SOUTHWEST STYLE WEAVING ON THE RIGID HEDDLE LOOM

Workshop – Taos Wool Festival – 2013

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Materials supplied by student:
Rigid Heddle loom with ratchet/pawl tension, minimum 12" weaving width
7.5 or 8 dpi heddle
Tapestry fork or Navajo beater
Stick shuttles

Materials supplied by instructor:

Warp: Maysville 4-ply cotton rug warp
Weft: Brown Sheep sport weight Lanaloft and Top of the Lamb (singles)

Warping the loom – using direct warping, make at least 80 warp ends 2-3 yards long, wind on and thread the loom.

The rigid heddle loom is very well suited to tapestry techniques. The geometric patterns found in the American Southwest lend themselves well to this simple and basic loom. The loom is small and can be used on a table, a lap or a floor stand. With an appropriate combination of warp and weft materials, it is not at all difficult to achieve a fairly professional runner, hanging, bag or even a small rug.

Southwest Style Weaving – this is not a term used by collectors, but used here to describe typical textiles found in the Southwest regions of the United States and extending into Mexico. Colors, patterns and techniques are similar between Oaxacan, Rio Grande, Navajo, Hopi, Chimayo weavings. There are several types of loom involved – the upright Navajo frame and the counterbalanced walking loom being probably the most common. Rather than concentrate on a particular ethnic tradition, this workshop seeks to identify common elements that can be learned in a relatively short time and executed on the rigid heddle loom. For those interested in continuing in a particular tradition, weavers working and living in that tradition will be able to identify symbolism and nuances best, and further lessons will be a nice enhancement.

Why use a rigid heddle loom? Today's crop of rigid heddle looms are nicely built with sturdy ratchet and pawl construction that gives the weaver a loom that warps quickly, weaves nicely, and serves as both a design tool or as a means to a professional looking project.

The weave structure we use here is called "weft faced" tabby (plain weave) because in the body of the piece one sees only the weft yarn. To achieve this effect, there needs to be a balance between thickness and placement of warp and weft yarns. When weaving tapestry, one usually weaves in groups of 2 weft picks – known as a pass or passé. **For figured areas, each "row" is really 2 rows.** The weaver executes the piece beginning at one side for the raised heddle throughout the piece.
For striped areas, pay attention that when switching to patterned sections that the yarn is exiting where Row 2 of the pass ends.

Each color change in the pattern area needs a butterfly or a simple "tail" of yarn. Each color is inserted into the shed such that the tail is exiting on the proper side for Row 1. When weaving left to right, the first butterfly will be inserted at the right edge of the loom. (See Fig. 1)

Figure 1

Figure 2

When weaving right to left, this means one begins with the tail on the left side of the loom. (See Fig. 2) When weaving, this procedure is followed throughout. If this order is not followed, it complicates clean execution of the joins that form the pattern.
Generally the first pass is with the heddle in raised position
It makes a difference if the weaver is right or left handed. Right handed weavers will find it most convenient to pass the shuttle from right to left on the first row of each pass. . When using the shuttle, insert from the right side. When working pattern areas, begin with the butterfly or tail on the left side of the loom, moving the butterfly from right to left. Continue working each tail working to the right. On the second row, with heddle in lowered position, insert shuttle from the left. When working pattern areas, begin with the the tail on the right, moving the yarn from left to right and working the rest of the tails to the left.
Left handed weavers may wish to reverse this. In any case, consistency is the most important part of setting up your project. If this order changes without good reason, the turns and joins may take on an odd look.

Choosing Warp and Weft

Weft faced tapestry is not as easy to set up as it may look. The relationship between warp and weft allows some degree of flexibility, but many factors contribute to the proper beating in so that the textile has all warp covered and the desired firmness.

The "Rule of thumb" here is that the warp yarns should be spaced widely enough that one can place a strand of weft yarn easily between them. At the same time, the warp yarn should be smooth and strong and finer than the weft yarn.

In this workshop, we will be using Maysville 4-ply cotton as the warp. This is a readily available yarn, inexpensive, strong and pliable. It is also used quite often by rag rug weavers and for placemats and heavy fabrics on the rigid heddle loom. Using the direct warping method, it is quite possible to set up for 1-3 small pieces in less than 2 hours.

Weft is sport weight singles yarn from Brown Sheep – either Top of the Lamb or Lanaloft. The Lanaloft has a slightly softer twist, but does make nice fabric. Should anyone want to "add twist" this could easily be done on a handspindle or spinning wheel. It is possible that somewhat heavier weft could be substituted. At home, feel free to try out whatever handspun or commercial yarn you think might produce good results.

I have done a number of samples using this combination of yarns quite successfully so that is our starting point. As you proceed at home, it is quite possible to experiment and try other yarns – other sport weight wefts, handspun yarns single or plied. Singles yarns will pack differently than plied yarn. It is up to the weaver to determine which works best.

Figure 3

Design Elements

Part of the reason for the similarity in designs stems from the reality that most designs are made of only **3 form elements – horizontal, vertical or diagonal**. These elements can be combined in an infinite number of patterns, dependent only on the size of the loom "canvas" and the weavers' imagination.

Horizontals are created by changing weft colors. There are many variations that create simple stripes or more complex horizontal effects.

Verticals can be in the form of vertical lines running over major portions of the weaving, or short steps to create diagonal blocks forming a sort of pyramid form.

Diagonals can be smooth or serrated – and the angle of these diagonals is controlled by the balance between warp and weft. If the weft is fairly thin compared to the warp spacing, the diagonal will be shallow. If the weft is heftier, the diagonal will be steeper. (One of the advantages of learning these techniques on the rigid heddle loom is that the weaver can test the angle before a larger design is finalized.)

Horizontal Design – Stripes

Figure 5

Correct handling of 2 colors at selvedge.

Horizontal design changes, especially those covering the entire width of the project need no joins. Keeping track of color changes when alternating colors in short pick sequences will be demonstrated here.

Figure 4

Horizontal stripes need no joins. Color changes take place at the edges where the colors can be woven such that the color changes do not show the wrong color. There are 4 types of stripe illustrated here. They may be used as shown or combined in any manner that is pleasing to the weaver.

The easiest stripes are simply bands of color in varying width – 4 rows A, 2 rows B, 8 rows C, 2 rows B, 4 rows A. Or the width can be measured on a ruler.

When changing color, turn at the edge in a way that has the unused color above the current color. This may need to happen at each turn for several rows. The result is an edge that is even and hides the color being carried at the selvedge.

Figure 6

Stripes of varying width

Figure 7

Multiple row stripes and choosing color3/3

Figure 8

2/2 (water)

…….

Figure 9

1/1 (coal mine)

……

Vertical Design

Vertical elements can take several forms. Rectangles, crosses, diamonds made or rectangles or squares moving diagonally… Because of the distortions that may occur, long vertical lines are difficult to make. If one studies existing textiles, borders and other long vertical elements, they are often meandering lines that break frequently to avoid yarn buildup that can cause the weaving to bubble or distort when off the loom.

Joins

There are two types of vertical join. The turned join (also called dovetail, shared warp) has the color change take place using a common warp thread for the turn. The interlocking or hooked join makes the turn between 2 adjoining warp threads. Using the common thread for turning is slightly easier to track for beginners, though it creates some bulk and makes rugs done this way more susceptible to wear from the layered threads. Turning between warp threads make a smoother join with no bulk but does pose a slight risk of losing one's place.

Diagonals are perhaps the most difficult join because it easy to lose track of what should be the turning warp. For this reason, the first diagonal designs should move in only a single direction. Later, triangles and other figures using diagonals in both directions become easier.

It is helpful to mark the center warp threads prior to beginning a design. Count from the selvedge to the center – if there is an odd number of warp ends, there will be one warp in the center. If there is an even number of warp ends, there will be 2. Put a piece of contrasting yarn around the center as shown here:

Figure 10

Turned Join

The turned join is the mainstay of Rio Grande and Navajo weaving. It is quite possible to execute a piece using only this join and some horizontal striping. It is sturdy, easy to keep track of and makes a nice appearance. The one disadvantage of this join is when the piece is intended to be used as a floor rug. The shared warps wear somewhat more quickly because of the extra abrasion at the join. For wall hangings, handbags and other pieces, this is not an issue.

To begin the figure, count the warp ends needed for the desired figure. (See Fig. 11.) For a square or rectangle in the center of the piece, count an even number of warp ends in the center – 2, 4, 6 – and begin the color with a separate piece of yarn. Proceed in the direction you are using for the first row of each pass. Now bring the main color from the side where it lies to the contrasting piece in the center. Next take a length of main color and proceed from the center design to the edge.

Figure 11

We are now ready for the return row. When making the shed, note that you will be including one more warp end on the return row – where 4 ends were included in the first row, now you will pass under 5 threads.

This is perhaps better illustrated when a few passes have been completed. Here is the first row – started with the gray thread at the right, followed by the red, followed by the gray at the left – remember, start with the yarn at the side of the piece where the tails will emerge. (Fig. 12)

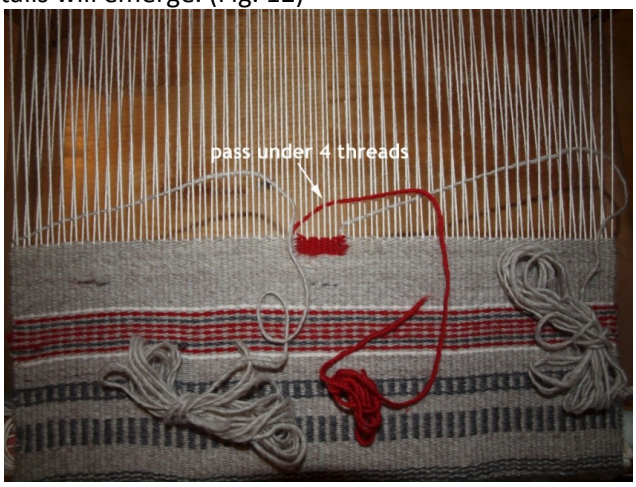

Figure 12

Now return the yarn reversing the order and including an additional warp when turning. The gray at left turns around the warp to the right of where it emerges on the first row. The red turns on that same end to the right of the emerging thread and continues under the first warp end of the gray section. The gray at the right turns on the selvedge and ends by passing under the first warp end of the red section. This can also be seen that the motif runs

over 4 threads for calculating the centering and that 5th thread is then shared by two pattern sections. (Fig. 13)

Figure 13

Advancing the Motif Right or Left

Now we will advance the design to both the left and the right.

Row 1 – working right to left as illustrated. Turn 1st gray as usual. Turn dk gray and pass under 2 additional warp ends. Turn lt gray as usual to the dk gray. Turn red and pass under an additional 4 warp ends. Bring lt gray, dk gray and another lt gray to the right as indicated by your pattern plan. (Fig. 14)

Figure 14

Row 2 – working left to right as illustrated. There is a symmetrical dk gray figure on the left side of the piece worked the same as the photo below. Turn the lt gray yarn at the left side of photo as usual to the beginning of the dk gray section. Turn red around expanded warp ends and proceed to pass under 4 additional warp ends moving to the left. Turn lt gray as usual, ending at the expanded red section. Turn dk gray around expanded warp end and pass under 2 additional warp ends to the left. Turn lt gray on right side at selvedge up to the expanded dk gray section. (Fig. 15)

Figure 15

Continue making the design with as many passes as needed to form the desired figure. Depending on the design, advances in the direction of Row 1 take place in row 1 and in the direction of Row 2 in Row 2 – after some experience, it becomes routine to change the shape of the motif. It is always a good idea after setting up a change pass, to double check that everything is correct. It is easy to alter this first pass and more difficult after 3 or 4 incorrect passes have been completed.

Diagonal Join

To begin a section with diagonal figures, determine placement of each color change and insert a butterfly or tail of yarn in each, in the manner used for the turned join – beginning on the exit side of the first row. The first row will pass under the raised warp ends and leave a lowered warp end between each color change. Working a smooth diagonal has no shared ends. To slant the section, each turn will be one warp end further in the direction of the slant. This turn is executed once for every pass (2 rows). Work Row 2 of the first pass starting on the exit side of the row and turning the weft around the desired warp end until the selvedge is reached or the weft will now turn one end further than the beginning.

Figure 16

Row 1. Note how turns proceed 1 warp end in chosen direction of the slant. (Fig. 16)

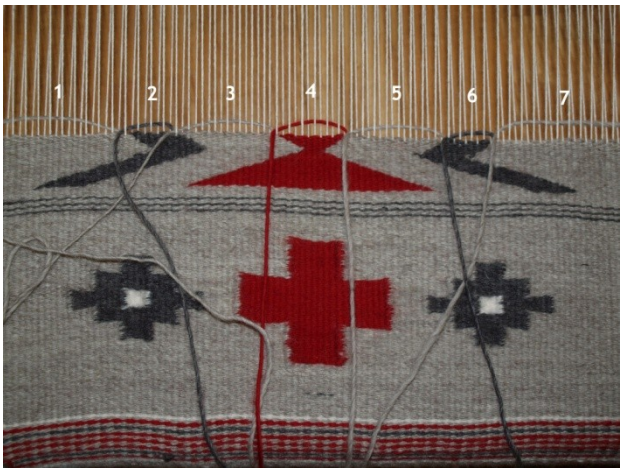

Figure 17

Row 2. Return row. Note how each thread now advances in the direction of the return slant. (Fig. 17)

Figure 18

Row 3 This time the row advances yet one warp further for the expected turn (Fig. 18).

It may sometimes appear that a thread is being skipped. Stop and remember that that thread is where the tail will turn on the following row. There will be no skip in the weaving. It is to be avoided that the tail turns twice on the same warp end.

Hooked or Interlocking Join

This join is done with an even number of warp ends, smallest number being 2. It is reversible and gives a cleaner outline than the turned join. It is also easier to lose one's place as the turn occurs between two warp ends and without concentration, frustrating errors appear in the design. This join is worked so that the hook is performed in Row 2 of the pass. This join is an exception to beginning on the exit side of each row. Row 1 is worked as usual, beginning with the color at the exit side of the row. Row 2 is worked from the beginning of the row – resulting in the situation where every row of a section with hooked joins begins at the same side of the loom. Following the numbers in the following photos, in the second row, work the first color, laying the exiting yarn over the strand of the second color. Bring the strand of color 2 from under color 1 creating a clasp in the yarn. Place the strand of color two under the appropriate warp ends – exiting with the strand covering color 3. Bring the strand of color 3 from under color 2 in the same manner, exiting that section with either the selvedge or laying it over the

strand of color 4. Repeat until the selvedge is reached.

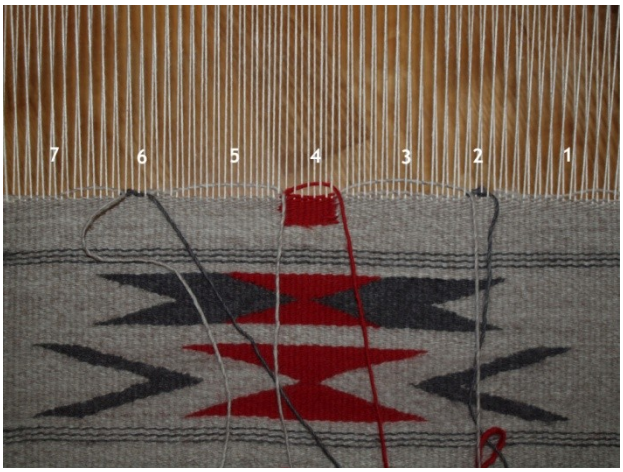

Figure 19

Hooked join, Row 1. This is worked the same as with the turned join.

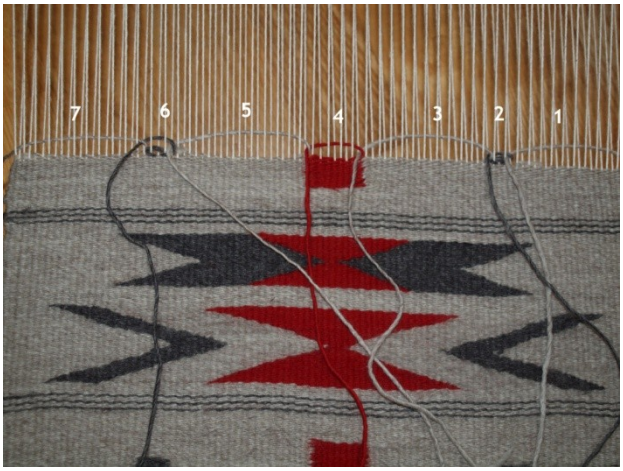

Figure 20

Hooked join, Row 2. This row is worked from the same side as Row 1 to enable the clasping necessary for the join.

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