WGB New and Occasional Weavers

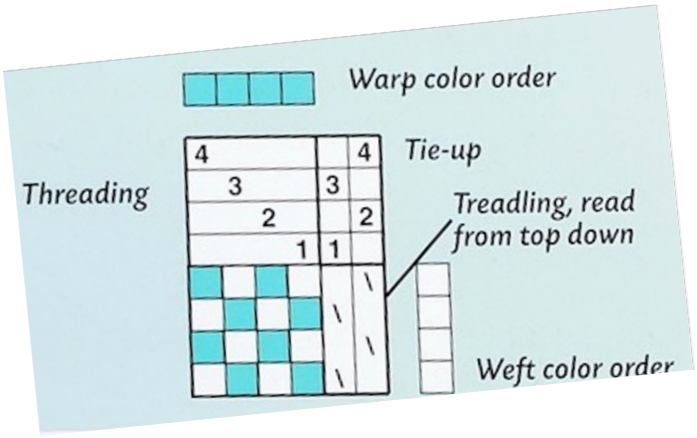
Meeting #8 Handouts

Explorations in Plain Weave and Twill continued…

Material and all images are adapted from: *Mastering Weave Structures* by Sharon Alderman. Pub. Interweave. 2004

Plain Weave

- Plain Weave is a 1:1 ratio of warp/weft: where the weft travels over one warp thread, and under one warp thread. The simplest weaving draft for plain weave requires only two or four shafts and two sheds.

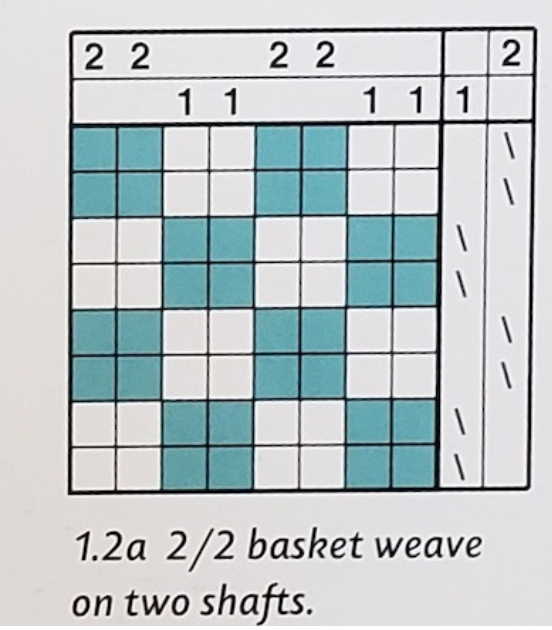


four shaft Plain Weave

- In Plain Weave we see the first mention of balanced cloth: where the number of Warp **Ends** Per Inch (EPI) equals the number of Weft **Picks** Per Inch (PPI). EPI = PPI for balanced cloth. Balanced cloth is not limited to Plain Weave and also occurs in other weave structures.
- The natural friction at the interlacement sites between warp and weft produces a strong fabric, which can be as coarse as buckram or as sheer as organdy depending on the thread.
- Plain weave may be used in cloth design as contrast to a complex structure or it can be woven with multiple colors and/or textural differences to create its own complexity.

- Below are other examples where the design of Plain Weave is expanded:

- **Basket Weave**: two or more warp and/or weft threads operate as one.



1.2a 2/2 basket weave on two shafts.

2/2 basket weave shown in cross section. Two successive wefts will follow the path shown here, followed by two more making the opposite journey: under two, over two, etc.

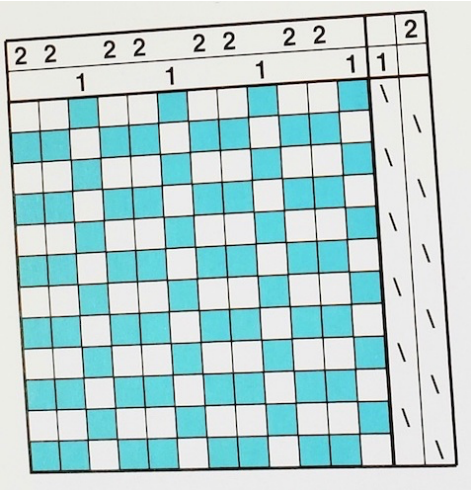
From Sharon Alderman's book: The cloth is a pattern of Plain Weave alternating with Basket Weave and using changing warp colors. (Enlarge screen to see the patterns.)

This pattern requires eight shafts:

Four for plain weave, four for basket weave.

- **Haircord** or **Rib Cord Weave**: Another variation for designing in Plain Weave is the alternation of single and multiple warp ends with a single weft pick.

Alternating the warp ends (single and paired) results in a cloth with ribs. Varying the types of warp yarn used can also create emphasis in the warp ribs.

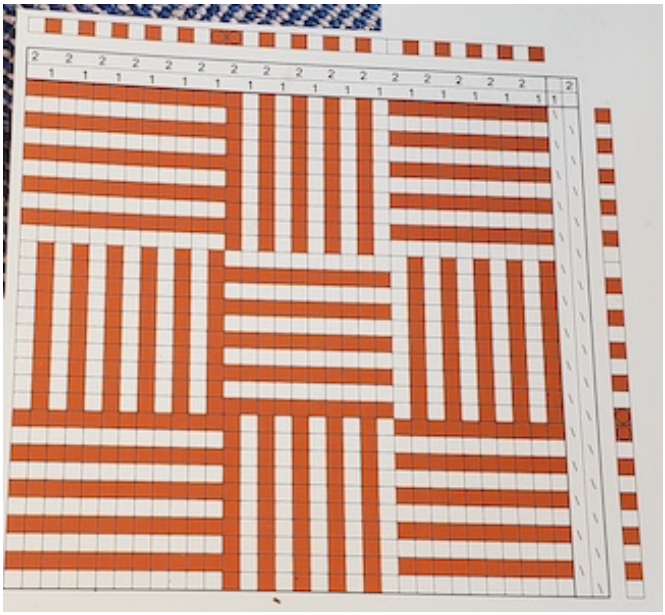


- Sharon Alderman encourages design in Plain Weave. “It is not necessary to limit ourselves to cloth in which the number of ends—and/or picks—that are grouped together is constant throughout the cloth; for example, we can design and weave cloth in which two ends act as one followed by three ends as one, twice, and then a single end…the only limits have to do with the stability of the cloth produced, assuming that you want a stable cloth.” (p14)

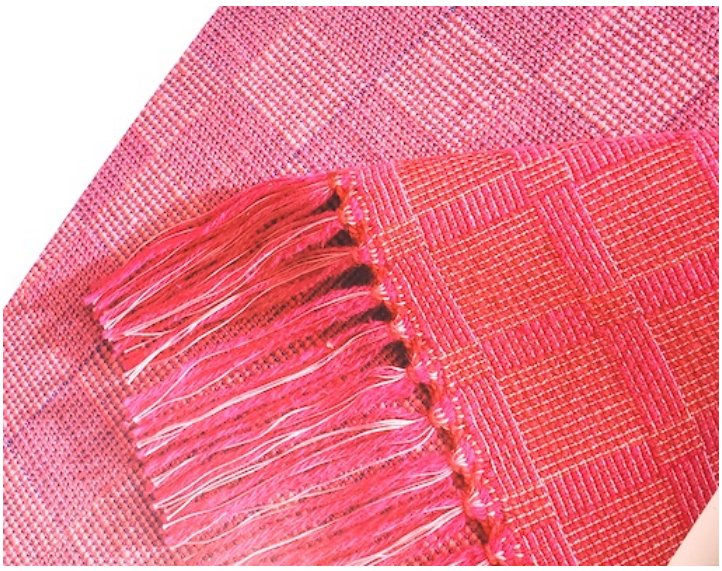
(left) These two examples by Sharon Alderman demonstrate an interesting design exploration – using a ribcord weave and Plain Weave:

- Top image: Rib cords as part of the warp ends.
- Bottom image: <u>adding</u> thick and thin weft threads to create an interesting grid.

- **Log Cabin: Plain Weave + Color and Weave Effect**



- Log Cabin is the accepted name given to a popular Plain Weave pattern that uses a color order and sequence of ends and picks. The sequencing of ends and picks can vary in size.
- Color and Weave Effect is the recognized nomenclature assigned to a specific use of color. In the case of Log cabin, the colorways (thread colors) alternate between light and dark. (Enlarge screen to see the differences between the design elements.



Twill Weave

In Deb Poodry's class (Handouts #6) we saw an introduction to twill and became familiar with several of the basic examples of twill.

- In these examples, we are seeing a basic four-shaft pattern.
- Twill is always a diagonal design with a step-up or step-down progression (left or right)
- Basic Twill is designed as: 2/2 balanced Twill, 1/3 Twill or 3/1 Twill.

Sharon Alderman reminds us of other facts about basic Twill patterns.

- Because Twill threading forms a step-up or step-down pattern, there is a defined 45º diagonal angle present. (Some people actually confirm their twill angle, with a ruler.)
- Twill "floats" come from the weft threads passing over or under the warp threads. Floats are the threads that are not tied down by a warp thread.
- The interlacement of threads is a defining difference between Plain Weave and Twill. For example, Plain Weave has 1:1 point of interlacement for the warp and weft threads Twill cloth works differently, multiple threads interlace:
    - 2/2 Twill has two threads that float over the interlacement point: two up and two down
    - 1/3 Twill has three threads that float under the interlacement: one up and three down
    - 3/1 Twill has three threads that float over the interlacement: three up and one down
- Because Twill structure is packing more threads closer together e.g., fewer interlacements, the Twill Sett is said to be denser.
    - Plain Weave Sett is calculated at WPI (warps per inch) divided by 2
    - Twill Weave Sett is calculated at WPI / 1.5 (Handouts #5)
- Twill is distinguished by its denseness, making the fabric thicker, heavier, and warmer than its Plain Weave cousin.
- Sharon Alderman also characterizes Twill this way: "Because floats move diagonally in the cloth, simple twill fabrics drape more softly and are more supple than a plain-weave cloth made of the same yarns." (26)

There are many, many Twill patterns to work with. Some experts recommend creating a Twill sampler. You can find Twill on the Internet, in books, and in your blue jeans. (True!)

This next document: *TwillsTwillsTwills.pdf* is found through an Internet search. It is a collection of the different types of Twill along with their weaving drafts and images of sample cloth. We will discuss these variations (screen share) in the meeting.

Originally posted by the New Hampshire Weavers Guild.org. there is no frontispiece (cover page) included in the .pdf.

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…and Rosepath – A popular Point Twill pattern with a thread at the point when the pattern reverses. We will look at some.