 12' (61 cm X 3.65 m) windows which slope with the roof and the solar heat made this area uncomfortable. Yet, what a view of the Aspen area mountains! The panels which I designed drop down in folds below the window level so that this view can be preserved. The brightly colored (reds and purples) shades were woven in rug techniques with a lot of soumak. A tightly-woven commercial white cotton lining reflects the sun and helps protect the yarns.



4. Window shades "Movement" in the Patrick residence, Aspen, Colorado.



6. Sliding door covering, Hickman residence, Boulder, Colorado. The panels can handle rigid insulation material between the weaving and the lining.



3. "Interrupted Spectrum," window tapestries, vacation home of Ken and Jane Owen, Aspen, Colorado.



5. "Elation," Tapestries, home of Les and Sandy Coyle, Longmont Colorado.



7. Stationary window covering "Evergreen", Smith residence, Louisville, Colorado.

In photo 2, an inner wall, covered with suede cloth, lines the outer wall. I designed the thirteen window panels so that when they pull down they fall into a slot between the two walls.

Photo 3 is one of a set of window tapestries, "Interrupted Spectrum". The set coordinates the bedrooms and baths. Each unit is a variation of an abstract design with emphasis on one color for each room.

For the operation of these tapestry window coverings, three types of mechanisms are used.

Most panels rise by means of a modified Austrian shade mechanism. The resulting folds stack within the top 6" (15 cm) of the window. This mechanism is used in Photo 4. When possible, the panels begin several inches above the windows to leave the complete view of the window open, as in photo 5.

I had a commission to cover sliding glass doors in a bedroom. To solve that problem, I put handwoven panels in sliding door frames in place of screens and built a second set of tracks for them.

Photo 6 shows another sliding door covering. The three sliding doors in the living room had exquisite oak framing which could not be covered up. This called for another solution. Wood frames, reinforced with steel angles, became a large bi-fold door over two sections. When open, both windows are exposed. The third panel is hung on a conventional hinge.

At times window tapestries are installed stationary. The clients for Photo 7 wanted to preserve light coming into their living room window with a modicum of privacy. "Evergreen" is a tapestry of thin linen warp with linen, wool, and cotton wefts filling in the landscape shapes.





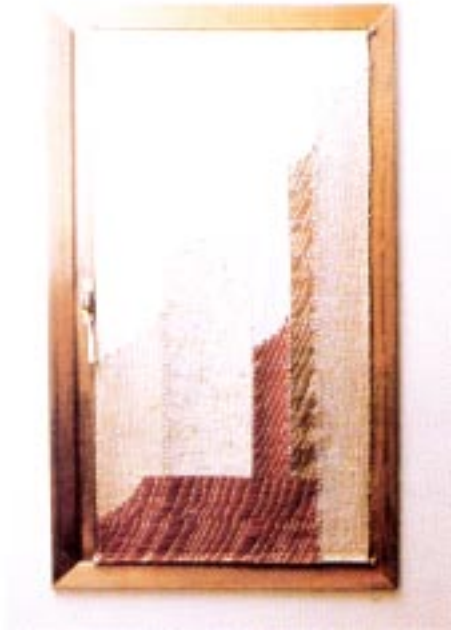
8. Master bedroom with window panels and bedspread to match, home of Ray and Dottie Imel, Boulder, Colorado.



9. Close-up, window in Imel residence.

10. The window panels are hinged together to form bi-fold doors.

11. Window panel, Imel residence.



The natural yarn tones change the overall effect from morning to night.

In 1980, I designed five window panels and bedspread for a master bedroom. Photos 8, 9, 10 and 11. A view of the jacuzzi deck and mountains, plus 5 foot high privacy was desired. Using the thin linen warp, the design for the window panels, with heavy wool wefts at the bottom, allows for sheeriness at the top and opaqueness below. Larger

areas of wool weft and a lining gave the bedspread its necessary weight. Shaped pieces of lining for the window panels added another dimension to the design. The mechanism for the window shown is the bi-fold door solution.

Solving window problems and adding tapestries to these homes and others has been a challenging and rewarding part of my weaving career.

Handwoven tapestries can be practical. ■

# INSULATING WINDOW COVERING

by Mary Jane Svenson



When our family moved into a new passive solar home on Chautauqua Lake, New York, the large south facing windows offered a real challenge to a handweaver.

Although triple glazed, the 79" X 99" (2 X 2.5 m) windows are still the greatest source of heat loss in the home. The average solar house with double glazed windows loses 50% of its heat through its south windows at night (a well designed solar house has no north facing windows). So, the first criterion for our window coverings became: preventing heat loss.

In order to prevent heat loss, the window covering has to have bulk for insulation, and a vapor barrier to prevent humidity from passing through. It has to be sealed all around the window so that the air cannot circulate in and out, cooling on the window and returning to the room.

A second criterion was: designing a window covering which would complement the decor of the house. The interior of the house has many natural colors, textures and materials. The decor includes red brick floor, light pine floor, ceiling and trim, natural linen upholstery, and brown cotton corduroy upholstery as well as handwoven rugs and pillows.

A third criterion was: provide a window covering which would not cover the window in any way during the day. This was for both practical and aesthetic reasons. The south windows are the major source of heat gain during the day. Reducing the amount of glass available to admit sun rays would be counterproductive. Aesthetically, the windows provide a picturesque view of the gardens and woods against the backdrop of Chautauqua Lake, adding another natural dimension to the house.



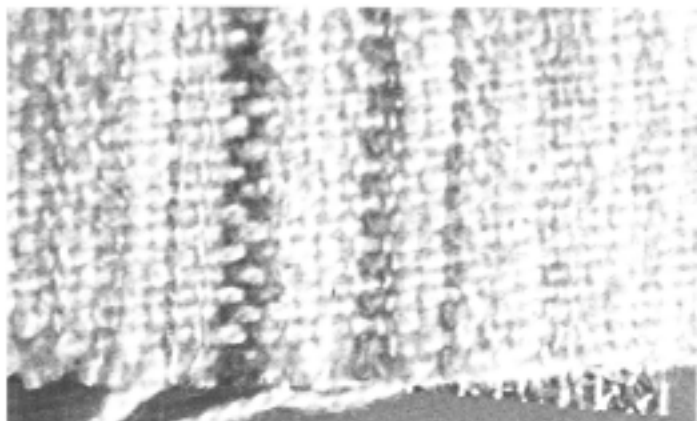
In order to meet all these requirements I designed a Roman shade made with handwoven fabric and a commercial lining with special insulating properties. The outer fabric was in plain weave to blend with all the existing textures in the room. Colors from the interior of the house were used in the warp, i.e. red, yellow, beige, brown, tan and off-white.

**WARP:** Ironstone upholstery yarns in a variety of weights, textures and colors. These yarns are rayon, linen silk blends. Some off-white 2 ply rug wool was used; the same as for the weft.

**WIDTH IN THE REED:** 33" (84 cm) (three panels were needed).

**SETT:** 12 epi (50/10) in a 5 dent (20/10 cm) reed. The larger reed was needed as some of the yarns were quite nubby. The finest ones were sleyed 3 to a dent, the others 2 to a dent.

**WEFT:** 2 ply rug wool, off-white from Ironstone. The yarn was washed before weaving to soften it and make it fluffy.



"Astrolon" was used as a lining. "Astrolon" is the manufacturer's trade name for a foil-nylon fabric that acts both as a vapor barrier and insulator by trapping air between itself and the glass. It also has a reflective surface which reflects heat back into the room. There are other foil-nylon fabrics on the market; this one is also treated with fire retardant, an important feature for window coverings. The "Astrolon" also will protect the woven fabric from any sun damage. This shade should theoretically cut heat loss through the windows 65-75%.

### FINISHING

The three panels were sewn together by hand. The "Astrolon" was cut in two panels to fit as a lining.

A small size Roman shade can be constructed, raised and lowered as per the article in *The Weaver's Journal*, July 1978, Volume 1, Issue 9, page 32. Due to the size of this shade, 90" X 98" (229 X 250 cm), these conventional methods of making Roman shades would not work.

A bar was mounted above the window. Four pulleys were mounted on the bar to afford ease in raising and lowering

the shade. The usual method would require rings and cords every 6"-10" (15-25 cm) so that the shade would fold evenly when raised. With four pulleys, only four cords could be used across the width of the shade. In order to keep the folds straight and aid in movement of the shade, fiberglass rods were used at 18" (46 cm) intervals. Horizontal pockets were sewn between the fabric and the "Astrolon". The rods were inserted into the pockets and four rows of rings were sewn around the rods. (See Fig. 1). Drapery cord was then threaded through the rings. A combination roller clamp is used at the edge of the bar to guide the cords and hold the shade in any position when up.

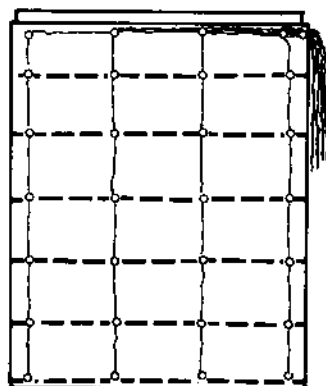


FIGURE 1

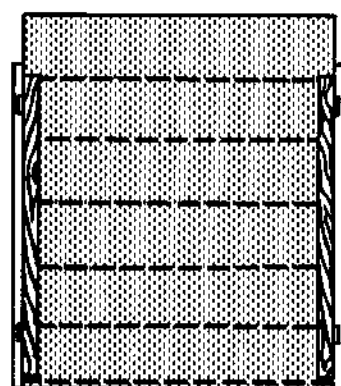
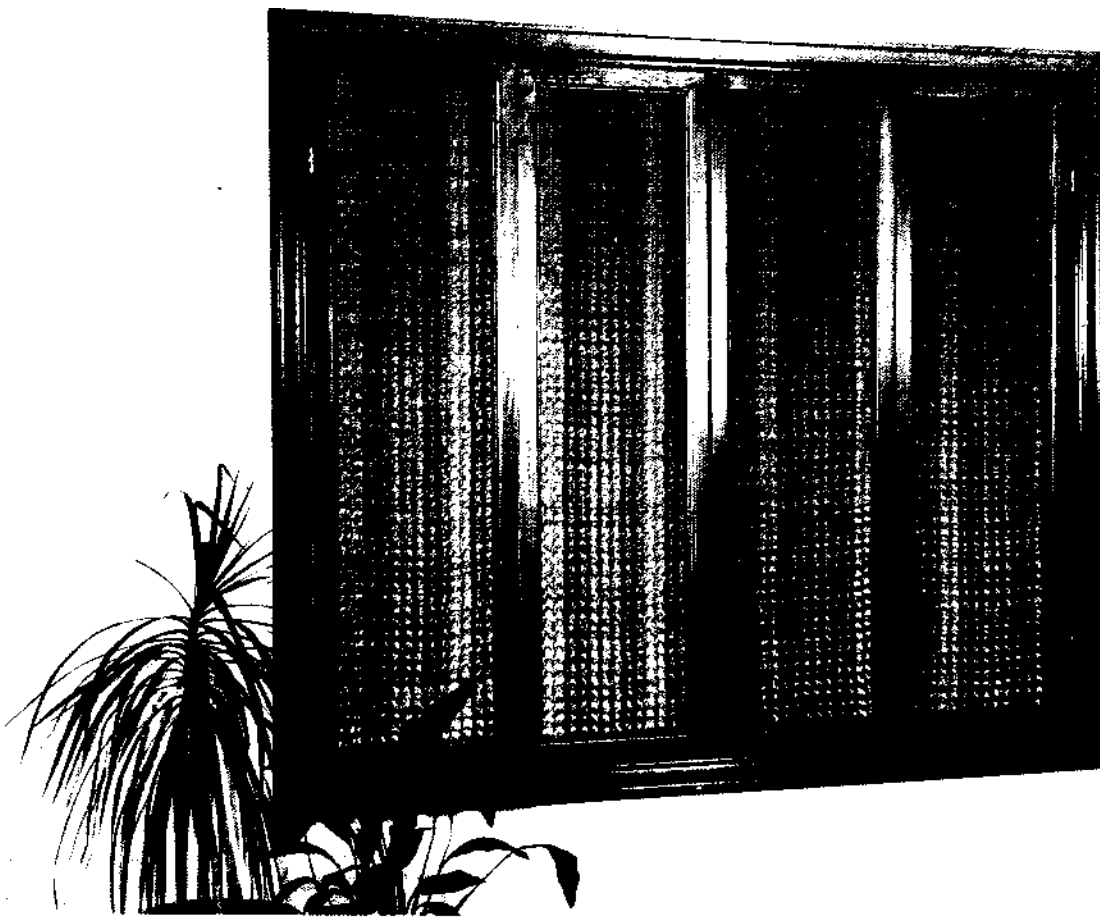


FIGURE 2

In order to keep the air trapped between shade and window, the shade is sealed on all sides. The sides of the shade are sealed by a molding attached to the existing casing with spring hinges. Thus when the shade is down it is held tight on each side. (See Fig. 2). On the bottom the fiberglass rod used in the shade tucks under the window casing.



During the day the shade folds softly at the top of the window completely above the glass. When lowered at night the shade seals off the cold glass and prevents constant cooling of air circulating onto the glass and into the room. The woven fabric gives a warmth to the room, blending nicely with the existing textures and furnishings in the room. Thus the shade's warmth is both real and decorative, meeting all the needs of a thermal shade and all of the personal criteria. ■



# INSULATING HANDWOVEN SHUTTERS

Shutters really help to keep out the cold. Here only the frames of the shutter are wood. Inside are lined woven panels. The cloth is done in waffle weave. This highly textured weave traps a lot of air which increases the insulating features of the shutters. Its loosely woven structure lets a lot of daylight penetrate. There are two shutter pairs, each having two panels. The shutters fold and can be swung flat against the wall leaving the entire window exposed.

## THE SHUTTER FRAMES

The moulding was custom made by a carpenter using the profile shown in Fig. 1. Then it was cut to size, mitered and assembled into frames. The lined woven panels were stapled inside the frame. (See Fig. 1)

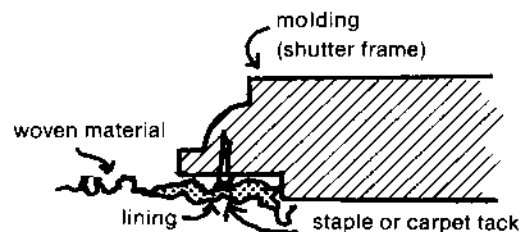


FIGURE 1

The four hinges used to put the frames together and the four special hinges which attach the shutters to the window frame are marketed as "shutter hardware".

Fig. 2 pictures the right-hand shutter set when one looks in through the window from the outside of the house. It shows how the hinges are placed.

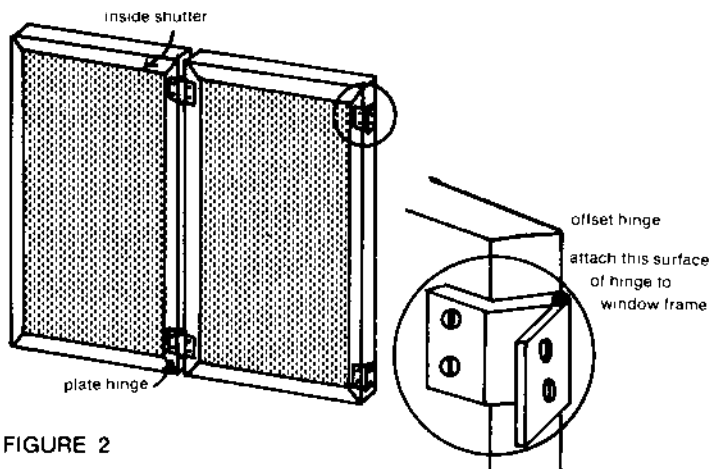


FIGURE 2

### THE WOVEN FABRIC

**WARP:** 6½/2 wool (Borgs KVAL -SN-2). Colors: rust, tan, dark brown, light brown

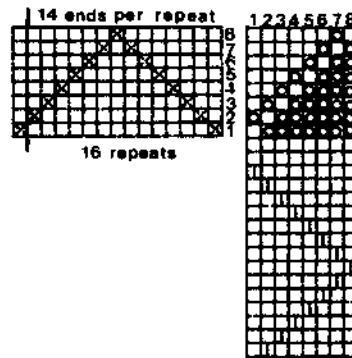
**WEFT:** Same as warp; color: tan.

**SETT:** 15 epi (60/10 cm)

**WIDTH IN THE REED:** 14.9" (38 cm).

**LENGTH OF THE WARP:** 10½ yards or 9.6 meters (for 6 panels).

### THREADING, TIE-UP AND TREADLING:



### COLOR ORDER OF THE WARP:

light brown				42			total = 42 ends
dark brown			28				total = 28 ends
tan		28				56	total = 84 ends
rust	42 +				28		total = 71 ends

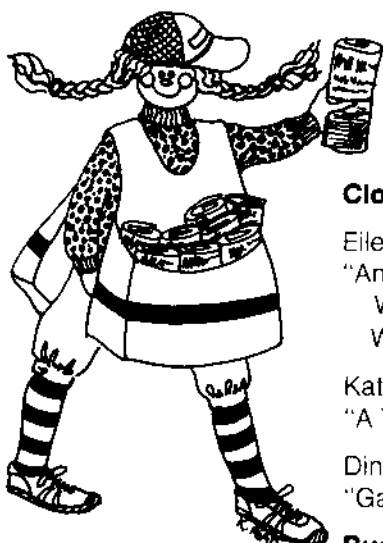
**PICKS PER INCH:** 15 (60/10 cm).

Note that there was quite a bit of take-up with this weave. If the width and the length of the panels are critical, one should sample the weave first.

The take-up of this fabric was approximately ¾" (9 cm) in width and 6" (15 cm) per yard (92 cm) of length.

## READ ABOUT THE PRIZE WINNERS OF THE WEAVER'S JOURNAL GREAT COMPETITION FOR WEAVERS

Fifty-five articles on successful projects were submitted in the following categories: Household Furnishings 11, Clothing 28, Handspun-Handwoven 12, Rugs 3, Miscellaneous 1. The winners are listed with the title of their articles and the date of publication in *The Weaver's Journal*.



### Clothing

Eileen O'Connor, Seattle, WA  
"An African Strip-Cloth Shirt—  
Without The Strips"  
Winter '81-82

Katherine Sylvan, Kennewick, WA  
"A Tale of a Talis" Summer '81

Dini Moes, Peterborough, Canada  
"Gala Rain Coat" Winter '81-82

### Rugs

Carrie Rogers, Columbia, MO  
"The Story of My Dining Room Rug"  
Spring '82

### Household Furnishings

Dorothy Smith, Houston, TX  
"Different But Related" Summer '82

Ann Wennerstrom, Princeton, NJ, Princeton  
Weavers' Guild  
"Weaving A City Skyline" Summer '81

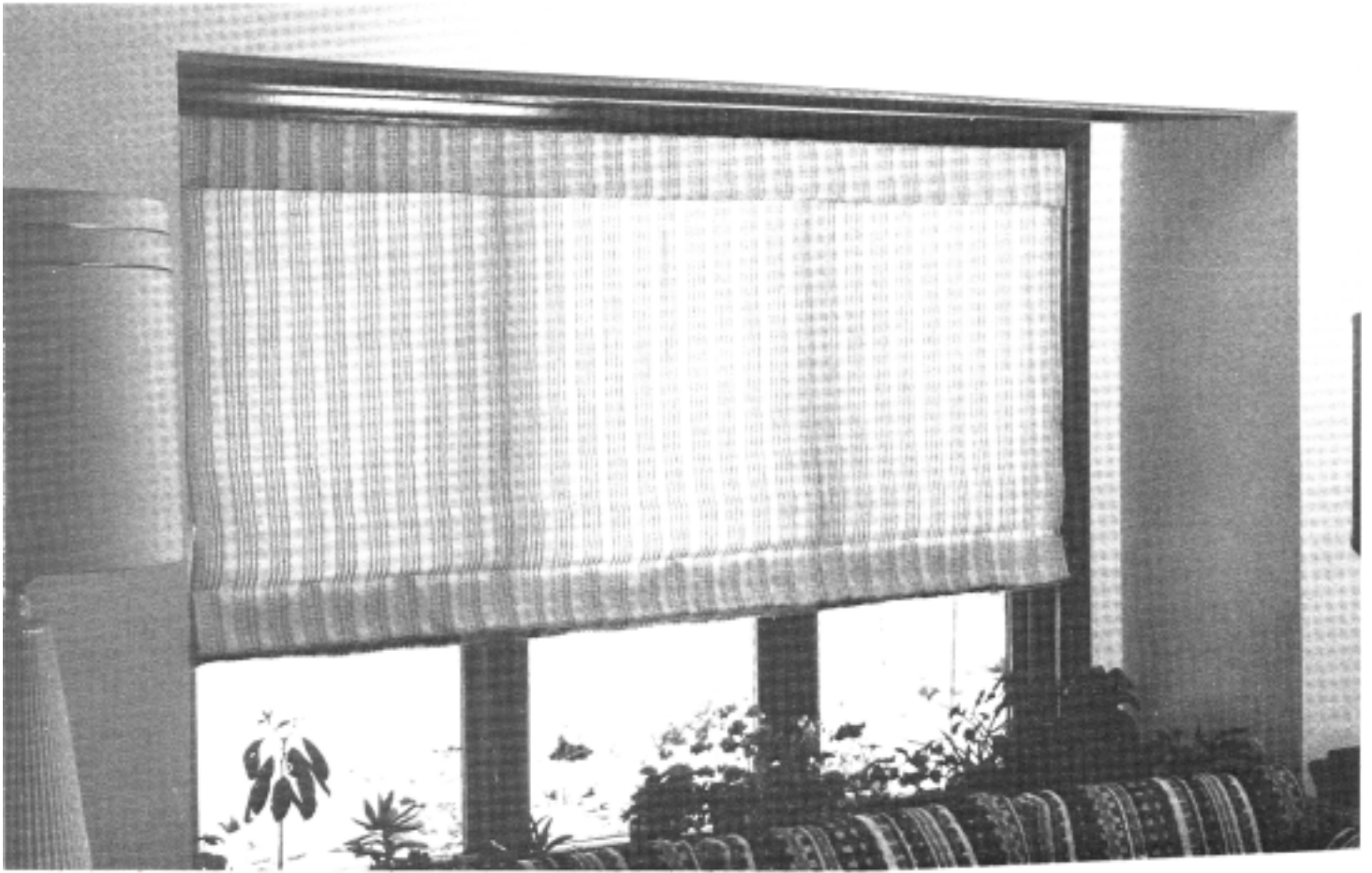
Mary Jane Svenson, Bemis Point, NY, Chautauqua  
County Weavers Guild  
"Insulating Window Covering" Summer '81

### Handspun - Handwoven

Peg Rasmussen, Glen Ellyn, NY, North Shore  
Weaver's Guild  
"Upholstered Chair" Fall '81

Edna Maki Kniskern, Charleston, IL  
"A Lacy Triangular Stole of Handspun Wool"  
Fall '81

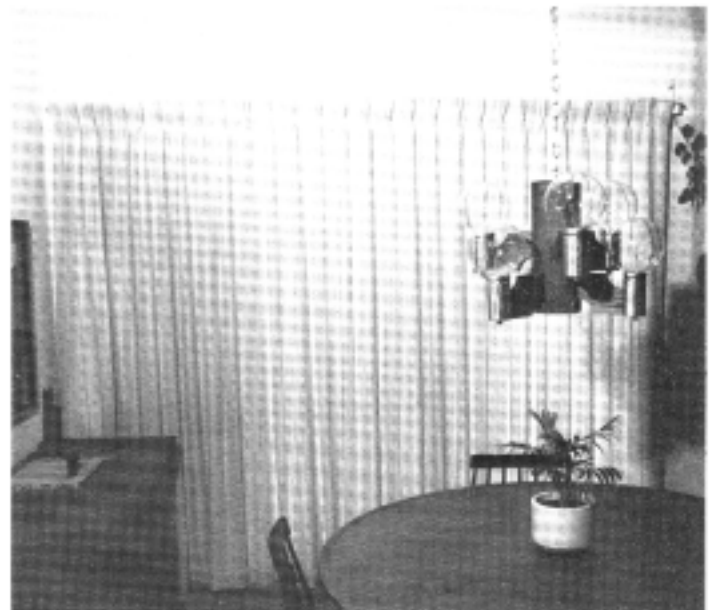
Joan Bouaz Koster, Whitney Point, NY,  
Lamb to Loom Weaving Guild  
"The Tagari: A Greek Saddlebag of Handspun  
Wools" Fall '81



# ROMAN SHADES AND DRAW DRAPERIES

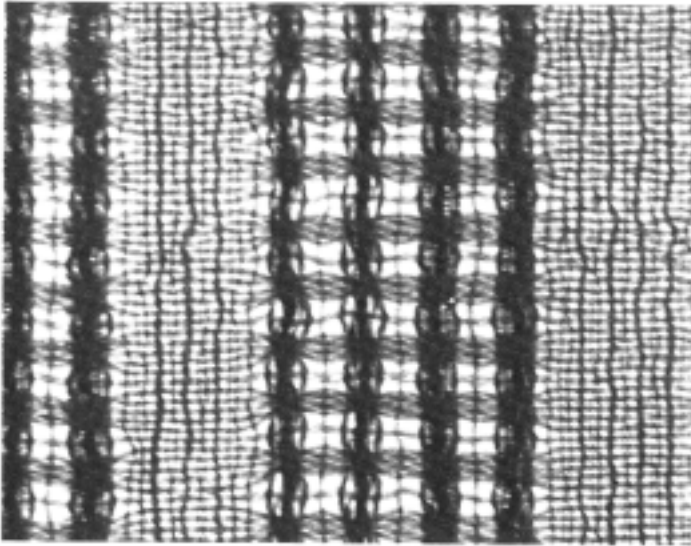
## MOCK-LENO

The floor plans of contemporary houses tend to create large spaces with several types of windows that can all be seen at once. The problem the weaver has to face when making window coverings for such a home is to design a cloth that is equally suited for Roman shades as it is for draw drapes. The mock-leno drapery fabric designed and woven by Maxine Wendler lends itself well to these functions when the fabric is lined and can also be used as a sheer curtain or drape when it is left unlined.



**WARP:**

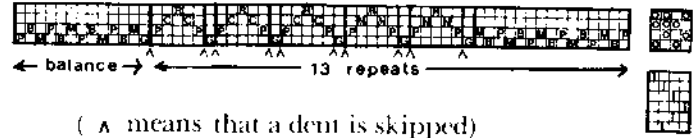
- P-5/2 perle cotton (3 lbs or 1.34 kg), (Lily art. 114), white
- B-A very fine rayon or synthetic mill end, small amount, beige
- M-20/2 mercerized cotton (1 lb or 454 g), (Lily art 214), white
- R-3/2 perle cotton (2 lb or 908 g), (Lily art 607), light rust
- C-8-cut rayon chenille (2 lbs.), (Robin and Russ)
- N-Fine single, slightly textured natural wool (2 lbs)
- G-Fine 2 ply wood worsted (1 lb)



Note that the chenille, the 3/2 perle cotton and the 5/2 perle cotton are the heaviest yarns in this fabric. All other yarns are finer. Ranking the warp yarns in order of their weight we have C, R, P, N, G, B, M.

**WEFT:** 3 ply worsted (7 lbs or 3.12 kg) (Oregon Worsted Co. Nehalem), cream white.

**THREADING, TIE-UP AND TREADLING:**



( A means that a dent is skipped)

**SETT:** 15 epi (60/10 cm)

**WIDTH IN THE REED:** 40" (100 cm)

**LENGTH OF THE WARP:** 32 yards (29.3 m)

The fabric shrank 10% during dry cleaning.

For the construction of Roman shades, see *The Weaver's Journal* III:1, pp. 32-34.

**Note:** If two beams are available it is desirable to beam the warp of the tabby stripes and the lace stripes on separate beams.

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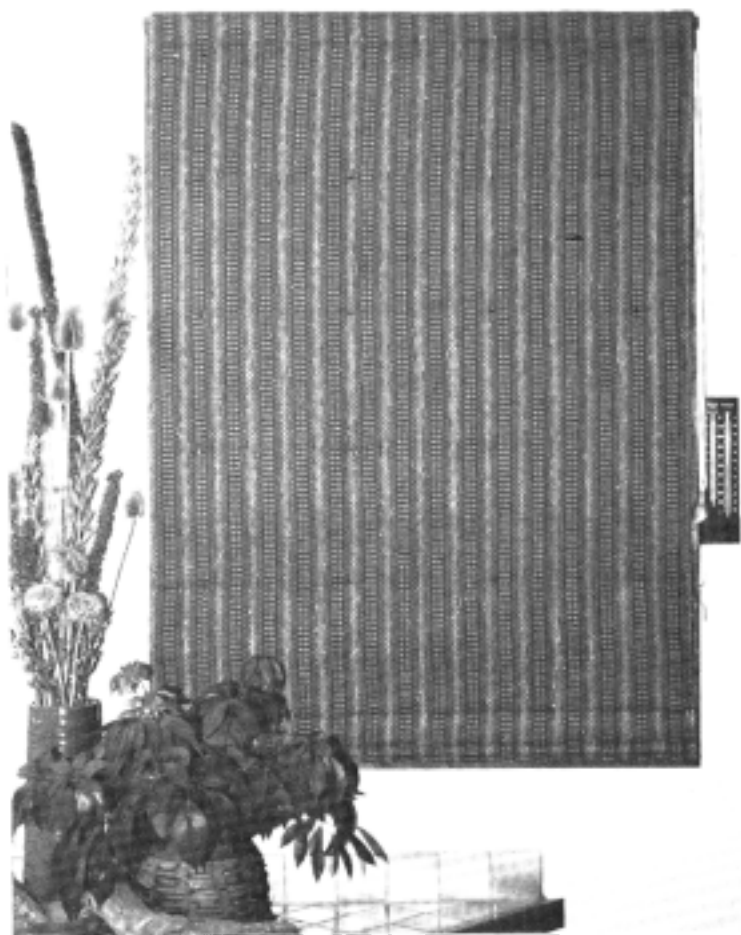
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photos by Ellen Champion



# INSULATED ROMAN SHADE

## DOUP LENO

by Ellen Champion

A new solar home is the inspiration for many weaving projects to come. One of our first needs was for an insulated window covering for a north-facing bathroom window. After finding an insulated lining called **Warm Window\***, a fabric was woven for the interior surface, and a Roman Shade was made by combining the two. When installed with a magnetic tape edge seal, to reduce air flow to a minimum, the R-factor is over R-9 with a double pane glass window, R-7.69 on a single pane window.

**Warm Window** insulation is a lightweight multiple layer quilted fabric. The manufacturer describes the layers from interior to exterior as:

1. An interior cover fabric of your choice.
2. A layer of metallized Mylar to reflect heat back into your room, punched with polyester for trapping air.
3. A vapor barrier of impervious polyethylene to reduce or prevent condensation and trap a layer of air between the shade and your window.
4. A layer of high density needlepunched Dacron II for maximum insulating dead air spaces.
5. A patented moisture and mildew resistant exterior layer of thermal suede fabric.

The shade's airtight edge seal is achieved by affixing an adhesive backed magnetic tape to the edge of the window frame at each side. A second magnetic strip is adhered to the inside of the shade. A steel rod weights down the bottom edge of the shade.

The yarn chosen to weave the Roman Shade interior surface was Alternative I and II, 70% Verel and 30% viscose. This fiber is machine washable and the color selection is good. A co-ordinated shower curtain was also woven, two widths wide. This is used with a clear plastic liner.

For a semi-lacy look, a doup leno weave was designed, based on one of the samples shown in "Doup Leno" *The Weaver's Journal*, Issue 10, October 1978.

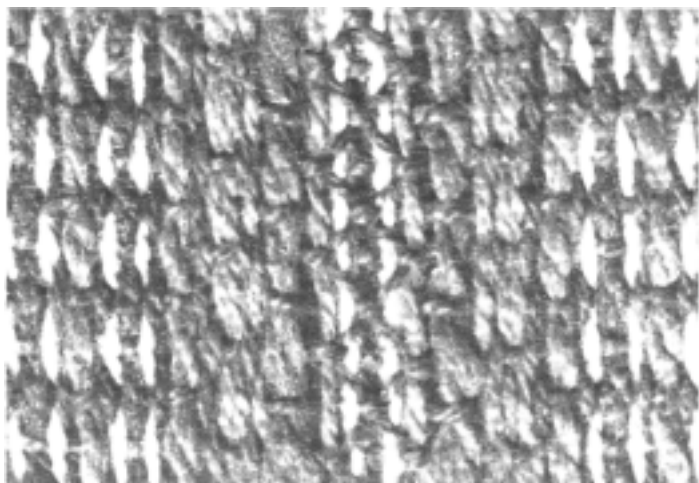
WARP: Alternative I and II, several colors

WEFT: Alternative I, rust, 6 shots per inch (24/10 cm)

REED: 12 dent (50/10 cm)

SI.EY: See Fig. 1.

WIDTH IN REED: 40" (101 cm) 652 threads + 2 selvedge threads



**THREADING AND TIE-UP:** See Fig. 1. The doups are attached to shaft 1. The crossings threads are on shaft 4. The standing threads are on shafts 2 and 3.

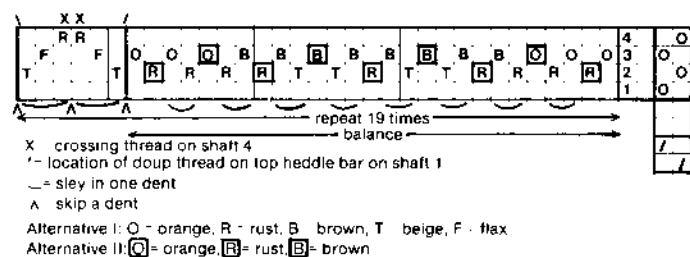


FIGURE 1.

The doups pull the crossing thread across under the T and F threads. The crossing threads always weave on top. See Fig 2 and 3. Because of this, the take-up is much greater with the crossing thread than with the rest of the warp. The crossing threads were not beamed with the rest of the warp, but tied and wound on a weighted bar, hanging behind the warp beam. A shed stick was used to obtain a clear shed during the weaving.

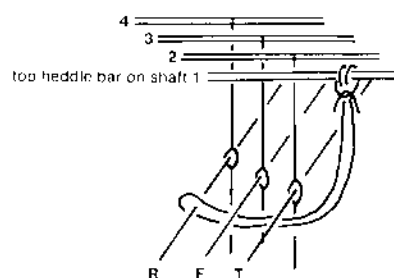


FIGURE 2. cotton doup thread looped around crossing thread

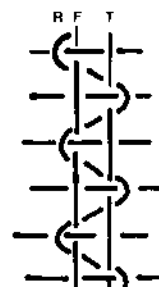


FIGURE 3. path of the crossing thread R under threads F and T

Finishing consisted of machine stitching the ends of the fabric and then machine washing and drying. Take-up and shrinkage was about 5% from the tightly stretched fabric as woven. The under side of the fabric was chosen for the right side because the design created by the pairs of crossing threads was more prominent.

\*Warm Window can be purchased from Windows, Ltd., P.O. Box 983, Evergreen, CO, 80439

# SATIN AND LONG-EYED HEDDLES

by Janet A. Hoskins\* and W.D. Hoskins\*\*

Satins are such simply structured weaves and can be used to create such subtly textured surfaces that it is well worth examining the structural aspects of these weaves to determine if it is possible to reduce the number of shafts required to weave them. Traditionally, the most elementary satin has required five shafts, an awkward value in view of the great number of four shaft looms in use, and the "most generally used [and in] some respects... the best of all satins"<sup>1</sup>, uses eight shafts.

A variety of articles have been written which discuss the use of long-eyed heddles to increase the pattern capability of any loom. Mary Atwater<sup>2</sup> refers to this technique as the English method of weaving, however, Luther Hooper<sup>3</sup> indicates that the technique originated in Asia but was practised in England from the eleventh century. Diane

Fabeck has established in her article "Long-Eyed Heddles and Rising Shed Looms"<sup>4</sup> that for a rising shed jack loom, long-eyed heddles can be used to facilitate the weaving of a "five-shaft" satin on a four-shaft loom. Trial and error was used to determine the threading, treadling and tie-up since no systematic algorithm existed for determining these components of the satin weave structure, when double threading on long-eyed heddles was to be used. The ensuing discussion illustrates a simple method of obtaining the threading, treadling and tie-up sequences for any satin weave, using a double threaded warp with long-eyed heddles on a rising shed jack loom.

\* Dept. of Clothing and Textiles, University of Manitoba

\*\* Dept. of Computer Science, University of Manitoba

## Technique for Deriving the Threading, Treadling and Tie-Up

The number of double threaded satins possible on a given number of shafts is determined by the number of different combinations of two shafts which can be formed. In mathematical terms, this is expressed as the binomial coefficient  $\binom{n}{2}$ , where n is the number of shafts, or  $\frac{n!}{(n-2)!2!}$ . Clearly for four shafts ( $\frac{4 \times 3 \times 2}{2 \times 2} = 6$ ), six combinations of two shafts are possible, for five ( $\frac{5 \times 4 \times 3 \times 2}{3 \times 2 \times 2} = 10$ ), ten are possible and 120 combinations are possible on 16 shafts. Yes, this does mean that a 120 shaft satin could be woven on a 16-shaft loom! This would, however use 120 treadles (or 120 lags on a dobby loom) and have a 119 thread float. Since this is obviously not practical, or not necessarily even desirable, we will confine our examples to satins which would normally be woven on eight shafts or fewer.

### "5-Shaft" Satin on 4 Shafts

Since a satin is merely a form of re-arranged twill, an interim stage in deriving the threading, treadling and tie-up for a "5 shaft" satin can be the derivation of these sequences for a straight 4/1 twill.

The threading is written down so that it represents five distinct combinations of two harnesses threaded on a four-shaft loom.

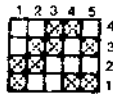


FIGURE 1

Each end must be threaded on two shafts as above, with the heddles being of the type described by Diane Fabeck<sup>5</sup>. The bottom of the eye of a long-eyed heddle for a rising shed loom is at the same level as for a regular heddle but the eye extends all the way to the heddle rod.

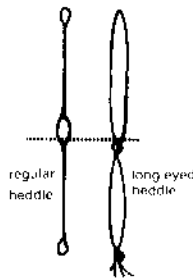


FIGURE 2

As five different sheds are required, we will use five treadles and the treadling sequence can be written simply as:

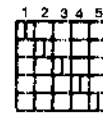


FIGURE 3

The tie-up is obtained by taking the complement of the threading matrix.

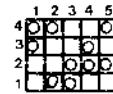


FIGURE 4

This process can be proved mathematically but a quick glance at the threading, treadling, tie-up and resulting drawdown indicates that the required structure has been achieved.

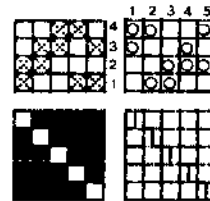


FIGURE 5

At this point, it is a simple matter to re-arrange the columns of the tie-up matrix so that a satin fabric is produced.

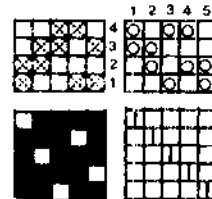


FIGURE 6

### "8-Shaft" Satin on 5 Shafts

Using exactly the same process as given in the previous example, the following "8-shaft" satin can be double threaded on 5 shafts. As before, we have an interim structure which is a straight 7/1 twill.

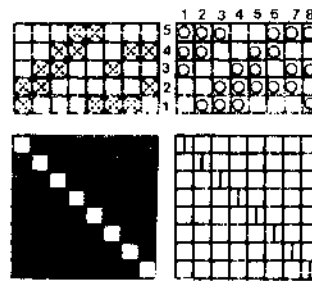


FIGURE 7 7/1 twill

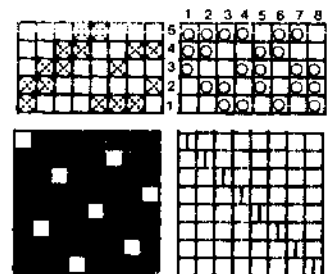


FIGURE 8 "8-shaft" satin

## References

1. Hooper, Luther, *Hand-Loom Weaving*, Pitman Publishing Limited; London 1979, p. 182.
2. Atwater, Mary Meigs, *The Shuttle-Craft Book of American Hand-Weaving*, revised edi-

tion, Macmillan Publishing Co., Inc., New York 1975; p. 248.

3. Hooper; p. 199.
4. Fabeck, Diane, Long-Eyed Heddles and Rising Shed Looms, *Interweave*, Vol. IV Number 4, Fall, 1979.
5. Ibid.

# MULTIPLE SHAFT WEAVING

## M's & O's WITH TWO FOUNDATION SHAFTS by Jane Evans

In our series on multiple shaft weaving we have, so far, only looked at twill and twill related weave structures. In the following articles we will take a look at some weaves that are very familiar to the 4-shaft weaver and study how these structures can be expanded if one has more than four shafts available.

The first article in this series deals with M's and O's and is contributed by Jane Evans, a weaver from Saskatchewan, Canada.

### TRADITIONAL 4-SHAFT M'S & O'S

Most weavers have tried the traditional 4-shaft weave called M's and O's. Its draft, Fig. 1, has two threading units:

A—a straight twill unit

B—a broken twill unit

Each of these units may be repeated in the threading to make a block.

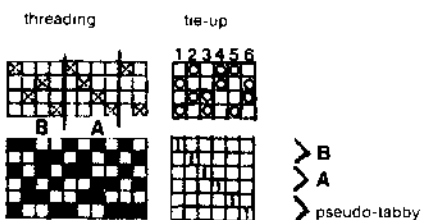


FIGURE 1

The units themselves can be expanded into wider units of 8 or more threads each. See Fig. 2.

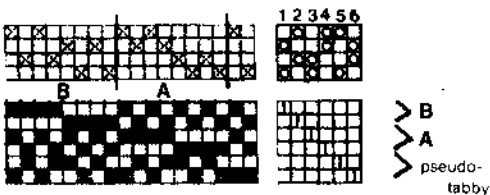


FIGURE 2

As seen in Fig. 1, one can also thread vertical stripes of plain weave. This threading unit (1,4) can be used for selvages, borders and lengthwise stripes.

In the weft direction, true tabby is impossible on this threading. There is a pseudo-tabby, woven by alternating reedles 5 and 6 (see Fig. 1) but this gives long floats in the stripes which have been threaded on (1,4). See Fig. 3.

While juggling of threading can produce further float variations,<sup>2,3,7</sup> they do not easily lend themselves to designing. In practical terms there are only two design blocks in traditional 4-shaft M's & O's.

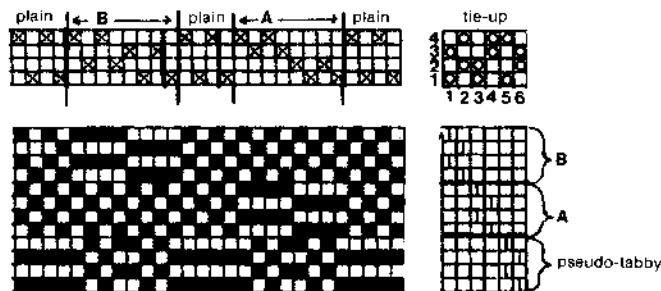
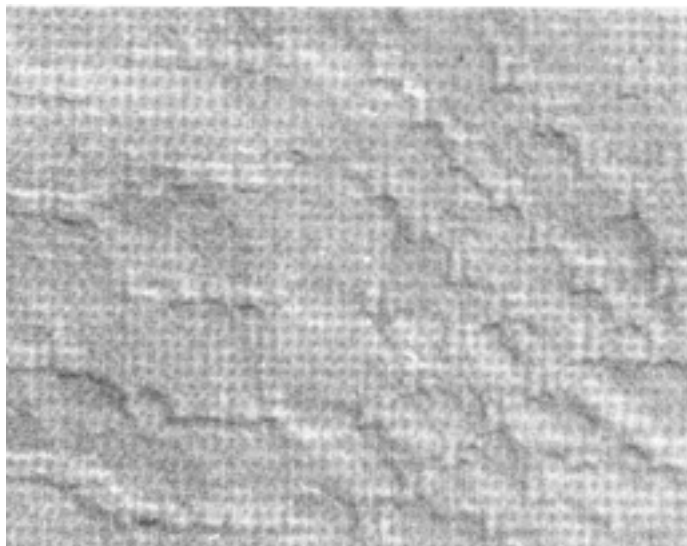


FIGURE 3

### DESIGNING IN M'S & O'S

The goal of "correct" M's & O's structure is areas of tabby (balanced plain weave) alternating with weft-face areas. These two structures interchange to create patterns via texture. The light and shadow of tabby versus weft ribs create strong contrasts. Obviously a warp sett that produces weft-face areas is going to present problems when tabby is wanted, and vice versa. A firm sett and solid beat are necessary. The finished fabric will have deflected threads where the two areas meet. See Photo 1.



Knowing the "correct" visual effect, a weaver can then create new variations of this weave.

For wear and stability it is best to design patterns with the largest surface areas in tabby. Keep in mind that the weft floats can become sleazy and wear quickly if too loosely woven. Longer sections of weft ribs will become vulnerable. Thus a short area of ribs may be acceptable, although the same sett and beat used for longer pattern area may become too loose.

A fine yarn with good loft weaves up best; this favors cotton. Usually the weave is done with the same color in warp and weft.

For further information on M's & O's as 4-shaft weave or how to design in M's & O's, there are several good texts. 1,2,3,4,6 One of the attractions of M's & O's for the 4-shaft weaver has been that it can be done easily on a counterbalanced loom.

### M'S & O'S DRAFT WITH TWO FOUNDATION SHAFTS

The weaver with an 8-shaft loom may be tempted to enlarge the draft by simply duplicating the first four shafts on the back four (Fig. 4). However, this gets awkward for pattern designing because the resultant 4 pattern blocks work together, somewhat as in crackle weave. Obviously if no true tabby is possible in both the A and B blocks at one time on 4 shafts, it still is not possible when they have neighboring threads on the other 4 shafts. So if the back 4 are treadled for a pattern block to appear, the front 4 cannot form a true tabby background. No one pattern block can ever act alone.

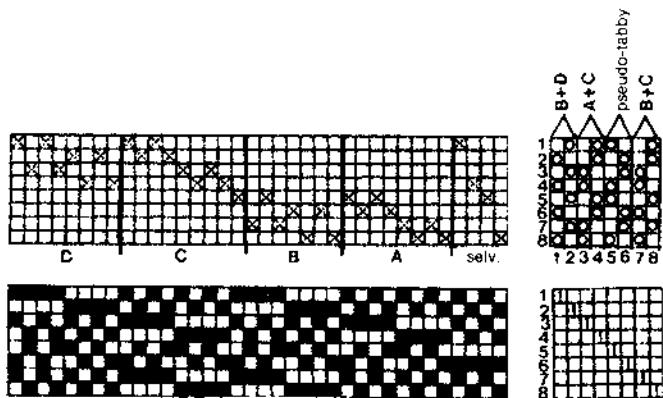


FIGURE 4

Breaking away from the restrictions of a habitual draft can lead to new possibilities. Harriet Tidball did just that in a 1957 study<sup>5</sup>. Her work on a 2-foundation shaft threading system for M's & O's is briefly shown in *Handloom Weaves*, yet seldom seen elsewhere. It offers a great deal of design possibilities for the multiple shaft weaver.

The M's & O's structure of tabby and weft ribs remains, but the drafting is wholly revised. Three outstanding advantages result from the 2-foundation shaft system: (1) full tabby is available both horizontally and vertically; (2) all blocks are capable of being pattern blocks individually or combined, and can be woven as tabby; (3) the simple drafting system can easily be expanded on paper and is visually clear.

Fig. 5 shows the block threadings for 2-foundation shaft M's & O's on 16 shafts. 1 and 2 become foundation shafts.

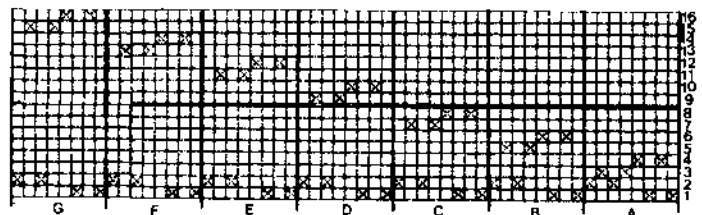


FIGURE 5

Fig. 6 shows the threading, tie-up, treadling, and draw-down for 2-foundation shaft M's & O's on 8 shafts.

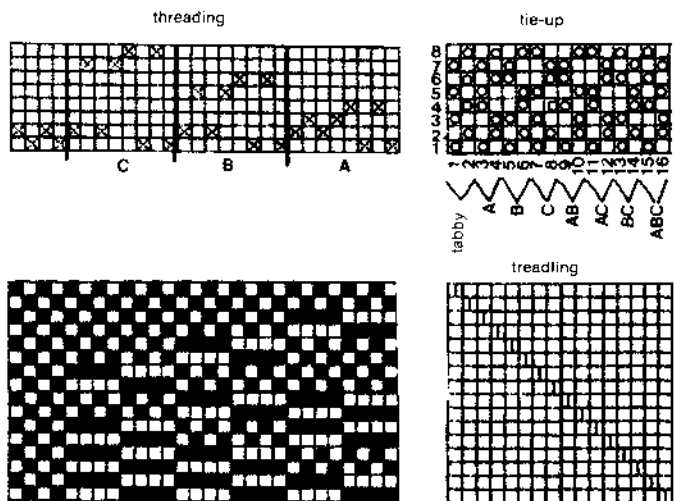


FIGURE 6

Selvages, plain weave borders, and vertical stripes are all threaded on shafts 1 and 2 alternately.

### DESIGNING WITH THE MULTIPLE SHAFT M'S & O'S DRAFT, USING TWO FOUNDATION SHAFTS.

A great asset of this threading is the flexibility and simplicity of designing. Pattern blocks can be planned with a profile draft. Fig. 7 shows a simple point pattern and a few of the numerous designs possible. Tie-up is likewise straightforward because blocks can easily be combined in the tie-up. Such a flexible system encourages experiments and changes on both paper and loom.



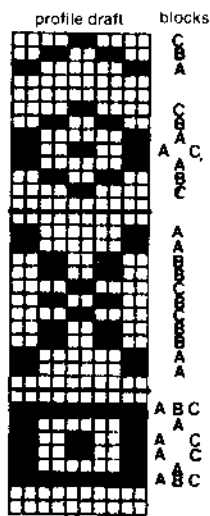


FIGURE 7

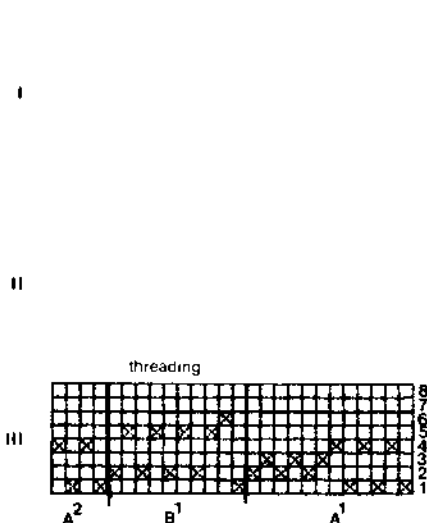


FIGURE 8

The tie-up is based on the threading draft alternating odd and even shafts. For a pattern block (a non-tabby area), the desired block's even pattern shaft is tied together with the odd foundation shaft. Then its odd pattern shaft is tied together with the even foundation shaft. This is done on paired treadles. Going back to Fig. 6, block A (controlled by pattern shaft 3 and 4 and foundation shafts 1 and 2) has treadles 3 and 4 to form its texture. Compare tie-ups on tabby treadle 1 with pattern treadle 3, and tabby treadle 2 with pattern treadle 4. It is seen that the blocks not forming a pattern are tied up for tabby on each treadle. Block B (threaded on pattern shaft 5 and 6 and foundation shafts 1 and 2) is woven as texture if treadles 5 and 6 are alternated. Block C is woven by treadles 7 and 8. Blocks A and B would combine as pattern if treadles 9 and 10 were used. Blocks BC are on treadles 11 and 12; AC are on 13 and 14; and ABC are on 15 and 16. Only those treadles needed for a design need be tied up, so a loom would not necessarily need as many treadles as Fig. 6 indicates.

In 2-foundation shaft M's & O's a loom's maximum number of pattern blocks can be calculated as follows: Divide the number of shafts by 2, then subtract 1. Thus an 8-shaft loom gives  $\frac{8}{2} - 1$ , or 3 pattern blocks. On 10 shafts there are 4 blocks, on 12 there are 5, and on 16 there are 7 possible pattern blocks.

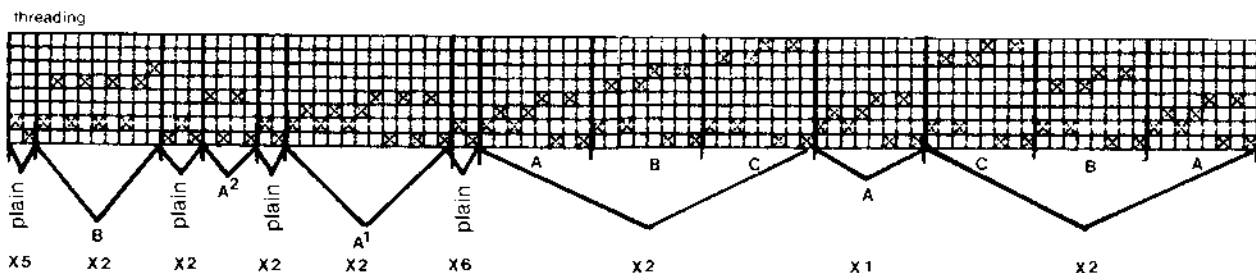
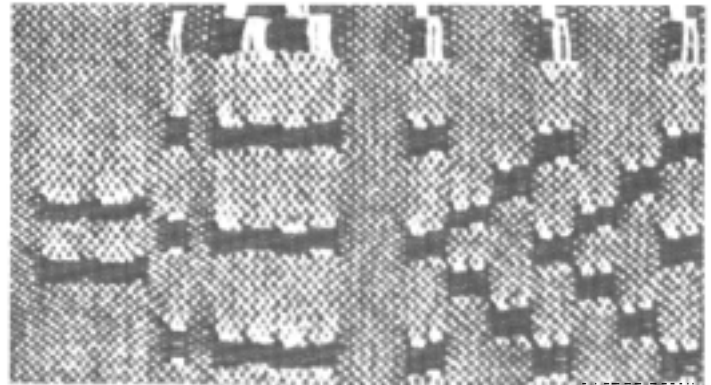


FIGURE 9

thread-by-thread draft of sampler

In Figs. 5 and 6 there are 8 warp ends per block. This number is not rigid. As long as the odd-even shaft order is retained with the two foundation shafts, even the halves of the block could be made of different amounts of threads. Fig. 8 shows some possible variation. Block A<sub>1</sub> has 12 ends for two symmetrical ribs. Block B<sub>1</sub> has 10 ends, which will form asymmetrical ribs. Conceivably only one of the ribs need be used, as at A<sub>2</sub>. Of course, this is an incomplete of the block, seen on the left. Block A<sub>1</sub> gives a looser look-block and care would be needed if a full block using shaft 4 were included in the plan.

Photo 2 is a sample threaded according to draft 9. The tie-up is shown in Fig. 10.



2. 8-shaft M's and O's sampler

Specifics for the sampler are:

WARP: 2 8 cotton, bleached

WEFT: 2 8 cotton, black

SETT: 21 epi (100" 10 cm)

REED: 12 epi (50" 10 cm), 2 per dent

TIE-UP: see Fig. 10

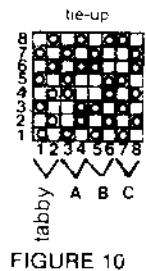
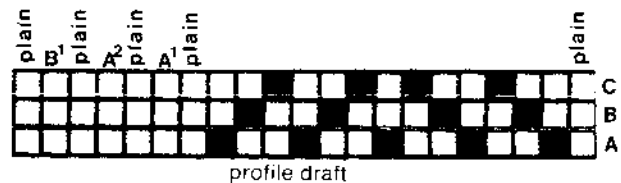


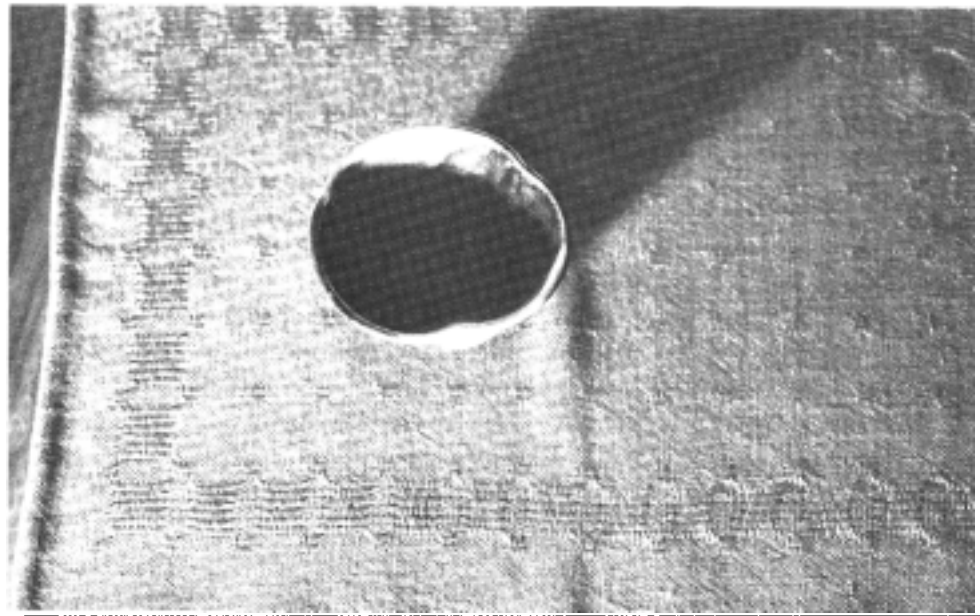
FIGURE 10



profile draft

**TREADLING:**

- 1  
2) ½" Tabby
- 3  
4) 4X (A block)
- 7  
8) 4X (C block)
- 5  
6) 4X (B block)
- 3  
4) 4X (A)
- 5  
6) 4X (B)
- 7  
8) 4X (C)
- 3  
4) 4X (A)
- 1  
2) ½"



3. M's and O's placemats

Black cotton weft is used for clarity. Note carefully the points where the corners of blocks touch. Going up the diamond the right side is in close contact, while the left blocks are more distinct. When the block order is reversed, the right ones become less close and the left ones touch. This is because the two treadles within each block's repetition were not reversed in order when the order of the blocks was reversed.

Also note how the background is influenced by the width of the block, seen on the left. Block A gives a looser looking ground than its neighboring plain weave threadings, or neighboring shorter blocks.

**8-SHAFT M'S & O'S PLACEMATS**

**WARP:** 25-2 Knox linen (color 503, blue)

**WEFT:** Same as warp.

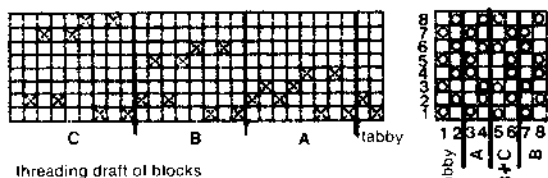
**SETT:** 24 epi (100/10 cm) in a 6 dent (25/10 cm) reed. Such a reed reduces the friction on the linen and provides a good shed.

**WIDTH IN THE REED:** 132 3" (34.7 cm).

**PROFILE DRAFT:**



**THREADING DRAFTS OF THE BLOCKS AND TIE-UP:**



**WEAVING INSTRUCTIONS:** Treadle tabby for the hem and the 2" (5 cm) border. Treadle block A for 12 picks. Treadle blocks B + C for 36 picks, treadle block A for 12 picks. \*Treadle block B for 36 picks, treadle block A for 12 picks\*. Repeat between asterisks 12 times. Treadle blocks B + C for 36 picks, treadle block A for 12 picks and finish with tabby.

**FINISHING:** Machine wash several times, with hot water. Iron with vigorous friction and hot iron on damp cloth. Hem.

**SIZES:**

Off loom: 21" (53.5 cm) X 13¼" (33 cm)

Finished: (before hem) 20" (51 cm) X 12¾" (32.5 cm)

**AMOUNT OF YARN NEEDED:** 9 mats require 14 oz. + waste.

**References**

1. Black, Mary, *New Key to Weaving*, Bruce Publishing Co., New York, 1957.
2. Frey, Berta, *Designing and Drafting for Handweavers*, Macmillan Co., New York, 1958.
3. Laughlin, Mary E., *More Than Four*, Laughlin Enterprises Ltd., West Sacramento, California, 1976.
4. Tidball, Harriet, *The Handloom Weavers*, HTH Publishers, Freeland, Washington, 1957.
5. Tidball, Harriet, "Expanded M's and O's Shuttle Craft, February, 1957.
6. Tidball, Harriet, *The Weaver's Book*, Macmillan Co., New York, 1961.
7. Tovey, John, *Weaves and Pattern Drafting*, Van Nostrand Reinhold Co., New York, 1969.

# FELTING



by Gunilla Askenfors

Felting is an ancient fiber technique that makes it possible to create clothing and other textile from raw wool. There is evidence that the art of felting was known before man could spin.

The creation of mittens, socks, hats and other textile forms from the carded raw wool and the use of some warm water and soap is truly fascinating. It takes about one hour to make a hat. A pair of socks takes two but when you are all through, you have really something nice and warm to wear in wintertime.

The picture series illustrates the process of making a felted hat.

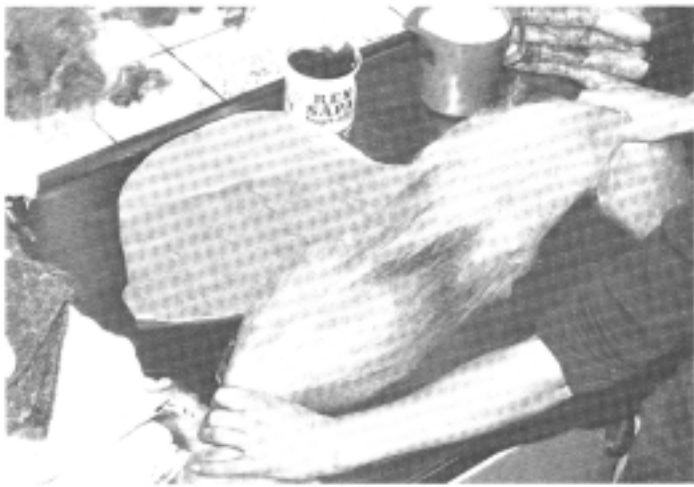


1. The wool has to be carded. Use either hand cards or a drum such as the one shown here. A drum carder does the job fast and the wool comes off in bigger bats.

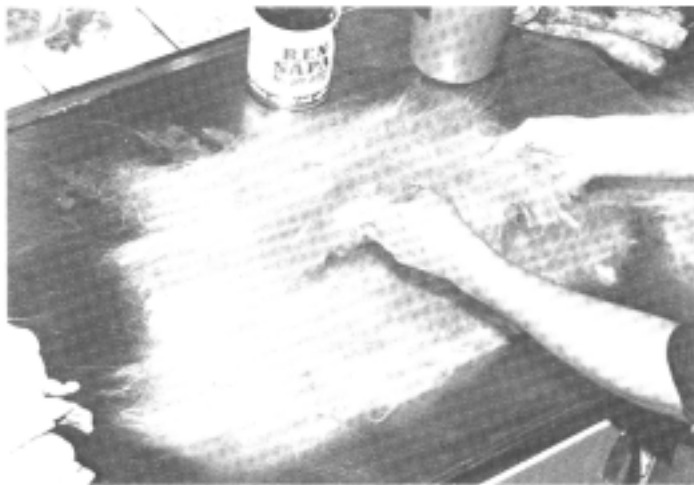


2. Cut a hat shape out of a sheet of plastic, the weight of light cardboard. The pattern has to be 50% bigger than the finished product because of the high shrinkage involved in the felting process.

*Gunilla Askenfors is from Stockholm, Sweden, where these photos were taken.*



3. Place the carded raw wool on top of the pattern. Make the soap and hot water ready for use. A gentle soap such as Ivory liquid should be used in the United States.



4. As one layer of wool is put on top of the other, the directions of the fibers are crossed.



5. Pour the hot water and the soap onto the wool. The first side of the hat will take shape by rubbing the soap and water into the wool.



6. Now prepare the other side of the hat. The pattern is laid on top of the first half and will be on the inside of the hat. Fold the raw edges of the wool over, on top of the pattern. New wool is laid to build the second side of the hat. The raw edges are folded under the hat. Rub with soap and water.



7. Shrink the hat by working it onto a washboard.



8. Finally, the hat should be tried on before it is dry.

# PRODUCT REVIEWS

## THE MACOMBER LOOMS

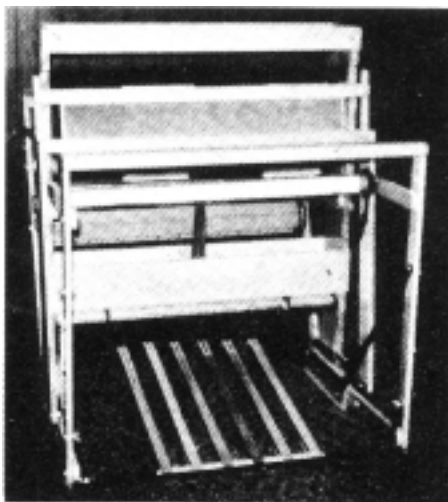
The Macomber Looms company manufactures two types of add-a-harness looms: the portable model (Type-CP) and the Type-B folding model. Both have rising sheds and are shipped fully assembled and ready for work. Their catalogue, available by writing to Beech Ridge Road, York, Maine 03903, describes the looms well. It gives the available weaving width, shaft capacity, mechanical specifications, design features and the many options that confront the weaver when ordering these custom built looms.

The portable model combines hardwood and plywood for maximum strength to weight ratio. My 8-shaft model has two beams, one with a warp beam ratchet and one with a friction brake. The weaving width is 24" (61 cm). Its compact size (11" X 31" X 37" or 28 X 79 X 94 cm) opens up to an amazingly resilient floor-loom on which just about any kind of fabric can be woven. The tie-up is done by means of hooks which should not be left in place when the loom is folded. The loom has casters and handles and can be carried by one person. Its compact size makes it fit into many passenger cars including the VW Rabbit and the CJ-5 Jeep. This loom is great when space is limited, for workshops, for weaving narrow fabrics and for fast experiments. A heavy clumsy foot on the treadles may make the tie-up hooks jump off but now there is a second type of hook available which should eliminate this problem. A regular chair can be used as a weaving bench.

The heavier, folding Type-B is built with the multiple-shaft weaver and the textile designer in mind.

For a weaver interested in a medium wide 4-shaft loom, there are many good looms on the market. The criteria which are generally most important to this buyer are the looks of the loom, the size of the shed and the convenience of the brake system. If the weaver wants a wide loom or becomes concerned with the speed of weaving and wants more sophisticated mechanical systems for patterning, the demands he puts on his investment becomes quite different. The Macomber looms have earned their reputation of satisfying the needs of many weavers who appreciate large numbers of shafts, skillful mechanical engineering, wider weaving space and more.

To a great extent, each loom is custom built with a choice of width (up to 72" or 183 cm), choice of number of shafts (up to 32), choice of beams, choice of brake systems, choice of heddles, etc. Please refer to the catalogue.



*type B — folding*

Shafts can be added later but note, however, that the 32" and up looms are only supplied with a 10-shaft frame. If one plans to increase the shaft capacity later to more than 10 shafts, a larger shaft frame has to be ordered originally.

The thin all-steel shaft frames are suspended with chains from overhead jacks. The fact that they swing freely is considered a nuisance by some weavers and an asset by others. I fall into the latter group because it is easy to remove or add heddles during the loom dressing. It also can help to avoid warp breakage under certain circumstances.

The Macomber looms truly invite the weaver to experiment. The connections between the treadles and the shafts are quickly made, there is little loom waste of the warp, and the loom can be dressed easily and comfortably. An ingenious weaver can even demand more from the loom than what it originally was designed for. For example, if an extra treadle is needed one can tie a pull cord to some of the upper shaft frames and thus make pull-sheds.

However, as with any equipment one also comes across stumbling blocks. My loom is 56" (142 cm) wide and has 20 shafts. I must admit that I have not yet found a way to lift 19 shafts while trying to reach out to throw a shuttle through the shed.

I would appreciate hearing from someone who has a 32-shaft loom. How do relatively thin treadles that by nature have a certain amount of flexibility and can only stand a limited amount of stress, lift 31 shafts which are loaded with a 72" wide warp? How do the



*type CP — portable*

bronze jacks hold up if they have to lift a 72" wide shaft on which there is a 72" densely sett warp?

The Macomber Company provides the designer-weaver with good handlooms but the challenge still exists. How does the weaver take the best advantage of his loom and how far can he push his demands?

*Clotilde Barrett*



## TREADLE MINDER

This is a simple loom accessory to be attached in front of the loom by means of two screws. It holds removable cards on which the weaver writes the treadling sequence of his pattern. Above each treadle number there is a hole drilled in the wooden card holder. As each shed is made and woven the weaver moves a peg to the hole right above the next treadle or harness combination. The weaver is thus always reminded of which shed he has to open next.

There are two models available, one for horizontal mounting, the other for vertical. They cost \$12.20 each. 25 cards cost \$5.00. Sievers Looms, Washington Island, WI 54246.



# COMPUTER LOOM

Computer Loom is a program for doing weaving drawdowns and related graphics on an Apple II computer. It requires 48K RAM (and uses nearly all of it!), Integer Basic in ROM, one floppy disk drive, and (as written), a Trendcom 200 (or Apple Silentype) printer. It is available on diskette from: Tim Trudel, 1001 S. Washington Ave., Fullerton, CA 92632. Telephone inquiries may be made by calling (714) 870-1916. Price is \$30.00.

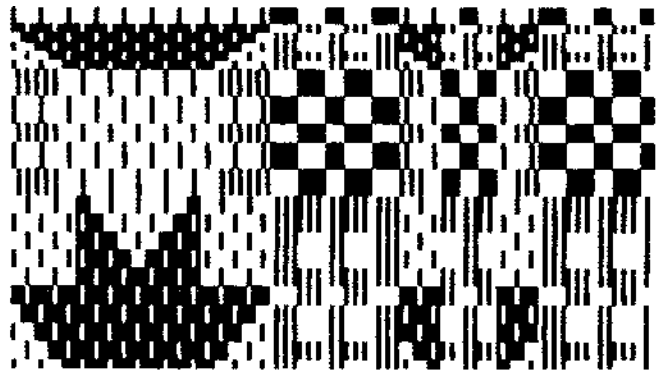
Although similar in function to other programs described in this journal, this program has some distinctive features all its own. The "weaving" resources include: 140 warp threads, 16 shafts, 100 treadles (!), and 80 weft picks. Threading and tie-up are either entered manually or retrieved from files previously stored on the disk.

When the system is booted from the disk, the program is automatically loaded and run. The list of resources is displayed and you are given the option of a list of instructions or getting directly to work. Selecting the latter then brings you to a decision whether a new threading will be given from the keyboard or an old one brought from disk. Assuming the first choice, you then proceed with the threading and the tie-up. Opportunities for error correction are provided. Each part of the draft can be saved on the disk and/or printed out (see Fig. 1).

Fig. 1

Coming to the treadling and weaving, one is presented with a large menu. In our example we chose to enter the treadling sequence as if one would weave on a treadle loom. One

FIGURE 2



may also operate by specifying the shafts to be raised for each pick, or, if you have planned your weft in advance, go to the "Dobby mode" and let the program do the job.

Once the drawdown is finished, it may be printed (but *not* saved to disk). The printed drawdown of our example (done by patchworking on our 460G Paper Tiger) is given in Fig. 2.

The strong points of this program are: ease of use, flexibility in weaving mode, fairly large number of shafts, and, most of all, lightning-speed graphics. It can throw a shot in much less time than a live weaver can. This program is a versatile design tool because the threadings and tie-ups can be stored and recalled as separate files. Thus, threadings can be combined with tie-ups at

the discretion of the weaver. Each treadling will then produce a drawdown that can be printed out to look exactly like conventional drawdowns.

Its weak points are: that there is a rather tight linkage between the choices of warp and weft colors which limits the possible color effects; and that one cannot save the drawdown to disk.

On balance, we regard this program as being a very useful aid to the textile designer and one worthy of being added to your computer weaving library.

Earl Barrett

*Our weaving sample is taken from "A Portfolio of American Coverlets" compiled by Carol Strickler. (See Book Reviews).*

THREADING STARS & ROSES

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 3, 1, 6, 7, 2, 7, 8, 1, 8, 4, 2, 9, 10, 1, 10, 11, 2, 11, 12, 1, 12, 13, 14, 13, 14, 13, 14, 15, 16, 15,  
 16, 15, 16, 17, 14, 13, 14, 15, 16, 15, 16, 15, 13, 14, 15, 14, 15, 11, 10, 9, 2, 9, 8, 1, 9,  
 15, 16, 15, 16, 13, 14, 15, 14, 15, 16, 15, 18, 9, 1, 8, 9, 2, 4, 10, 1, 10, 11, 12, 13, 14, 12, 14, 13, 14, 15,  
 16, 15, 18, 15, 16, 13, 14, 13, 14, 15, 16, 15, 16, 13, 14, 13, 14, 15, 16, 13, 14, 13, 14.

TIE-UP STARS & ROSES T

HARNESSES 1 1 1 1 1 1 1  
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TREADLES	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
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2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TREADLING

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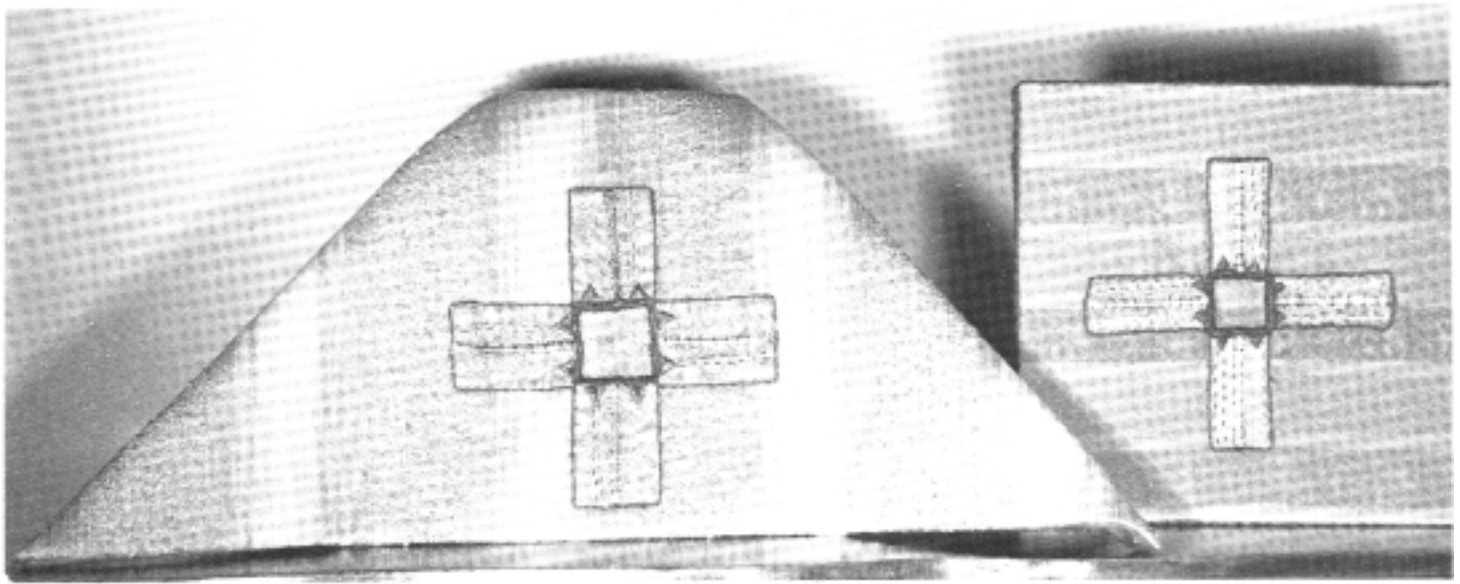
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1. Burse and veil of handwoven smooth and slub silk using the same handwoven fabric for the applique cross with metal thread embroidery. photo by W.S. King

# ECCLESIASTICAL WEAVING

by Bucky King

Perhaps the greatest difference between domestic weaving and weaving for a house of worship is that the latter must serve a specific function and very often has a dictated color scheme or design idea, plus an established size. It is very much like being an architect. The weaver-designer is given a specific set of environmental situations. The architect may have the land, the site, and the general ideas of the clients and must come up with a design that suits all the needs; those of the clients as well as those of the land and environment. The weaver is faced with very similar specifications. For example, in 80 percent of all commissioned liturgical woven work, the house of worship already exists. Furnishings have already been placed in the church or synagogue and the color and design of these existing pieces must be taken into the scheme of the overall picture. This does not necessarily mean that a contemporary design will not fit into a pseudo-Gothic church; it merely means the challenge is greater.

In thinking about ecclesiastical weaving the very word *challenge* is perfect. The challenge to create the piece that will suit the established environment which will be its permanent home will cause all the wheels and rusty cogs of the mind to grind a little harder. Ecclesiastical weaving is not for the faint of heart, nor the amateur just starting out, because it asks a great deal of its creator. It is this challenge which perhaps makes it so gratifying.

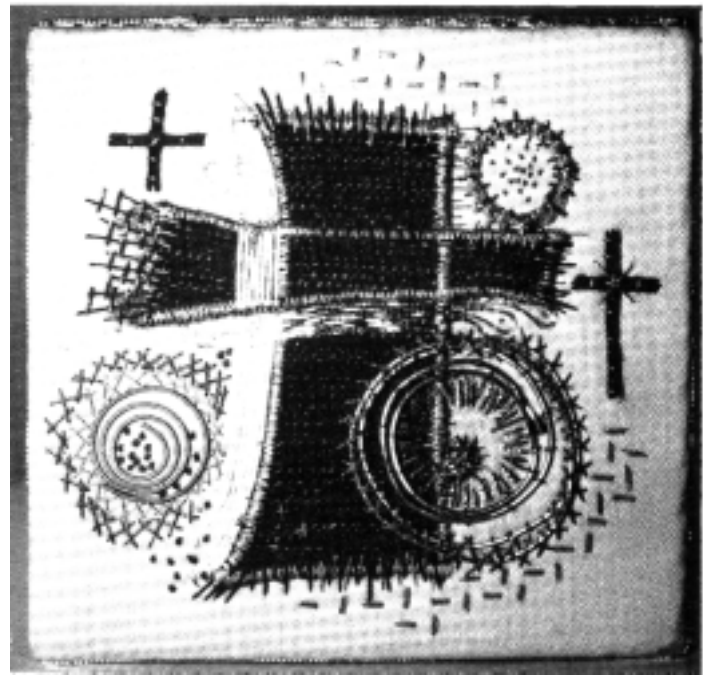
One of the unique features of weaving for the house of worship is the aesthetic ego which lures many amateurs to feel a desire to weave something up for their church or synagogue. It seems this urge has caught on more in the last eight years with more classes in weaving available to amateurs. So perhaps a few brief words are in order here. When you are stricken with this urge to weave something up for your church, minister or rabbi, there is one thing you ought to consider very seriously. Is your urge based solely on the desire to have something you made gain acceptance in the eyes of your fellow humans, or are you honestly interested in making something really worthy of a gift to God? There is a difference. Too often the amateur asks the rabbi or priest if they would like a new stole or hymnal cover and then rushes home to toss it off without any further considerations, except the personal gratification that they made an item for their rabbi or priest. They create what they want to create, if you can call it that, without thought for its use, color blending, wearability, or function. I recently recalled a rural service in a small church in Montana. The minister was wearing a poorly-made green stole which made no visible effort to blend in with the other green textiles used on that Sunday. To worsen the situation the stole was woven of wool, too heavy for comfort in the summer months when green was predominantly used. I noted all these things and remained silent until I had a quiet opportunity to ask the minister

about the offensive green stole. He looked at me sadly and replied, "You see, one of my parishioners asked me if I didn't want a new stole because she had just taken up weaving and spinning. She didn't bother to ask me about the fiber, use, weight, or color; she just rushed off happy as a lark and made it for me. Even though it clashes with the other greens on the frontal, I haven't the heart to hurt her feelings."

The serious weaver who has this urge to weave for the church has a far different approach. It is based on the same approach used by professional weavers who earn their living or a part of it, doing ecclesiastical commissions. The difference is that the professional weaver is usually called in to submit for a specific item, whereas the serious amateur may often elect the item he or she may wish to make. So let us consider an imaginary example. You wish to weave something for your church and you really do not want to do something large, so you elect to weave a fine linen corporal for the altar. You first pay a visit to the clergy to have this idea approved and if your church or synagogue has an art committee you next visit them with your sketches and ideas as well as linen samples and weave samples. All this necessitates some careful thinking and work on your part before you approach the clergy. If you are not an artist (and many weavers are not artists) you further seek the advice of a reputable textile artist concerning any design motif you are considering. One does not just slap a cross in the front center of a corporal because one has seen this safely done before. One researches to find out what liturgical motif may be suited and then looks carefully at all the surrounding design on the fair linen, the frontal, the burse and veil, etc., to be sure that yours is going to blend in with the whole picture. Then and only then are you ready to submit a design idea, and, hopefully an alternative so that there is some choice. You do not skimp on material cost, even though you will be paying for this, since the corporal is a donation to your church. You obtain the best linen thread suited for the project that will dent up at least 60 to the inch (240/10 cm). When your project has been accepted by the clergy and the art committee you weave up the corporal and hem and finish the entire piece properly before presenting it to the church.

Now quite a few of you are going to say "dent up 60 to the inch? Never". You had in mind something around 14 to 18, perhaps stole material, or you saw this wonderful Torah cover when you were in Chicago last month and you could adapt that design and make one that was similar for your own synagogue. If these are your thoughts then you are not the serious amateur and the whole idea ought to be tabled.

The professional weavers approach ecclesiastical commission work in a professional manner. They do all the needed research for design ideas, fabric use, and they go to the house of worship (or look at many slides and photos) to gain an insight into the feeling the existing environment induces. They match up color use or contrast it, as the case may be, and they consider very carefully the func-



2. Gold burse with applique and metal thread work. The green fabric used to make the cross is hand woven, left over from the matching veil. photo by W.S. King

tion of the piece so that the thread selection fits this specification. When they are ready to make a presentation to the clergy and the selection committee, they come fully prepared with neat sketches, thread samples, weave samples, and color ideas. They prepare a written contract, stating all the terms involved, which is signed by both parties. Then and only then do they go to their studio to weave.

The challenge here is often assembling the right colors of threads in the right fiber content as well as coming up with an original design idea that can say something to the viewer. It is often necessary to be a member of the diplomatic corps as well in order to deal with the jolly little rotund priest who insists on a full conical chasuble when a straight cut gothic style would better suit his figure, or the memorial giver who insists upon silk being used when linen would far better suit the style of the church and other textiles.

The challenge is in being willing to undertake all the many facets and different laws which govern all our different religious bodies and thus affect the colors, styles, design and techniques. In the twenty five odd years I have done ecclesiastical design for textiles in both weaving and embroidery, I have gained a great deal of knowledge and background concerning symbolism as it differs in each religious body. Many of us are fine weavers, for this is merely the technical part of this work. Not all of us have the patience and desire to tackle liturgical weaving. There is no room in a brief article for all the technical requirements governing all the various religious bodies, but I have included a list of reference books which should be most useful for obtaining the technical knowledge. As a professional fiber designer, it has been a very gratifying experience and one that has been financially rewarding as

well. Perhaps the greatest advantage I have had is my technical skill in several fiber areas besides weaving, allowing me to dally in printing, embroidery, and lace as well as woven pieces. I have not mentioned costs because this varies with each commission depending upon the expense of the materials and the time involved, or is influenced by a specific budget applied to any given item. Certainly one uses the very best materials the church or synagogue can afford, but very often the best suited for the job does not mean the most expensive. A simple formula for calculating cost is:

Materials + time and labor (includes research, mounting and presentation) + overhead equals retail cost figure.

Many other professionals prefer a cost based upon the square foot, or square inch, because this is uniform for every commission. For the serious amateur, some churches and synagogues will give tax deduction letters so that the weaver may gain tax credit for the donation.

Liturgical work of all kinds offers the weaver a tremendous reward, not so much in monies earned but in knowledge gained and experience stored. Each piece is a new and different problem and that is what design truly is: problem solving. The thread we weave is truly the line in the service of design, a continuing challenge to all of us involved with warp and weft.

Detailing all the liturgical requirements for all the different religious bodies simply cannot be done in a brief article. However, for those seriously interested, the following list of references will be most useful.

- Child, Heather and Colles, Dorothy, *Christian Symbols*. G. Bell and Sons, London, 1972.
- Dean, Beryl, *Ecclesiastical Embroidery*. B.T. Batsford Ltd., 1958 (includes size requirements and color laws for many Christian denominations).
- Dean, Beryl, *Church Needlework*. B.T. Batsford Ltd., 1961 (details specific make-up for items which are used most frequently).
- Ireland, Marion, *Textile Art in the Church*. Abbington Press, 1966.
- Kamph, Avram, *Contemporary Synagogue Art*. Jewish Publication Society, 1966.
- Wilson, Jean, *Weaving is For Everyone*. Van Nostrand Reinhold Co., 1979.
- Freehof, Lillian and King, Bucky, *Embroideries and Fabrics for the Synagogue and Home*. Hearthside Press, 1967.
- King, Bucky and Martin, Jude, *Ecclesiastical Crafts*. Van Nostrand Reinhold, 1979 (you will find many more references included here as well as directories of artists and religious communities). ■

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# THE EUCHARISTIC VESTMENTS

by **Kim Malloy, OSB**

In the directives on vestments in the post-Vatican II reforms, there are three things that are stressed: color, form, material. The American Bishops in *Environment and Art in Catholic Worship*, state "The more these vestments fulfill their function by color, design and enveloping form, the less they will need the signs, slogans and symbols which an unkind history has fastened on them". From this statement we come to understand that the vestments themselves are the signs and symbols, not the ornamentation placed on them.

"Enveloping Form" is a classic definition of the chasuble: to enclose in. The chasuble is derived from **casula**, a garment covering the wearer entirely. It was likened to a "little house" (**casa**: a cottage). Most historians agree that the early form of the chasuble was a semicircle joined down

the center front. (See Fig. 1) In this form (conical) the movement of the arms are somewhat constricted.

With the advent of the damask, brocade and velvet weaves came an alteration in the shape of the chasuble. In the new form the shoulder line was shortened, freeing the arms from the weight and stiffness of the new fabrics. This form became known as the Gothic chasuble. As this process continued, more and more was cut away, coming to an end in the Roman chasuble. (See Fig. 2)

Beginning around the turn of this century came the revival of the full chasuble. (See Fig. 3) This chasuble differs in form from the earlier ones, in that the shoulder line is raised, giving greater freedom of arm motion to the wearer. In designing a form or using one of the traditional forms we must remember that enveloping is the norm.



The chasuble is the vestment of the Eucharistic Liturgy. Thus, the wearing of the chasuble states that a Eucharistic Liturgy is taking place. Color states the season and type of feast being celebrated: white for the seasons of Christmas and Easter; red for Pentecost, Passion (Palm) Sunday, Good Friday; violet for the seasons of Lent and Advent. Green is to be used for Ordinary time; white for the feasts of Mary, the angels and those saints who were not martyrs; red for martyr saints. Rose is appropriate for the Sundays midway through Lent and Advent; black for Masses of the dead; white for the funeral liturgy. Just as the church does not prescribe a definite form for the chasuble, the colors are not any particular shade or tint. For example, all violets are liturgically violet.

Now that we have encountered color and form, we come to material in which the handweaver can excel. If at one time damask, brocade and velvet could determine the chasuble form, we must now let the full chasuble form dictate the type of fabric we design and weave. Because of its shape, the fabric must drape well. Next, we must remember that vestments are clothing, and that the same criteria hold true for both. Because the chasuble is made of five or six yards of 45 inch (114 cm) fabric, and is worn over several layers of clothing, it must be light in weight. The biggest com-

plaint I hear from priests regarding handwoven vestments is that they are too heavy.

At one time silk was the prescribed fiber. Today any natural or artificial fiber can be used, as long as it is in keeping with the dignity of the sacred action and office of the person wearing the vestment.

In the vestment pictured here, I used a wool warp and weft of grey and white acrylic together with a silver Mylar. This chasuble was woven with front and back panels; on these panels I used grey stripes with silver, running across the chest and upper back. After I had woven the panels, I wove 150 inches (3.81 m) for the side panels, stole, chalice veil and burse. (See Fig. 5)

WARP: 2 20's worsted wool, off white

WEFT: white Acrylic (5200 yds per lb.)

grey Acrylic (5200 yds per lb.)

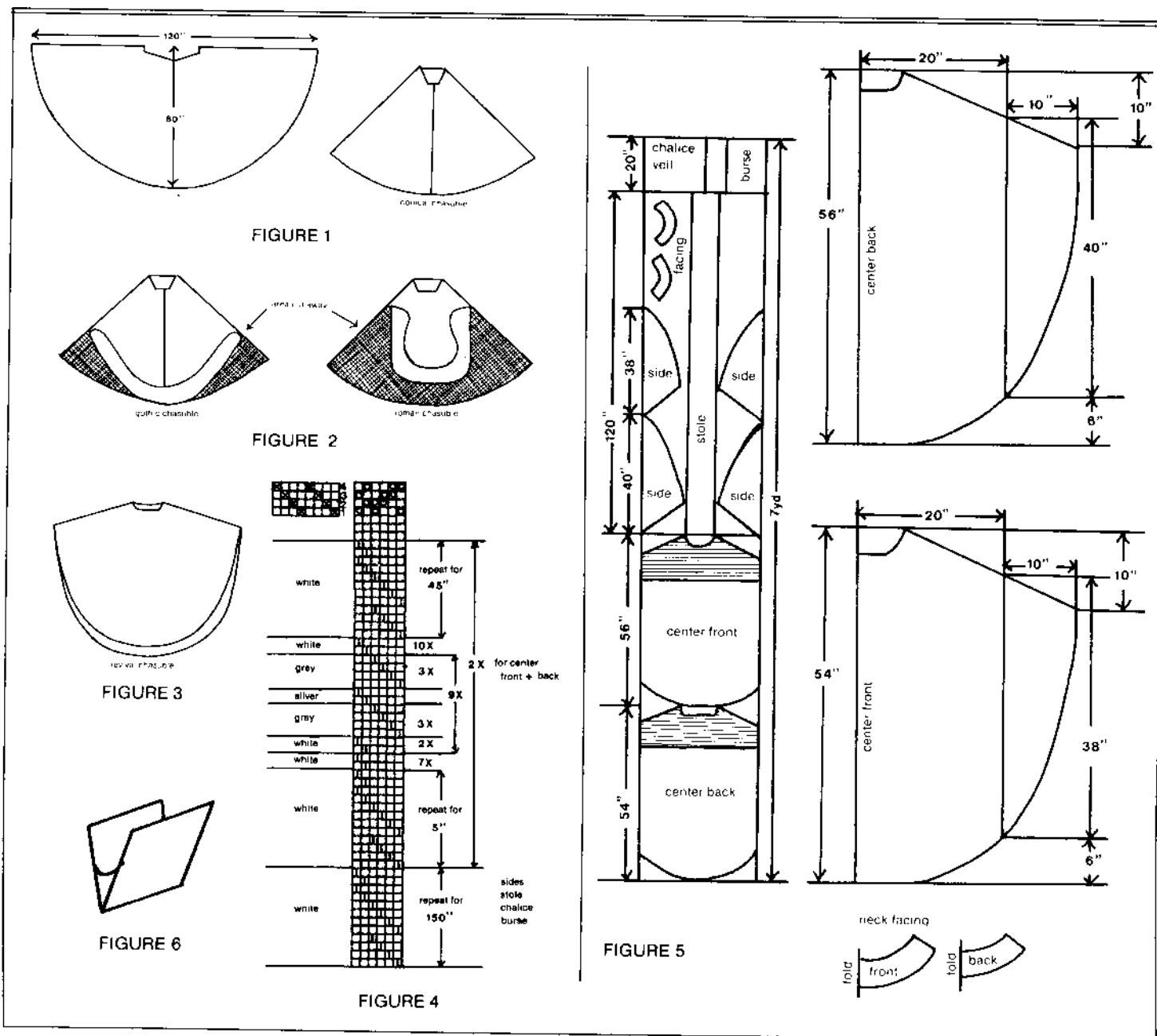
silver Mylar (1 16")

SETT: 18 epi (70-10 cm)

WIDTH IN THE REED: 44" (112 cm)

THREADING, TREADLING AND TIE-UP: See Fig. 1





From the loom, the yardage was first steamed, holding the iron just above the fabric. Then it was rolled with a wet blanket on a drying roller, and let dry overnight.

After the vestment was cut out, the side panels were sewn to the center panels. These are selvedge edges and needed no other treatment. The shoulder line, being cut on the bias, needed some extra attention. First I pressed the edges over, front to back 1/8 inch (3 mm), and inserted a 1/8 inch strip of Stitch Witchery (iron-on bonding web), and pressed. This gave the bias cut some stability and a nice finished seam. Next, the front and back were sewn together, the facing added, and the chasuble hemmed.

In the Eucharistic vestment set there are four matching pieces. With the chasuble these are as follows.

1. **Stole**—a piece of material 10" x 120" (25 cm x 3 m) is folded in half lengthwise, sewn, and the seam pressed

open. Then, turned rightside out, it is pressed with the seam center back and hemmed. The finished stole is 4 1/3 x 118" (11 x 299 cm).

2. **Chalice Veil**—a 20 inch (51 cm) square of material hemmed on all four sides. The veil covers the chalice when it is not in use.

3. **Burse**—two 9 inch squares of cardboard are covered with the vestment fabric and backed with linen. The two squares are joined together along one edge forming the bottom. Two cords are added, one to each side, leaving room for the burse to open. (See Fig. 6) The burse holds the corporal when it is not in use.

The Eucharistic vestments—chasuble, stole, burse and chalice veil—are just a beginning of the wearable ecclesiastical garments that can be made. Other garments might be copes, dalmatics, albs, preaching robes and prayer shawls, to name a few.



*1. Double Cross Motif tapestry, 21' x 5', woven for Bellevue Christian Church, Bellevue, Washington, using the Theo Moorman technique. Natural lighting (no direct sun).*

# WEAVING WORKS FOR WORSHIP

by Jan Paul

Weaving an ecclesiastical tapestry or hanging can involve problems not present in commission work where you work with an architect or designer. The selection committee may be the worship committee in one church, trustees or memorial committee in another or an especially appointed redecoration committee. They are not always selected because of a background in art or design and are often unable to conceptualize an artist's sketch as a finished weaving on the wall of their building. Another frequent problem with an established building, as opposed to a new or remodeled structure, is resistance to change. People often like what they are used to, even a plain wall. Change, even one enhancing a worship setting, can be a threat to many.

I use a fast and easy way to make color yarn samples to scale for my own and the committee's use. After the selection committee has given preliminary approval of the

general design and size, I cut a number of pieces of tag board to scale, using one inch to one foot (1:12), and draw my design on them. I then glue small pieces of yarn on my models. When I glue the yarn to the tag board, I work on a push-in surface such as a bulletin board. I protect the surface with wax paper. This makes for easy clean up. I then put white glue on the area of tag board to be covered and set the yarn snips on it. If the yarn wants to curl, I can easily pin it on with two straight pins, one at each end, until it is set.

I make as many color samples of a given area as possible. When the glue is dry, I cut the tag board into individual color components. If I have a background, as with my double cross motif, I forget it until my final sample is made. Very detailed or small areas of color may not be possible to show by snips of yarn, but paint, colored in or dye may be brushed on the yarn after the glue is dry.

When all possible color components are made, I then try the various possibilities together to get the best combination and make a final model, including the background, for the committee's use. This model can be held at arms length with one eye shut and then moved around until the placement on the wall is correct. This provides a way for the individual members of the committee to actually visualize the piece on the wall. Any needed changes in color or size can easily be determined by this method. By taking your color components with you to the site, if a color isn't working quite right, you can use double stick tape and tape another color over it. You may find that a bluish red works better in the setting than the orangish red that looked so good in your studio.



2. A finished color sample surrounded by the color components used in its creation.

I have found two factors very important in designing ecclesiastical hangings—light and viewing distance.

The type of lighting affects a piece greatly. Is it artificial, natural or both? If artificial, is it a warm or cool light (flood light or fluorescent)? Direct or indirect? Will colored flood lights be used during the year near the hanging and how will they affect it? If natural light, is it filtered through stained glass? Is the stained glass cool or warm in color? If the lighting is natural during the day, what do artificial lights at night do to the room? Light definitely affects the color of yarn and must be taken into consideration.

Viewing distance is also very important. Small details that look great up close may be lost when viewed from the back of the room. The piece should read well from all viewpoints and distances.

On very tall hangings, perspective comes into play. For example, if the hanging is of a figure (saint, Christ, prophet, etc.), the head and upper portion of the body will need to be made larger in relation to the total figure. Otherwise the figure will look like it has a small head because of the keyhole effect of viewing from the bottom. Of course, if the room has a balcony, the figure would then look distorted from it and design changes would be necessary. To work out the proper size for the features, a full size sketch on paper may have to be made and hung to see if readjustment is necessary.

How the piece will be affixed to the wall should be determined before the piece is begun. I would recommend hanging by a method which would allow removal for cleaning. Be sure and give the church, synagogue or temple written detailed instructions on care, including cleaning. Dust can cause yarn to deteriorate very fast. Some professional cleaning firms have the proper equipment or will obtain it. A long vacuum wand with lots of holes to lessen the suction will work. A gentle flow of air from an air compressor can blow dust off the piece - but be careful, too much may do damage.

For my large hangings I use the Theo Moorman technique sett 10 ground epi (40/10 cm) with polyester sewing thread as the tie down. Warp is linen, ground weft is Navajo warp and the inlay is hargarn or matt yarn (wool with goat or cow hair singles). To get the exact colors I want, I may use yarns from several manufactures. The use of the Moorman technique in this manner, as opposed to traditional tapestry techniques, allows all the color (inlay) to show on the front of the piece and thus cuts the cost of yarn by close to half.

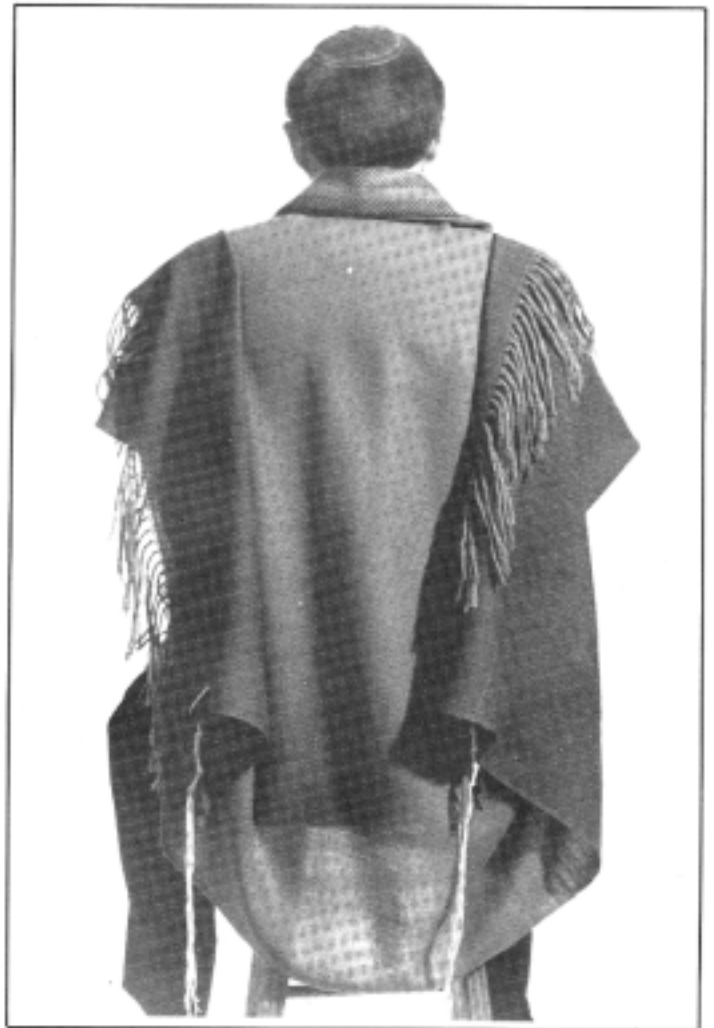
The hanging for Bellevue Christian Church, Bellevue, Washington, completed in 1975, is of a double cross motif, each set of crosses half again as tall as the preceding set. It is twenty-one feet long and five feet wide. It was woven in two pieces and joined lengthwise on the right side of the center cross. The colors, except for the blue and purples, were taken from the stained glass clerestory window which plays light across it from the morning sun. The colors of the crosses and the background change constantly as the sun moves across the windows. The summer and winter sun have completely different effects on the hanging. The blue and purples pick up "people colors" and were included when I realized that the originally planned browns went "dead" in the artificial light used at night.

© Jan Paul

*Jan Paul is a weaver from Kirkland, Washington. She has woven commission pieces for churches, offices and private homes. Being a newlywed, she is also busy weaving furnishings for her own home. Jan Paul is chairman of the Accessories for Interiors exhibit for Convergence '82.*



1. Front view. Seymour wearing talis



2. Back view

# A TALE OF A TALIS

by Katherine Sylvan

A talis (tallit or talit) is a prayer shawl, a rectangle of cloth with four ritual fringes or tzitzit at each corner, worn by married men in Jewish Orthodox synagogues and by all males past the age of bar mitzvah in Conservative and Reform synagogues. Since women are now permitted to become rabbis in Reformed congregations, they may also wear a talis for the first time in centuries. It is worn during morning and some evening services, during Sabbath services and on holy days. It is worn over everyday garments.

My friends, Seymour and Phyllis, asked me to weave a talis for him, and because of the research involved, a year elapsed between the request and the time I actually began the samples for it.

I was raised as a Gentile and had seen prayer shawls only at shivas (the seven-day period of mourning following the funeral) and bar mitzvahs (the ceremony in which the thirteen-year-old male assumes the moral responsibilities of an adult), and I had not particularly paid much attention to those rectangles of cloth worn by the men.

I had two concerns with this commission. I am not Jewish and yet I am being asked to weave a ceremonial garment. Is this kosher? I then remembered that through the centuries artists and craftsmen have often contributed to cultures not always their own. I thought about the synagogues designed by Minoru Yamasaki and Frank Lloyd Wright, both Gentile artisans who have contributed to Jewish ceremonial art.

## This is what I learned from my research:

**COLOR:** There is widespread Jewish identification with the colors blue and white and today there are many commercially-made prayer shawls in white with blue stripes, but there is no prohibition on color. "The rabbi even has an orange one," Phyllis told me.

Traditional prayer shawls were cream colored with black stripes.

It is specified in Numbers 15: 37-41<sup>3</sup> that the Hebrews should include a thread of blue in the tzitzit ritually tied at the four corners of their garments. In ancient times, this blue dye was obtained from a particularly rare shellfish. Since it has become increasingly difficult to obtain the proper dye, early rabbis decided to skip use of the blue thread entirely. The blue color made from other dye sources began to appear in bands or stripes at either end of the talis.

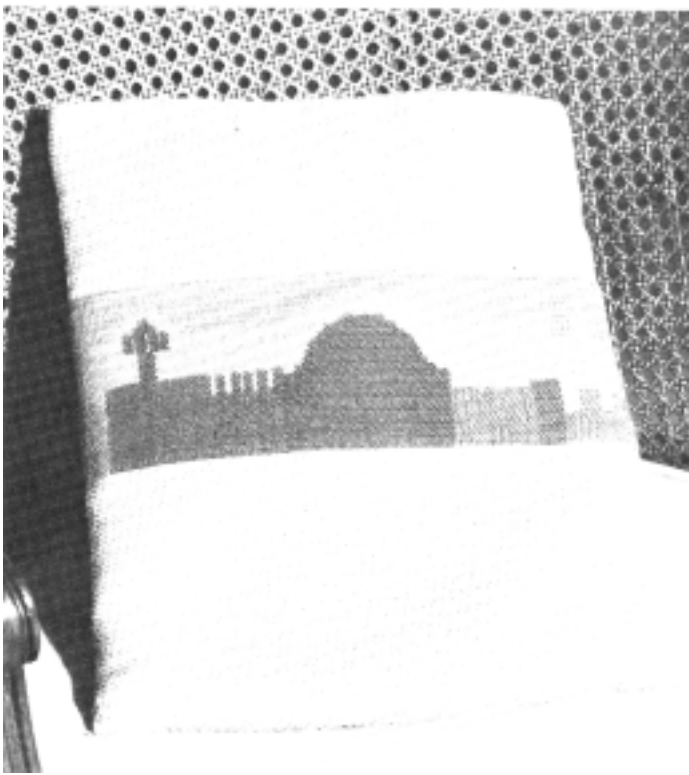
**SIZE:** There is no limitation as to the size. Commercially-made prayer shawls may vary from 2' X 5' (61 X 152 cm), to 1½' X 6' (46 X 182 cm), to 4' X 6' (122 x 182 cm). The size depends on the wearer's comfort and preferences.

**FIBER:** There is a strict prohibition called the "sha'at-netz" against making a garment with both linen and wool. This prohibition is in remembrance of the commandment not to trespass against the order of nature which created the species separately,<sup>4</sup> but the prohibition refers only to combinations of linen and wool. Synthetics may be combined with linen or wool, and silk may be used alone or combined with any other fiber. Commercially-made prayer shawls I have seen are all rayon and tend to slip off the wearer's shoulders.

**THE RITUAL FRINGES:** The tzitzit (pronounced tzeit zeit) consist of sixteen white woolen strands, four long and twelve short. The longer strands are called the shammash and are used for winding around the shorter strands in a very precise and specific number of double knots and spirals. The symbolism of the numbers is central to the overall symbolism of the talis.

Because this is such an important ritual, Seymour did not want me to tie the tzitzit when the talis was completed. He wanted it done by someone familiar with the process. I might have tied 6½ or 7½ spirals when I should have tied 7, thus invalidating the tzitzit.

The process of tying the tzitzit is described in an earlier Weaver's Journal article on the talis,<sup>5</sup> so I will not elaborate here. Tzitzit kits are available from Hebrew bookstores, or one may have this process done by a rabbi or qualified individual.



3. Carrying bag

My second concern was with all the traditions and commandments of the Jewish culture. I didn't want to make any mistakes in color, size, fiber or embellishment. The mitzvot (commands) in the Torah contain six hundred and thirteen regulations for everyday life, and I was sure that some of those pertained to me, the talis weaver.

I turned to my weaving books and journals naively thinking (or hoping) I would find the "how to" of weaving a talis. I was disappointed that at that time (early 1977) there was but one periodical source<sup>1</sup> too brief for all the questions I had. Our state library interloan service offered a few more books on ecclesiastical weaving, and their bibliographies were additional sources of information. Meanwhile, Phyllis and Seymour continued to send me books and articles from their own Hebrew sources.

I learned during this research process that there is very little published information on handwoven or hand-crafted ecclesiastical garments. The main complaints I read throughout my research are that churches and synagogues tend to use the factory-made adornments for their ceremonies rather than asking local artists and craftsmen to make them. "What is currently available in [ecclesiastical] crafts for Jewish-Americans, either to buy or to make, is paltry indeed. If we go looking for a matzah or hallah cover to buy, we find that the only objects available are far below even Green Stamp standards. . . . If we are truly interested in enriching our aesthetic and religious lives simultaneously, we shall have to make the things ourselves."<sup>2</sup>



**THE COLLAR OR CROWN:** A narrow, rectangular piece of fabric, ribbon or embroidered tape is often centered along the edge of one of the long sides to provide spatial orientation for the talis. Sometimes the collar is embroidered in Hebrew with one of the phrases from the ritual for putting on the talis.

**OTHER CONSIDERATIONS:** A talis is not meant to be a garment of warmth. Although by admonition of the Torah, the wearer is to feel enwrapped by the talis, it should not be so heavy as to be uncomfortably hot. Seymour sings in his synagogue choir and sometimes must stand for long periods of time while he wears the talis over his dress suit. We would not want him passing out in the middle of a service. The weight (or lack of weight<sup>6</sup>) of the garment is important.

If the fabric is inflexible, it will fall off the shoulders and be distracting. The talis should be light enough to drape well and yet not be as slippery as the rayon prayer shawls I discussed earlier.

The talis should be large enough so that all four tzitzit may be gathered and held at one time during parts of the service. Seymour tried on one of my own shawls to determine the size that he wanted, and we settled on a finished dimension of 45" X 70" (114 X 178 cm). Now that he has used it for a while, he would have liked it a little wider than 45".

The edges may be fringed or hemmed, and there are many possibilities for embellishments and personal creativity.

Since both the inside and outside of the talis are visible during use, it is advisable that both sides be as similar as possible. One should not choose a pattern that has an obvious right and wrong side.

Because the talis is worn several times a week, it is easier to transport and protect if it has its own bag. I planned to add extra warp length from which to make the carrying bag.

After Phyllis and Seymour chose their colors, I worked the samplers in setts ranging from 18 e.p.i. to 24 e.p.i. (70 to 95/10 cm) with striped and solid warps, striped and solid wefts, and found that 20 e.p.i. (80/10 cm) in a 2/2 twill with a solid color warp would work best.

**WARP:** 2/20 Worsted from Frederick J. Fawcett, Tan

**WEFT:** 2/20 Worsted from Frederick J. Fawcett, Beige, Tan, Acorn, Chestnut and Delft Blue

**SETT:** 20 cpi, in a 15-dent reed (80/10 cm in a 60/10 cm reed)

**WIDTH IN REED:** 49" (124 cm)

**LENGTH OF WARP:** 147" (373 cm)

**THREADING, TIE-UP AND TREADLING:** see Figure 1

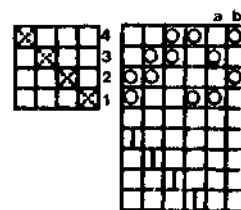


FIGURE 1. Threading, tie-up and treadling

**WEAVING PROCESS:** The entire project—the talis and carrying bag—took fifteen tubes of the 2/20 worsted altogether, and I used every last bit of it except for the blue.

Within the seventy-four inch length of the talis, I wove fifteen inches (38 cm) of Chestnut, then eight inches (20 cm) of Acorn, then twenty-eight inches (71 cm) of Tan in the center, and then back to eight inches of Acorn and fifteen inches of Chestnut. (see Figure 2)

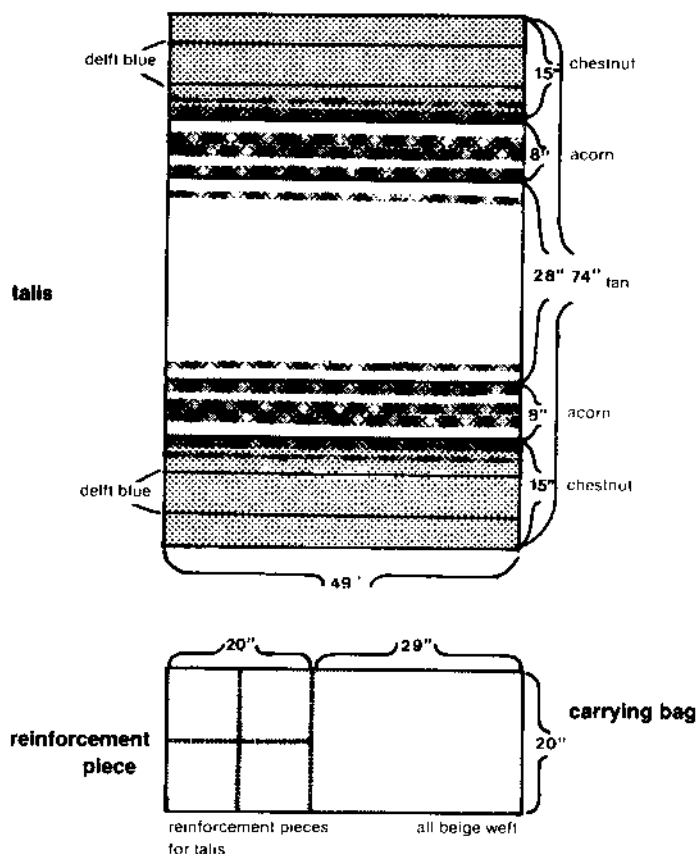


FIGURE 2. Talis and bag measurements

Within the fifteen inches of Chestnut on each end of the talis, I wove two picks of the Delft Blue. I found that this area was too large and monotonous, and the Delft Blue added more interest without being busy or distracting.

At the end of the warp I allowed twenty inches for the carrying bag and for the four reinforcements for the corners of the talis to which the tzitzit were to be later attached. (see Figure 2)

I hemstitched the fringes at either end of the talis while it was still on the loom.

After removing the talis and bag from the loom, I machine zigzagged around the talis bag piece. I then placed both the talis and bag into the washing machine which had been prefilled with warm water and Ivory Liquid Detergent dissolved in it. After the two pieces soaked in the soapy water for two hours, I agitated the machine on the gentle cycle for five minutes and then rinsed the pieces by: lifting them out of the soapy water, refilling the machine with clean, warm water, agitating the pieces in the rinse water, lifting them out and again repeating the process until the rinse water was clear. At no time did I let the machine go through the spin cycle with the talis and bag piece, for I didn't want any wrinkles to be forced into the fabric. I rolled the pieces in towels to soak up the excess moisture, removed them from the towels and laid them flat to dry.

Here are the comparative measurements after the fulling, drying and hand pressing:

	width	length
talis just off the loom	47½" (121 cm)	73½" (187 cm)
after fulling and pressing	45" (114 cm)	70" (178 cm)

I machine zigzagged the four reinforcement pieces and cut them from the carrying bag piece. I was then ready to apply them to the talis. The tzitzit are tied at the corners, but I had a question as to how far in from each edge the tzitzit were to be tied. I learned that the general guide is that the tzitzit hole is three to four fingerbreadths from both edges of the corner. I applied the reinforcement pieces or facings onto the front of the talis by turning under the edges and blind hemstitching them down so that the center of each facing would be four inches in from each edge. (see Figure 3) I then embroidered a buttonhole stitch around the center so that the tzitzit would not ultimately tear the fabric.

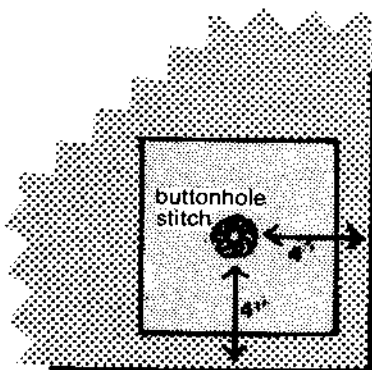


FIGURE 3. Corner reinforcement square for tzitzit

At this point, the talis did not have a collar or crown. On a separate warp I planned to weave a 3" X 30" (7.5 X 75 cm) strip, using the Theo Moorman Tapestry Technique to weave a silhouette of the City of Jerusalem in all the

colors that had been used in the talis. This warp was particularly successful because while it was still on the loom, Seymour, to my great delight, immediately recognized the design as being Jerusalem. However, after being removed from the loom, fulled, pressed and pinned to the talis edge, the design of this strip appeared inappropriately decorative. I needed something else more conservative in tone.

I had enough yarn left to do another warp in a point twill in Chestnut and Tan. I reversed the twill in the center of this 3" X 24" (7.5 X 61 cm) strip to give the collar a centering focus for the back of the talis. (see the collar in Plate 2) I made this second strip a finished 24" instead of 30" because I found the latter length to be proportionately too long for the overall length of the talis. I applied this second strip to the edge of the talis by turning under the edges and blind hemstitching all around.

I did not want to give up on somehow using the Moorman piece. I found that it fit perfectly across the upper half of the bag which had not yet been sewn together. Here the decorative effect was appropriate and brightened up an otherwise dull bag. After blind hemstitching the Moorman piece to the bag fabric, I folded right sides together, machine stitched down the side and across the bottom, pressed, turned right side out, turned under the upper inch for a hem and lined it in satin. I had originally used a Velcro strip across the inside of the opening as a closure, but this tended to catch on the talis when it was being removed or replaced, and I have since applied three covered snaps as a closure. The bag has a finished size of 12" (30 cm) wide by 16" (41 cm) long. The Moorman strip completely encircles the upper half of the bag.

This was a very satisfying project. I learned a great deal more about the Jewish culture, and I know that the talis is lovingly used several times a week. Plus, I had only three broken warp threads!

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# WEAVING ECCLESIASTICAL

As is evident from this issue of *The Weaver's Journal*, there is a renewed interest today in the individual contribution of the weaver-artist to liturgical environment and vestments. An attempt to encourage development and design of hangings, vestments, stoles, paraments, altar cloths and other decorative accoutrements for worship which are unique and individual, rather than traditional, is seen clearly in the churches' attitude now. It is time to develop an art environment which speaks to people in the church today in the art forms and culture of today. Traditional is very beautiful, but the weaver-artist need not be restricted to traditional any longer. The contribution of the handweaver to the mood and spirit of a liturgical celebration can be great in today's atmosphere of individual ministries within the church community.

Handsome and beautiful handwoven ecclesiastical stoles and chasubles can be designed and made by those interested in investing some thought, time, and sensitivity in the project. A design need not be complicated to be effective and beautiful. Nobility and seeming simplicity are encouraged to enhance the wearer's appearance and not detract from the liturgy, to speak to the particular celebration, yet bring awareness of tradition, continuity, and mystery. It is encouraging to see handcrafted vestments made by members of a church community itself emerging to join the traditional commercially produced products available through catalogues. Craftspeople are thus able to express themselves meaningfully and fill the special needs of their own religious fellowship through their participation.

The celebrant of a liturgy often wears special vestments meant to enhance his appearance, serve the ritual action, and to call attention to the mystery being celebrated. Commonly used vesture includes a chasuble and/or a stole, both of which can vary in style and design a great deal from traditional and yet be quite acceptable. The rules are no longer hard and fast. One can break with tradition to express the message in new ways, with new symbols, and with new colors; thus perhaps being more effective than with traditional designs.

Although traditional seasonal colors are still used, other colors appropriate to liturgical celebrations are allowed. For instance, autumn colors used for a liturgy of the Thanksgiving season give a clear message of the time of year and greatly enhance and emphasize the ceremony. Multicolor stoles are delightful for solemnization of weddings, baptisms, and anniversaries. The beautiful bright colors of spring flowers, including a fresh "spring" green, add greatly to the Easter celebration. Imaginative use of

white on white with off-white, a contrast in texture and patterns, and a touch of metallic thread combine to enhance any service. A red, white, and blue stole with stars is most appropriate for July 4th and other patriotic occasions.

**Stole**—A stole is a long somewhat narrow piece of fabric worn around the neck and hanging down the minister's front over the chasuble or alb. It varies with the wearer's taste from 2½" (6.4 cm) wide and 106" (2.7 m) long, to 7" (17.8 cm) wide and 130" (3.3 m) long. There may be a cord or chain, 5" to 8" (13 to 20 cm) long, fastened at 8" to 11" (20 to 28 cm) from center back on each side of the length of the stole, to keep it in place across the shoulders when worn. Many stoles have a mitered point worn at center back varying from understated and near the neck, to wide and exaggerated hanging down nearly to the waistline. The angle used to make the point varies as does the width and length of the stole. (see Fig. 1)

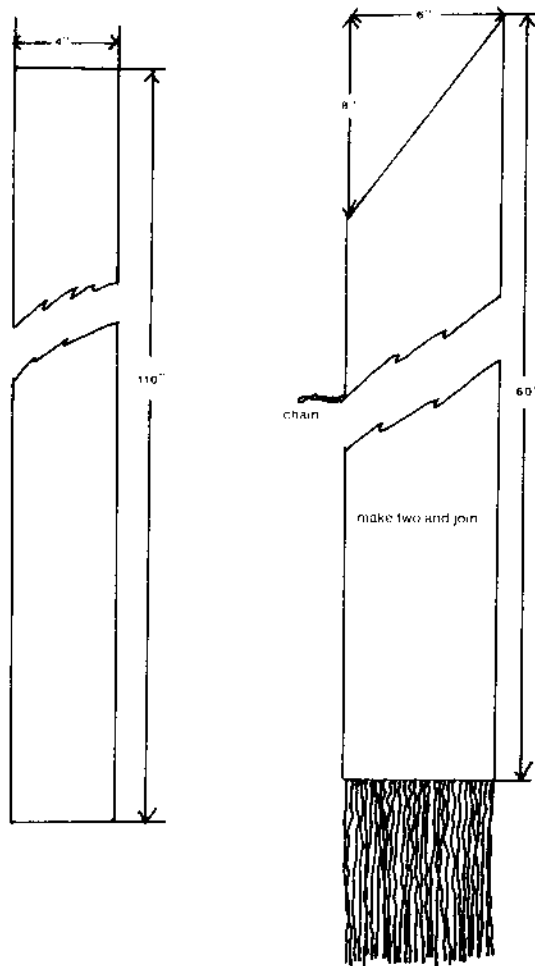


FIGURE 1

# STOLES AND CHASUBLES

by Kathy Reed

A stole may be a straight length of fabric in the usual seasonal colors of red, white, green, or purple with a cross or simple traditional design woven in or embroidered after weaving. Or it may be a complicated color sequence of horizontal or vertical stripes of varying width and color, a fabric which "sings" beauty and joy to the viewer, becoming an intense aesthetic experience. No symbol needed. Monk's belt or crackle weave may be used to make an overall design of crosses in changing lengths and colors in rows on the fabric. Overshot patterns offer many excellent possibilities. (See Figs. 2 and 3)

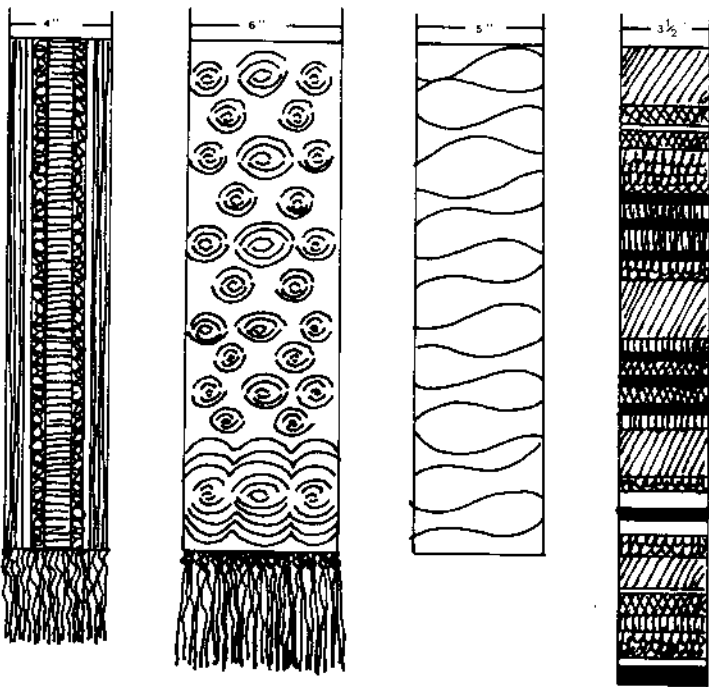


FIGURE 2

Subtle weft color changes can be used effectively to vary the monotony of a one-color stole. Plain bands of contrasting or complementary hue can be woven at intervals between patterned areas. Varying textures, sheen, and shading can make a monochromatic stole sparkle with interest and effectiveness in a simple design. Special results may be obtained by the use of pickup, supplemental warp, hand embroidery on or off the loom, and laid-in methods of weaving. Many beautiful effects can be achieved by use of the Theo Moorman technique. Tapestry technique may be used for special detailed decoration. (See Figs. 4 and 5) There are unlimited possibilities for working out designs for the result one wishes to achieve. The joy of the artist in

the creation should show plainly in the design, color, and craftsmanship of the finished weaving.

Pay close attention to color, varying value, intensity and hue in the warp and weft to make the fabric come alive. To be effective the stole must be designed to carry its message to the entire congregation rather than just those in front. More contrast and more intense color and larger designs are desirable if the stole is to be effective in a large church. Lighting in the church has much to do with the effectiveness of color. Design placement is important. If the design concentrates at the ends of the stole, it is less effective than when it falls on the front shoulders and center back of the wearer.

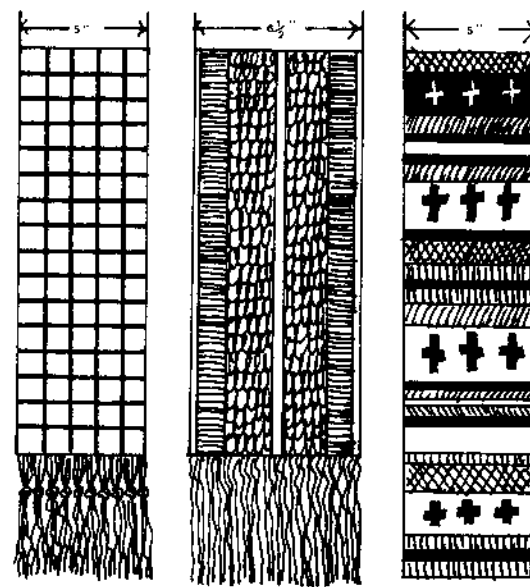


FIGURE 3

A stole is ready to wear when woven to size and finished on the loom, i.e., some method such as hemstitching has been used to secure the last picks of weft, and the warp ends have been cut to provide a fringe for the ends of the stole. More threads might be added to give a generous look to the fringe, and the cord or chain sewn on to complete the stole. At this time one must consider whether the stole needs some kind of finish on the selvedge. This finish should blend in and not detract from the careful design and craftsmanship of the stole. If the edges are irregular, a row of single crochet in a blending color with a fine thread edges it nicely. A lightweight or fragile stole might need lining, but generally the stole is more attractive unlined.

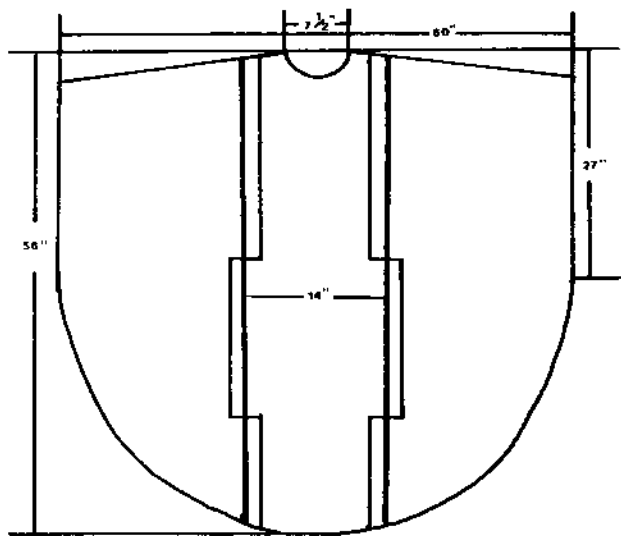


FIGURE 6

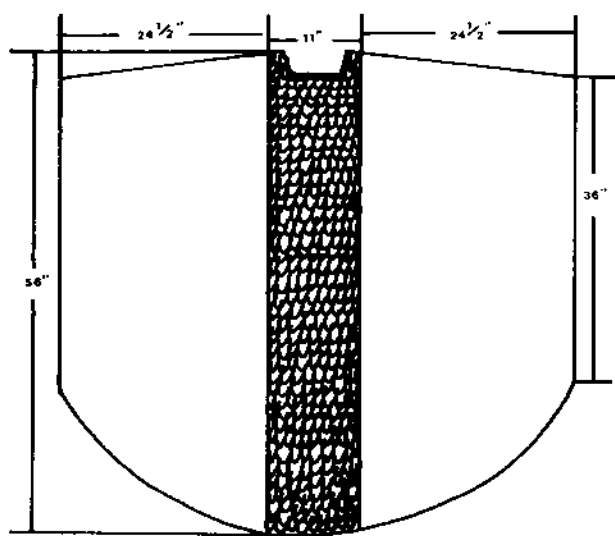


FIGURE 7

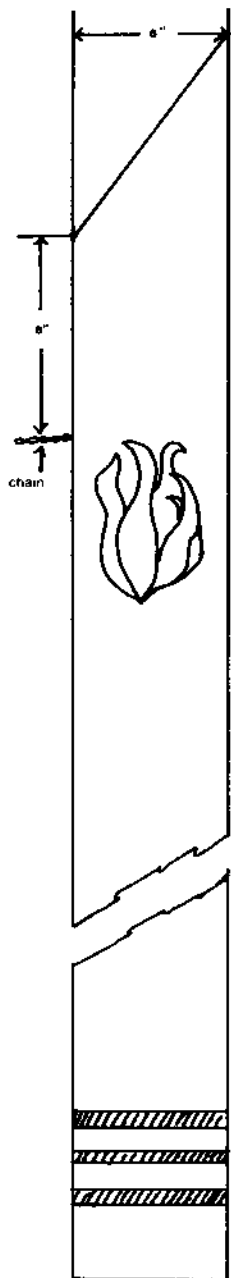


FIGURE 5



FIGURE 4



FIGURE 8



FIGURE 9

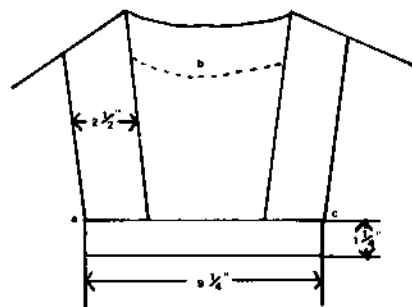


FIGURE 10

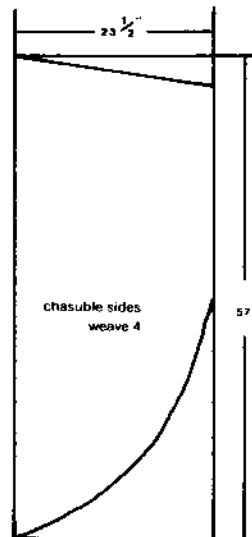


FIGURE 11

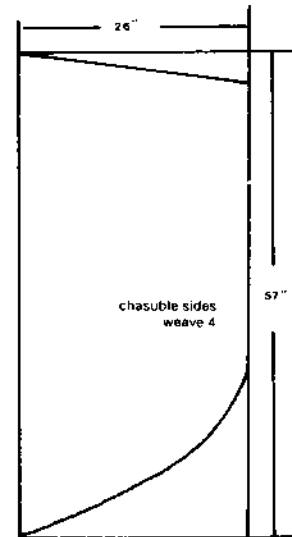
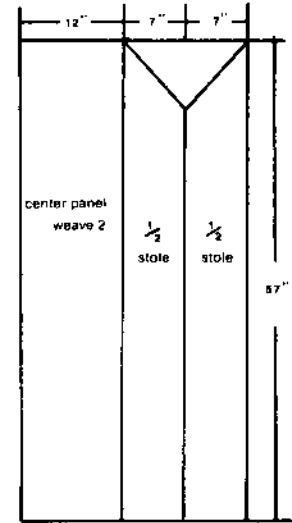
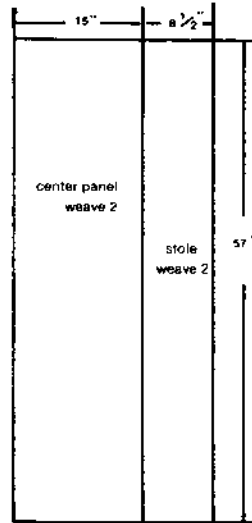


FIGURE 12





Another method of producing stoles is to weave yardage and cut the stole from that carefully designed yardage. This allows for possibility of contouring for a better fit. The weaver must be careful to secure the warps and wefts before cutting the fabric, or immediately after, so there will be no raveling. A straight or zigzag sewing machine stitch will hold the fabric. Lining fabric of a coordinated hue  $\frac{1}{4}$ " (6 mm) narrower than the stole may be stitched along the edge and the whole thing turned inside out, the ends turned in and finished by hand. A fringe could be added. Sometimes stoles need a bit of weight to hang correctly. A drapery weight or chain may be sewn inside the lining, or bells or decoration of some kind on the fringe could give the additional weight.

One stole may be woven at a time, long and wide, on a small loom, inkle loom, with cards, or on any other loom, but one often wishes to be more efficient than this. Several stoles could be warped at one time across the loom and woven using separate shuttles for each. Different widths, color, and design could be explored at the same time, or the two halves of a stole may be woven side by side with two shuttles. For design purposes this would give good control over what is happening on the parts of the stole which hang side by side when worn. Ends could be woven with the proper angles and sewn together with the warp ends woven back in or used as a decoration hanging down the center back to become a tassel. The addition of bells and/or beads here might be considered.

**Chasuble**—Fabric for a chasuble can be woven to a specific width and design idea, then cut out and joined very simply to make a beautiful garment. A tastefully designed fabric will give the nobility and grace required by the ministry of the celebrant. The chasuble does not need additional symbols and designs to carry the message of celebration in

community, especially if a coordinated stole is worn over the chasuble.

The usual dimensions of a chasuble are shown in Figs. 6 and 7. The fabric may be woven to the full width indicated, or made in three parts as suggested by the designs shown. The heavy line in Fig. 6 may be the decoration at the join of the three pieces. The neck edge can be made plain and collarless by finishing the edge with facing woven for that purpose, or with a bias strip cut from the corner of the fabric. (see Figs. 8 and 9) Additional fabric may be woven and cut if a collar is a part of the plan. A squared neckline edge can be finished with a width of fabric stiffened with interfacing and sewn around the neck from a to b to c, then folded in half and finished inside by hand. A flat facing for the right side center front neckline is then applied. (see Fig. 10). The edge of the chasuble is hemmed simply by hand or on a sewing machine.

**Layouts**—Two suggested layouts for weaving a chasuble and stole are shown in Figs. 11 and 12. Be sure to adjust the dimensions to the person for whom the chasuble is being made. The diagrams include seam and hem allowances.

Design elements may be woven separately and applied after joining the sections of the chasuble. An overall pattern could be used for the center panel with good results. Stripes of color or pattern carefully placed would enhance the chasuble. There are unlimited possibilities for the creative weaver to know the joy of developing and contributing her personal talent in ecclesiastical weaving to her own community and others. This article suggests a beginning. ■

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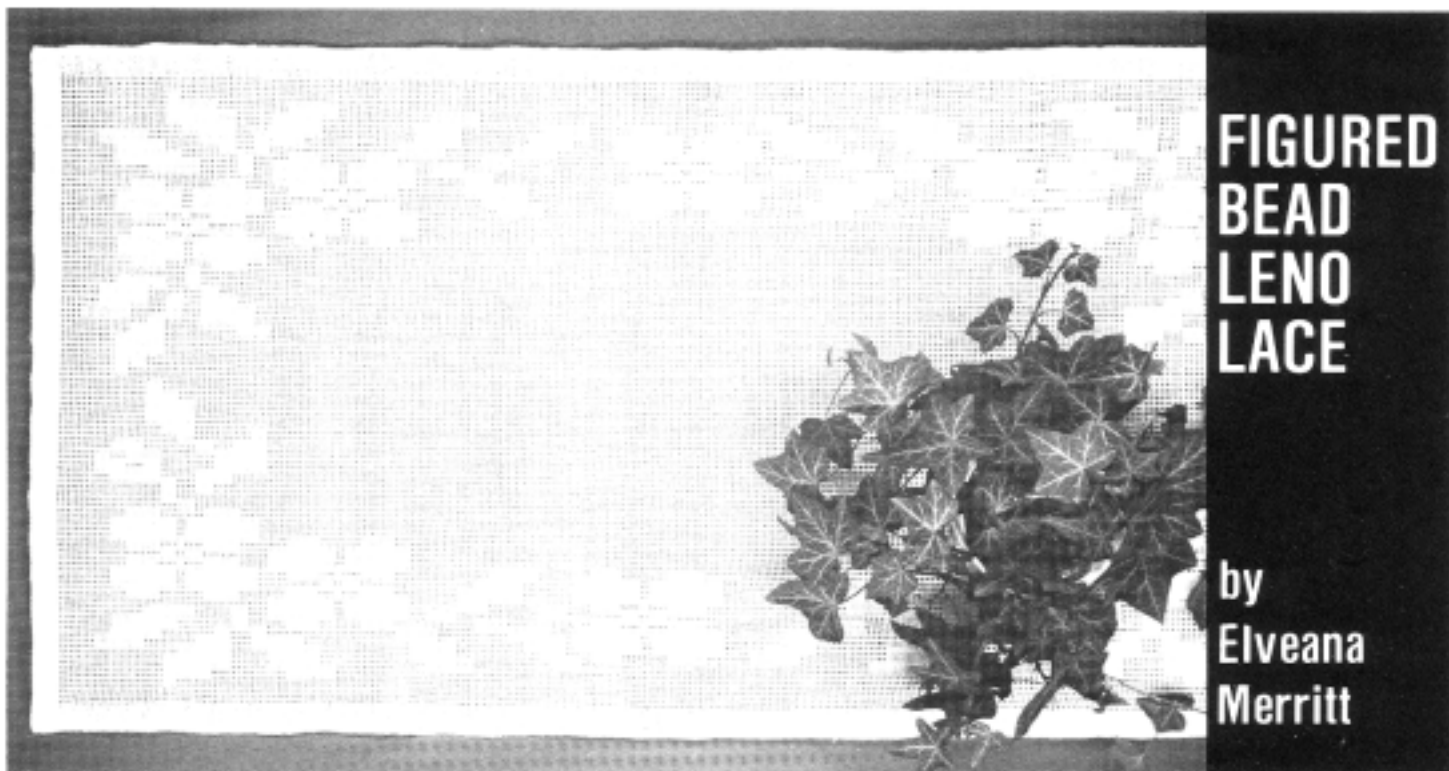
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1. Figured lace, 2 over 2 leno, 2 over 2 plain weave

Leno is a gauze technique whereby certain warp threads are twisted with each other. This twist is held in place by weft yarns. The crossing is usually done by means of a pick-up stick, doups (special heddles) or with the help of beads.

Bead leno has been described by Mary Meigs Atwater on pp. 266-276 of *Shuttle Craft Guild Book of American Handweaving* (MacMillan, New York 1966 edition). While experimenting with the technique I realized that it could be used for the figured lace I wished to weave.

The weave is done on a 4-shaft loom (jack or counterbalanced) and is easy to thread. The leno twists are formed automatically, by the action of the beads, when the proper shafts are raised or lowered. The type of leno produced is a two over two leno (double leno) and the weft which holds the twist in place is also a double thread. The effect is somewhat coarser than single thread leno. But, with the large choice of yarns available today, the weaver can nevertheless weave a very fine product.

The design of the figured lace should be drawn on graph-paper, letting each square account for one unit of the weave: 4 warp threads (twisting 2/2) and 2 double thread weft picks.

Fig. 1 shows the graph for the design shown in Photo 1. Simple patterns with blocks of no less than 2 units are best for experimentation.

To prepare the loom for weaving, you will need a supply of beads. These should be the long tubular type, large enough to accept two warp threads and move freely, but not larger than necessary. The small, hollow plastic

"bamboo" tubes used to make cafe curtains a few years ago, or plastic cocktail sipping straws cut to  $\frac{3}{8}$ " (9.5mm), make excellent beads when using fine yarns. You can use the larger size straws but they do tend to hang up in the warp a bit. You need as many beads as there are units of weave.

Each unit of weave requires four warp ends, threaded 4,1,2,3 or 3,2,1,4. See Fig. 2.

The threads from shafts 3 and 4 of each unit are drawn together through a "bead". The threads from shafts 1 and 2 are taken over the bead. Next, all 4 threads of the unit are drawn through a single dent of the reed. Skip a dent, then enter the next set of prepared threads. Thus you have four threads every other dent. Do take note! The beads are threaded on the warp between the heddles and the reed!

The system works quite simply. When shaft 4 is raised, the threads on both shafts 3 and 4 will come up together on one side of the free threads on shafts 1 and 2. When shaft 3

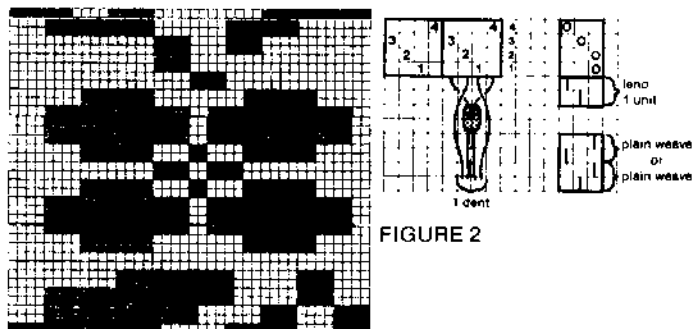


FIGURE 2

FIGURE 1

is raised, the two threads will come up on the opposite side of the free threads.

Notice the threads on shafts 3 and 4 do not come up independently, so no true tabby is possible for weaving a heading.

To weave two picks of leno (one unit): Raise shaft 4 and weave, then shaft 3 and weave. Beat well.

To weave two rows of plain weave: Raise shafts 1-2 and weave, then shaft 4 and weave or raise shafts 1-2 and weave, then shaft 3 and weave. Beat lightly.

As the leno sheds are rather shallow, it is best to weave with a stick shuttle.

I suggest the warp be kept well tensioned although this will cause considerable draw-in. A stretcher (template) can be used to keep the cloth properly spread.

When using a jack loom, weighting the crossing warp threads will provide a better shed. Raise shafts 1 and 2. Insert a dowel or flat stick in the warp behind the heddle frames, letting it rest on the warp on shaft 3 and 4 only. Suspend a weight from the dowel or stick. Experiment to determine the amount of weight needed for the best shed. I found my counterbalanced loom provided a sufficient shed without weighting the warp.

Occasionally one or more beads may refuse to release the warp twists. If that happens, lower a leno shaft (shaft 3 or 4) and raise shafts 1-2 and the warp will clear.

So far we have described how to weave rows and units of all-leno or of all-plain weave. In order to weave figured lace, we need plain weave and leno in the same row. This we accomplish by stopping the twists from forming in the leno row where plain weave is desired.

You will need a narrow pick-up stick, well tapered at one end and a shed stick that should also be tapered at one end. These sticks should be a little longer than the width of the warp but no longer than the length of your reed.

All the numbers in following treadling instructions refer to shafts to be raised and lowered, not to treadles used.

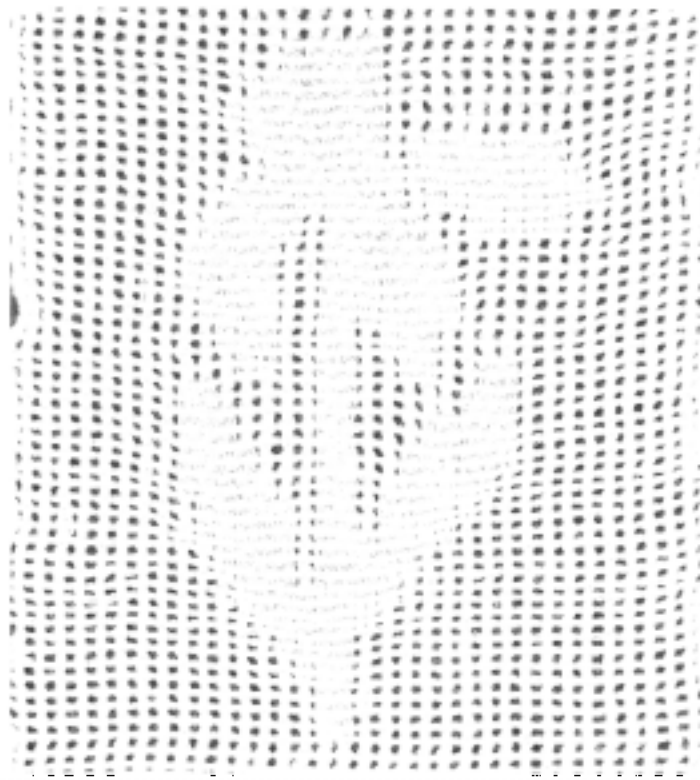
For our examples we shall use the 1-2 then 4 for all plain weave.

### **METHOD #1—2 over 2 leno; 2 over 2 plain weave—weft same as warp but used double.**

Either leno or plain weave or both may be woven as desired before starting the figure, but the last pick must be in the shaft 4 shed.

#### **PATTERN ROW**

**Step 1** - Raise 1-2. Using the narrow stick, pick up one pair of warp threads for each square of the first row of the graph where plain weave is needed. Skip over the warp pairs where leno is desired. Do not split the warp pairs.



2. Figured lace. 2 over 2 leno. 2 over 2 plain weave, double weft.

**Step 2** - Drop 1-2 and raise 3 and leave up. Pull the stick towards you to clear the shed, then push it back to the reed. If the pick-up is correct, you will see the warp twists formed in the desired leno areas only.

**Step 3** - Starting at the selvedge, slide the shed stick under all of the raised warp pairs (just raised by shaft 3) for the leno areas and as you come to the plain weave pairs, transfer them *over* the narrow stick to the shed stick. Take care not to pick up threads from under the narrow stick in the plain weave areas.

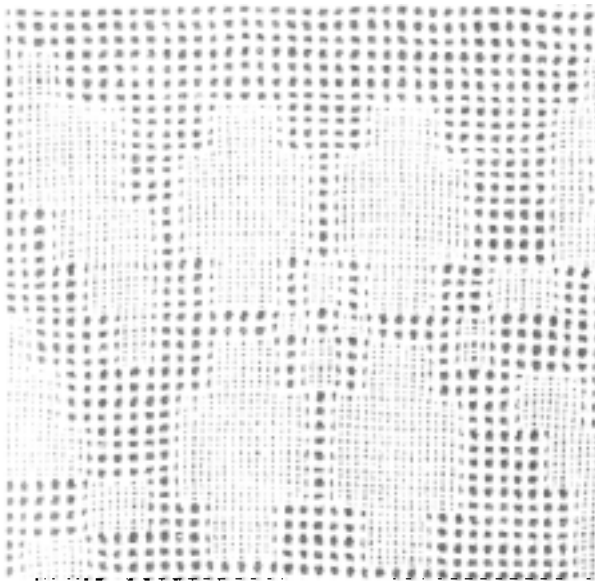
Turn the shed stick on edge. The warp now over the stick should be in pairs, one pair for each used dent of the reed. Make corrections if needed, then weave with double weft. Remove both sticks and beat. Drop 3.

**Step 4** - Raise 4 and weave. This completes 2 weft picks (1 unit of the weave) and accounts for 1 line of graph squares.

Pick up pattern according to line 2 of your graph, repeating steps 1 through 4. Note that the plain weave packs in better than the leno. This causes the weft to deflect.

### **METHOD #2—2 over 2 leno with double weft, plain weave with single weft—weft same as warp.**

There will be 2 rows of leno and 4 rows of plain weave in each complete unit of lace. Thus, in the plain weave areas, there are twice as many warp and weft interlacements using method #2 than in method #1. It will appear to be more closely woven and contrast well with the open leno areas. Here there is less packing-in of the weft in the plain weave areas, eliminating the deflected weft effect.



3. Figured lace, 2 over 2 leno with double weft, plain weave with single weft.

A single floating selvedge should be added at each side of the warp.

To start, weave leno or plain weave as desired, entering each leno shed twice and ending with a pick in the 4 shed.

#### PATTERN ROW

**Steps 1 and 2** - Raise 1-2 and follow the same instructions as in method #1.

**Step 3** - Same as in method #1 but weave with single weft.

**Step 4**-Raise 4 and leave up. Clear the shed. Examine the cloth (fell line) carefully. With the narrow stick, pick up the **untwisted** warp pairs for the same plain weave areas as for step 1. Skip over all of the **twisted** warp pairs for the leno areas.

**Step 5**-Drop 4 and raise 3 and leave up. Clear the shed. Push the narrow stick back to the reed. There will be no twists in the warp. Transfer the plain weave pairs of warp from the narrow stick to the shed stick and pick up all of the just raised leno warp as you come to it, being careful that you do not pick up any warp from under the narrow stick in the plain weave areas. Turn the shed stick on edge; weave with single weft. Remove sticks and beat. Drop 3.

**Step 6**-Raise 1-2. Repeat step 1, picking up the same warp pairs for the plain weave areas, using the narrow stick.

**Step 7**-Drop 1-2, raise 4 and leave up. Clear the shed. Push the narrow stick to the reed. Transfer the plain weave pairs to the shed stick and pick up the leno pairs as you go. Turn the stick on edge, weave, remove sticks and beat.

**Step 8**-With 4 still up, clear the shed, weave and beat. One unit of the lace is now complete.

Raise 1-2, pick up the pattern for line 2 of your graph, repeating steps 1 through 8.

If you have difficulty finding the proper warp pairs to make the second plain weave pick up for step 4 and making the transfers for step 5, you may like to try it this way.

After weaving through the shed for step 3, leave the sticks in place and do not beat.

**Alternate step 4**-using a second narrow stick, pick up all of the leno pairs from the shed stick, passing over the plain weave pairs.

**Alternate step 5**-with this third stick in place holding the leno, drop 3, remove the first 2 sticks and raise 4. Using the shed stick, pick up the just-raised warp pairs for the plain weave areas, plus the leno pairs from the holding stick. Turn the shed stick on edge, weave with single weft, remove both sticks and beat. Drop 4 and go on to step 6.

#### METHOD #3—1 over 3 leno

For a very special piece, you might try the 1 over 3 twist leno and its companion plain weave. The weaving is a bit tricky, as the warp will be on 3 levels at times. Once you understand the principle this isn't too much of a problem. The method of weaving is the same as method #2, with a little change in the shaft lifts.

To weave two picks of leno (one unit), raise 1-3, weave; then 2-4, weave. To weave plain weave, raise 1; weave; then 2-4, weave.



4. Figured lace, 1 over 3 twist leno, 1 over 3 plain weave

#### PATTERN ROW

**Step 1** - Raise 1. Using the narrow stick, pick up the plain weave (one warp thread per square of graph).

**Step 2** - With 1 still up, raise 3 also. Using a shed stick, pick up the 3-thread leno groups and also transfer the plain weave singles to the same stick. Weave and leave the sticks in place.

**Step 3** - Transfer the leno to an extra pick-up stick as in method #2. Lower 1-3, remove the first 2 sticks. Raise 2-4. Using a shed stick, pick up the first raised 3-thread warp group in the plain weave area and transfer the 3-thread leno groups on the same stick. Weave and remove the sticks.

**Step 4** - Raise 1. Pick up same single warp for plain weave area. Lower 1. Raise 2-4. Transfer the plain weave singles to the shed stick, picking up the 3-thread leno as you go. Weave and remove sticks. With 2-4 still up, clear the shed and weave again. This completes one unit of the weave.

I suggest you make a sampler, trying out the different methods. Do not be concerned because the work will look rather open while on the loom. This is as it should be. Don't try to pack the plain weave areas and *never* beat when shafts 1 and 2 are raised. Take your sampler from the loom, wash and press it. Sit back and admire your handywork!

#### Description of cloth using leno lace method #2.

WARP: 20/2 natural cotton.

WEFT: Same as warp.

SLEY: 4 ends in every other dent in a 15 dent (60:10 cm) reed.

WIDTH IN THE REED: Approximately 19" (48 cm).

TOTAL WARP THREADS: 568 + 2 for selvages. A single floating selvedge thread was used on each side.

WEAVING INSTRUCTIONS: One unit (4 threads) of leno was woven at each selvedge for a neater finish, then five units (20 threads) of plain weave were picked up for the narrow plain weave border. As there was approximately 10% less take-up in the warp for these borders, weights were attached to these bouts of warp and allowed to hang under the warp beam. A better way would be not to beam this warp at all but to chain and weight it, letting it hang down behind the loom.

When taken off the loom, the woven piece measured approximately 17½" X 37" (44.5 X 94 cm) including hem allowance. After stay stitching by machine (2 rows of straight stitch each end), the cloth was machine washed and dried, pressed a bit and hemmed. The piece was then medium starched and blocked to shape on a Turkish towel, much as you would block a crocheted piece. I avoided stretching the plain weave patterns; just patted them in place and slightly stretched the large leno center area (warp wise) to match. When dry and lightly pressed, with no further stretching, the piece measured 16¼" X 32" (41.3 X 78.4 cm).

An allover lace with more balance of leno and plain weave in the design would pose no tension problems. ■

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## BOOK REVIEWS

by Clotilde Barrett

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*THE TEXTILE COLORIST* by Faber Birren © 1980 Litton Educational Publishing, Inc. Published by Van Nostrand Reinhold Co. New York. 64 pp. Paperback, \$12.95.

Without elaborating extensively on color theories this book gives immediate and practical help to the textile artist who needs to improve the color harmonies in his work.

There is a short and simplified discussion of several theories of color and their graphic representation. The author bases his own color series for use by textile artists on a very specific circle and triangle. The circle is called his color keyboard and its relationship with music is often touched upon. It shows four primary colors (red, yellow, green and blue) and four secondary colors (orange, lime, turquoise and violet). The primary colors are represented both as warm and as cold colors. There are thus 12 hues in all. The color triangle shows the color, white and black at the points, tone in the center and tint, gray and shade on the sides.

Using the triangle and the circle the author teaches how to produce color series and how to evaluate their merit.

There is also a chapter on the painters from the Renaissance till the present who are especially renowned for their outstanding achievements with color.

This book is sure to help weavers and other textile artists. The theory is clearly explained and illustrated with color plates and line drawings. The color reproductions are not as "true" as they should be but nevertheless do give a solid basis from which to start experimenting.

*WEAVING TRICKS* by Susan Gilmurray © 1981 by Litton Educational Publishing, Inc. Published by Van Nostrand Reinhold Co. New York. 189 pp. hardcover, \$12.95.

Where is one going to find the basic information one needs to embark in this fascinating world of weaving? How is one going to catch up with all the tricks other weavers have learned through many years of experience? There is no single source that meets these needs so well as "Weaving Tricks". This is truly a useful book, especially for the beginner and intermediate weaver but there are many practical hints for the advanced weaver as well.

The first chapter deals with setting up a studio and buying a loom. A lot of important facets of the loom are discussed and also what to look for, advantages and disadvantages of various systems, ways to compromise for features that are not available on a particular loom, etc.

The next chapter is on fiber and on the search for the right yarns to do a project. Chapter 3 deals with drafts and the various systems of drafting that are used in today's literature. The clear line drawings will help the beginner understand those graphical representations of weave structures. In this chapter the author crams a great deal of information, all clear but very condensed, which risks being somewhat overwhelming to the reader who hitherto might have thought this book to be an elementary one. Many of the interesting approaches and techniques are touched upon but not explored. The pace here is too fast.

In chapter 4, on dressing the loom, the author explains the basic techniques but shares many useful tricks.

The many good tips of chapter 5, entitled



"weaving secrets", are meant to improve the skills, the speed and the craftsmanship of the weaver. This chapter also includes some tapestry, loom embroidery and other useful stitches. The last chapter is on finishing techniques such as the handling of fringes, seaming narrow woven pieces and more.

The glossary, the index, the excellent line drawings and the easy style of writing all contribute to the value of this book as a true weaver's companion.

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*RUG HOOKING & RUG TAPESTRIES* by Ann Wiseman © 1960 by Ann Wiseman. 1980 edition by Van Nostrand Reinhold, NY 100 pp. Paperback \$7.95.

The technique of hooking rugs and tapestries is an easy one. Very little equipment is needed: A hand hook that can be made from a nail, a backing (burlap can be used) and strips of rags or wool. For speedier hooking there are other tools on the market: A shuttle-hooking tool, an automatic hooker, a rug-tufter, all of which have to be used on a backing that is stretched on a frame. The author describes all this equipment and the materials well. She also gives clear instructions on the techniques including the transfer of designs and the finishing of the project.

In an effort to lure the craftsman away from commercial rug hooking kits about half of the book is devoted to the encouragement and aid of originality and self expression.

By means of good illustrations, lively anecdotes and an easy style of writing the author produces a climate in which the reader really wants to make an effort at designing. All through the text the reader acquires more self-confidence in his ability to create.

Entire chapters are devoted to such subjects as awareness of design, working designs into compositions, how to look for design sources, how to interpret them for rug hooking and finally how to produce and use color.

This book is sure to make the textile artist want to embark on a new venture, that of hooking.

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*HALI. The International Journal of Oriental Carpets and Textiles.*

A quarterly publication (in its 3rd year), published in New York with additional offices serving foreign countries. Subscription price for the U.S. is \$49.00. Circulation Dept., HALI, P.O. Box 4512, Philadelphia, PA 19118 U.S.A. For other countries, inquire about subscription rates.

Just after opening one of these luxurious journals, containing about 266 pages, the first word that comes to mind is 'quality'. The advertisements which occupy more than 50% of the pages do not diminish the value or importance of this periodical. Rug dealers

from all over the world seem to want to outdo each other by representing in their ads the finest merchandise by means of exquisite color plates. Because most of these rugs are identified by origin and size, the advertisement pages are a valuable collector's catalogue.

In the articles the authors, who are mostly museum curators, collectors and art historians, address themselves to their peers and to newcomers in the field. Nevertheless, I, as a handweaver found them of great interest because they are such fascinating reading material. The winter 1981 Vol. 3, No. 3 issue includes such topics as scrutinizing old paintings to aid in the research on antique rugs, accounts of the survival of handmade rugs in remote Eastern villages, the tracking down of specific designs both culturally and historically, the history and survival of handmade rugs in Great Britain, scholarly investigations of designs, fibers, techniques and dyes.

This periodical also keeps the readers informed on past and upcoming auctions, on the market value of rugs, on galleries, shows, conferences and books.

The text is profusely illustrated, mostly in color and, except for the many hard to read and to pronounce Eastern words, this scholarly journal is very readable by the non-experts in the field.

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*TEXTILES OF BALUCHISTAN* by M.G. Konieczny © 1979. The Trustees of The British Museum. Published by British Museum Publications Ltd. U.S. distributor: The Textile Museum, Washington, D.C. 77 pp. Hard cover \$21.50; soft cover \$12.50; S + H \$2.75 for surface mail, \$7.50 for air mail.

The Baluchis are a tribe of people whose lands span areas of Iran, Pakistan and Afghanistan. More than half of the people still lead a nomadic life while others live in settlements. They have few material possessions except for their woven and embroidered textiles.

This book describes the traditional flat woven textiles of the Baluchis. These textiles are weft face and are woven on a horizontal loom. Their fibers are mainly sheepswool and goat hair and are dyed with plant material. The techniques for patterning are slit tapestry, dovetailing and complementary weft tabby. The patterns are intricate and of great beauty. Their woven objects include bedding covers, floor covers, bags for various uses and animal tackle and embellishments. The textiles are often decorated with tassels, shells and bones.

The author leads us through the steps of the manufacture of these textiles: Fibers, spinning, dyeing and weaving. Their spindles and their simple but efficient looms are described in great detail.

The author also gives us an inside view of the life of these people by depicting them at work while producing these beautiful woven objects.

The text is well illustrated with line drawings and photos and there is a brief description of each type of article they make for use in their daily life.

This is a book that is valuable to those interested in spinning and weaving equipment, ethnic weaving, weaving techniques, material culture and above all in functional weaving as an art form.

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*PROCESSING AND FINISHING HAND WOVEN TEXTILES.* © 1980 The Weavers Guild of Boston. Monograph Three, 24 pp. No price or address given.

This monograph draws on the knowledge of many handweavers past and present to come up with some reliable rules for finishing woven fabric. The authors deal mostly with wool and flax fiber but give also some information for silk and cotton.

The first chapter deals with the characteristics of the fibers and the importance of the twist of spun yarn. Successive chapters deal with wool yardage, the use of novelty yarns, the use of linen and finishing techniques, and recipes for handling cotton and silk.

This booklet is very worth while having around for quick consultation. The recipes are sensible and apply directly to handweavers who have limited facilities for finishing their goods.

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#### BOOKNOTES

*COLOR AND DESIGN IN MACRAME* by Virginia Harvey is now available as a paperback from Madrona Publishers, 2116 Western Avenue, Seattle, WA 98121. \$9.95.

This is a reprint of a study and pattern book using a technique of creative knotting called Macrame. This book is particularly rich in information on the use of color and design techniques.

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*A PORTFOLIO OF AMERICAN COVERLETS VOL. 4*, compiled by Carol Strickler is now available from Carol Strickler, 1690 Wilson Ct., Boulder, CO 80302. \$4.75 ppd.

As for the three previous portfolios in this series, this folder contains 25 information sheets, one for each coverlet which the author has analyzed. There are 10 coverlets woven in overshot and 15 which require more shafts or a jacquard loom. These notes will help collectors to identify old coverlets and the weaver to rediscover old techniques. However, to be practical, a catalogue of the coverlets, classified by technique and pattern, should be made available by the publisher. ■

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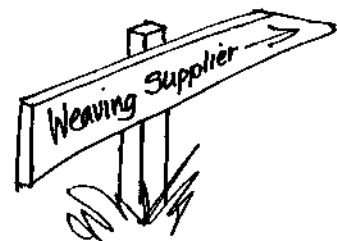
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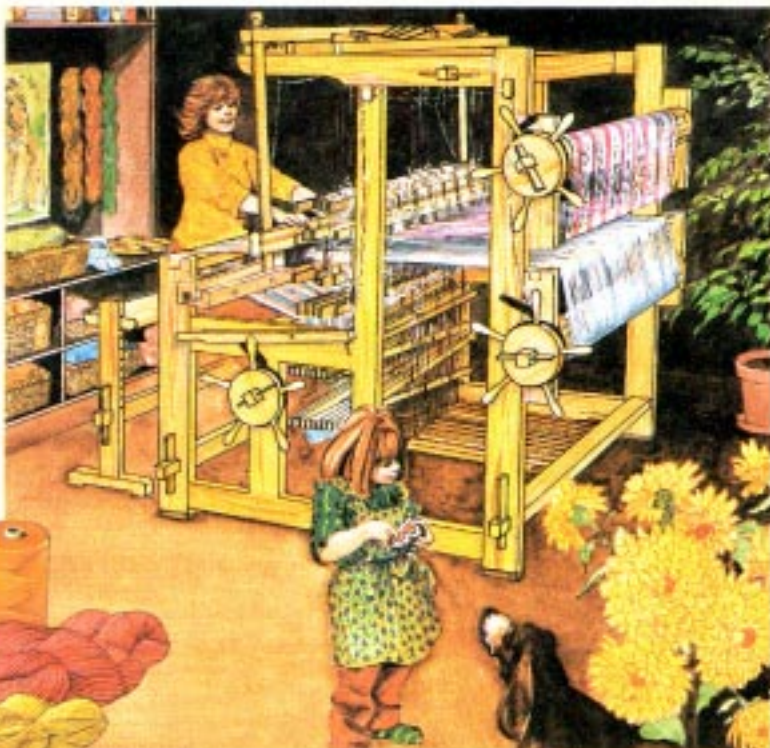
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ADELE CAHLANDER

Weaver's Journal Monograph IV

# SLING BRAIDING OF THE ANDES

by Adele Cahlander

with Elayne Zorn & Ann Pollard Rowe

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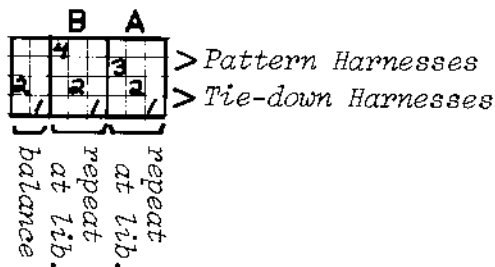
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V/1 p. 9

Missing graph:



V/2, p. 54

After the 5 repeats continue as follows:

- 1-4
- 3-4 two times
- 1-4 two times
- 3-4 two times
- 1-4
- 0-2; 2-3; 3-4; 1-4) 4 times

V/3, p.7

Center of third paragraph: For example, few Vogue patterns and most of the designer styles of the other companies are *not* suitable.

V/3, p. 28

Section 2: Skirt Front

3 1/2" plain

1/8" or 3 picks Island green

16 picks plain  
tulips/repeat yellow, red, blue  
sequence in all areas a - l

3 5/8" 16 picks plain

1/8" or 3 picks Island green

3 5/8" plain

1/8" or 3 picks Island green

3 5/8" plain

1/8" or 3 picks Island green

1 1/2" plain