

This web-only article gives complete 16-shaft and 32-shaft drafts for fabrics appearing in “A Loom Story” by Sheila O’Hara (*Handwoven*, November/December 2008, pages 60–61).

The Full Story

ADVANCING TWILLS GO FROM SHAFT LOOMS TO A JACQUARD LOOM

SHEILA O’HARA

If you want to weave intricately patterned fabrics, you soon learn that intricate designs mean more shafts. See how advancing twills can “advance” from sixteen shafts to thirty-two to a Jacquard loom.

In 1984, I was lucky enough to live near Jim Ahrens, the “A” in AVL Looms. (Not just near, but on the same street and only a block away! How lucky is that?) At the time, I was weaving complex warp-faced images. I invited Jim to my studio to ask his advice about increasing my efficiency. He studied my drafts and told me that a computerized dobby loom with its unlimited number of “pedals” would make my weaving a lot easier and faster, but a Jacquard loom was what I really needed. A Jacquard loom seemed *way* beyond my reach!

Full circle

Twenty-four years later, after doing pick-up for years on a 16-shaft AVL CompuDobby and finally renting time on TC-1 and TIS AVL Jacquard looms, an AVL Jacquard came to me through the amazing generosity of Mim Wynne of Fayetteville, Arkansas! After it was packed, shipped, and reassembled, two eighty-pound Jacquard heads had to be lifted onto the top, making it nearly nine feet tall! I call her Big Momma, and she is happy to be in my studio with her family of other looms I use for teaching.

Shaft looms vs hand Jacquard looms

The advancing-twill fabrics in this article are the result of a conversation I had with *Handwoven* editor Madelyn van der Hoogt at Convergence 2008. She envisioned an article that would show how one weave structure could be expanded from four shafts to eight, to sixteen, to thirty-two, and finally to a Jacquard loom. (When Madelyn talks, people weave!)

My contribution to this exploration was to use my new Jacquard loom (still in pieces at the time!) to produce the 16-shaft, 32-shaft, and Jacquard examples. (For advancing-twill fabrics on four and eight shafts, see Lestra Hazel, *Handwoven*, November/December 2008, pages 56–58.)

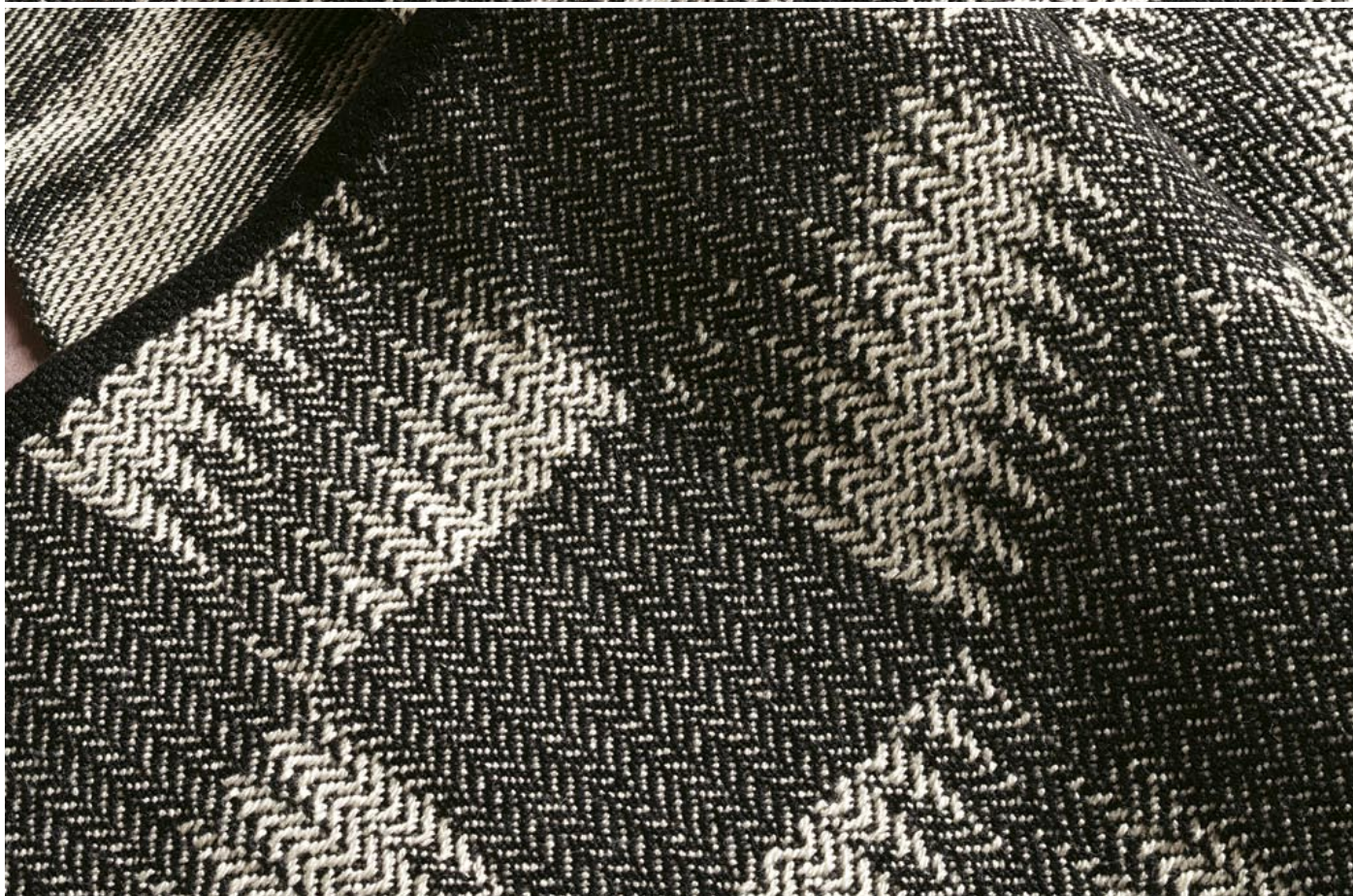
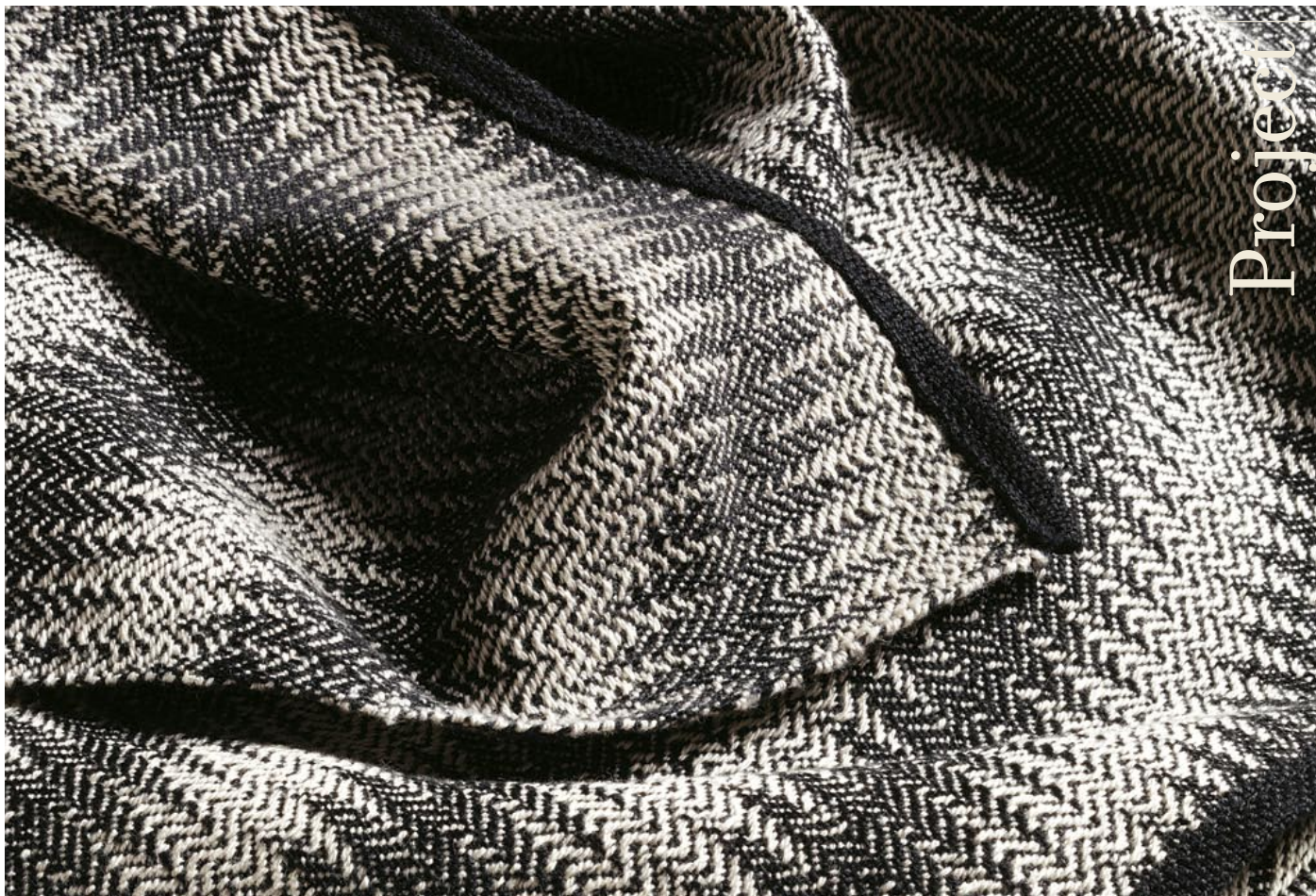
Creating the drafts

I used an advancing-point-twill threading from Bonnie Inouye to create the 16- and 32-shaft drafts used for the project napkins on page 2 (they would also make great table squares). To weave them on a dobby loom, you’ll need to transpose the treadling drafts to dobby peg plans.

Since I wanted to weave both drafts on my Jacquard loom, however, my next problem was transferring them to Jacquard software. Aid came from Jane Eisenstein, who showed me how to save the drafts as “wif” files and then open them in ArahWeave, the Jacquard software I already use for designing my Jacquard pieces. After I finished weaving the 16- and 32-shaft project fabrics, I was ready to use the Jacquard loom for imagery that incorporates the advancing point twill.

Creating Jacquard imagery

I decided to use a photograph my mother took of Lake Biwa in Japan as the image for my Jacquard example. I figured out how to transpose the advancing point twill and a number of other weaves into structures that use three shuttles (therefore blending three weft colors throughout). Thanks to a special feature of ArahWeave, I could look at and work on the weave structure of each shuttle separately and then combine them for the complete weave. Weft color blends of white, tan, gray, and brown duplicate the sepia tone of the original photograph (see page 6).



1. 16-shaft advancing-twill draft

13
12
11
12
11
11
10
10
9
9
8
8
7
6
5
4
3
2
1

● = floating selvedges.

	16			16	16	16	16	16	16	16		
15			15	15	15	15	15	15	15			
		14		14	14	14	14	14	14		14	
	13		13	13	13	13	13	13		13		
12		12	12	12	12	12	12	12		12		
11		11	11	11	11	11	11		11			
	10	10	10	10	10	10		10			10	
9	9	9	9	9	9		9					
8	8	8	8	8		8		8	8	8		
7		7	7	7		7		7	7	7		
	6	6	6		6		6		6	6	6	
5	5			5		5		5	5	5		
4	4		4		4		4	4	4	4		
3		3			3		3	3	3	3	3	
				2	2	2	2	2	2	2	2	
	1		1		1	1	1	1	1	1		

ting selvages.

b ←cont'd.

16 16 16 16 15 15 15 15 14 14 14 14 14 14 14 14 13 13 13 13 12 12 12 12 11 11 11 11 10 10 9 9 8 8 7 3 2 1 1 1

←cont'd.

STRUCTURE

Advancing point twill.

EQUIPMENT

16- or 32-shaft loom,
21" weaving width; 10-
dent reed; 1 shuttle.

YARNS

Warp: 10/2 pearl cotton (4,200 yd/lb), black, 2,163 yd. Weft: 10/2 pearl cotton, Safari (UKI #140), 1,540 yd; black, 150 yd for hems).

WARP LENGTH

618 ends (includes 2 floating selvages) 3 $\frac{1}{2}$ yd long (allows 4" take-up, 30" loom waste.

SETTS

Warp: 30 epi (3/dent in
a 10-dent reed).
Weft: 30 ppi.

DIMENSIONS

Width in the reed: $20\frac{2}{3}$ ".
Woven length: 92".
Finished: four hemmed
napkins $18" \times 18"$ each

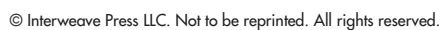


a

● = floating selvages.

← cont'd. *b*

- This extension of the advancing point twill in Figure 1 does not use shafts 16 and 24 (you can use them to thread a selvedge end on each side instead of the floating selvages.)



6 Machine stitch on both sides of the contrasting marker threads and cut pieces apart. Turn ends under two times (so that the black shows for about $\frac{1}{3}$ ") and sew hems by hand. Press again.

b

3



Weaving detailed images requires individual control of every warp thread, only possible on Jacquard looms. This design and the several weave structures that create it require 672 individually controlled warp threads. First, a digital image (in this case, a photo of Lake Biwa in Japan) is used to create a Jacquard computer file with ArahWeave software. Then, various weave structures are designed to achieve the different textures and colors that can reproduce the image. For Lake Biwa, several three-shuttle (three-color) weaves including eight-end satins are used. Two different three-shuttle advancing point twills add life to the rocks on the lower right and to the leaves in the tree. Lake Biwa was woven with JacqPoint software on an AVL hand Jacquard loom ("hand" because the weaver throws the shuttle as with other handlooms).