

Chapter 10

Lampas

Lampas, also known as tissue or diasper, is a compound structure that uses two warp systems and two or more weft systems. In a historical lampas, you will see a warp-faced ground, usually a satin structure, that is covered with motifs in one or more colors, rendered in a weft-faced structure, usually a twill. The cloth has a distinct front and back side, though yarns have reasonable tacking points on both sides. Depending on the use of the finished cloth, a lampas can be used as a two-sided fabric, though more often it has a specified front. Pattern wefts work across the full width of the cloth, but discontinuous brocaded wefts may also be combined with pattern wefts that work selvedge to selvedge.

Lampas is such a versatile structure, with many variations possible. It has been woven across the centuries by weavers in diverse cultures; among them the superb 13th century Italian weavers of Lucca and Venice, the 16th century Safavid weavers of Persia, and the French court weavers of the 17th and 18th centuries. Theo Moorman, a 20th century English weaver of wall art, created a variation of this structure known as the Moorman technique in which she brocaded pattern wefts into a translucent ground.

Lampas has been used to create highly decorative, often narrative, textiles on drawlooms and jacquard looms. Geometric loom-controlled patterns as well as free-form motifs are possible on dobby and shaft looms, if you are willing to handpick the designs. We will show you how to design both jacquard and dobby fabrics in lampas using Photoshop, but first we will discuss some issues involved with setting up the loom for lampas.

Basic Structural Ingredients

First we will describe a traditional structure used to create lampas, and then we will explore some possible modifications.

Two Warp Systems and Multiple Wefts

There are two warp systems in the structure—a warp-faced ground (or main warp) and a thin, almost invisible, tie-down warp (sometimes called a pattern warp). If you read the previous chapter on taqueté and samitum, then you are already familiar with the two warp systems of the tie-down warp and the inner warp. In those structures, you never see the inner warp and it does not interlace with a weft to create a structure. The inner warp just acts as a plane within the center of the cloth, to hide or expose the wefts. In lampas, the inner warp becomes known as the ground (or main) warp. The ground warp now becomes an important visible element. It also continues to perform the function of the inner warp in that it separates the pattern wefts so they fall above or below it.

Lampas also has an additional weft system, the ground weft, which interlaces with the ground warp in a structure. Unlike taqueté or samitum, the structures used for lampas can vary. Often you find a satin ground with a twill patterning, but it can be any combination of weaves: a plain weave with a plain weave, a twill with a twill, a satin with a plain weave, a twill with a plain weave, and so on. When the ground warp is a traditional warp-faced structure, and the pattern wefts weave as weft-faced structures, lampas produces the light reflective quality of a damask–warp-faced versus weft-faced structures. In lampas, it is also possible to create a damask or shaded satin in the ground structure with the weft-faced pattern yarns floating on top of it. French and English fabrics from the 18th century used this possibility, including discontinuous brocaded wefts, with inspiring results. We will explain this possibility below.

The Ground Warp

The ground warp is a visible element in lampas, usually sett for a warp-faced cloth. All the visual choices you would normally consider with a single cloth are available when making the ground warp. In terms of color, you can use a solid warp, a striped warp, a painted warp, an ikat warp, a printed or discharged warp, or any other variation you can conceive. Since the ground becomes the field on which the pattern motifs are displayed, it has traditionally been a monochromatic silk, whose luster is emphasized by the satin structure. However, dyeing or modifying the field into different color areas can become a powerful and unexpected element, which contrast, even compete with, the images created by the pattern wefts.

Using different types of yarn in the ground warp can also affect the visual aspect of the cloth. If you use stripes of cotton interspersed with stripes of silk, you are setting up a dynamic shift between light reflection and light absorption. If you use yarns of varying materials that are compatible with a single dye type, and paint the warp, you will see that yarns will absorb the dye differently, creating modulation of color in the cloth. The yarns do not have to be the same grist either. Stripes of these different yarns can be sett at appropriate, varying densities across the width of the warp.

Two Back Beams are Best

For centuries drawlooms were used to create beautiful historical lampas fabrics, so it was a natural progression for jacquard weavers to also produce them. It required setting up the loom with two back beams, and adjusting the tension of the two warp systems separately. Since this required careful monitoring of looms and slowed down production, most mills today have turned to weft-back structures, using only one warp for their polychrome weft fabrics (see Chapter 11). If speed is not essential to your work, don't let this issue dissuade you from trying lampas.

Ideally, the two warps are beamed separately, since their take-up is different. If you have two beams on your loom, and one has a finer tension device than the other (a friction brake versus a ratchet), use the beam that allows the subtlest changes for the tie-down warp.

If you only have one beam on your loom, you can wind the ground warp on that and weight the tie-down (pattern) warp off the back of the loom. See Appendix B for more details on working this way.

Using One Beam is Possible

You can also beam the two warps together, as we have successfully done on a TC-1 loom with one back beam. As you roll back the warps, separate them by periodically inserting rods over the ground warp and under the tie-down warp. You can use dowel sticks or lengths of molding that are flat on one side and curved on the other. This will give the tie-down warp a slight increase in circumference. As you weave, the tie-down warp will get tighter, but as you remove each rod, it will give the tie-down warp some slack and ease the tension. This method worked fine for us, and we encourage you to try it.

Structures for the Jacquard Loom

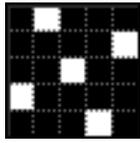
Ratio of the Two Warps

You will have to make weaves that work according to the relationship of your warps. If you want a 5-shaft satin for the ground, and a 1/2 twill for the tie-down warp, you have to design the combination of structures according to their ratio in the cloth. You can build up libraries of Pattern Presets for lampas that are grouped according to this ratio. Have a folder of lampas weaves that are 1:1, another at 2:1, another at 3:1, and folders for any other ratios that you make. It will take time, but once you make and save these weaves as Pattern Presets they are available to you for future work.

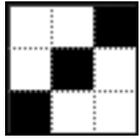
Consider the Number of Weft Systems

You also have to make the structures considering the number of pattern wefts you will use. The structure for three pattern wefts, which is smaller than the structure for four pattern wefts, will not accommodate all the wefts in a cloth that uses more than three pattern wefts. You don't have to make all the

structures at once, just create new ones as you need them. Please remember to save them, so you only have to make them once.



10-1 4/1 Satin

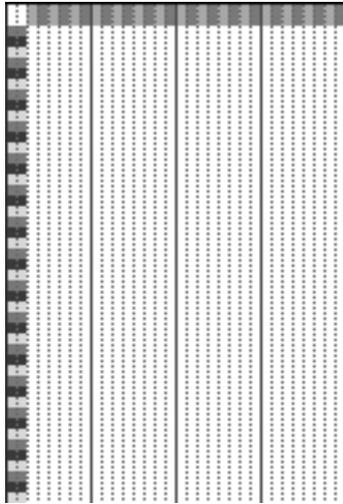


10-2 1/2 Twill

Satin Ground with Twill Patterning

First we will make a structure that has the two warp systems at a ratio of 1:1, using a 5-shaft satin for the ground and a 1/2 twill for the pattern wefts. We will make versions of this using 2, 3 and 4 pattern wefts. The root 5-shaft satin and 1/2 twill are shown to the left in Figures 10-1 and 10-2.

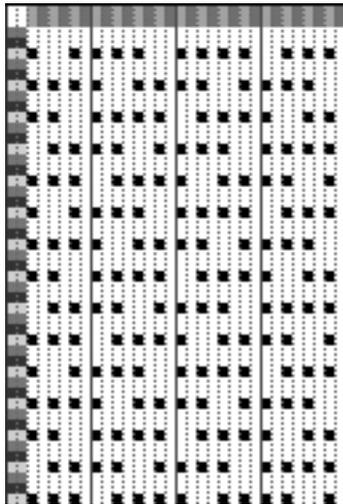
These two structures do not repeat on the same number of ends and picks, so when we combine them, we have to repeat them until they complete at the same time. If we repeat the five-end satin three times, and the three-end twill five times, it comes to 15 each. Since the ratio is 1:1, we add them together and find that we need 30 ends in our template. We are using two pattern wefts, which work with the 3-end twill, so we need 30 picks for pattern weft, plus 15 picks for the ground weft. Added together, that comes to 45 picks in the structure. We also want to add two columns and two rows so we can make marks indicating the warp and weft systems.



10-3

Create a template 32 pixels wide by 47 high. Pencil in the warp (Pencil tool), using two different colors, on the top two rows, and pencil in the weft, using three different colors, on the left two columns. We used salmon to denote the tie-down warp and yellow for the ground warp. We used yellow for the ground weft, purple for the first pattern weft, and green for the second pattern weft. It should look like Figure 10-3.

Now, make a new layer and draw in the satin structure on the ground warps only. The easiest way to do this is to draw it once, putting the black marks on the intersection points of the yellow warp and yellow weft; then copy and paste it. You are going to need three repeats in both the vertical and horizontal directions. After you have them all filled in, click off the eye next to the Background layer, so only the layers created by cutting and pasting the structure are visible, and go to **Layers>Merge Visible**. Name your new layer *4/1 Satin* or something that clearly identifies it to you. Your template should look like Figure 10-4.

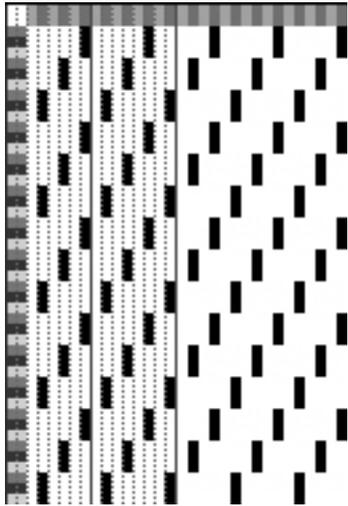


10-4

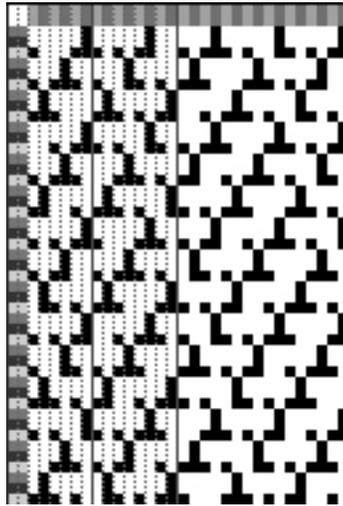
Now make another new layer. If you rename your layers, it will help remind you what the data is on each of them. Name this one *Twill*. We are going to have the tie-down warp work with all the wefts, including the ground weft. This means you have to expand the twill so each riser extends over three picks. (Lampas can be woven with different variations. By raising the tie-down warp over the ground weft, you enable the pattern picks to beat down and float over the ground weft, fully and easily covering the ground warp.) It is probably clearer to dot in the twill with the visibility of the satin layer turned off. Pencil in one repeat and copy and paste until it fills the field. You will have five repeats of the twill in both the vertical and horizontal directions. Turn off the visibility of all layers except the twill layers (cut and paste will create new layers). Have the layer labeled *Twill* highlighted. This will ensure that the new merged

layer is still named Twill. Go to **Layers>Merge Visible** and now you have only one layer for this structure. Your image will look like Figure 10-5 with the Background layer visible and the satin layer turned off; and it will look like Figure 10-6 with all three layers showing:

Now you want to make a layer where the ground warp is raised for the second weft (this will allow pattern weft 1 to show on the face, and pattern weft 2 to go to the back of the cloth). Name this new layer *Pattern 1 Shows*.



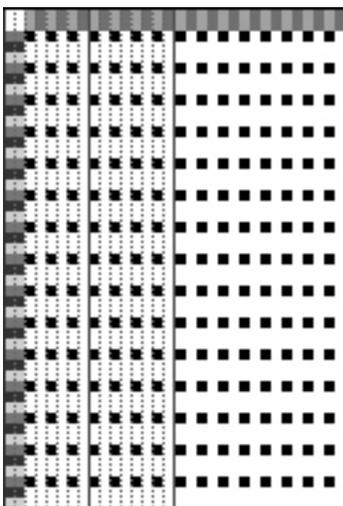
10-5



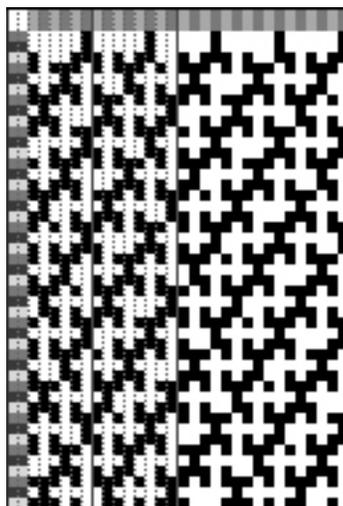
10-6

Again, you can pencil in one row and copy and paste until you have marks on every row for the second pattern weft. When finished, go through the process of turning off all layers except this new raised pattern, and merge the new layers. The image will now look like this when only the Background layer and the new *Pattern 1 Shows* layer is showing (Figure 10-7) and it will look like Figure 10-8 with all four layers showing.

Note: Follow along with the color images saved on the CD in the Chapter 10 folder.



10-7



10-8



10-9



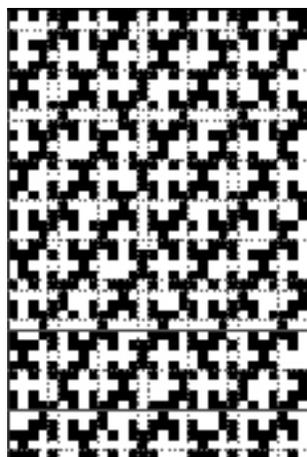
10-10

Now duplicate the layer you just made, by dragging it down onto the Make New Layer button at the bottom of the Layers palette. Rename the new layer *Pattern 2 Shows*. Turn off the visibility of the previous layer so it doesn't confuse you. Make sure your new layer is the active one. With the Move tool and the down arrow, move the risers down one row so they fall on the pattern weft 1 rows (purple in our template). Now you have a structure

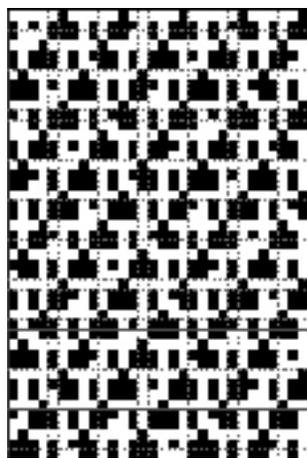
where the first pattern weft will go to the back of the cloth and the second pattern weft will show on the face. It is shown in Figure 10-9. The Layers palette for the complete lampas template, *10-10a.psd* is going to look like Figure 10-10.

Save the Pattern Presets

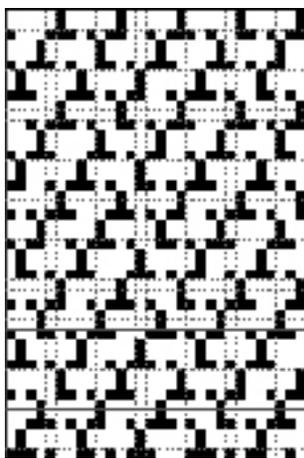
Now you want to save the lampas structures as Pattern Presets. You need to make a rectangular selection of 30 wide by 45 high. Place it over the structural part of the design. Turn off the *Pattern 2 Shows* layer, and save the first structure (**Edit>Define Pattern**). Then turn off the *Pattern 1 Shows* layer and turn on the *Pattern 2 Shows* layer. Save this structure. Now turn off both Pattern Weft Showing layers and save this structure. Now turn on both Pattern Weft Showing layers and save this structure. As you can see, we have four lampas structures from this one template. You can create a design with four conditions in the cloth: areas with the ground warp showing (Lampas 004), areas with pattern weft 1 showing (Lampas 001), areas with pattern weft 2 showing (Lampas 002), and areas where both pattern wefts work together on the face of the cloth (Lampas 003). Unlike taqueté and samitum, when you have all the pattern wefts working on the face of the cloth, you will not see warp floats on the back,



10-11a Lampas 001



10-11b Lampas 002



10-11c Lampas 003



10-11d Lampas 004

since the ground warp in lampas (called the inner warp in those structures) weaves a structure with the ground weft. The Pattern Presets are shown on the previous page.

Damask Ground

You can have another variation in your lampas cloth, an area where the ground warp weaves as a weft-face satin. There really isn't any need to create structures that have either of the pattern wefts working together or alone covering the weft-face satin, since you won't see the ground cloth under them anyway. Therefore we only need to create one structure, Lampas 005, which is similar to Lampas 004, except the ground structure is weft-faced instead of warp-faced.

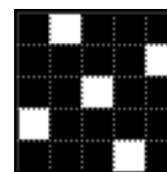
A simple way to make this structure is to add another layer to your template. Name it *Weft-face Satin*, turn off the *Satin* layer, and pencil in your new structure. If you flip your original satin horizontally, then invert it, you will have a weft-face structure that meets the warp-faced structure so that vertical and horizontal lines will tack each other. Often this is irrelevant for jacquard design with highly organic, curving forms. However, if you have any areas with verticals or horizontals, it will make the weaving appear crisp. Since it is easy to do, why not do it? Here is the original structure, then flipped, then inverted, and an example of the two structures meeting and tacking each other correctly (Figures 10-12a–d).

Your weft-faced satin, which you will pencil in on the ground warps and ground wefts is going to look like Figure 10-12c.

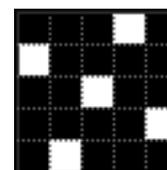
The new layer will look like Figure 10-13, and the new weave structure, Lampas 005, will look like Figure 10-14. The template is found on the CD as *10-14a.psd*.

Save the template for future reference. If you find later that you made a mistake, you can easily make corrections. Also, we will start from this template to make lampas with 3 or 4 pattern wefts.

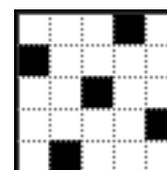
If you want to be really creative, you can also make ground structures for the other variations of five shaft satin, the 2/3 satin and the 3/2 satin. Having four structures for the ground warp means you can do a shaded satin image in the ground, as well as have pattern weft imagery. We will leave it up to you to make those structures, if you decide you want to try this type of lampas.



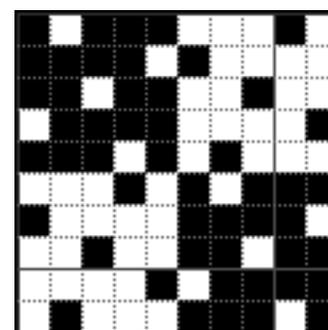
10-12a 4/1 Satin



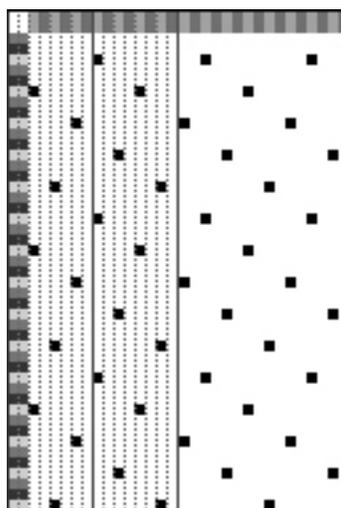
10-12b Satin Flipped



10-12c Flipped Satin Inverted



10-12d Two Structures Combined



10-13



10-14 Lampas 005

Structures for More than Two Pattern Wefts

The structures we created can only be used with two pattern wefts, and the two warps having a ratio of 1 to 1. If you want to use three pattern wefts, or four, or seven (Safavid weavers used this many), using the same combination of satin and twill, then you need to create new structures for each possibility. Here is one way to do this, without redoing everything.

Make a duplicate of your final layered 1:1, three weft lampas (one ground pick and two pattern wefts). We want to increase the size of the file so it adds a pick at even intervals, copying one of the pattern picks. If you followed our suggestions for making your template, you will see it is only 47 rows high. We need it to be a number divisible by three, so go to **Image>Canvas Size**. Change the height from 47 to 48. Be sure to anchor your image to the lower edge of the Anchor map, so that the new row will be added at the top of the file. Click OK.



10-15

Now go to **Image>Image Size**. Make sure Constrain Proportions is unchecked, but Resample Image is checked with Nearest Neighbor showing. Change the height from 48 to 64. This number ($48 + 16 = 64$) will add one row for every three rows in the current file. Photoshop will start at the top of the file and add the extra 16 rows in an even manner by copying and adding rows. Click OK and see what happens. In our template, Photoshop copied the rows that were marked by green, our first pattern wefts. For some reason, it also added the top marks on our satin structure layer. So we have a few things to correct, but it is simpler than starting with nothing. The new file will look like Figure 10-15 when the layers for background, satin, twill and Pattern 2 shows are visible.

Now we want to recolor the weft sequence. Let's say we want to keep the previous sequence (yellow, purple, green) and add a third pattern weft color of blue. Make a new file one pixel wide by four pixels high. Dot in the four color weft sequence you want and save as a Pattern Preset (**Edit>Define Pattern**). It will represent the ground pick at the bottom, then the three pattern wefts. It is shown in Figure 10-16.



10-16

Working on the Background layer, make a fixed sized rectangular marquee 2 pixels wide by 60 pixels high and select your weft indicators. Now go to Fill, and choose the four-color Preset you just made. Your weft marks have been re-colored to reflect the sequence of four weft systems—yellow as ground and purple, green, and blue as pattern wefts.

Let's make sure each layer is correct. Leaving the Background layer visible, highlight the *Satin* layer. In our expanded file, the top row of the satin has been copied onto the purple weft row also. Be sure you are working on the *Satin* layer (it is highlighted in your Layers palette). Make a normal Rectangular Marquee that encloses the row of black and white marks that you need to erase and hit Delete. They are now gone.

Now turn off the *Satin* layer and turn on the *Weft-Face Satin* layer. Once again, Photoshop has added marks on the top purple row in this layer. Make sure you are working on the correct layer (the *Weft-Face Satin* layer is

highlighted). The marquee is still showing, since we didn't deselect it. Again, hit Delete. Now that layer is correct.

Turn off the visibility of that layer, and turn on the visibility of the *Twill* layer. Our *Twill* layer is fine, so there is nothing to fix. If you notice a problem in your file, fix it now.

Individually, look at both your *Pattern 1 Shows* and your *Pattern 2 Shows* layers. Does one of them have single rows of marks while the other has duplicate rows of marks? That is what has happened to our file. What we want is to have the same pattern of single marks that land on a specific pattern weft. We can make one layer correct, copy it and duplicate it twice, then move it into correct alignment for each pattern weft. Let's do that.

In our file, the *Pattern 1 Shows* layer is almost correct. For some reason the extra marks here are at the bottom of the file. Make sure you are working on the correct layer, and drag your Rectangular Marquee (which you haven't deselected yet) down to the row you want to eliminate. Hit Delete. The layer is now correct and you can go to **Select>Deselect** and remove the marquee. It turns out that these marks are falling on the third pattern weft rows. Let's change the name of the layer to *Hide Pattern Weft 3*. Now, drag the layer over the button at the bottom of the Layers palette for Create a New Layer. You have just made a copy of the layer. Do it again, either dragging the copy or the original.

Turn off the visibility of the *Hide Pattern Weft 3* and one of the copies, having only one copy layer show. Make sure this is the active layer, and choose the Move tool. With the down arrow, move the position of the marks down one row. Now they are falling on the green weft rows, your second pattern weft rows. Change the name of the layer to *Hide Pattern Weft 2*.

Turn off the visibility of that layer, and turn on the visibility of the remaining copy. Make sure this is the active layer. The Move tool should still be selected. Use your down arrow to move the marks until they fall on the purple rows, your first pattern weft. Change the name of the layer to *Hide Pattern Weft 1*.

These marks, on all the Hide layers, should be falling on the ground warp columns (the yellow columns). Remember, you are raising the ground warp to push those wefts to the back of the cloth.

We still have a layer called *Pattern 2 Shows*, remaining from the original file, which we do not need. Drag that layer into the Trashcan at the bottom of the Layers palette. Save this file as a .psd, giving it a name such as *3weft1to1.psd*. From this file, we are going to make the lampas Pattern Presets for three pattern wefts at a warp ratio of 1:1. The extra pattern weft will enable us to make more Presets. We still have the possibility of a satin ground with all wefts at the back, or a weft-face satin ground with all wefts at the back. We also have three possibilities of a single pattern weft working on top of the satin ground. There are three possibilities of showing two of the pattern wefts with the third going to the back, and there is one possibility of showing all three wefts on the top. This means we can create a total of 9 Pattern Presets. Again, you can make the other satin configurations of 2/3 satin or 3/2 satin



10-17



10-18

for the ground structure, pushing the pattern wefts to the back, if you want to create a shaded satin ground for your lampas.

Currently, our template looks like Figure 10-17, when the structure that brings pattern weft 1 to the surface is showing.

The Layers palette for this template (*10-17.psd*) looks like Figure 10-18.

Making Pattern Presets for a 3 Pattern Weft Satin/Twill Lampas at a 1:1 Ratio

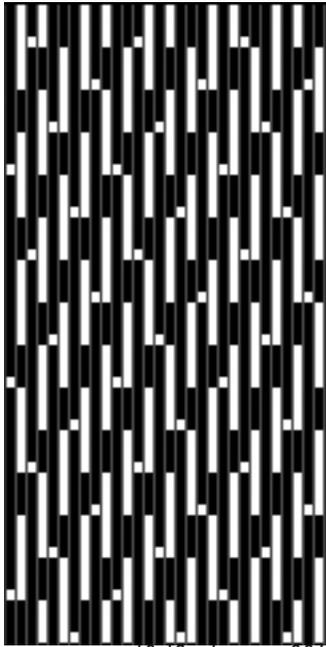
Let's make the Pattern Presets working with *10-17.psd*. Make a Fixed Size Rectangular Marquee the size of the weave structures, which is 30 pixels wide by 60 pixels high. Place it over the area of your template where the structure is. By choosing the rectangular marquee, then clicking anywhere near the lower right corner of the image, the selection will fall where it belongs. Be sure you are not including the colored marks indicating either warp or weft. Have your *Satin* layer, your *Twill* layer, and all three *Hide Pattern Weft* layers visible. The image looks like it has extremely long warp floats. Don't worry, they are correct. In the cloth, picks will pack down together at the back of the cloth and the warp floats will not be exaggerated. Sometimes a flat representation is misleading to express the dynamics of compression and interlacement in the actual fabric. Save this configuration as a Pattern Preset by going to **Edit>Define Pattern**. We called ours Lampas 006, continuing the number sequence. Eventually we are going to save all our lampas structures with a warp ratio of 1:1 as a subset under Lampas in the master Weave Presets folder (as well as the Chapter 10 folder) of the CD.

Now turn off the layer for *Satin* and click on the layer for *Weft-Face Satin*, keeping the other layers, *Twill* and the three *Hide Pattern Wefts*, visible. Save this as pattern Lampas 007.

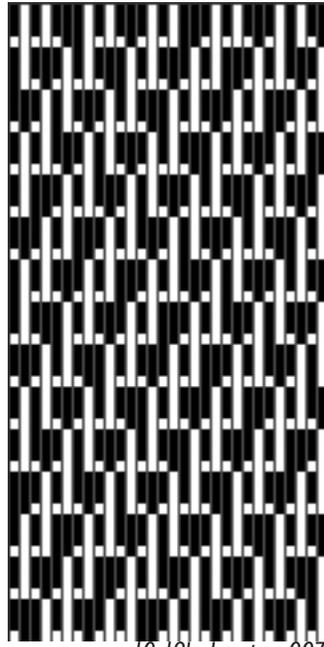
Now turn on the *Satin* layer again, and turn off the *Weft-Face Satin* (you actually have a choice which of these to use under your pattern wefts, but we generally choose the satin structure). Keep the *Twill* layer visible. We are going to turn off the visibility of the *Hide Pattern Weft 1* layer, but keep the other two *Hide Pattern Weft* layers visible. This structure will let Pattern Weft 1 show on the face of the cloth. Save it as Lampas 008. Now turn on the visibility of *Hide Pattern Weft 1* layer, and turn off the visibility of *Hide Pattern Weft 2* layer. Save this as Lampas 009, which brings pattern weft 2 to the face of the cloth. Turn off the visibility of *Hide Pattern Weft 3* layer and turn on the visibility of *Hide Pattern Weft 2* layer. Save this as Lampas 010, which will be a structure that brings the third pattern weft to the surface.

Go through the other combinations and save them. Make Pattern Presets that bring combinations of two pattern wefts to the surface. Make a Preset

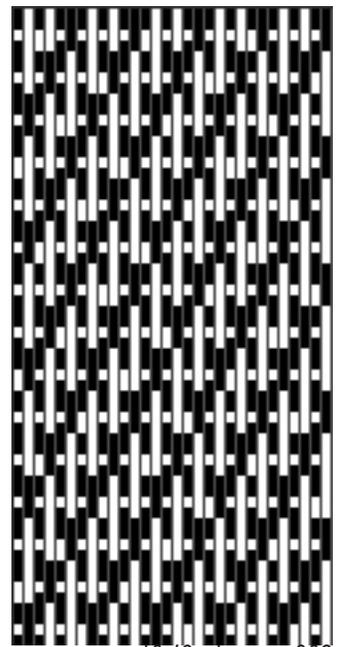
that brings all three pattern wefts to the surface (turn off the visibility of all three *Hide Pattern Weft* layers). Here are the final Pattern Presets.



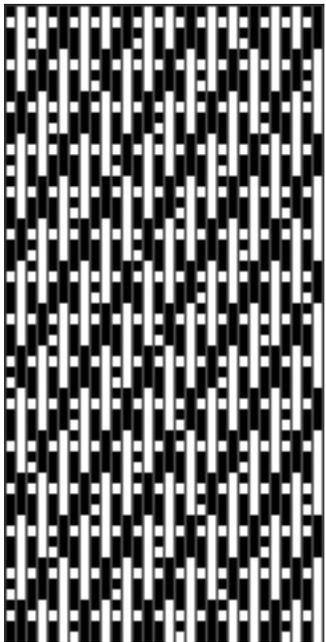
10-19a Lampas 006



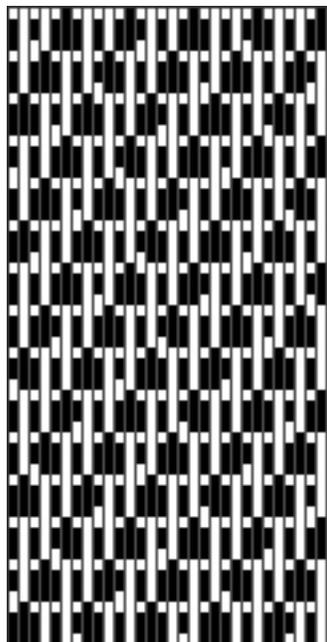
10-19b Lampas 007



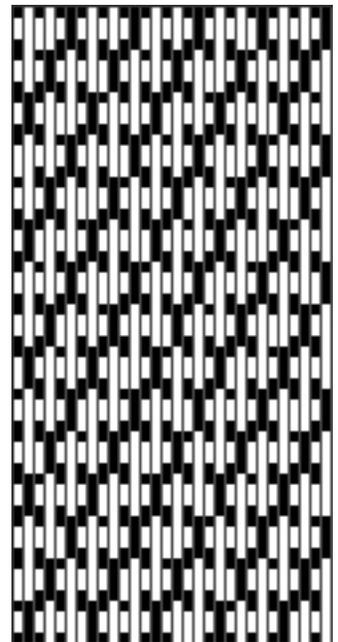
10-19c Lampas 008



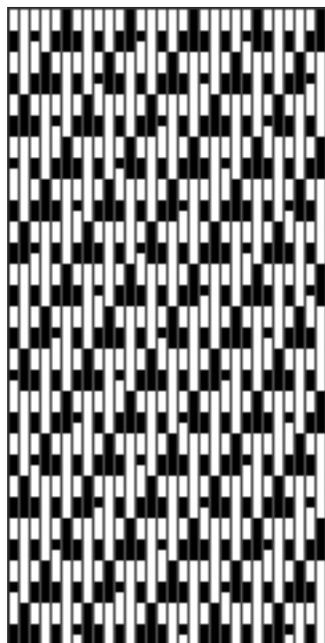
10-19d Lampas 009



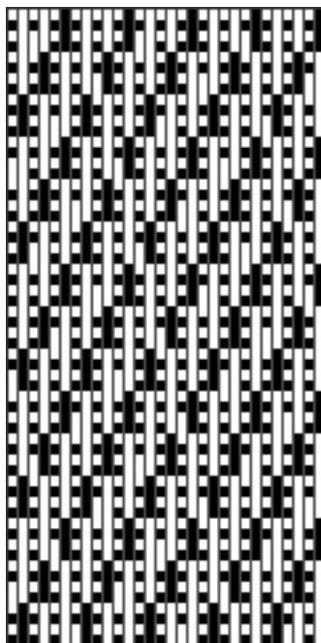
10-19e Lampas 010



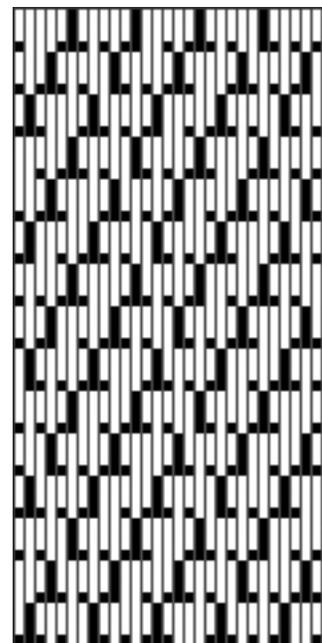
10-19f Lampas 011



10-19g Lampas 012

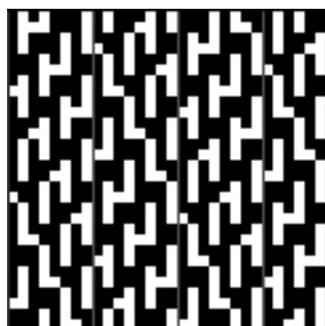


10-19h Lampas 013

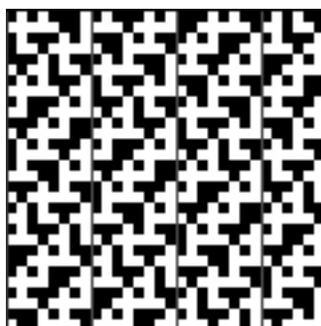


10-19i Lampas 014

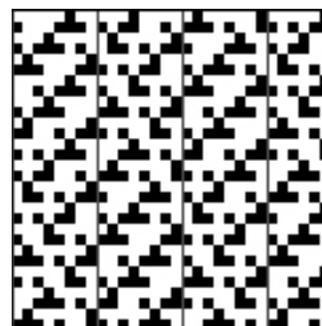
We also made and saved structures (Lampas 015, 016, 017) for a lampas using the satin ground, twill tie-down and only one pattern weft. They are illustrated below as Figures 10-20a-c, and you can find them on the CD as *10-20a-c.psd*. We saved the template for these structures as *10-20.psd*.



10-20a Lampas 015



10-20b Lampas 016



10-20c Lampas 017

If you want to create a lampas cloth with the same structures of satin and twill, but use more than three pattern wefts, you have to expand your template and add the extra weft picks, then save new Presets. We haven't done it here, but encourage you to follow the procedure we just covered to make additional templates and structures using more than three pattern wefts.

Satin/Twill Lampas at Warp Ratios of 2:1

So far we have only made lampas structures that can be used with a warp ratio of 1 to 1. If you have a different ratio, 2 ground to 1 tie-down, or 3 ground to 1 tie-down, or something even greater, you also need to modify your templates and save each structural possibility as a Pattern Preset. The

width of a template using a 4/1 satin ground and a 1/2 twill tie-down with a ratio of 2 ground to 1 tie-down needs to be 45 ends wide in the structural area. In the 1:1 template, each structure divided evenly into 15. Now you have two ground for every tie-down, so you double the number of ground ends to 30 and add that to the 5 repeats of the twill to get 45 as the number of ends required for each of the two structures to return to their starting places at the same time. Below are the structures we have saved on the CD for warp ratios of 2:1 using the same satin and twill combinations in lampas as the 1:1 Pattern Presets.

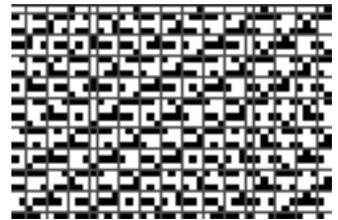
2:1 Structures using 2 Wefts (ground and 1 pattern weft)



10-21a Lampas 018

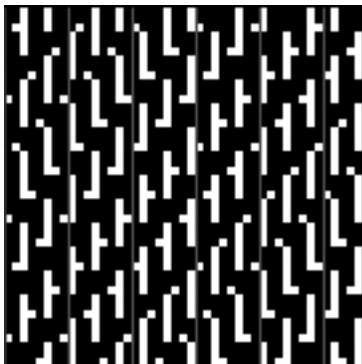


10-21b Lampas 019

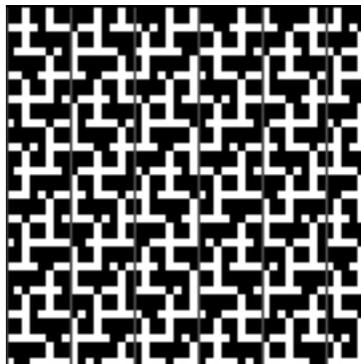


10-21c Lampas 020

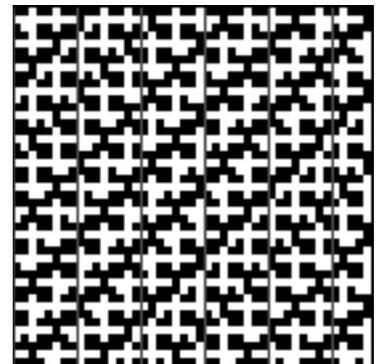
2:1 Structures using 3 Wefts (ground and 2 pattern wefts)



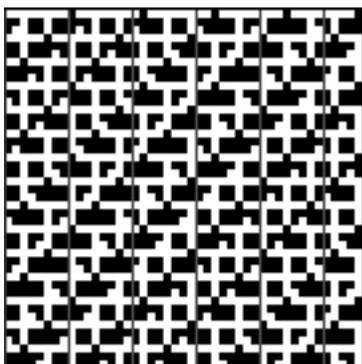
10-22a Lampas 021



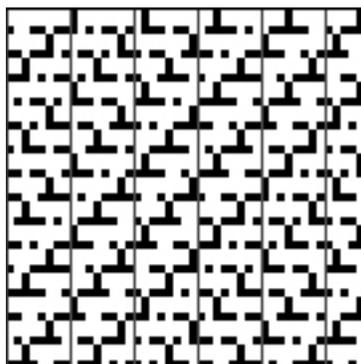
10-22b Lampas 022



10-22c Lampas 023

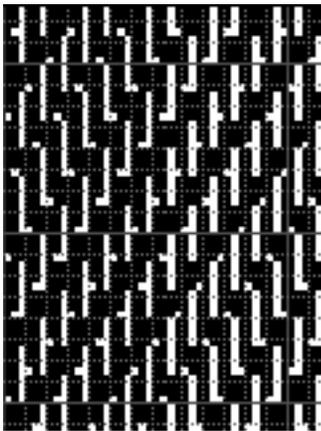


10-22d Lampas 024

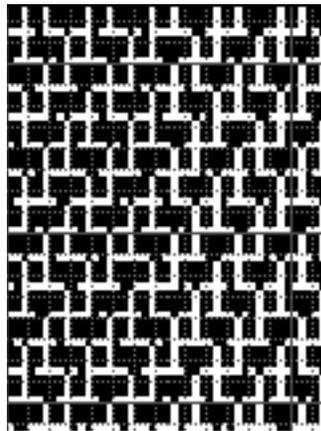


10-22e Lampas 025

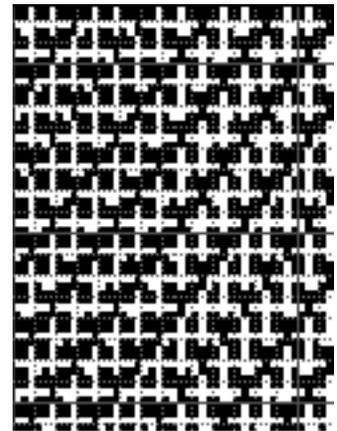
2:1 Structures using 4 Wefts (ground and 3 pattern wefts)



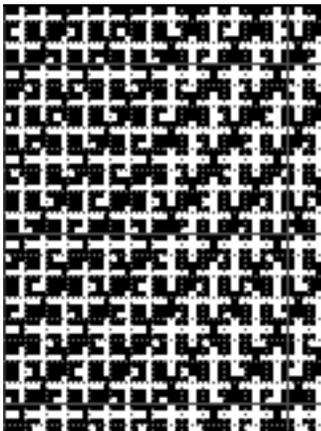
10-23a Lampas 026



10-23-b Lampas 027



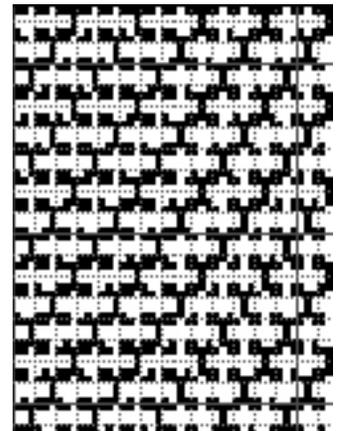
10-23c Lampas 028



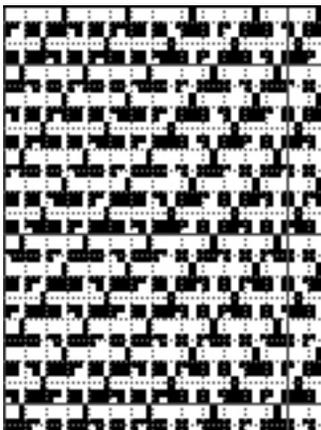
10-23d Lampas 029



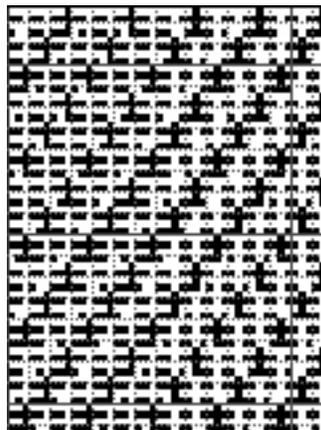
10-23e Lampas 030



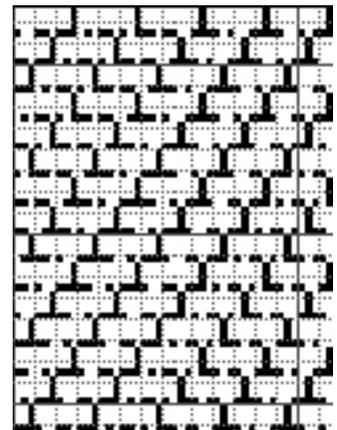
10-23f Lampas 031



10-23g Lampas 032



10-23h Lampas 033



10-23i Lampas 034

Satin/Twill Lampas at Warp Ratios of 3:1

The template for the 3:1 ratio using these weaves needs to be 60 pixels wide in the structural area to accomplish the combined repeat of the two structures (3 x 15 = 45 for the satin + 15 for the twill = 60). Here are the structural diagrams for 3:1 Pattern Presets.

3:1 Structures using 2 Wefts (ground and 1 pattern weft)



10-24a Lampas 035

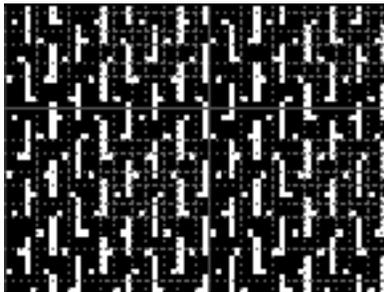


10-24b Lampas 036

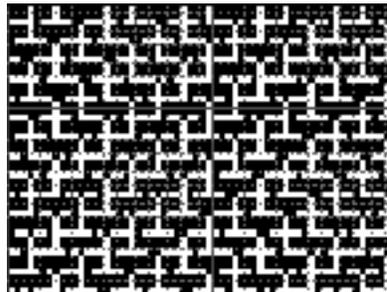


10-24c Lampas 037

3:1 Structures using 3 Wefts (ground and 2 pattern wefts)



10-25a Lampas 038



10-25b Lampas 039



10-25c Lampas 040

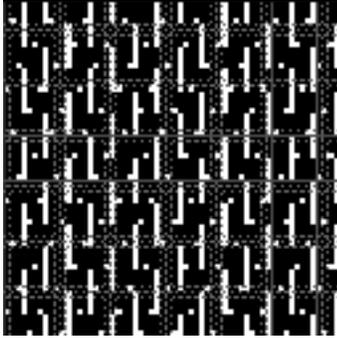


10-25d Lampas 041

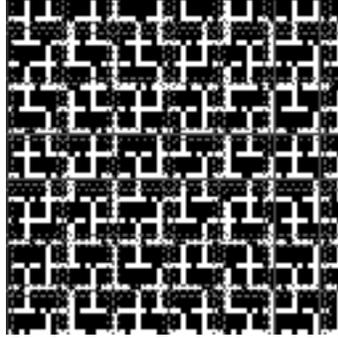


10-25e Lampas 042

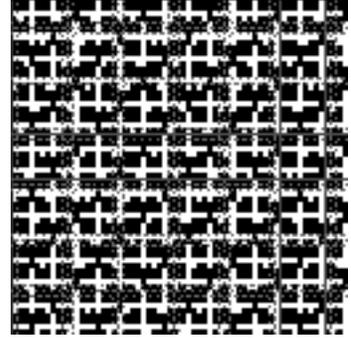
3:1 Structures using 4 Wefts (ground and 3 pattern wefts)



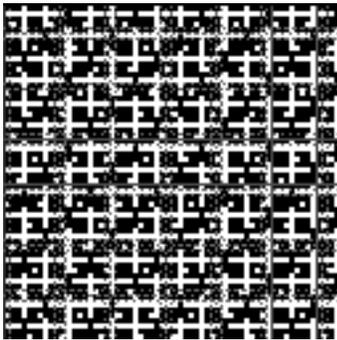
10-26a Lampas 043



10-26b Lampas 044



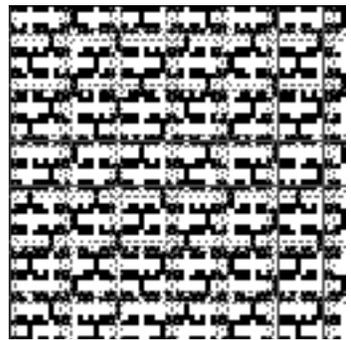
10-26c Lampas 045



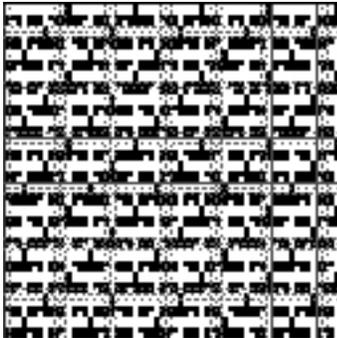
10-26d Lampas 046



10-26e Lampas 047



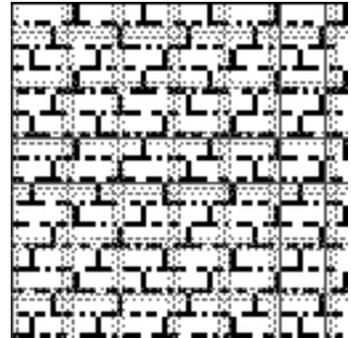
10-26f Lampas 048



10-26g Lampas 049



10-26h Lampas 050



10-26i Lampas 051

The charts on the following page explain what is happening in each lampas Pattern Preset that you can find on our CD.

2 Weft Systems (1 Ground and 1 Pattern)						
Preset Number (Lampas #)			Number of Weft Systems	Ground Structure	Tie-Down Structure	Pattern Weft(s) To Top
Ratio of Warps (Ground to Tie-Down)						
1:1	2:1	3:1				
015	018	035	2	4/1 Satin	1/2 Twill	none
016	019	036	2	1/4 Satin	1/2 Twill	none
017	020	037	2	4/1 Satin	1/2 Twill	1

3 Weft Systems (1 Ground and 2 Pattern)						
Preset Number (Lampas #)			Number of Weft Systems	Ground Structure	Tie-Down Structure	Pattern Weft(s) To Top
Ratio of Warps (Ground to Tie-down)						
1:1	2:1	3:1				
003	021	038	3	4/1 Satin	1/2 Twill	none
005	022	039	3	1/4 Satin	1/2 Twill	none
001	023	040	3	4/1 Satin	1/2 Twill	1
002	024	041	3	4/1 Satin	1/2 Twill	2
004	025	042	3	4/1 Satin	1/2 Twill	1 & 2

4 Weft Systems (1 Ground and 3 Pattern)						
Preset Number (Lampas #)			Number of Weft Systems	Ground Structure	Tie-Down Structure	Pattern Weft(s) To Top
Ratio of Warps (Ground to Tie-Down)						
1:1	2:1	3:1				
006	026	043	4	4/1 Satin	1/2 Twill	none
007	027	044	4	1/4 Satin	1/2 Twill	none
008	028	045	4	4/1 Satin	1/2 Twill	1
009	029	046	4	4/1 Satin	1/2 Twill	2
010	030	047	4	4/1 Satin	1/2 Twill	3
011	031	048	4	4/1 Satin	1/2 Twill	1 & 2
012	032	049	4	4/1 Satin	1/2 Twill	2 & 3
013	033	050	4	4/1 Satin	1/2 Twill	1 & 3
014	034	051	4	4/1 Satin	1/2 Twill	1, 2 & 3

Image Design

As in the case with most compound structures, we suggest you design for the face of the cloth. In lampas, this means designing for the total number of ends of the ground warp and thinking of all weft systems as one. Use square pixels if you lack experience to know the true ppi of your final cloth. If you do

have that information, you can design using the real face Pixel Aspect Ratio of your cloth (face ppi/face epi).

Expand for Total Number of Ends

After finalizing your design, and reducing it to the number of colors that represent the number of structures you will use, you have to expand the image. Expansion will most likely not be equal for height and width. First expand your design in the width, which will be determined by the ratio of your warps. If your ratio is 1:1, then expand your width by 200% (you are adding one tie-down warp for every ground warp); for a ratio of 2:1, expand the width by 150% (you want to add one tie-down end for every two ground threads); and for a ratio of 3:1, expand the width by 133% (you want to add one tie-down end for every three ground ends). Constrain Proportions is turned off, and Resample Image should be set to Nearest Neighbor. Change the width to percent, and type in the correct percentage. Click OK. This number should represent the total number of ends on the loom, all ground and tie-down ends. If it is off by one or two, go back to **Image>Image Size** and again, with Constrain Proportions turned off, and Resample Image set to Nearest Neighbor, type in the correct number of total ends for the width. Click OK.

Expand for Total Number of Picks

Now you need to expand the design for your total number of weft systems. You always have a ground weft system, plus the number of pattern weft systems. One pattern weft will mean 2 weft systems, and expanding the height by 200%; two pattern wefts equal 3 weft systems, and expanding the height by 300%; and 3 pattern wefts plus ground equal 4 weft systems, and expanding the height by 400%. Go to **Image>Image Size** and make sure Constrain Proportions is turned off. Have Resample Image set to Nearest Neighbor. Change pixels to percent next to the height, and type in the correct percentage for your total number of weft systems. Click OK. Once more, go to **Image>Image Size**. Look at the number next to height. Is it divisible by the total number of weft systems? If not, you want to increase or decrease that number so that it is evenly divisible by the number of weft systems, so that the structures and weft systems will mesh correctly. If everything is okay, Click OK. If not, make sure Constrain Proportions is unchecked, and that Nearest Neighbor is selected for Resample Image. Change the height to a number evenly divisible by the number of weft systems. Click OK.

Pixel Aspect Ratio

Now that you have expanded your design, your image is most likely stretched and looking wrong on the monitor. If you knew from experience the true Pixel Aspect Ratio of your cloth, and designed for the face Pixel Aspect Ratio, change the ratio to the true expanded cloth Pixel Aspect Ratio and your image should look fine. If you used square pixels, we suggest you ignore the image for now. Go to the loom and weave an inch or two of the final

design. Count your true ppi and epi with the tension relaxed. Divide ppi by epi. Modify the height of the design by multiplying the existing pixel height by the actual Pixel Aspect Ratio. Be sure that the final height is a number evenly divisible by the height of your structures, or at least by the number of weft systems. This will ensure that the weave structures mesh correctly with your weft color sequence. We assume you did not check Link with Layer or Snap to Origin, so your weaves will flow correctly into your modified file. Now that you know the true ppi of your final cloth, you can modify the Pixel Aspect Ratio of the final design to reflect this ratio and your design image should look correct.

An Actual Lampas Design

In the following design, we used three wefts throughout the cloth, a ground weft and two pattern wefts. To add more texture to the fabric, the pattern wefts used to weave a series of lampas pieces were chenille and/or bouclé. In this example, two chenille pattern wefts were used.

Painted Warp Adds Complexity

We also added color to the ground warp by painting it before weaving with natural dye extracts. To visualize how this would look in the final weaving, we made a separate layer in the image file that mimicked the painted ground. That layer was visible when judging the visual aspects of the design, but eliminated before introducing the weave structures.

The actual weaving had one more element that was not structural. The painted warp was interspersed with small vertical stripes of resist-braided indigo dyed cotton. We did not try to reproduce this in the simulation, but we could have added that element, if we thought it was necessary for determining visual relationships.

The images of our design on the next page illustrate the design process. On the left, Figure 10-27, the ground is colored to represent the painted warp. In the image on the right, Figure 10-28, the ground is reduced to one color (white). Ultimately, the white color was replaced with the warp satin structure. Even though only one structure is used, in the weaving it looks more complex because the warp threads are painted different colors.

The green words represent the ground weft working as a 1/4 satin (also known as sateen). When weaving the cloth, a pick of the ground weft would appear as 4/1 satin in the white areas and as the 1/4 satin in the green areas. The black tree became the 1/2 twill woven with pattern weft 1 (chenille) showing; and the red words in the tree became the 1/2 twill woven with pattern weft 2 (also a chenille) showing.

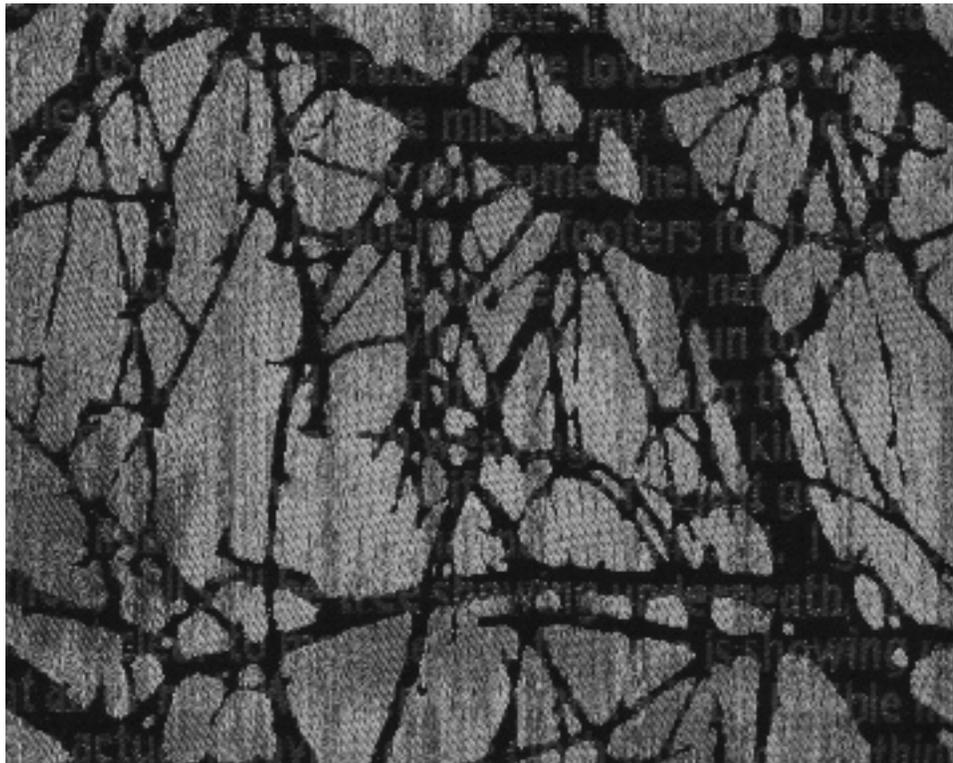
Figure 10-29 is an image of the final weaving reduced to grayscale. You can see the weaving in color on the CD as *10-29.tif*.



10-27 Image with Painted Warp Represented



10-28 File Reduced to Colors to be Filled with Weaves



10-29 **Postcard 4** by Bhakti Ziek, 2005, 21”h x 26”w, natural dye extracts, silk, cotton, rayon, chenille, painted warp, handwoven lampas jacquard

Although the final weaving looks complicated, it is composed of only four weave structures. It was woven with a total epi of 30. The ratio of 2:1 meant there were 20 ground ends and 10 tie-down ends in an inch. Pattern Preset Lampas 021 was used in the white areas, Lampas 022 was used in the green areas, Lampas 023 was used in the black areas, and Lampas 024 was used in the red areas.

Floating Selvedges

We strongly recommend that you work with floating selvedges when weaving lampas. They will catch all your wefts and keep the edges of the cloth neat and straight. If you have never worked with floating selvedges before, read Appendix A for more information.

Designing for Dobby Looms

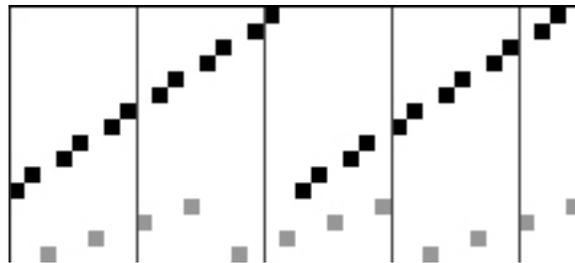
As with taqueté and samitum, lampas can be woven on dobby looms. There are more block options with taqueté and samitum, since the inner warps do not need to be threaded for a structure as they do in lampas. The tie-down threads are threaded on the same sequence of shafts across the width of the cloth. If you want them to work as a plain weave, you only need two shafts for the tie-down warp. A twill will need three or more shafts for the tie-down warp. The ground threads need to be threaded for whatever structure you decide to use, and different groups of shafts used for different blocks. A plain weave will allow the most blocks. A 3-shaft twill will mean three shafts per block, allowing you to weave both warp-faced twill and weft-face twill in the ground. Four-shaft straight threadings will let you weave either twills or plain weave in the ground. Satin structures need at least 5 shafts per block. You can expand the width of blocks by repeating the threading, and you can have blocks of even width or varying dimensions, as you wish. The design for the pattern wefts is determined by raising or lowering all of the ground warps in a block or group of blocks.

As we mentioned in the previous chapter, if you have a computer-driven dobby loom, you probably already own software for writing drafts and controlling the loom. You might not want to switch to Photoshop for drafting; although a great advantage of Photoshop for dobby is the dynamic resizing of lift plans to accommodate various numbers of picks per inch without redoing the lift plan from scratch. However, if you have a dobby loom with hand pegging, and you don't have software, you might enjoy using Photoshop, as we have done below.

Threading Drafts

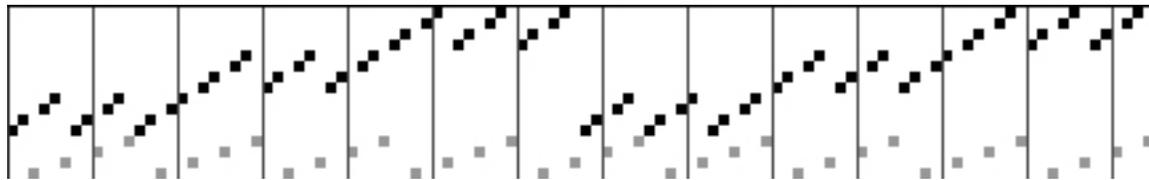
Here is an example of a threading for a dobby with 16 shafts that will allow you to weave either plain weave or twill in both the tie-down and ground warps. The tie-down warp is indicated with yellow marks, and threaded on four shafts. The ground warp is indicated by black marks. There is a ratio of 2 ground warps to 1 tie-down warp. You can consider groups of two ends or

four ends as blocks. If you consider each group of two ground ends as a block, you have a 6 block draft. If you think of groups of four as a block, you have a 3 block draft. In either case, they are not very wide.



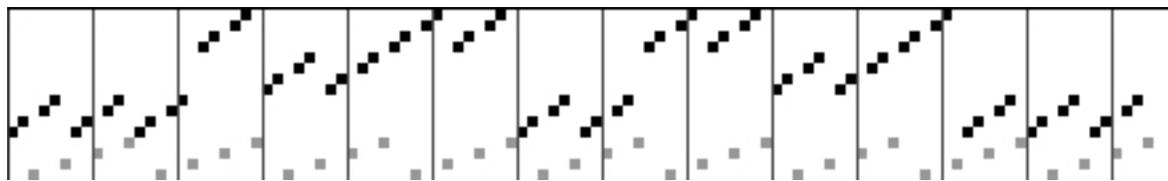
10-30

If you want the blocks to be wider, you repeat the threading of the ground warps on a group of shafts that complete the structure before moving them to another group of shafts. Here is an example of a draft with three evenly expanded blocks:



10-31

You also have the option to vary the size of the blocks, as well as to thread the inner warps in any block sequence, as long as you preserve the flow of the ground weave structure (network drafting is an exception to this as explained in Chapter 15). Here is a 3 block example that shows both these possibilities as they apply to blocks:



10-32

Multi-shaft looms give so many possibilities of combinations of structures to be used in lampas. Here are some options.

If you have 16 shafts, you can use plain weave for both warps and have 7 design blocks. If you use a 1/3 twill for the tie-down warp, and plain weave for your ground blocks, you will still have 6 design blocks. You can have three design blocks working as a 3/1 twill or broken twill for the ground against a tie-down warp of 1/3 twill or broken twill. Using a 5-end satin for the ground gives you two design blocks totaling 10 shafts. You can have the tie-down

warp work in plain weave, and use just 12 of your shafts, or it can work as a 6-end irregular sateen and use all your shafts. You can also combine structures for the ground. If you have two 5-end satin blocks for the ground, you can also have one ground block weaving a 2/1 twill, while the tie-down warp weaves a 1/2 twill.

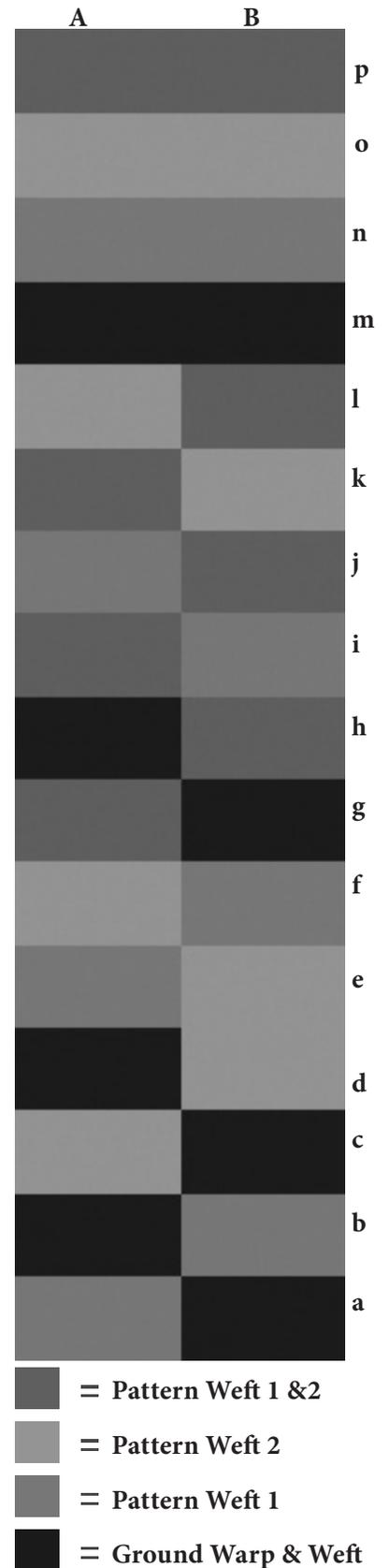
Those of you owning 24- and 32-shaft dobby looms can consider block threadings that use 7- and 8-end satins. Whatever structures you choose, just remember to pay attention to the size of the float created by your tie-down structure. The end use of your cloth will determine what is the optimal distance for your pattern wefts to float on the surface.

Block Plans for Lampas

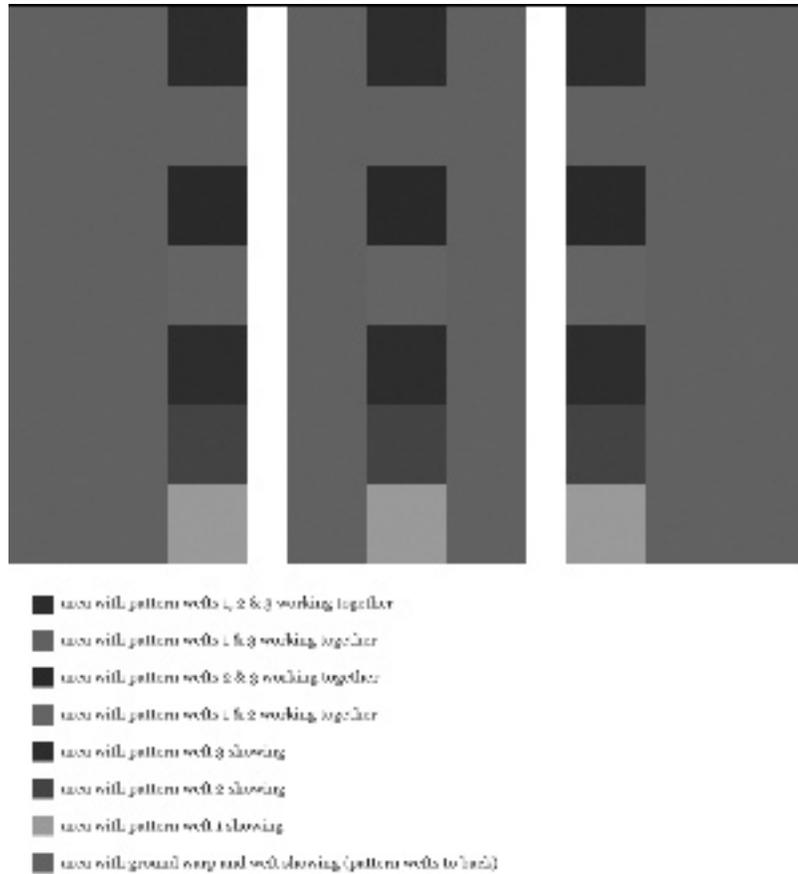
If you have only two blocks for lampas, you still have many choices to make a design. Figure 10-33, to the right, is a plan that shows all of the possibilities you can weave in a two-block design using one ground weft and two pattern wefts. There are areas where the ground warp and weft show, areas where pattern weft one shows, areas where pattern weft two shows, and areas where pattern wefts one and two weave together. As you can see, there are 16 different combinations of these four conditions that can show in the cloth. There are an infinite number of ways that you can sequence these combinations. If you change the colors of the two pattern wefts used in a design, you have even more choices. Of course, if you want a realistic rendition of a landscape, you will need to go back to jacquard, but if you want to capture the feeling of the landscape, the color impression, then two blocks might work. Using the texture of your weft yarns is another element that can enhance your two-block landscape.

We considered showing you all the combinations that you can make with a three-block lampas, using three pattern wefts, but it was too overwhelming. Just consider the basics: you can have areas that show the ground satin with single blocks of each pattern weft, or combinations of two of the wefts or even all three of them. Since you have three blocks, there are 21 possibilities just having the pattern weft(s) show in one of the three blocks. Those 21 possibilities are shown on the next page in Figure 10-34.

You can then have these options combined so that the ground shows in one block and the wefts in the other two blocks, or you can have areas where the ground is completely covered with pattern wefts, and another section where all the pattern wefts go to the back and only the ground warp and weft show on the face of the cloth. Those of you who are mathematically inclined will be challenged to figure out just how many combinations can be created from these three blocks and three pattern wefts.



10-33



10-34

Peg Plan for Lampas

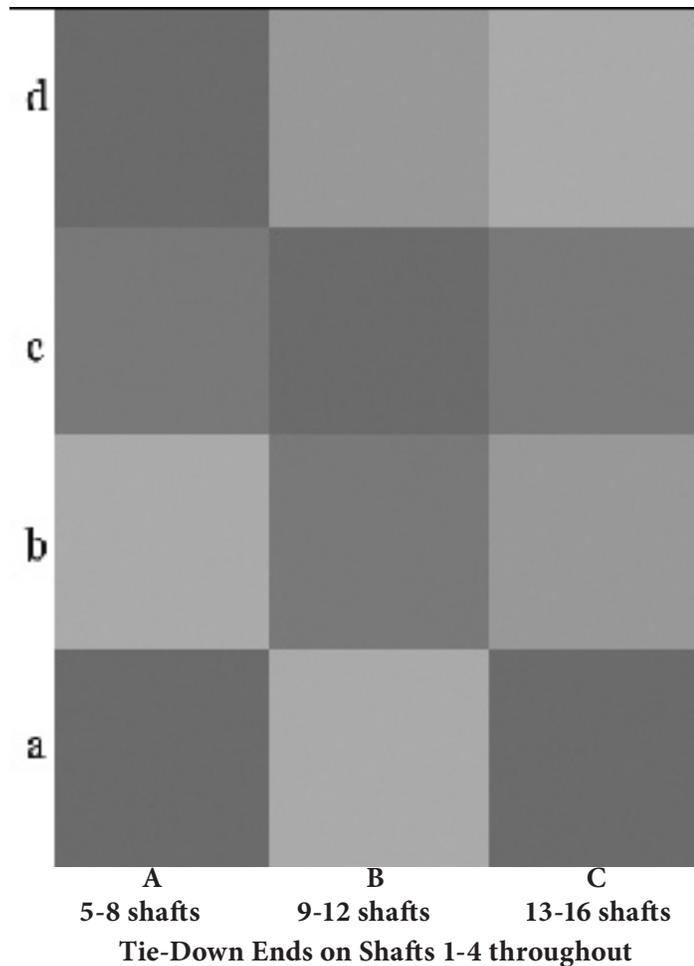
Once you have your block plan, or design plan, you need to make the peg plan (also known as lift plan) that will give you the desired results. Here are two suggestions:

1. Be consistent in the rotation of your weft systems (we like to start with the ground weft, followed by pattern systems 1, 2, 3, etc.);
2. Have the tie-down warp work with all the weft systems, including the ground warp and weft.

Sample Peg Plan

Let's do a sample of a peg plan that can be used with either of the threadings 10-31 or 10-32. We will create a three-block design using two pattern wefts, using Figure 10-35 as our block design.

The actual cloth image will look different in each threading, because the way the ground warp is threaded in blocks is different in each, but in both threadings, the tie-down warp is on shafts 1 through 4, and the ground is in three four-shaft blocks, 5–8, 9–12, and 13–16. Let's assume that the tie-down



Note: This will make more sense if you look at the image in color on the CD.

- = pattern wefts 1 & 2 work together on face
- = pattern weft 2 works on face
- = pattern weft 1 works on face
- = ground warp and weft show (pattern wefts to back)

10-35

warp will work as a 1/3 straight twill and the ground will weave as a 3/1 broken twill.

Reading the block design from bottom to top (starting with a and going to d) we will write out the peg plan for weaving this design.

Read the peg plan from top down, but remember that it will actually weave up in the cloth.

The weft system sequence is always ground weft, then pattern weft 1, followed by pattern weft 2.

Notice that the tie-down twill remains the same for all three picks. The ground warp weaves as a broken twill on the first pick, with the ground weft,

and on the other picks is either up or down, hiding or exposing the pattern weft, depending on the block pattern.

What will happen in the cloth is that the groups of three wefts will beat down to look like one line in the cloth. This means the wefts are sitting on top of each other, rather than rolling out as a continuous plane. Obviously it is going to take more time to weave an inch than if you had only one weft system, but the results will be most satisfying.

A block – repeat until you reach desired height

A Block																
Weft System	Peg Plan															
Ground weft	1				5	6	7		9	10	11		13	14	15	
Pattern weft 1	1				5	6	7	8					13	14	15	16
Pattern weft 2	1				5	6	7	8	9	10	11	12	13	14	15	16
Ground weft		2			5	6		8	9	10		12	13	14		16
Pattern weft 1		2			5	6	7	8					13	14	15	16
Pattern weft 2		2			5	6	7	8	9	10	11	12	13	14	15	16
Ground weft			3			6	7	8		10	11	12		14	15	16
Pattern weft 1			3		5	6	7	8					13	14	15	16
Pattern weft 2			3		5	6	7	8	9	10	11	12	13	14	15	16
Ground weft				4	5		7	8	9		11	12	13		15	26
Pattern weft 1				4	5	6	7	8					13	14	15	16
Pattern weft 2				4	5	6	7	8	9	10	11	12	13	14	15	16

B block – repeat until you reach desired height

B Block																
Weft System	Peg Plan															
Ground weft	1				5	6	7		9	10	11		13	14	15	
Pattern weft 1	1								9	10	11	12				
Pattern weft 2	1				5	6	7	8								
Ground weft		2			5	6		8	9	10		12	13	14		16
Pattern weft 1		2							9	10	11	12				
Pattern weft 2		2			5	6	7	8								
Ground weft			3			6	7	8		10	11	12		14	15	16
Pattern weft 1			3						9	10	11	12				
Pattern weft 2			3		5	6	7	8								
Ground weft				4	5		7	8	9		11	12	13		15	16
Pattern weft 1				4					9	10	11	12				
Pattern weft 2				4	5	6	7	8								

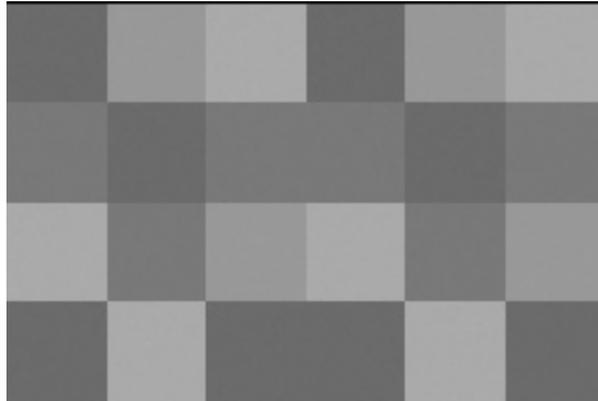
C block – repeat until you reach desired height

C Block																
Weft System	Peg Plan															
Ground weft	1				5	6	7		9	10	11		13	14	15	
Pattern weft 1	1				5	6	7	8	9	10	11	12	13	14	15	16
Pattern weft 2	1								9	10	11	12				
Ground weft		2			5	6		8	9	10		12	13	14		16
Pattern weft 1		2			5	6	7	8	9	10	11	12	13	14	15	16
Pattern weft 2		2							9	10	11	12				
Ground weft			3		6	7	8		10	11	12		14	15	16	
Pattern weft 1			3		5	6	7	8	9	10	11	12	13	14	15	16
Pattern weft 2			3						9	10	11	12				
Ground weft				4	5		7	8	9		11	12	13		15	16
Pattern weft 1				4	5	6	7	8	9	10	11	12	13	14	15	16
Pattern weft 2				4					9	10	11	12				

D block – repeat until you reach desired height

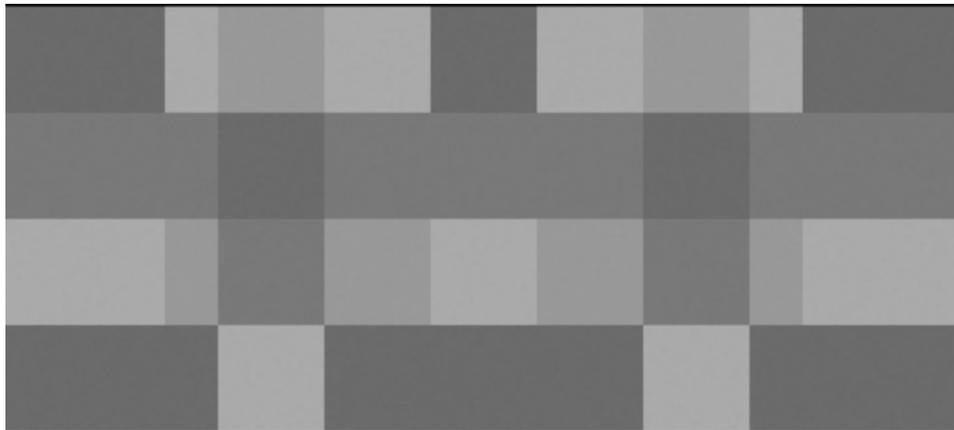
D Block																
Weft System	Peg Plan															
Ground weft	1				5	6	7		9	10	11		13	14	15	
Pattern weft 1	1				5	6	7	8								
Pattern weft 2	1				5	6	7	8					13	14	15	16
Ground weft		2			5	6		8	9	10		12	13	14		16
Pattern weft 1		2			5	6	7	8								
Pattern weft 2		2			5	6	7	8					13	14	15	16
Ground weft			3		6	7	8		10	11	12		14	15	16	
Pattern weft 1			3		5	6	7	8								
Pattern weft 2			3		5	6	7	8					13	14	15	16
Ground weft				4	5		7	8	9		11	12	13		15	16
Pattern weft 1				4	5	6	7	8								
Pattern weft 2				4	5	6	7	8					13	14	15	16

If you wove the design in figure 10-35 using threading 10-31, the design plan will look like this (row a is at the bottom and row d is at the top):



10-36

If you wove the same design using threading 10-32, it would look like this:

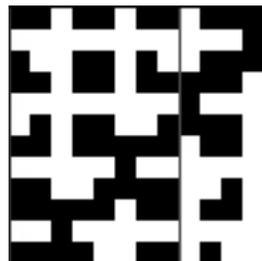


10-37

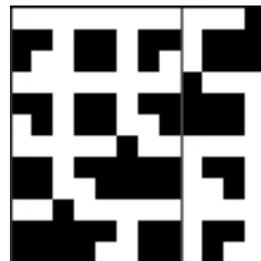
The four structures used to create the cloth in either block version look like this:



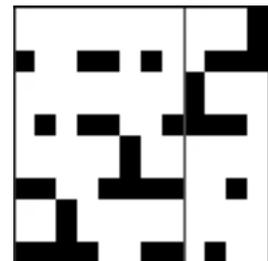
10-38a Lampas 052
Ground shows



10-38b Lampas 053
Pattern 1 shows

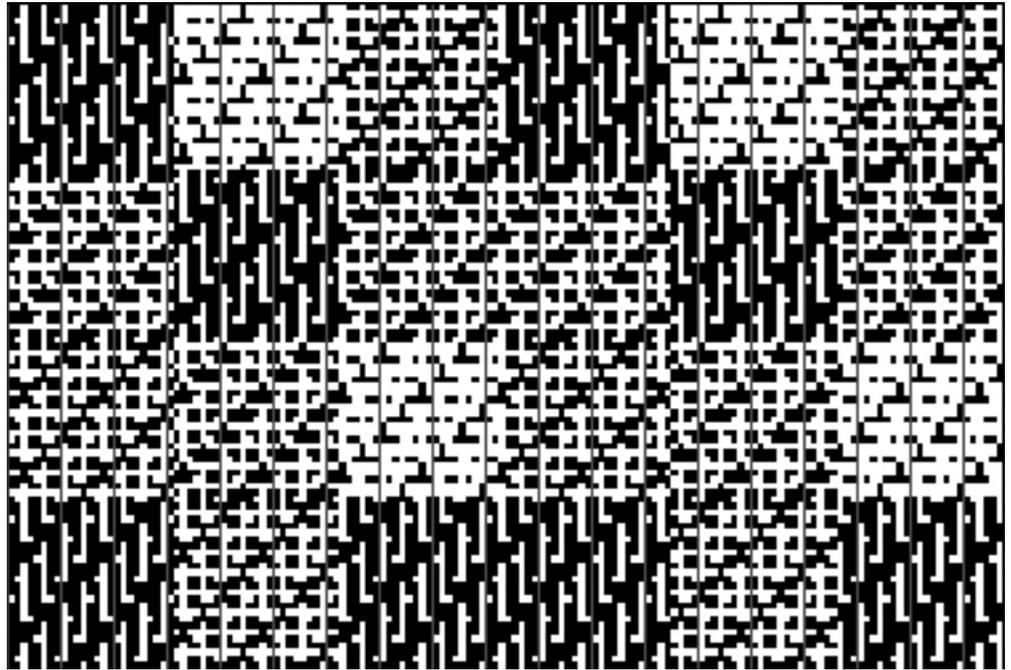


10-38c Lampas 054
Pattern 2 shows

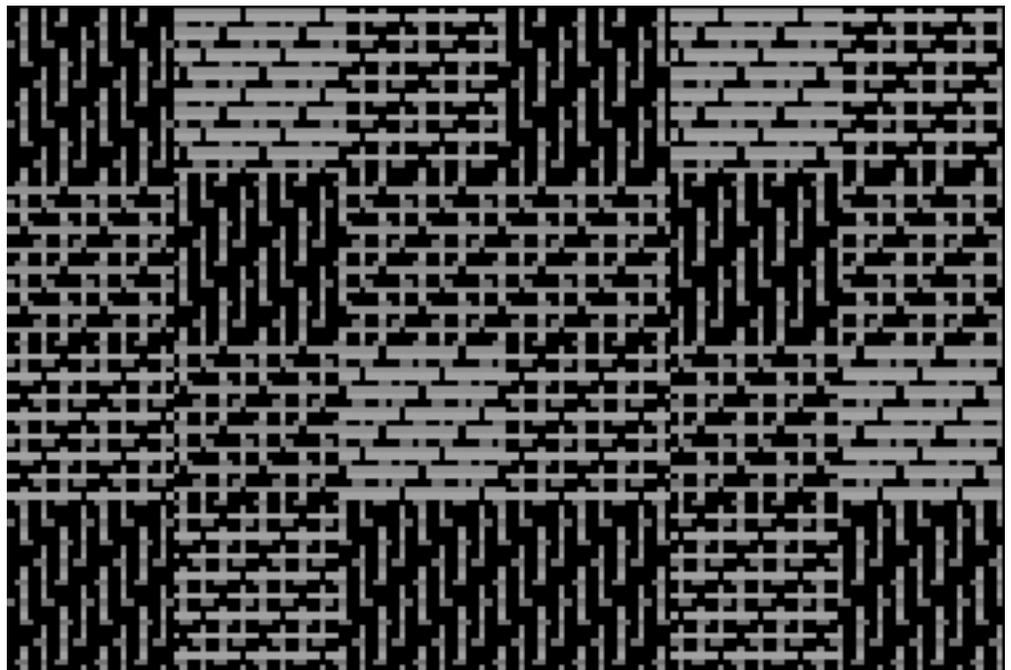


10-38d Lampas 055
Pattern 1 & 2 shows

Figures 10-39a and 10-39b show Figure 10-36 as a structural file and with a simulation using weft colors, On the CD, *10-39.psd* is the layered weave file.

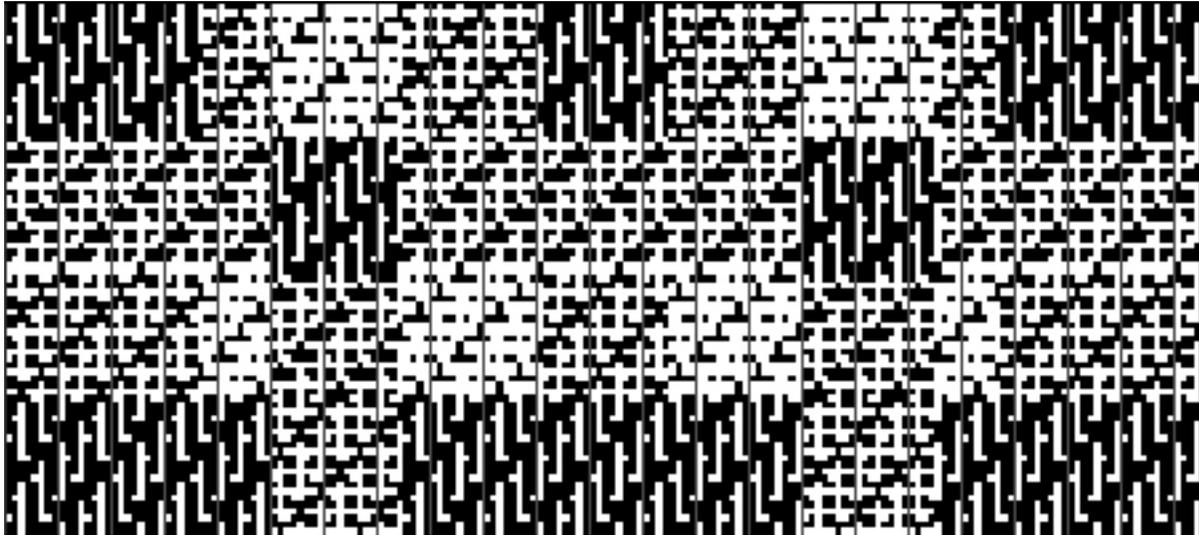


10-39a

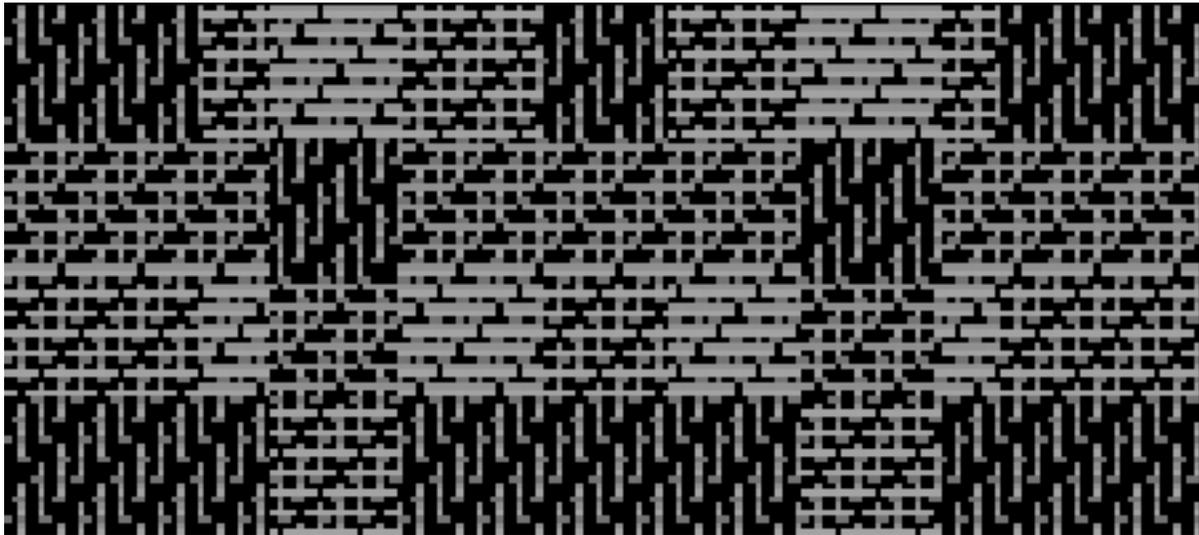


10-39b

Using the same colors for weft, this is how Figure 10-37 looks as a structural file and as a simulation with weft colors in place:



10-40a

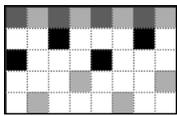


10-40b

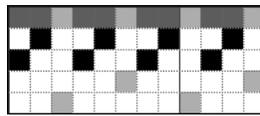
Theo Moorman Technique

Theo Moorman did not know the structure she created was a variation of lampas, but she did have the good sense to suggest that it was probable that others had come up with the same structure before her, just that she did not know about them. Her method was to use a plain weave structure for the ground and a plain weave for the tie-down warp. The drafts below can be used to set up a loom to try her process. As you can see, it only takes four shafts—two for the ground warp and two for the tie-down warp. The drafts

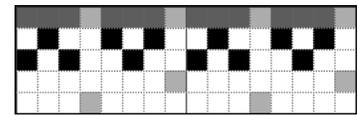
show threadings for ratios of 1:1, 2:1, and 3:1. Each threading draft has the basic threading repeated twice. The black marks indicate the ground warps and the yellow marks show the tie-down warps.



10-41a



10-41b



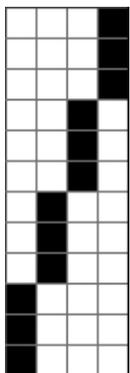
10-41c

The main difference between what we have been describing and her weaving is the sett of her cloth. Moorman had her ground sett so it was sheer, almost transparent. Also, she brocaded her pattern wefts rather than run them edge to edge so they appear to float in the cloth. There have been excellent books written about her process and transparent weavings, including Moorman's own book (see Bibliography) so we won't go into detail here.

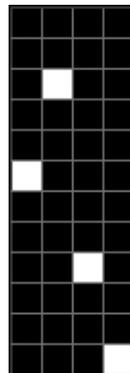
More Photoshop, Lampas, and Dobby

Here is Alice's method for using Pattern Presets to design lampas doobby lift plans in Photoshop. We will adapt the same basic weaves that Bhakti presents in Figures 10-38 a–d. Shafts 1 through 4 will be reserved for straight 1/3 twill pattern, and the remaining shafts will be available for 3/1 broken twill ground. Any multiple of four shafts will do—we may use a 16-, 24-, 32- or 40-shaft loom. Our example will be for a 32-shaft loom.

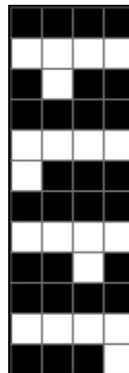
We need five Pattern Presets—one for the pattern warps on shafts 1-4, as in Figure 10-42, and four for the ground warps, Figures 10-43 through 10-46.



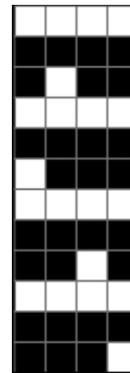
10-42 Preset 060



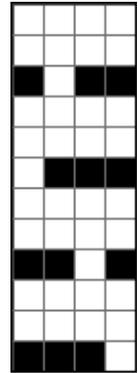
10-43 Preset 061



10-44 Preset 062



10-45 Preset 063



10-46 Preset 064

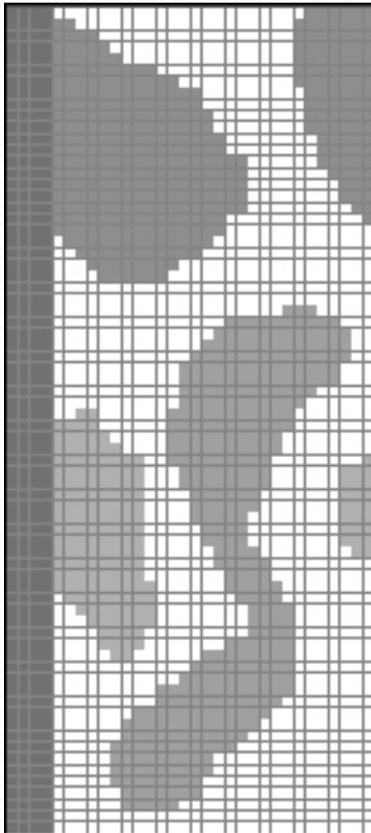
The chart below explains what each Preset represents.

Preset #	Section of Lift Plan	Effect
060	Pattern warp	
061	Ground warp	Ground shows
062	Ground warp	Pattern 1 shows
063	Ground warp	Pattern 2 shows
064	Ground warp	Pattern 1 & 2 shows

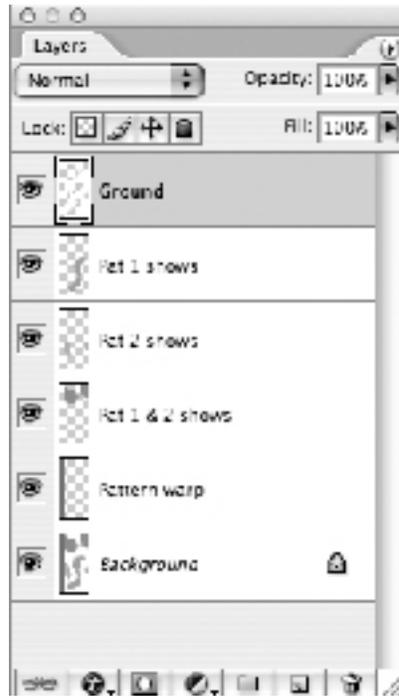
For a 32-shaft loom, open a new Photoshop RGB file, 28 pixels wide by 72 pixels high, with a resolution of 72 dpi. It will be 28 wide because we will be designing for ground warps only (the pattern warps remain constant—you will see this in a minute). It will be 72 long, or any other multiple of 12, as that is the height of our weft repeat.

Design for this dobby lift plan, referring to Chapter 15 for some suggestions. Reduce to 2, 3, or 4 colors via indexing. Add a 4-pixel wide band to the left side of the file via **Image>Canvas Size**. Fill this band with yet another color, which will represent the four shafts dedicated to pattern warp. Convert the file to RGB, assign each color to its own layer (Figure 10-47). The Layers Palette at this point is shown in Figure 10-48. Assign the preset 061 (for the pattern warp) to the band on the left. Assign the presets for Ground Shows, Pattern 1 shows, Pattern 2 shows, and Pattern 1 & 2 shows as desired (Figure 10-49). Duplicate the file, flatten it, index it to two colors (black and white) and save it. Copy this lift plan to a lampas dobby file in your weaving software. We have chosen to use ProWeave for these examples.

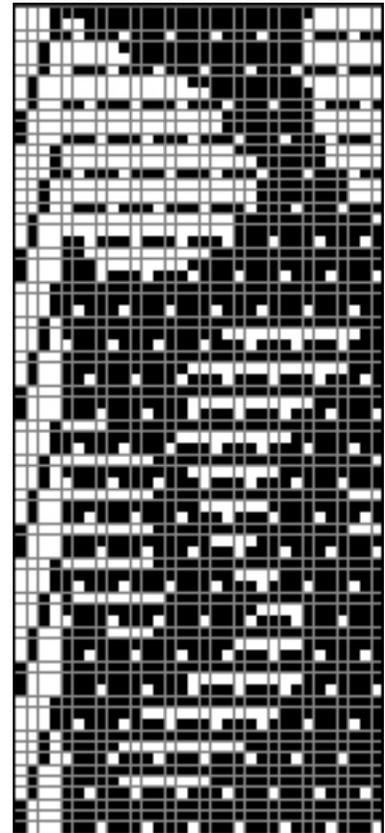
You may use this lift plan with a straight lampas threading or other lampas threading whose ground warp is based on a network, such as the network in Figure 10-50. The gray squares in this network represent legal positions for the ground warps. Every ground warp thread must be plotted on one of these legal positions. Two drawdowns are shown in Figures 10-51 and 10-52. These threading drafts were generated in ProWeave software, and the lift plan copied from Photoshop (black and white only, 72 dpi) into ProWeave. Two repeats of each lift plan are shown. For more information on networked lampas, see *Network Drafting: an Introduction* in the Bibliography.



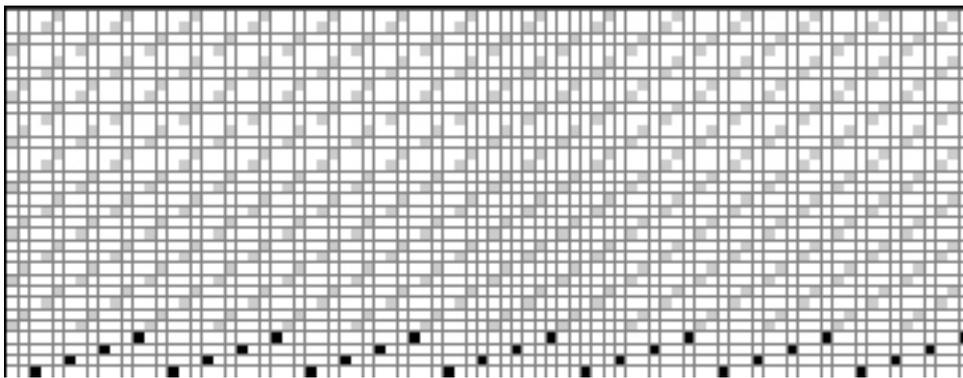
10-47



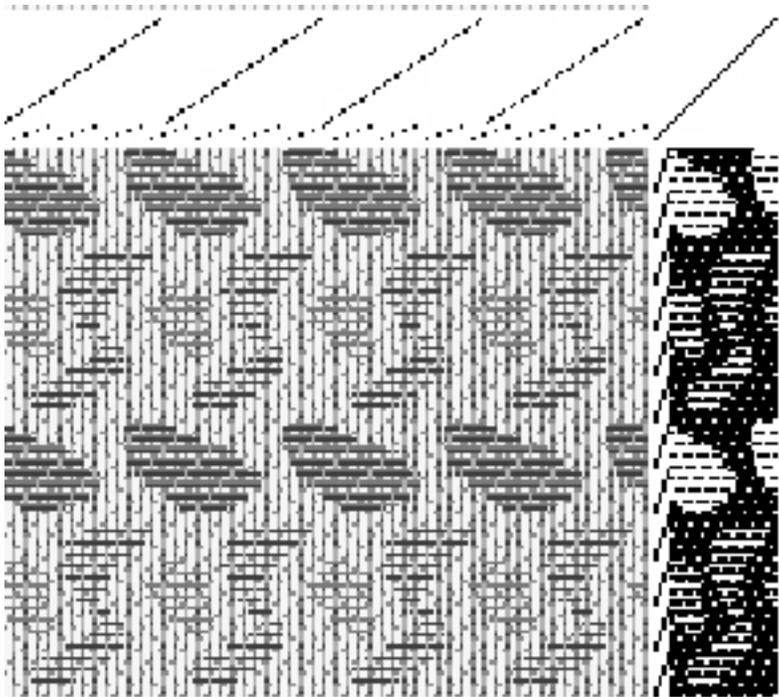
10-48



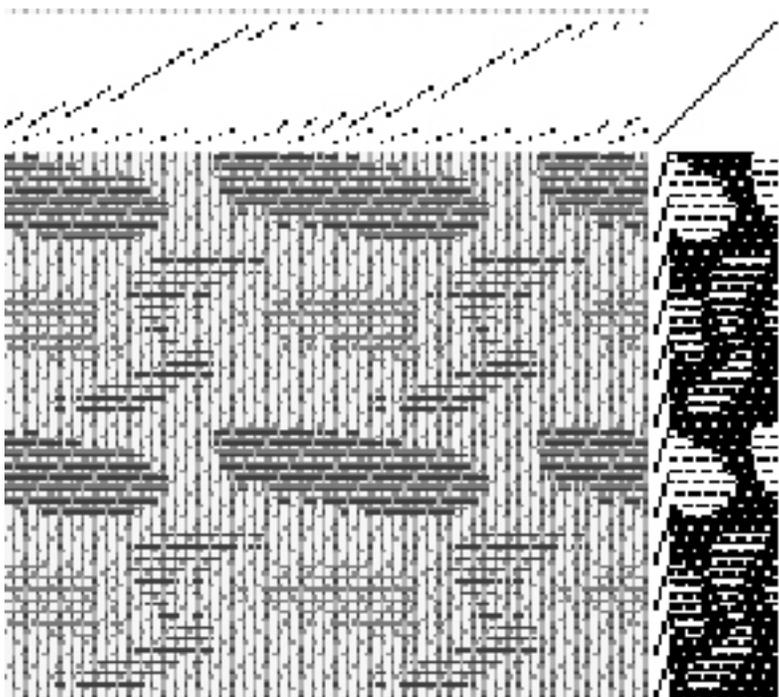
10-49



10-50



10-51



10-52

Time for a break. You have worked so hard!

Recipes

nana's recipe

Madelines

375° oven
lightly butter mold - any fluted tartlet mold will do

mix together - 1 cup sugar
2 cups sifted cake flour
pinch of salt

add, 1 by 1, + mix thoroughly - 4 eggs

stir in lightly - a finely grated rind of 1 lemon

add + mix well - 1/2 lb melted butter

Fill molds 2/3 full -

bake 25 min (approximately) at 375° -

Should be risen + golden brown

brush with 1 well beaten egg white

dust with confectioner's sugar

Put in 200° oven for 5 minutes to dry out

Genoise Cake

oven at 350°

grease + lightly flour 2 - 9" cake tins or 3 - 7" tins
or 1 - 11 x 16 pan

6 large eggs

Bake 25-30 minutes

1 cup sugar

1 cup sifted flour

1/2 cup sweet butter, melted & clarified

1 tsp vanilla

separate eggs. Add vanilla to egg yolks.

Beat egg white till hold soft peaks. Beat in sugar, one tablespoon at a time, beating well after each addition. Beat till egg whites are very stiff, about 5 minutes.

Fold in 1/4 egg whites into yolks. Pour over stiff egg whites. Sprinkle flour on top. Fold eggs + flour gently but thoroughly.

Adding clarified butter at same time.

bake till sides pull away from pan - golden brown + springy.

Remove from pans immediately + cool on cake rack.

Fudge Brownie Recipe

2 cups sugar
1/2 lb butter
4 eggs
1 TB vanilla
4 sq unsweetened choc.
1 cup flour
1 cup nuts, chopped

bake at 350° (375 for high altitude)

20-30 minutes - bake

soften butter
Preheat oven
melt choc in double boiler + remove from heat
cream sugar + butter
beat in one egg at a time till creamy
add vanilla
Stir in choc.
Fold in flour + nuts
Pour into greased + floured 9" x 13" pan
1 1/2" pan

Mom's Fudge Cake

3 sq. unsweetened choc (1 sq = 1/4 cup cocoa choc)
2 1/4 cups sifted cake flour
2 tsp baking soda
(1/2 tsp salt)
1/2 cup (1 stick) butter
2 1/4 cups firmly packed light brown sugar
3 eggs
1 1/2 tsp vanilla
1 cup dairy sour cream
1 cup boiling water

- melt choc in db boiler + cool
- grease + flour two
9 x 1 1/2" layer pans
- sift flour, salt + baking soda
- beat butter till soft in large bowl
- add sugar + eggs + beat on
high speed 5 min till light
+ fluffy
- beat in vanilla + cooled choc
- stir in dry ingredients,
alternately with sour cream -
beating well
- stir in hot water (batter is thin)
- the center springs back

Pour into pans + bake 35 min at 350° F
cool in pans 10 min, then out on racks

Choc Fudge Frosting

1 lb confec sugar
1/2 cup dry cocoa
1/4 tsp salt
6 TBs boiling water
1 tsp vanilla
1/3 cup (2/3 stick) soft butter
mix sugar, cocoa, salt.
add boiling water, vanilla
+ butter. Blend +
beat with mixer

Butterscream Frosting

6 TBs butter, softened
2 2/3 cups conf. sugar
cocoa - 1/3 cup for light flour
1/2 cup for med-flavor
3/4 cup for dk-flavor
1/3 cup milk
1 tsp. vanilla
beat butter till creamy.
add sugar + cocoa alternat-
ing with milk. Beat
to spreading consistency.
Additional milk may be needed.
Blend in vanilla

Frosting for Above

4 sqs bitter choc
1/2 c. butter
combine + melt over
lower heat
1 lb conf. sugar
1/2 cup milk
2 tsp vanilla
stir together
and il smooth
Add choc mix
Set bowl in ice
+ beat till
thick