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December 1955 marks a small milestone in the History of the Shuttle Craft Guild. This is the l00th BULLETIN since 1 took over the Guild, on the retirement of Mary M Atwater. As a fitting mark of this centenary, I am reproducing herein two drafts with designs which I gave in my first Bulletin, September 1946. These drafts were so popular at that time that the Bulletin was out of print in less than one year, so it is time to make them available again. The drafts are designed expecially for weaving borders and textures and not for weaving-as-drawn-in. Nlarist Tinbalf

The OVERSHOT WEAVE for SIX HARNESSES
Too often the Overshot technique is thought of as a strictly 4-harness weave. The misconception is understandable, since practically all of the printed Overshot drafts are for four harnesses, but it is perhaps unfortunate because Overshot, when written on more than four harnesses, can produce remarkably lively and unusual effects. The technique, however, is difficult to understand and consequently appeals largely to the weaver who has a good technical background.

To understand the drafting of multiple-harness Overshot patterns, one need merely construct a Circle Diagram with as many spokes as there are harnesses to be used, and follow the rules given in the September 1954 BULLETIN for the construction of 4-harness Overshot drafts. There are a few additional rules to be considered. First, in order to retain the odd-and-even alternation required for Overshot, only an even number of harnesses may be used. Second, one basic block is added for each harness added. Third, there are secondary blocks which can be added if desired, which combine odds-and-evens which do not lie in adjacent positions. Fourth, the tabbys as in 4-harness Overshot, are made by combining all odd numbered harnesses on one treadle, all even numbered harnesses on the other, but these do not lie in cfposite position on the circle diagram.

The tie-up for multiple-harness Overshot drafts presents some complications because it has certain free, or optional, arrangements and there is no "standard" tie-up. The basis of the tie-up is the weaving of each block individually by tying all harnesses except the two involved in the threading of a specific pattern block to a single treadle, and thus tying a sufficient number of treadles to weave each block. This tie-up, which will weave very open
patterns with single blocks, each one having halftones on either side, and wide, tabby-woven background areas, can be used for very effective designing. However, it has one serious fault: there are long weft floats on the wrong side. To correct the long weft floats on the wrong side, it is necessary to bring in additional half-tones by dropping one harness from the basic tie-up wherever needed. Here is where the freedom enters into the tie-ups, since different pattern arrangements will demand different half-tone arrangements. A generality might be made that from the tie-up one drops the two adjacent harnesses which compose the desired pattern block, and also drops the harness:- which lies, on the Circle Diagram, directly opposite the first harness of this combination. This will give a practical fabric in most cases, but not always the most attractive design possible.

The method suggested for making the best halftone distribution is to draft the pattern and then make a development of it on paper, bringing down pairs of harnesses at one time so that the basic block arrangement and the half-tones on either side of each block are shown. A study of this development will indicate where additional half-tones should occur in order to avoid the wide background areas which will weave as too-long weft floats on the wrong side. The weaver who prefers working directly at the loom instead of on paper, may thread the pattern, make the suggested single-block tie-up, and weave a sample on this to determine where additional half-tones are required. Then, simply release the tie-ups on appropriate treadles, which are indicated by either the development or the woven sample. These additional half-tones may be placed so as to weave secondary shadow-patterns, or they may follow the basic pattern to give it emphasis through a secondary shadowing.

Further tie-up modification is possible, to
permit two non-adjacent blocks to weave simultaneously. This is done by releasing another pair of harnesses from a ticeup, but always raising at least one harness between each pair. For instance, if the $1-2$ block is being woven by leaving harnesses 1 and 2 untied, then harnesses 4 and 5 may also be left untied to weave the $4-5$ blocks along with the 1-2 blocks. Another variation is possible if adjacent blocks are small; the weaving of two adjacent blocks together. For example, the 1-2 and 2-3 blocks may be combined by leaving harnesses 1, 2 and 3 untied on one treadle. Very interesting patterns may be achieved by doing this.

Because the possibilities of multiple-harness Overshot are so wide, there are usually too many complications in Overshot patterns with eight or more harnesses. Therefore the best number for the technique are six harnesses. The six-harness Overshot will have 6 basic pattern blocks: $A$ is $1-2, B$ is $2-3, C$ is $3-4, D$ is $4-5, E$ is $5-6, F$ is $6-1$. In addition there are three secondary blocks which may be drafted: $G$ is $1-4, H$ is $2-5,1$ is $3-6$. These are the combinations made by cutting directly across the circle on a 6mpoke Circle Diagram. The fundamental tie-up for the 6-harness Overshot is:

Treadle 1-to harnesses 3-4-5-6, for Block A;
" 2 - to harnesses $4-5-6-1$, for Block $B$;
II. 3- to harnesses 5-6-1-2, for Block C;
". 4 - to harnesses $6-1-2-3$, for Block $D$;
.l. 5 - to harnesses $1-2-3-4$, for Block $E$;
4. 6- to harnesses 2-3-4-5, for Block $F$.

If the secondary blocks are drafted they are tied:
Treadle 7-to harnesses 2-3-5-6, for Block G;
" 8 toto harnesses $1-3-4-6$, for Block $H$;
" 8- to harnesses $1-2-4-5$, for Block 1 .
Tabbys are always tied:
Treadle a - to harnesses 1-3-5;
" $\quad \underline{b}$ - to harnesses 2-4-6.
The inclusion of the secondary blocks in a draft will often eliminate the necessity for adding half-tones.

## OVERSHOT DRAFTS ON TRUE OPPOSITES

Overshot drafts written on true opposites are those which give no half-tones nor no overlapping of adjacent blocks. The opposites are drafted by eliminating all connecting blocks, such as the $2-3$ block which might be considered the connecting block between 1-2 and 3-4, and 4-1 which might be considered the connecting block between 3-4 and 1-2. Thus, for a 4-harness Overshot draft there are only two possiblle pattern units which are 1-2 and 3-4. The most commonly used draft on 4-harness opposites is the well known Monk's Belt. The advantage of additional harnesses for opposites Overshot drafts is clear, since two harnesses are required. for each pattern block, making six harnesses necessary for three-block patterns, eight harnesses for four-block patterns, ten harnesses for five-block patterns, etc.

The tie-up problems are the same, however, as for multiple-harness Overshot, as half-tones or additional blocks must be entered, in most cases, if impractically long weft floats are to be avoided on the wrong side of the fabric. The fundamental tie-up is as follows:

Treadle 1 - to harnesses $3-4-5-6$, for Block A;
Treadle 2 - to harnesses 5-6-1-2, for Block B;
Treadle 3 - to harnesses 1-2-3-4, for Block C. The 8-harness, four block tie-up is, fundamentally:

Treadle 1 - to tiarnesses $3-4-5-6-7-8$, Block $A$;
Treadle 2 - to harnesses 5-6-7-8-1-2, Block B;
Treadle 3 - to harnesses $7-8-1-2-3-4$, Block C;
Treadle 4 - to harnesses $1-2-3-4-5-6$, Block D. If a fabric without long floats on the wrong side is desired, one or two harnesses from each of the treadles must be dropped in order to bring in halftones or additional blocks, according to the wishes of the designer.

The first draft presented on the draft sheet (draft a) from the BULLETIN for September 1946, is

6-harness Overshot on opposites which will weave unusual, even spectacular borders. The borders shown at the left of the draft sheet are all woven on the tie-up (a), as follows: (With tabby throughout)

```
a-1
Treadle 2-4 shots
    Treadle 5 - 4 shots
    3-2
    1-2
    3-2
    2-4.
a-3
Trerdle 5 - 1 shots
    6-1
    Tabby - 4
    ae-4
    Treadle 5-1,3 times
    3-2
Treadle 5-1
    4-2
    2-1
    6-6
    5-1 4-2
    Tabby - 4
    3-2
    6-1
    5-1.
    6-1, 3 times.
a-5
        a-2
    1-8
    5-4.
    Treadle 5-1
    Tabby -
Treadle 5 - 12 shots
    3-3
    4-2
    3-3
    5-12.
```

Infinite variations may be woven on this threading, but the borders above will give the weaver a good start.

Draft (b) is a 4-harness draft. on part opposites which has much of the samespirit as the other. The 2-3 block has been omitted to give the partial opposites, but the $4-1$ block is included to give the necessary third block. Treadle with Standard tie-up:
$\mathrm{b}-1 \quad \mathrm{~b}-4$
Treadle 1-2 shots Treadle 4-3.shots
3-6 $1-4$ shots
$1-2$
4-3

```
b-2 b=3
Treadle 3 - 2 shots
    4-3
    1-12
    4-3
    3-2
b-5
Treadle 1 - 4 shots
    3-2,3 times
    3-2 4-3
    1-4 1-6
```


## SNACK NAPKINS for CHRISTMAS

Here is a Christmas special mosmething to use during the holidays when everyone serves a piece of fruit cake or fancy hors d'oeuvres fo callers and guests, and to put away with the Christmas tree ornaments until the next year. They require a six or seven inch wide warp, but may be woven on a wider warp and cut to size. Make each napkin square, with about a quarter inch of whipped fringe on all four sides, or fringe only the ends if a narrow warp is used. Those which 1 made were on a warp of light green $\# 767,20 / 2$ cotton (Lily Article 314) set at 30 ends per inch and threaded to the 6-harness draft given at (a). The tie-up used was:

Treadle 1- to harnesses 3-4-6;
Treadle 2 - to harnesses $3-5-6$;
Treadle 3 - to harnesses $1-2-4$.
Tabby like the warp was used and pattern weft of Pea Pearl size 5 (Lily Article 114) in bottle-green \#562 and pimento \#773. Three identical borders were woven, the first one about one half inch from the end, spaced about one third inch apart. The borders were woven with tabby:

Treadle 1,- 1 shot, treadle 2-1 shot, green
Treadle 3-2 shots, red
Treadle $2-1$ shot, treadle $2-1$ shot, green. Finish with tabby to make square. Resemble Hollpy.

## A CHRISTMAS BUFFET CLOTH

This buffet cloth for holiday use is 32 inches wide, $2 \frac{1}{2}$ yards long. $1 t$ is woven of scarlet Pearl cotton \#10, or 10/2 (Lily Art 114), set at 24 ends per inch. The main weft for the tabby is identical to the warp and was woven for an exact balance. Two different materials were used for the inlay and supplementai threads: $!\frac{1}{2} /$ ! Iinen from Davis Cordage Company in Conifer green, and a $1 / 8 \mathrm{th}$ inch silver braid which was purchased at a department store.

The basic threading was 4-harness twill, and the supplemental warp ends were threaded on harnesses 5. However, a base threading may be made on three harnesses and the supplemental threads placed on harness 4; for weavers with 4-harness looms.

Thread: 1, 2, 1, 3, repcated throughout.
Sley: Two per dent in a 12 - dent recd.
Tie-up: Treadle 1-to raise harness 3 (inlay shed)
Treadle 2 - to raise harnesses 2-3-4
Treadle 3 - to raise harnesses $2-3$ Treadle 4 - to raise harnesses 1-4.

Weave: For tabby, alternate $\ddagger$ readles 3 and 4. When carrying supplemental warp threads which must be tied under each fourth weft, treadle: 4, 2, 4, 3, repeated.

Inlavs: These are made in the inlay shed, treadle 1. After weaving the tabby, open the inlay shed and place the inlay weft in the shed for the desired distance, entering at the left and withdrawing the long end at the right. Close the inlay shed and weave 4 tabby shots, one succession, before placing another inlay.

Fastening inlay-weft ends: This was done in the usual manner, by placing the strand of weft in the shed, then carrying the shor end around the

edge warp thread and into the shed under two warp ends. Because the linen was very heavy part of the fibers were cut out of the part which turns under, to eliminate unsightly bulk. In some cases, the first four outline inlays, for instance, the long strand of inlay weft (about 10 yards) was centered at the place where the inlay ended at the right, and after 4 shots of tabby were woven, the long end was carried back to the left and both ends shifted to supplemental warps, so that no loose ends need be entered. The other supplemental wefts were entered at the left edge and were continued to make the trunks of trees or the long candles. When supplemental warps for the long candles were ended, they were simply crosscd in anwéntay shed to fasten.

Supplemental warp threads: in most cases these are made by simply turning the long end of a weft inlay thread so that it will weave as warp. At the point where the weft inlay emerges, after two shots of tabby have been woven, turn the long end and sley it through the dent lying directly above which carries warps threaded 1, 3. Carry it between the heddles at the left of 3. At this point tie a string heddle on harness 4 and carry the thread through this, over the back beam, and weight it at the back. It will now automatically weave as warp. It may be desirable to fasten it at the turning point with a pin to prevent it from distorting the weft. Then weave the next two tabby shots before making the next weft inlay. For the three supplemental, double warps at the far end, simply pin the center of a long strand of linen at the desired spot, and carry both ends through the reed and heddles, 4 warp ends apart.

Lenath of inlay threads: Short lengths of the linen, about a yard long, were cut for wefts which formed base and tree trunks. But the inlay threads which form the left border and the candles must be long enough to hang over the back beam for the entire length they weave.
Spacing inlay threads: Four tabby shots are thrown between each strand of weft inlay, or each turn of the inlay weft. Four warp ends are left between each supplemental warp on the border at lleft and the lines at far right.

The design: This was woven freely from a sketch similar to the one given on page 10, which was scotch taped to the front of the loom. The general outlines and proportions should be followed with considerable care, but the details are more lively if put in frecly. The green linen was used for the main outlines and the base weft lines, and the tree trunks and candles. The trees and candle flames were of the silver braid, and three varying lengths of silver braid were incorporated in the simple weft inlays at the far end, to give harmony.

Anyone weaving a similar buffet cloth may wish to change the proportions. This one was made to fit exactly, with no overhang, a buffet table used for holiday parties. As it has now served three seasons brilliantly as a buffet cloth, we plan to use it this year as a background wall hanging. Making it was a lastominute thought the first year, and it really was not a major project as the threads are coarse and the work progressed rapidly. With the warp all ready, the weaving required about one good weaving day. As I have said before, there seems to be nothing which stimulates as many good weaving ideas as having a red warp, 30 to 36 inches wide, already threaded on a loom. A weaver with a second loom will do well to keep one alvays set up to such a basic warp, though not necessarily red.

A CHRISTMAS TABLE CLOTH
Here is an idea for a quick cloth which can be woven on any bright colored warp of $20 / 2$ or $24 / 2$ cotton, 24 to 36 inches wide, in two strips. Select two heavy materials the same color or almost the same color as the warp, preferably one a rough novelty, the other heavy like $10 / 3,20 / 2$, pearl cotton or even carpet warp. Use also a metallic, gold, silver or a color, preferably the $1 / 64$ th supported, and also use thread like the warp. Weave a 2 -inch stripe in each of the three colored wefts. It may be better to alternate a heavy novelty wth one or two shots like the warp. Then weave a 3 inch stripe of the metallic. All weaving done on tabby sheds. Repeat this for the necessary length. Sew the strips together so that the metallic stripes stagger, and it will not be necessary to worry to much about matching. A simple, quick inlay of $1 \frac{1}{2} / 1$ linen of a contrasting color may be placed in the metallic stripes, near one selvage, to arrange down the center of the cloth.

## NEW METHODS FOR WEAVING OVERSHOT THREADINGS

Did it ever occur to you to weave one technique by the system or treadling rotation which is used for an altogether different technique? This is a good thing to experiment with when weaving a comprehensive sampler, as it will often give good results which can be very useful as unusual effects.

The Summer and Winter Alternate Tie-down:
This can be used for any Overshot threading. It gives an effect which resembles that of the Crackle weave because two blocks always overlap, and both pattern and background areasrare mixtures of tabby and pattern weft and there are no half-tone areas. There is a difference, however, in that pattern weft floats extend the full width of a block, as with ordinary Overshot. It is woven with alternating
tabbys, in the usual Overshot or Summer and Winter manner, on the Standard tie-up. To weave:

Block A - treadle ${ }_{2}$ ) alternate as desired,
Block B - treadle 2 ) alternate as desired,
Block C - treadle ${ }_{4}^{3}$ )alternate as desired,
Block D - treadle ${ }^{4}$, lalternate as desired.

A smooth transition from one block to the next is made by adding one extra shot on the first treadle of the combination before passing on to the next block. For instance, weave:

Treadle $1-1$ shot
"
$2-1$ shot 4 times,

Treadle 1-1 shot.

Treadle $2-1$ shot
"
$3-1$ 4 times,

Treadle 2 - 1 shot.

There is another way to look at this method of weaving Overshot, and that is as an exact reproduction of the threading in the treadling order. For instance, to weave-as-drawn-in with this method, one need merely use the draft as the treadling directions. Wherever harness 1 is threaded, depress treadle 1 ; for harness 2, depress treadle 2; for harness 3 depress treadle 3; for harness 4 depress treadle 4.

The Portfolio sample shows this method woven on draft (b) in simple, diamond manner. This system of weaving is particularly effective with the large, bold Colonial patterns, but may be used with any Overshot threading including the Opposite threadings.

The Atwater Lace Method: This weave is somewhat more specialized in that it works out best when woven on a threading containing pattern blocks of not more than 6 or 7 threads. It is woven with a single weft, which may be identical to the warp but is more effective if heavier and of a different color. We have used this for weaving tuncheon cloths on warps of $20 / 2$ cotton set at 30 ends per inch, and $24 / 2$ set at 36 , with $7 / 1$ linen for weft. The weft color should be similar in value to the warp color. A variation is to weave the first five shots of each rotation with the main color, and the sixth shot with metallic to add a glint or sparkle. It would be a good technique to use in the tablecloth given on page 14, instead of the rough yarn suggested.

The treadling rotation, with the Standard tieup, is the same 6-shot rotation used for the Atwater or Bronson Lace: $\underline{b}$, pattern, $\underline{b}$, pattern, $\underline{b}$, $\mathfrak{a}$, repeated. However, if this is done identically for all four blocks, a texture irregularity occurs which may in some cases be desirable, but in most cases should be eliminated. To eliminate this, two of the blocks are woven with the $\underline{b}$ tabby alternated, the other two with the a tabby alternated. Therefore, for the smoothest effects, design with only two blocks at one time. Blocks A and D pair together and Blocks $B$ and $C$. The treadling order thus becomes -- one shot on each shed:

Block A - treadle b (1-3 rising shed, 2-4 sinking)
" | (3-4 rising shed, 1-2 sinking)
" b
" 1
" b
" a (2-4 rising shed, 1-3 sinking)
repeat.

Block D - treadle b

| " | 4 (2-3 rising shed, $4-1$ sinking) |
| :--- | :--- |
| " | $b$ |
| $" 1$ | 4 |
| " | $b$ |
| $"$ | $a$ |
|  | repeat. |

The other pair of Blocks uses tabby alternately:
Block $B-$ treadle a (2-4 rising shed, $1-3$ sinking)
" 2 (4-1 rising shed, $2-3$ sinking)
" a
" 2
II a
$11 \quad b$
repeat.

Block C - treadle a (

| "1 | 3 (1-2 rising shed, $3-4$ sinking) |
| :--- | :--- |
| "I | $a$ |
| $" 1$ | 3 |
| $" 1$ | $a$ |
| $" 1$ | $b$ |
|  | repeat. |

The Portfolio sample, woven on draft (b), uses the $A$ and D blocks only.

As in weaving the Atwater Lace technique, the true texture comes out only if the same rotation is repeated two or more times. The texture is not identical to that of the Atwater Lace because Overshot blocks are of differing sizes, and because there are several irregularities which in most cases add interest. However, on figures such as Tables, which use a repeated block with a singlethread tie-down, repeats of the treadling rotation will develop the open-work which is so pleasing.

Question and Answer -- BEATING TECHNIQUE.
Question: "What is your opinion of beating on a closed shed as a regular style of weaving? l've met a bran' new weaver who is starting by always beating on a closed shed. Her weaving so far is beautifully even. She has so far done only one warp $14^{\prime \prime}$ wide of $20 / 2$ mercerized cotton, weaving in tabby with the same weft.

Answer: There is nothing which determines the craftsmanship of any handwoven fabric more than the complete control of the beat. Control of the beat means using exactly the correct beater speed and force and coordinating the beat with the shed change in such a way that the desired number of shots per inch are placed with absolute regularity. Therefore the problem also includes analysis and judgement to determine exactly how many shots should be placed per inch. After determining.this, the weaver's problem is to discover, through experimenting, just how to beat the fabric so that the correct number of shots will be placed. There are many ways to beat: a single tap before the shed change, a double tap before the shed change, a single tap before the shed change and one after, or a double tap before and after, or a single or a double tap on the closed shed, or a single tap which reaches the fell at the exact instant the shed change is made.

The closed-shed beat is the advisable one when the warp setting is abnormally wide, or often when the warp is narrow, or when the warp and weft are smooth and slippery as is apt to be the case with mercerized cottons and some silks, rayons and synthetics. The advantage of the closed-shed beat is that considerable friction is added to the weft shot so that it may be placed with greater exactitude than if the beat is made on an open shed. Therefore, the beginning weaver was probably using the best beating technique for her particular narrow warp
the tabby weave which required exactly 30 shots per inch. However, if she tried to use this same beating technique on some other warp or technique, she would find that the weft placement presented a different problem. Also, should she try weaving a balanced 2-shuttle Summer and Winter, or Overshot pattern on this same warp, a technique which would require the placement of 60 weft shots per inch instead of 30 , she would find the closed-shed beat ineffective.

There is another very important factor which enters into this control of the weft placement, and this is the manner in which the beater is operated. For best control it should be grasped in the exact center and thrown with a loose, relaxed motion, rather than with a stiff-wrist, forceful pull. The effectiveness of the beat is determined primarily by the speed with which the beater hits the fell, so speed control as well as coordination is needed.

The accuracy of the hanging of the beater in the loom is of utmost importance in controlling the beat. The beater must be slung from a position where the reed will hit the fell at as nearly a vertical position as possible. If the reed beats down on the fabric instead of against it, the beat cannot be fully controlled. If the beater is set too far back in the loom, the weight of the beater will exert an undesirable control over the force of the bdat, so that the weft placement is determined by the weight of the beater instead of by the weaver.

Therefore -- it is correct to beat on a closed shed when this beat gives you the desired weft placement: But do not allow your handling of the beat to become channeled into this one system, nor into any other system. The textile must determine the beating technique.

## Threadenderes <br> Merry Christmas. All:

So much to say, and so little space for saying it! To. the recipients of Christmas-gift subscriptions to the Shuttle Craft Guild we shall send one of the handwoven Christmas Cards from the November Portfolio with the announcement, and start the subscription with the December issue. Gift subscriptions, as well as other subscriptions, will give the sender $\$ 1.00$ credit toward the next renewal, $\$ 2.00$ credit for a Portfolio subscription. With so many renewals due in December, this is a good time for building up credit for reducing the price, by sending in new subscriptions.

The Lily Mills Company, Shelby, North Carolina have asked me to make an announcement regarding the leaflet PRACTICAL WEAVING SUGGESTIONS, which they have mailed from time to time. Starting with January 1955 this will be issued as a quarterly and on a subscription basis of $\$ 1.00$ a year, all subscriptions to start with January. So if you wish to be on the mailing list for this, as well as for announcements of new Lily yarns and price changes, send $\$ 1.00$ to the Handweaving Department. It will be well worth it.

Next month we shall send you a special illustrated leaflet on our arrangements for taking individuals and groups of weavers for studio instruction during the 1955 season which will start in April. We shall start making reservations in mid-January and have several applications on file now.

The Color Wheels $(\$ 5.00)$ and India Ink Fountain Pens for Drafting (\#1 fine line, \#3 heavy, $\$ 3.50$ each) have proved a popular addition and we shall carry them in regular stock. The Color Wheels are sold at the required publisher's price, but no postage added. The Drafting Pens retail at $\$ 3.98$, but we have purchased them in quantity so we can give Guild members this $12 \frac{1}{4} \%$ discount, and no postage charged. Sincerely, ThC $195^{4}$


Having had color harmonies much in mind recently, we thought that with the yellow cover and red warp we should make a triad harmony this month. On assembling we found the harmony much more pleasing than we had anticipated. Comparison with the Cheskin Color Wheel indicates the reason - we have a contrast. Colors analyze thus:

Bulletin Cover: Orange ( 2 parts yellow, I red) in the center fint,
Pattern Weft: Orange, identical to above but with the $40 \%$ black overlay,
Warp and Tabby: Orange-red (2 parts yellow, 2 parts red) full intensity.
Mounting Sheet: Green-blue (blue only) with $30 \%$ black overlay. And we thought we had plain red, blue, yellow. The samples woven on draft (b) are fully explained in the Bulletin. The top one is woven as Atwater Lace, the bottom one as Summer and Winter. The weft materials are both Lily Mills Ming Gold and indicate how two different materials (mercerized cotton and worsted) take dye differently.

