

## BLOCK DESIGN AND PROFILE DRAFTS

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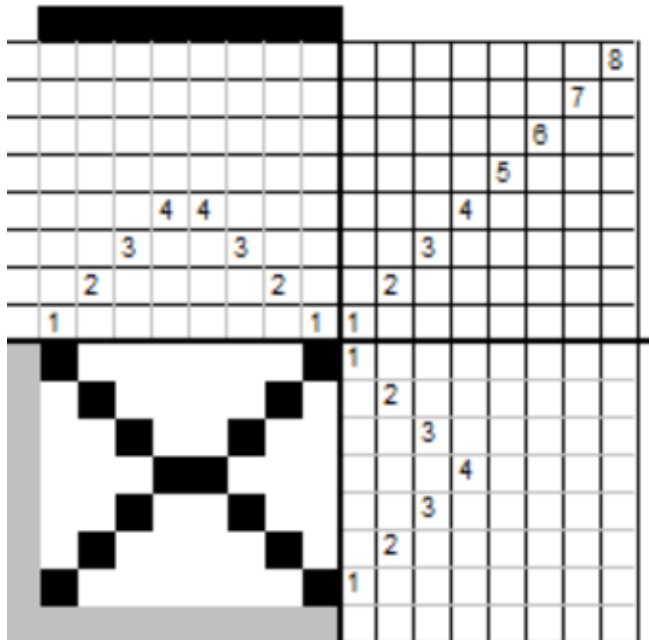
### WHAT ARE BLOCKS

Blocks are areas where warp and weft threads interlace in one way in one block and a different way in another block so there is a visual difference between the two blocks. This is often called “pattern” and “background”.

Some block weaves make the pattern and background interlacements with independently functioning threading and treadling "units." With unit weaves, you can thread as many units of the same block next door to each other and weave many in succession.

Summer and winter and Atwater-Bronson lace are unit weaves. Overshot is not. With overshot, you are limited to the length of the weft float in determining the width of any block. With unit weaves, all the interlacement takes place within each unit. With overshot, the pattern weft doesn't interlace in the block at all; it just passes over it. So overshot is a block weave but not a unit weave. Atwater-Bronson lace and summer and winter are unit weaves. All unit weaves are block weaves, but not all block weaves are unit weaves. Unit weaves can be used without limitation with profile drafts (block designs), whereas non-unit block weaves have certain limitations (overshot, crackle, M's and O's, spot Bronson).

Block weaves can be used in something called a “profile design”. The following is a possible profile design:



The black areas will be distinguishable from the white areas when the design is woven, but the black areas are often not a solid color (doubleweave is an exception). However, the blocks will be clearly distinguishable in the final cloth. The opposite side of the cloth will normally have the opposite color (depending on the weave structure you use).

You start by designing a profile draft that you want to weave. Then you take the following steps:

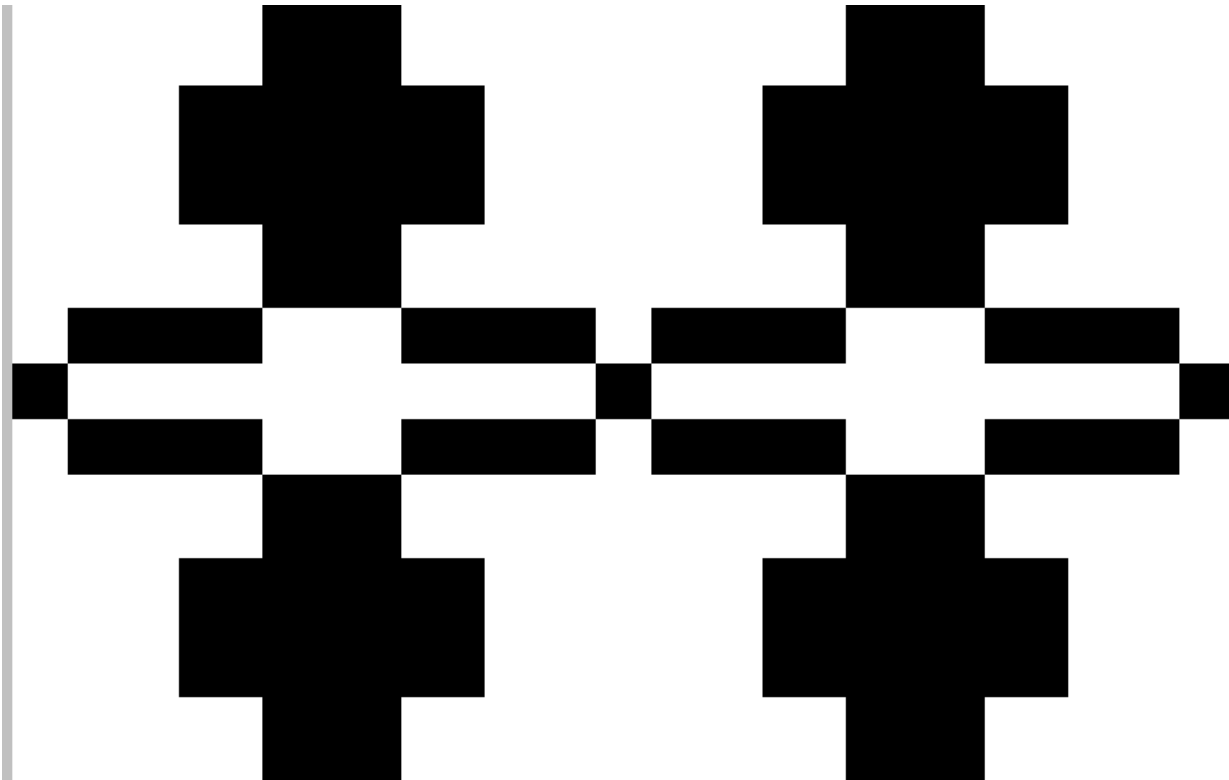
1. Determine how many blocks are in the draft.
2. Determine what weave structure you want to use and if your loom has the number of shafts needed.
3. If you cannot weave the profile draft using your loom, reduce the number of blocks in the draft.
4. Convert the profile draft into the weave structure you have selected.

We will discuss each step.

#### NUMBER OF BLOCKS IN THE PROFILE DRAFT

Draw a profile draft that you like.





## WEAVE STRUCTURE

Now that you have a profile draft, you need to select a weave structure that you will use. There are two considerations when selecting a weave structure: the number of shafts you have on your loom and the float lengths. Different weave structures get more blocks out of less shafts, and some weave structures minimize the float length.

Examples of popular weave structures:

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### TURNED TWILL

8 shafts are needed for 2 blocks on turned twill. The pattern is a 3/1 warp twill and the background is a 1/3 weft twill. Therefore, 3 is the maximum float length.

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### SUMMER AND WINTER

Summer and Winter uses shafts 1 and 1 for tying down the threads, and then one shaft for each block. Therefore, a 4 shaft loom can weave 2 blocks, and a 8 shaft loom can weave 6 blocks:

number of shafts – 2 = the number of blocks

The nice thing about overshot is the maximum float length is 3 ends. However, summer and winter often requires a lot of treadles and you may need to press more than one treadle at a time.

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## OVERSHOT

Overshot can have 4 blocks on 4 shafts, although some shafts are shared. 8 shafts give you 4 blocks without the shared shafts. The problem with overshot is you can have long float lengths if you repeat a block.

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## CRACKLE

Crackle can have 4 blocks on 4 shafts.

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## BRONSON LACE

2 blocks on 4 shafts. 4 blocks on 6 shafts.

The maximum float length is 5 ends. The background is plain weave.

This is not by any means an exhaustive discussion of the weave structures available for a profile draft.

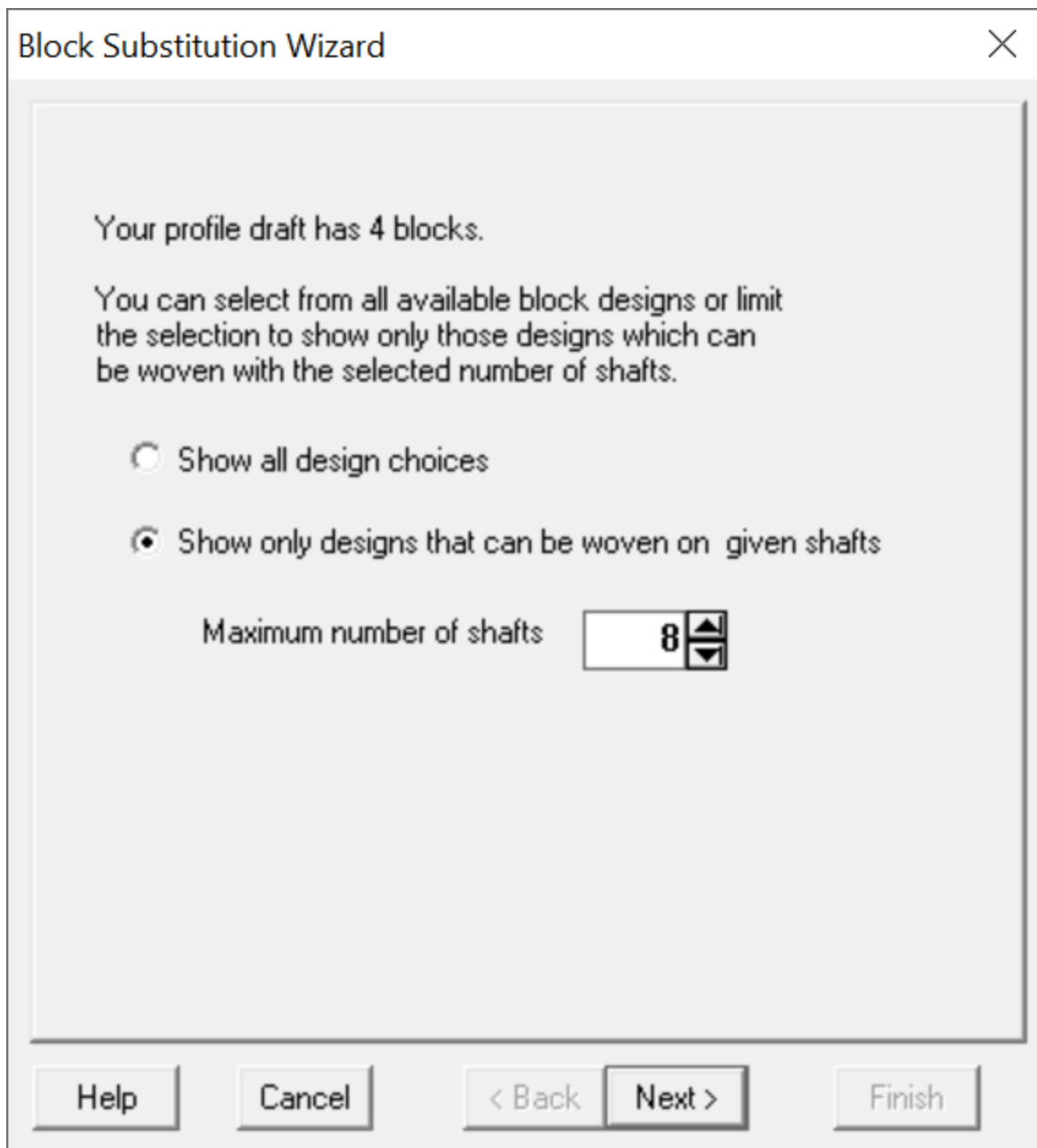
## USING SOFTWARE

If you have a software program, such as Weave-It or Fiberworks, they have tools to convert a profile draft to a weave structure and it will tell you the number of shafts for the different weave structures, or restrict the weave structures to the number of shafts you have.

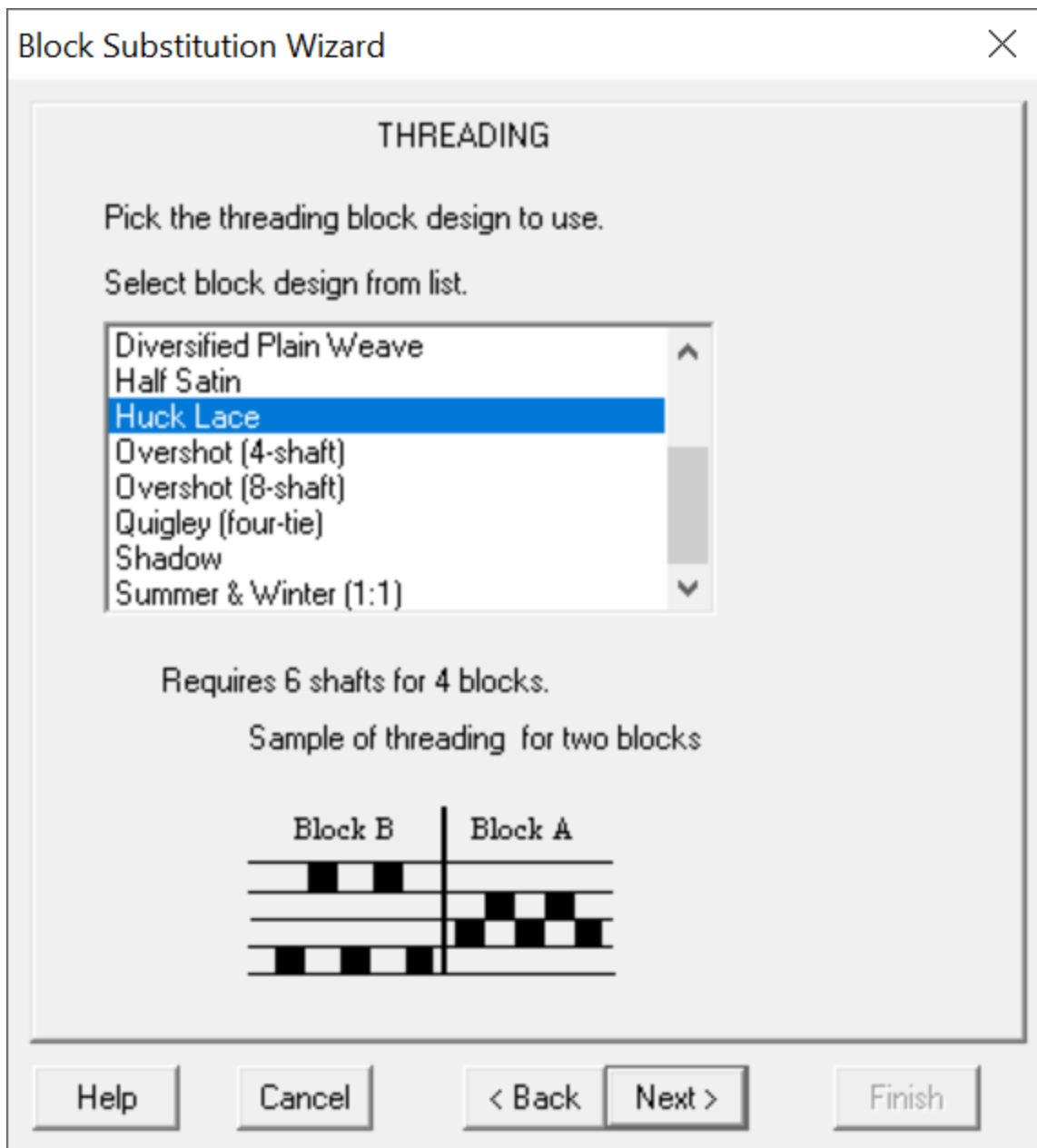
Here is an example using the structure in the section “What are blocks” in the software Weave-It.

1. Draw the profile draft
2. Tools...Block Substitution Wizard

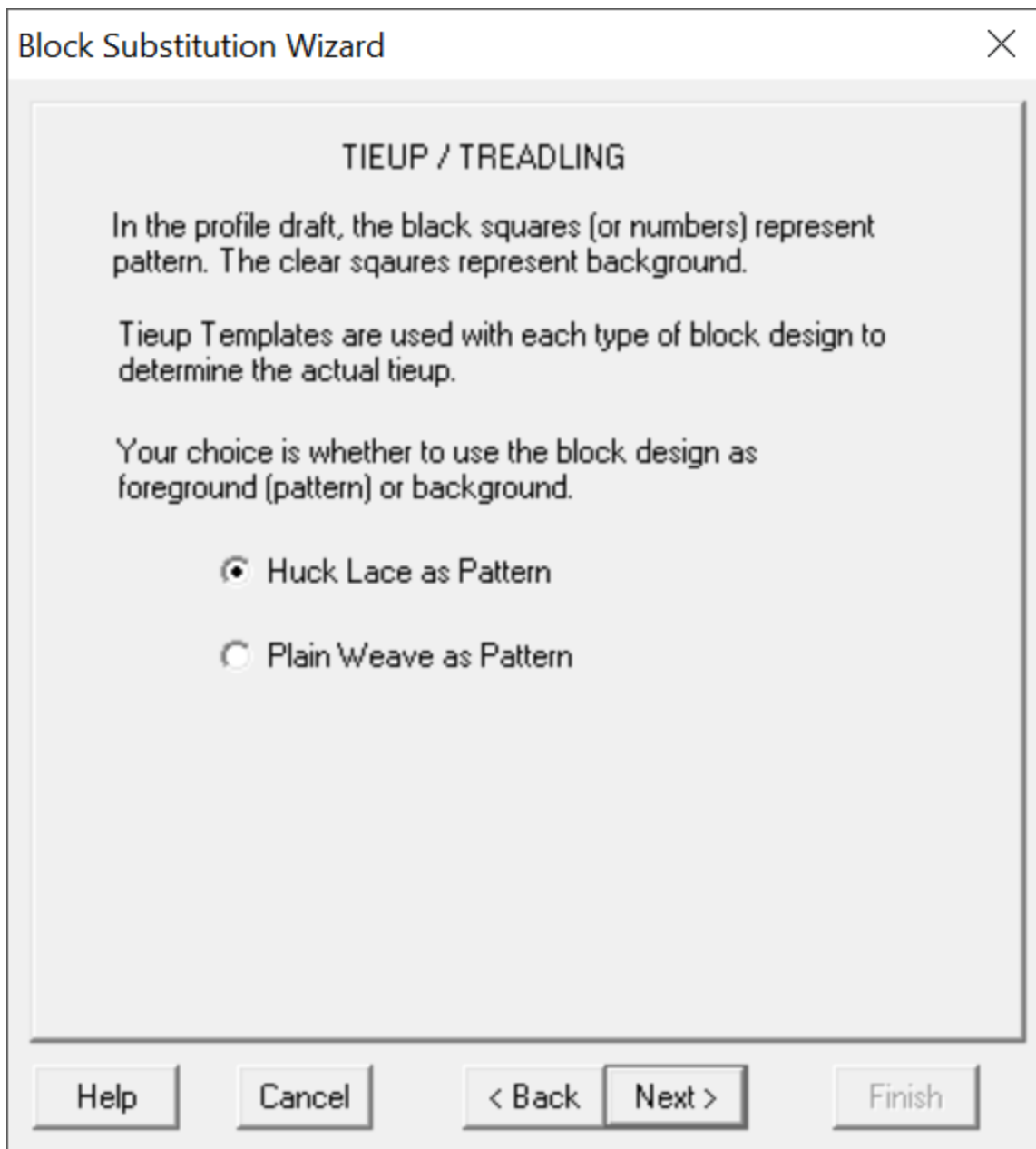
It tells you how many blocks your design has. You then have a choice of showing all designs or only those that can be woven on a given number of shafts:



The next screen shows the choices. In this case. There are a lot of choices. When select a structure, it shows the threading for each block. Here are some of the structures:

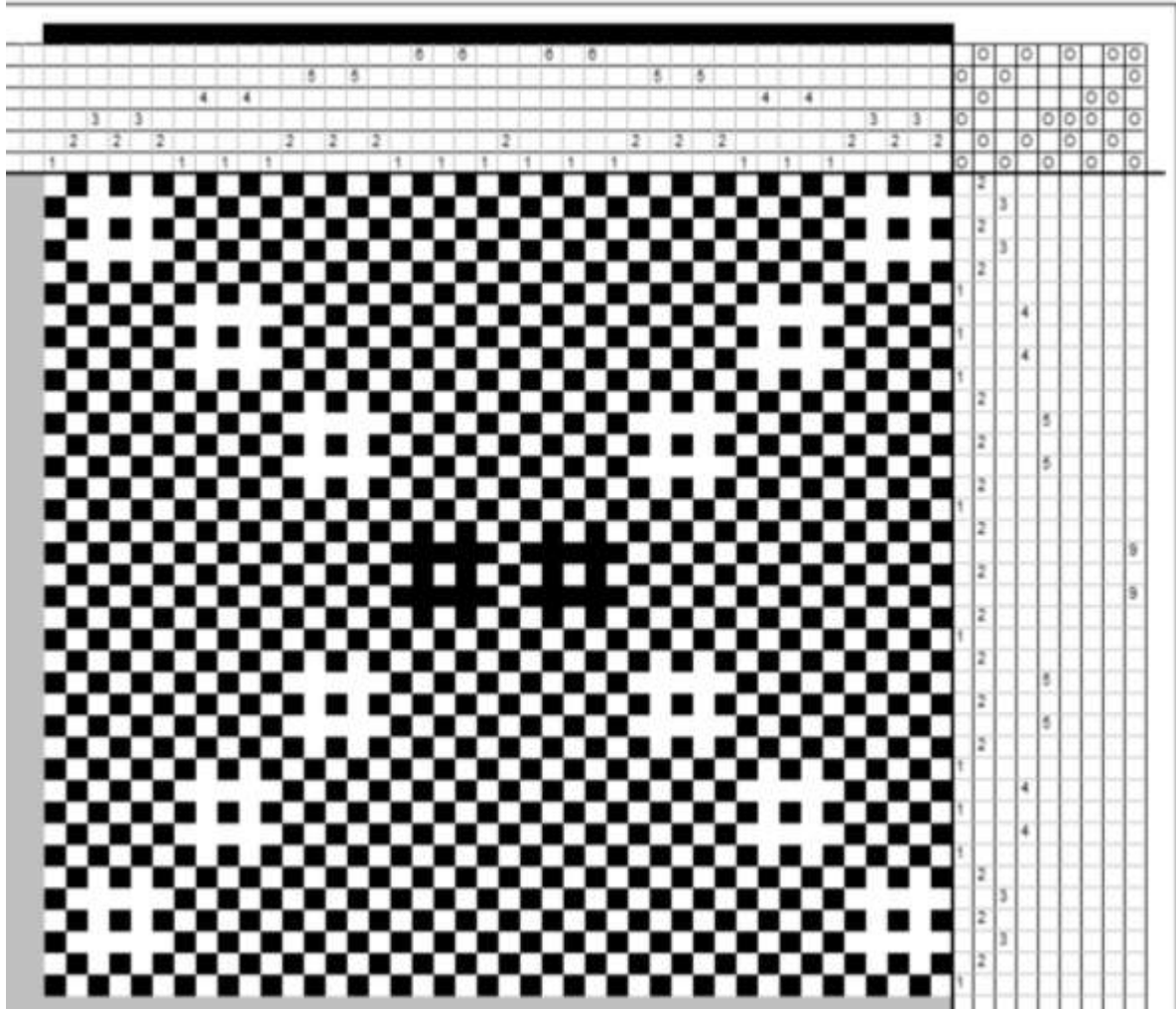


You select a structure. The next screen will show any other choices for that pattern. Here is the screen for huck lace:



When completed, it creates the draft for you:





You can then use the software to determine the maximum float:

Tools...Find Floats

For this draft:



It also highlights the float on the draft so you can see where it is.

Whether the float length is acceptable is based on a number of factors: the yarn you are using, the sett, and the use of the fabric.

#### POSSIBLE REDUCE THE NUMBER OF SHAFTS NEEDED

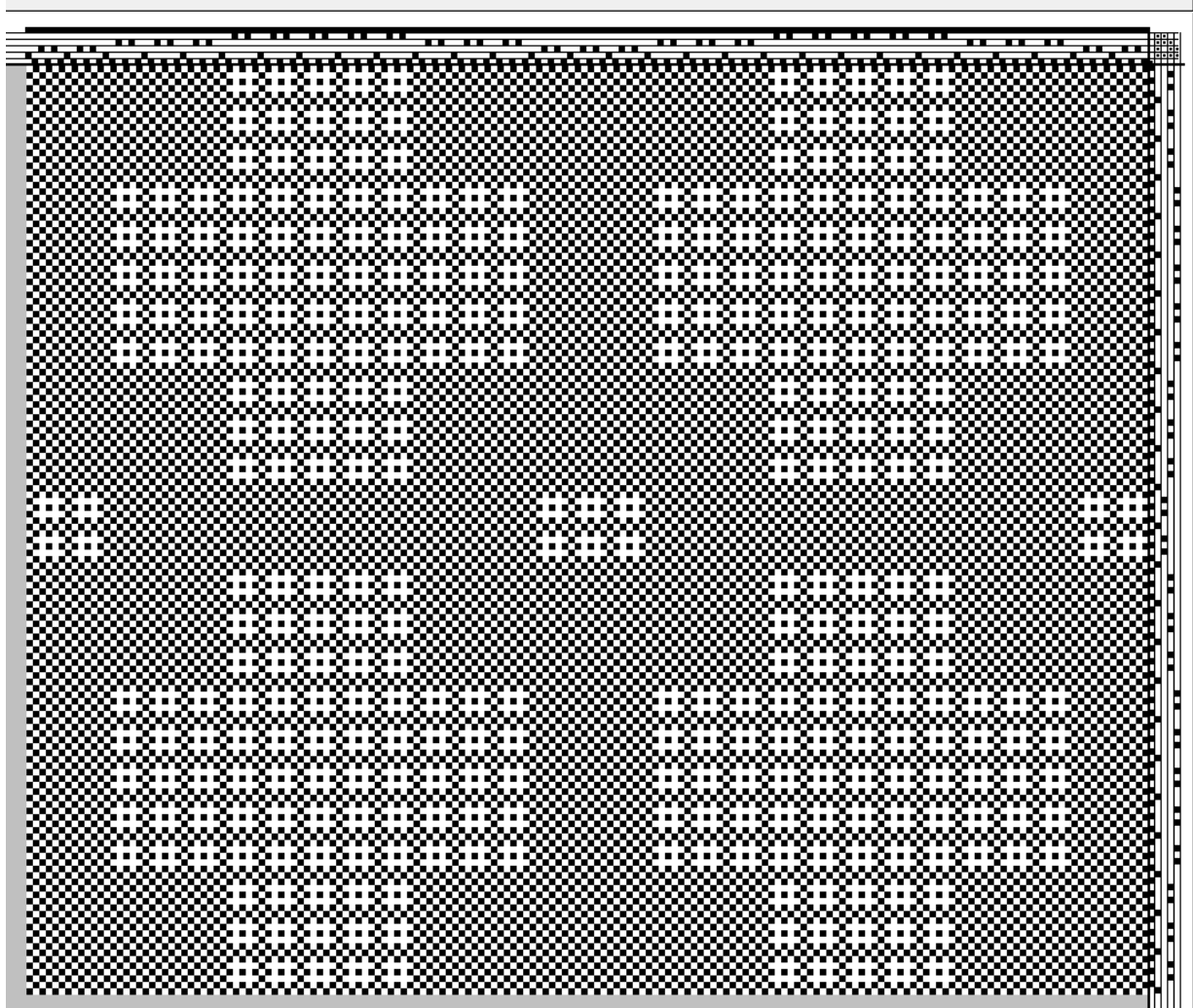
If you cannot do what you want to, you can reduce the number of blocks needed for the profile draft. You can do this by simplifying the profile draft, or making the draft so that one side is a mirror image of the other side.

#### CONVERT TO A WEAVE STRUCTURE

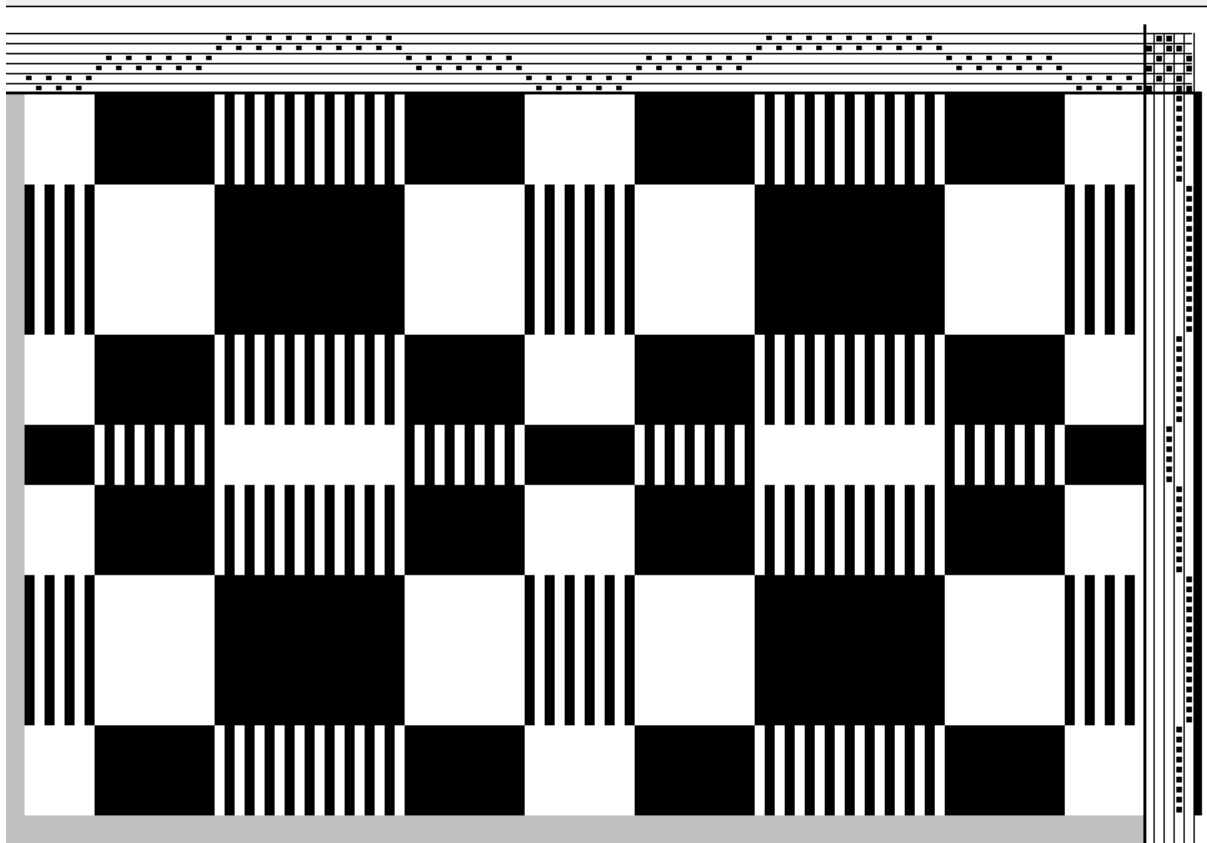
Go from blocks to a weave structure, such as Bronson Lace, Huck Lace, Summer and Winter, Crackle, Doubleweave, etc. You need to find a structure that will work with the number of shafts you have. For example, in Summer and Winter, you have # of shafts – 2 blocks available. Because there are 3 blocks, there are few options available if you are working with a 4 shaft loom – spot Bronson was the only selection in Weave It when using the Block Substitution Wizard.

Using a maximum of 8 shafts, there are a lot of options.

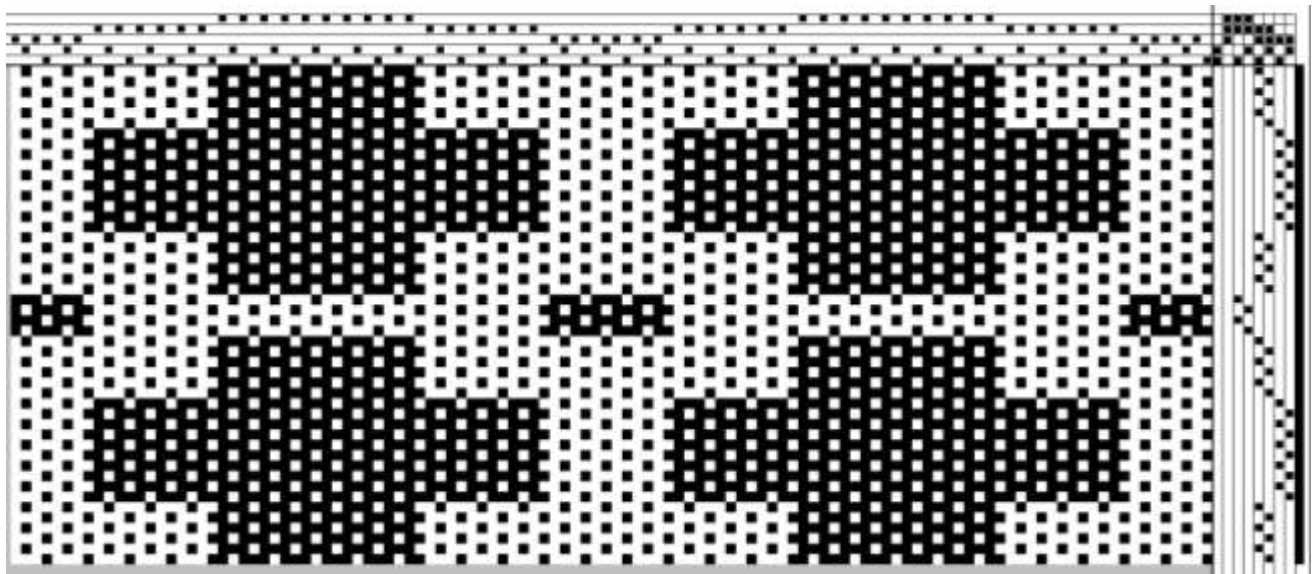
Bronson Lace (5 shafts):



Overshot (6 shafts):

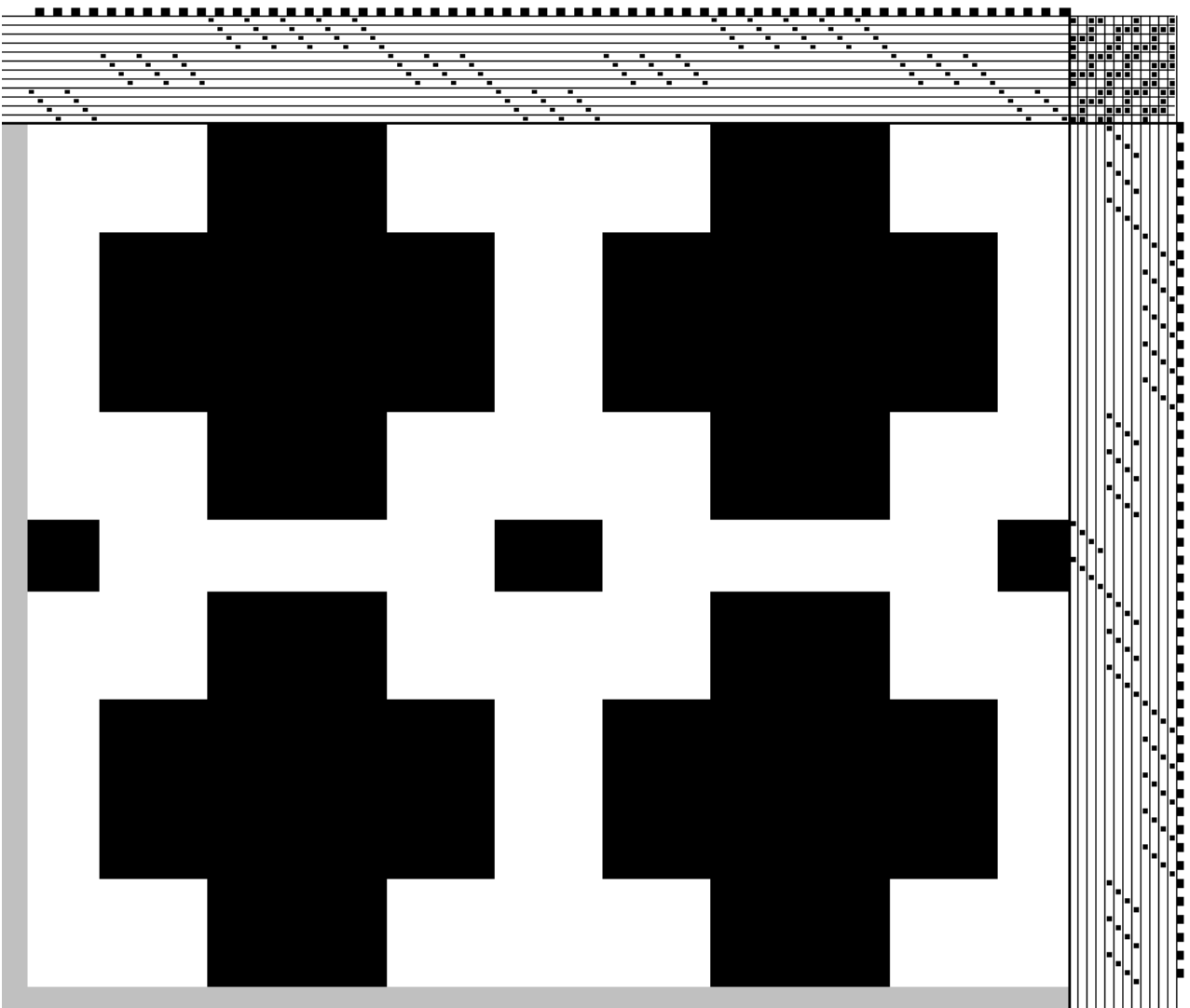


Summer and Winter (5 shafts):

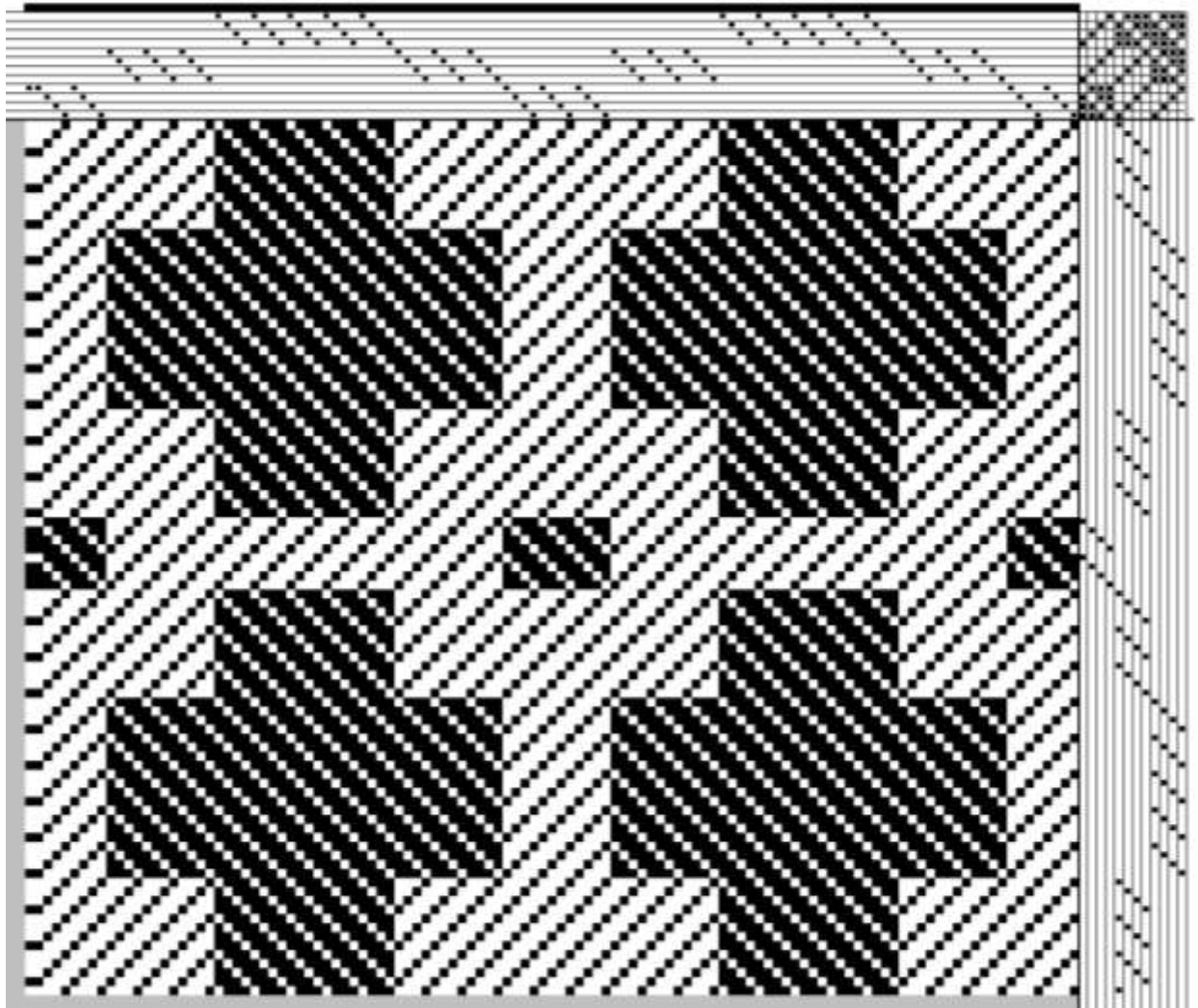


In Summer and Winter, each block is  $1X2X$ , where  $X$  is the shaft the block is on. So Block A is 1323, block B is 1424 and Block C is 1525.

Double Weave (12 shafts):



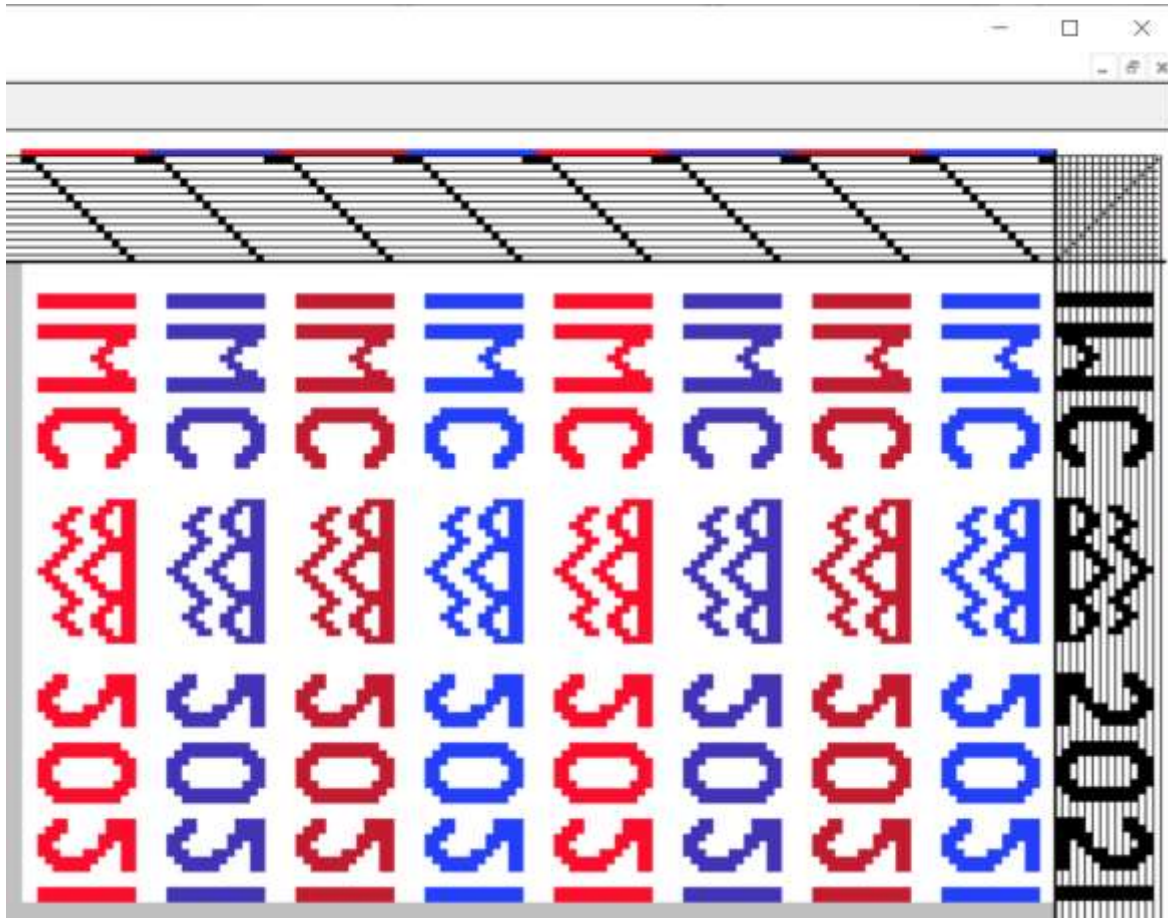
Twill (12 shafts):



#### IWC TOWELS EXAMPLE

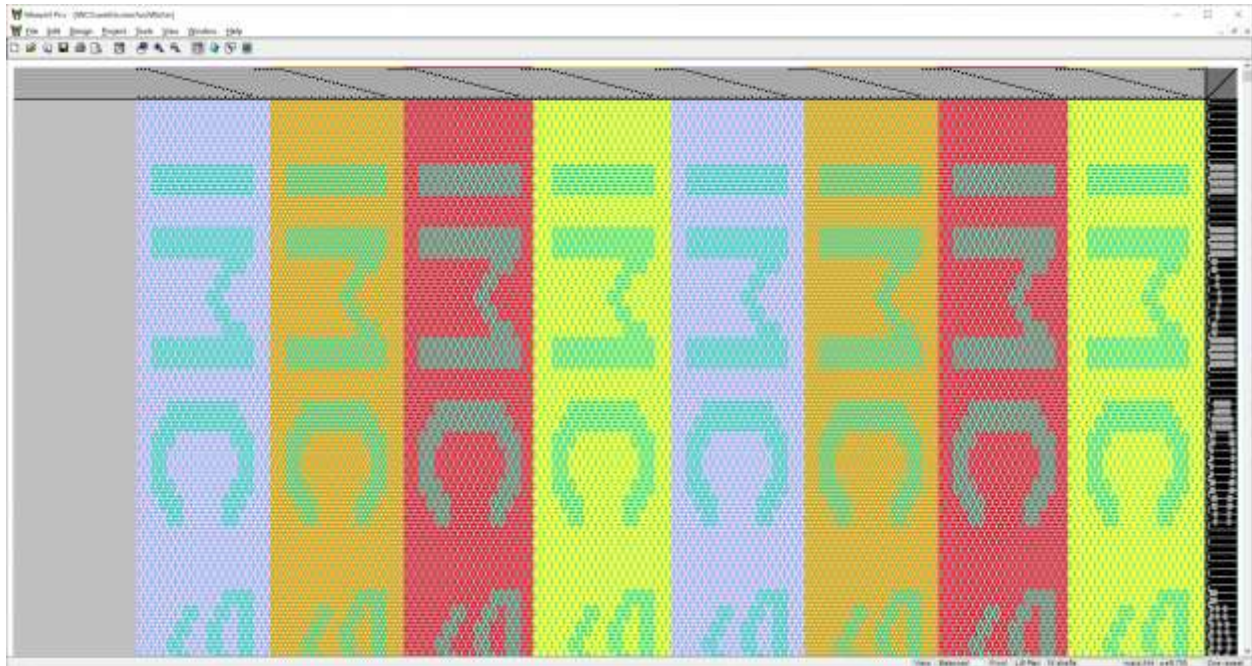
I have a 16 shaft Weavebird. I know that on 16 shafts, I can have 14 blocks if I use summer and winter. Summer and winter is not a problem for the weavebird since I do not have any limitations of the number of treadles.

I leave one shaft for the space between the letters/images/numbers I first created a block design on graph paper using one square for each block. I then created a block draft:



It looks like the letters are backwards but everything looks good when you weave it because the draft is showing is opposite of how you see it when you weave it. The treadling shows what you will see.

Once I got the block design as I wanted it, I did a block substitution for summer and winter:



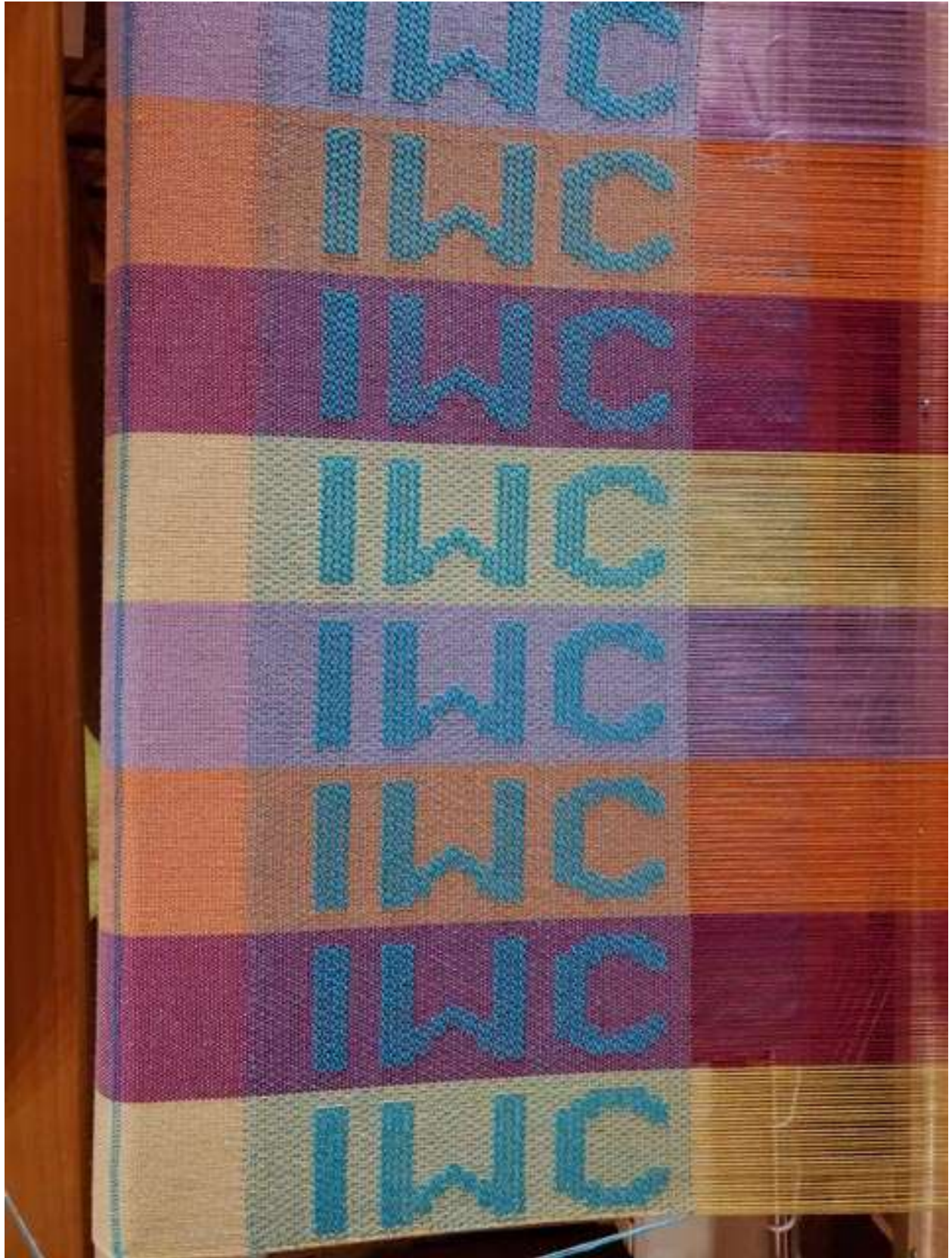
Notice how the design is elongated because of the tabby picks between the pattern picks. I have learned that the block design needs to look narrow in order for the woven end product to look good.

I played with different colors and yarn weights when I started weaving. I first thought I would use black for both the tabby weft and the thick weft. I did not like it – it was just too dark.





I then tried an off-white tabby weft and a lighter blue think weft, and I liked it better. This is what it looked like on the loom:



Here is a finished towel:



Reference:

“The Complete Book of Drafting for Handweavers”, Madelyn van der Hoogt