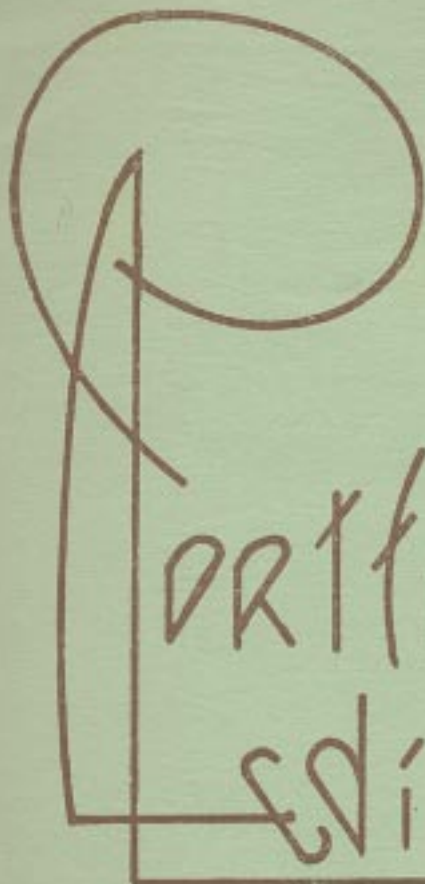

Shuttle Craft Guild
HANDWEAVER'S
BULLETIN



Portfolio
Edition

1955
Vol. XXXII • No. 4
APRIL

The Shuttle Craft Guild
Handweaver's BULLETIN
Volume XXXII, number 4
April 1955



FANCY TWILLS in WORSTED - - - - -	2
Diagram Sheet: Reference for Drafting	
Articles - - - - -	11
UNDERSTANDING DRAFTS, Second of a Series - - -	13
PORTFOLIO: Six different Fancy Twill Samples	
Yarn Samples of Walters Worsted.	

The Shuttle Craft Guild Handweaver's BULLETIN is published monthly by Mr and Mrs Martin Tidball (Harriet Douglas Tidball), The Shuttle Craft Guild, Kelseyville, Calif, and mailed to all members of the Shuttle Craft Guild throughout the world. Annual membership, \$7.50, PORTFOLIO edition, \$17.50.

This BULLETIN contains only two major articles instead of the usual number. The "Happy Story of a Warp" however, breaks down into a coverage of many subjects -- too many, in fact, to present them separately. The article on Understanding Drafts is only part of the whole and will be continued. The Draft Sheet contains illustrations which apply to this and to further articles. Some may feel that the subject is being treated in excessive detail. The reason for the detail is that this is a subject which is hardly touched upon in handweaving literature, and thoughtful weavers are clamoring for a clarification of the draft and symbol situation. It is presented in the belief that, although in the Primary stages of any field of endeavor the learner accepts what he is given, the student soon passes to the reasoning stage and wishes to have his dogmas justified by logic.

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FANCY TWILLS in WORSTED

Here is another "Happy Story of a Warp." For me, the story actually started away back before World War II, when I bought some cones of yarn from another weaver who had bought them from another weaver who had bought them from another weaver, who had bought them from a jobber at a bargain. No one along the line knew the original source of the material of anything about it. Half the yarn was white, half a dark grey oxford mix; it was fine and unusually lustrous. I wove it into a fancy twill suit length and it wove so easily, into such a beautiful yardage of exactly the right weight and texture for a woman's suit, that it made me feel much more accomplished than I actually was. This was my very first worsted yardage and my first warp set as closely as 30 ends per inch, and I needed this encouragement which was really just "fool's luck". I was so new at weaving that I didn't know there was any difference between woolen and worsted, nor that handling wools presented any different problems from handling cottons. That the project was so successful and so encouraging to future efforts, it was the happenstance of an exceptionally good yarn.

The relationship between this story and the present one is that ever since then I have been looking for that particular yarn, and at last, if I have not found the identical yarn, I have come across some which seems to be the same. The yarn is spun by a small custom mill and as far as I know it is available to handweavers through one source only. This is: Mrs Hazel Walters, 1326 Columbus Avenue, Cincinnati, Ohio. It is a 2/18 Bradford or English-spun worsted with 5060 yards per pound. It comes on one-pound cones at \$6.00 a pound, plus postage. There are 19 colors including light and dark oxford grey, those lovely mixtures which are found in tweeds but rarely in worsteds; The tartan colors are represented by tartan red, green, blue, black and white, but not yellow or the minor tartan colors. Yarn samples are included in the Portfolio, or you may write Mrs Walters.

Since this is another "tell-all" article, here are the planning details. I had ordered two pounds of light oxford, two of dark oxford, and four single pounds in other colors. We decided that this would be a fine basis for a long experiment on fancy twill. (Twill experiments are too often made with very coarse yarns so that the designs will show diagrammatically, but the resulting textures usually have little relationship to the actual fabrics one weaves, and I have come to the conclusion that such experiments should be in fine yarns to make them practical.) Also, there was the Portfolio sample requirement, and I wished to thoroughly test the new yarn by weaving about eight yards of fabric. A 16 yard warp seemed advisable, 32 inches wide, for which we estimated roughly about four pounds of yarn, with an equal amount for weft. Since our supply was an assortment we made the warp in 48-thread stripes alternating the light and dark greys. We wove the samples (about 70 different 4 and 8-harness twills) with 48 shots of each design, using the various other colors. The effect we liked best was the white weft, so we ordered additional of this for the suit length and Portfolio samples.

The warping method we used was the semi-sectional beaming on the Gilmore 2-yard warping reel. One word about this reel. It provides just about the easiest and fastest warping method we have ever used, and one which requires only one person for the entire process, but there has always been a beaming problem due to the lack of stability of the reel on its standard. No standard could be made heavy enough to hold the terrific tension pull of a large warp, without necessitating that a second person hold the reel steady during beaming. We solved this by purchasing from Mr Gilmore a pair of maple arms such as he uses to hold the sectional beam in his loom. We fastened these to studs in the wall, with hinges so the beam centers at 28" high. As the reel folds easily, it may be folded and removed when not in use and the arms pushed back against the wall. Of course

every weaver cannot make such an arrangement, but it would be worth-while for anyone who can.

From working with 2/18 worsted previously, we decided that a warp set of 30 ends per inch would be correct for twills, though 27 per inch would be good for a light-weight tabby fabric. We wound twelve spools of each color yarn, using the Blum winder and yardage counter and placing 645 yards on each spool. This was 960 (total number of warp ends) divided by 2 (number of colors) divided by 12 (number of spools) multiplied by 16 (number of yards in warp), plus 5 yards as a safety factor. These were set up on a creel with two tensioners -- 12 ends of dark through one, 12 ends of light through the other. We clamped the tensioner with the dark yarn to a 24' high table and set the end of the tensioner about one inch from the reel, at one side. The 12-end bout was tied to one of the reel cross pieces. Then, sitting comfortably on a chair at the left of the tensioner, we turned the reel eight times, cut the bout, twisted the ends around the bout, and half-hitched them. We then moved the tensioner in one inch, repeated this, and pushed the second bout over so it was against the first. We put on four bouts thus, 48 ends, which measured slightly over $1\frac{1}{2}$ inches in width. Then we substituted the light-yarn tensioner and repeated, and continued until the entire warp was wound. We then removed the beater from the loom, clamped it to a small table which we placed in front of the reel. The half-hitches and twist holding each bout of yarn were unfastened and the reel turned sufficiently and the friction brake tightened, to give adequate length for sleying, and the warp was sleyed, 2 per dent in a 15-dent reed. We pulled the loom to the front of the reel, substituting it for the table, and replaced the beater. The back of the loom was then dismantled by removing the back-beam and warp beams, and a low stool was drawn in front of the harnesses for the threading. At the right-hand side of the harnesses, six heddles on each of eight harnesses

were counted off. The first four bouts, containing 43 dark ends were held at the left of these, with the left hand, under tension. The first heddle was picked off and pushed to the right with the sleying hook held in the right hand. The hook was then run through the heddle eye and was used, in connection with the index finger of the left hand, to pick off the edge thread from the tautly-held group. This was drawn through the heddle eye, and the heddle pushed to the far right with the hook, and the next heddle selected. This threading method requires the minimum motion and is very rapid, once one gets the "hang" of it. It requires no cross or lease.

The loom was reassembled when threading was completed, and the tie-in to the beam-rod made with as much care as when tensioning the warp on the cloth beam-rod. Beaming is now simple. Stand at the right hand side of the loom and turn the crank with the right hand while tensioning the reel with the left hand. Stop to pad the beam as necessary. If any tangles occur to distort the tension at any point, tighten the friction brake on the reel and run the fingers across the offending area to loosen the twist. Do not comb the warp, as this simply adds more tangles. The beaming progressed very rapidly and easily with this warp. The only process left after beaming was the cloth-beam tie-in. And, of course, the tie-up.

In selecting fancy twills to weave, we used the December 1952 BULLETIN (still available), the out of print TWILLS, TWEEDS AND ALL-WOOL FABRICS, which will soon be republished in expanded form, and HAND-BOOK OF WEAVES by Oelsner and Dale. By the way, since announcing a series of articles on understanding drafts, we have had many requests that we include an explanation of the Oelsner and Dale weaves, which we shall do, but in a later BULLETIN.

To weave the fancy twills, the treadling follows the draft in that the order is 1, 2, 3, 4, repeated,

or 1, 2, 3, 4, 5, 6, 7, 8, repeated, and when more treadles than harnesses are required, the order is still in unbroken rotations. The different pattern or texture effects are achieved in the tie-up. This is particularly true of the multiple-harness twills, though not necessarily so of the four-harness ones.

It is absolutely imperative in weaving the fancy twills that the fabric be made perfectly balanced -- exactly as many weft shots per inch as there are warp ends. If not balanced, the effects will be distorted and the fabric will not tailor well. This means that each different tie-up arrangement requires a different beat control. Herein lies the great finesse of weaving. When starting to weave a yardage on any particular tie-up, one may practice until the exact balance is achieved and the rhythm which produces it has become natural. In weaving a sampler such as we did -- making a 48 thread stripe of one twill and then changing to another one, achieving a perfect balance in each requires a great deal of concentration and sensitivity. No weaver who is working on beat control could find a better practice project. By the time one has woven twenty different arrangements, one can gauge by the way the beater slips through the sheds just what kind of beat will be required. The sharpness of the beat increases with the shortness of the weft floats so that tie-ups which give very close weaves with considerable tabby require a sharp beat, while weaves which have long floats require a light beat. Weaves which are dominated by long floats do not make practical suiting fabrics, so they were avoided in this projects.

The 4-harness threading allows insufficient freedom for doing much with the fancy twills. There are several good effects which can be achieved through using the Standard tie-up (treadles tied in order to: 1-2, 2-3, 3-4, 4-1; or, if you prefer:

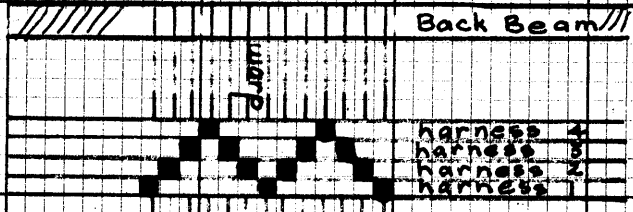
3-4, 4-1; 1-2, 2-3) but varying the order. Plain twill is treadled 1, 2, 3, 4, repeated throughout. Broken twill is treadled 1, 3, 2, 4, repeated throughout. A larger broken twill is 1, 2, 3, 4, 2, 1, 4, 3, repeated throughout. Point twill is treadled 1, 2, 3, 4, 3, 2, repeated throughout. A pleasant variation of the point twill which gives a vertical zig-zag effect is with three treadles only, 1, 2, 3, 2, repeated throughout. A twill woven with a tabby is a good expedient when the warp setting is too wide for a practical balance, but it will have a steep diagonal. The arrangement which alternates the tabby treadles with treadles 1 and 3 is good, and alternating tabby treadles with 1 and 2 gives a pleasant vertical effect. (Tabby treadles are, of course, tied 1-3 and 2-4.) Most of the arrangements which call for an off-balance tie-up (the raising of one harness alone, or of three together) give soft, spongy textures and displaced effects which in most cases are not good suiting fabrics. In diagram these twills are often handsome, but for the 4-harness threadings they seldom work out satisfactorily.

Of the 8-harness fancy twills sampled, the following tie-ups give handsome, practical yardage fabrics. In the design classification of fancy twills, numbers 1, 2 and 3 would be considered Broken Twills, number 4 a Curved Twill, numbers 5 through 11 Diagonal Interlocking Twills, numbers 12 through 22 Spotted Twills, and numbers 23 and 24 Crepe Twills. It is suggested that anyone working with 8-harness twills would get as much thrill as I did from sampling these twenty-four variations. Since the best sampling -- the kind of sample weaving from which one can really learn a great deal about weaving as well as about the various patterns -- is done on a full-width warp, put on an extra yard or two of yardage warp instead of setting up a separate sample warp. You'll have a lot more width than you need for a sampler, but cut the extra into 6 inch strips and use them as barter with your weaving friends.

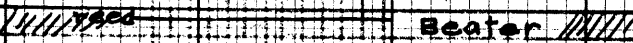
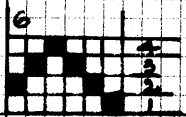
(1)	(2)	(3)
tr 1, 3-4-7-8	tr 1, 1-5-6-8	tr 1, 2-3-5-6
2, 2-3-5-7	2, 4-5-7-8	2, 3-6-7-8
3, 1-2-5-6	3, 2-4-6-7	3, 2-3-4-7
4, 1-4-6-8	4, 2-3-6-8	4, 1-2-4-5
5, 3-4-7-8	5, 1-3-4-8	5, 1-5-6-8
6, 2-4-5-8	6, 1-2-4-5	6, 3-4-5-8
7, 1-2-5-6	7, 2-3-5-7	7, 1-4-7-8
8, 1-3-6-7	8, 1-3-6-7	8, 1-2-6-7
(4)	(5)	(6)
tr 1, 2-4-5-7	tr 1, 3-5-6-8	tr 1, 2-3-5-6
2, 3-4-6-8	2, 1-4-5-8	2, 1-4-5-6
3, 1-3-5-7	3, 2-5-7-8	3, 1-4-7-8
4, 1-4-6-8	4, 2-3-6-7	4, 2-3-7-8
5, 2-5-7-8	5, 1-2-4-7	5, 1-2-3-6-7
6, 1-3-6-7	6, 1-4-5-8	6, 1-2-4-5-8
7, 2-4-8	7, 1-3-4-6	7, 1-3-4-5-8
8, 1-3-5-6	8, 2-3-6-7	8, 2-3-4-6-7
(7)	(8)	(9)
tr 1, 2-3-7-8	tr 1, 3-6-8	tr 1, 1-4-7
2, 4-5-7-8	2, 3-4-7-8	2, 3-4-5-8
3, 1-5-6-8	3, 2-5-8	3, 1-3-6
4, 2-3-5-6	4, 1-2-5-6	4, 2-5-6-7
5, 3-4-6-7	5, 2-4-7	5, 3-5-8
6, 1-3-4-8	6, 3-4-7-8	6, 1-4-7-8
7, 1-3-4-5	7, 1-4-6	7, 2-5-7
8, 1-2-6-7	8, 1-2-5-6	8, 1-2-3-6
(10)	(11)	(12)
tr 1, 2-5-8	tr 1, 1-4-7-8	tr 1, 1-2-6-8
2, 1-3-5-6-7	2, 2-3-7-8	2, 1-2-5-7
3, 2-4-7	3, 2-3-5-6	3, 2-3-4-8
4, 1-3-5-7-8	4, 1-4-5-6	4, 1-3-4-7
5, 1-4-6	5, 4-5-8	5, 2-4-5-6
6, 1-2-3-5-7	6, 3-6-8	6, 1-3-5-6
7, 3-6-8	7, 2-6-7	7, 1-2-3-5
8, 1-3-4-5-7	8, 1-5-8	8, 1-2-4-6

- | | | |
|----------------|-----------------|---------------|
| (13) | (14) | (15) |
| tr 1, 1-5-6-7 | tr 1, 1-2-3-7 | tr 1, 3-5-7-8 |
| 2, 3-5-7-8 | 2, 2-3-4-6 | 2, 2-5-6-8 |
| 3, 2-5-6-8 | 3, 1-3-4-5 | 3, 1-5-6-7 |
| 4, 4-6-7-8 | 4, 1-2-4-6 | 4, 4-6-7-8 |
| 5, 1-2-3-7 | 5, 1-5-7-8 | 5, 1-2-3-5 |
| 6, 1-3-4-7 | 6, 4-5-6-8 | 6, 2-3-4-8 |
| 7, 1-2-4-6 | 7, 3-5-6-7 | 7, 1-3-4-7 |
| 8, 2-3-4-8 | 8, 2-6-7-8 | 8, 1-2-4-6 |
| (16) | (17) | (18) |
| tr 1, 2-3-4-6 | tr 1, 1-2-3-5-7 | tr 1, 3-4-7-8 |
| 2, 3-7 | 2, 1-2-4-6-8 | 2, 4-6-7-8 |
| 3, 4-8 | 3, 1-5-7-8 | 3, 1-5-6-7 |
| 4, 1-3-4-5 | 4, 2-6-7-8 | 4, 1-2-5-6 |
| 5, 2-3-4-6 | 5, 1-3-7 | 5, 3-4-7-8 |
| 6, 1-2-3-5-6-7 | 6, 2-4-8 | 6, 2-3-4-8 |
| 7, 1-2-4-5-6-8 | 7, 1-3-4-5 | 7, 1-2-3-5 |
| 8, 1-3-4-5 | 8, 2-3-4-6-8 | 8, 1-2-5-6 |
| (19) | (20) | (21) |
| tr 1, 3-4-6-7 | tr 1, 1-4-6-7 | tr 1, 3-4-7-8 |
| 2, 2-3-6-7 | 2, 2-5-6-8 | 2, 2-4-5-7 |
| 3, 1-2-5-6 | 3, 3-5-7-8 | 3, 1-2-5-6 |
| 4, 1-4-5-8 | 4, 1-4-6-7 | 4, 1-3-6-8 |
| 5, 3-4-7-8 | 5, 2-3-5-8 | 5, 3-4-7-8 |
| 6, 2-3-6-7 | 6, 1-2-4-6 | 6, 2-3-5-8 |
| 7, 1-2-7-8 | 7, 1-3-4-7 | 7, 1-2-5-6 |
| 8, 1-4-5-8 | 8, 2-3-5-8 | 8, 1-4-6-7 |
| (22) | (23) | (24) |
| tr 1, 1-3-7 | tr 1, 1-3-4-6-7 | tr 1, 2-4-6-8 |
| 2, 2-4-6-7 | 2, 2-5-6-8 | 2, 3-6-7-8 |
| 3, 3-5-6-7 | 3, 1-4-7 | 3, 1-3-5-7 |
| 4, 4-8 | 4, 1-3-5-8 | 4, 1-5-6-8 |
| 5, 1-2-3-5 | 5, 2-4-6-8 | 5, 2-4-6-8 |
| 6, 1-2-4-6 | 6, 1-2-5-7 | 6, 1-2-4-5 |
| 7, 1-5-7 | 7, 1-3-6 | 7, 1-3-5-7 |
| 8, 2-6-8 | 8, 2-4-5-8 | 8, 2-3-4-7 |

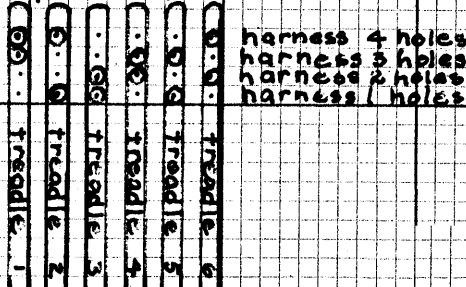
Threading Diagram



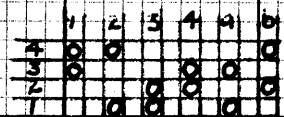
Threading Draft



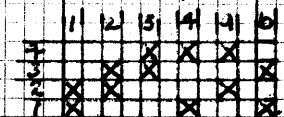
Tie-up Diagram



Tie-up Draft Rising Shed



Sinking Shed



Thread-by-Thread Drafts

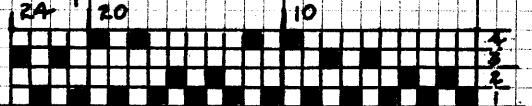
Extended Point Twill
22 20 10



Overshot Diamond
26 20 10

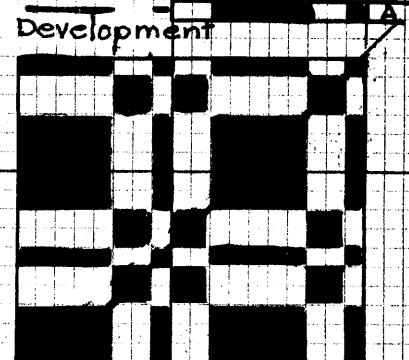


Spot Bronson
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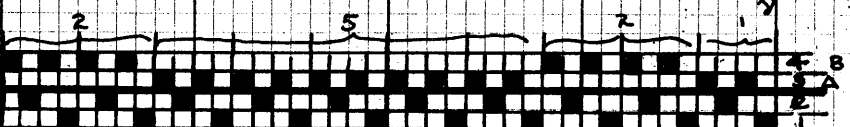


Profile Draft

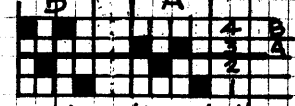
2 5 2 1



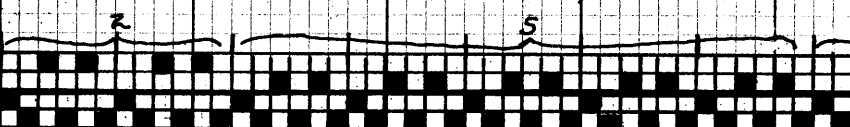
Summer and Winter (From Profile)



S&W Threading Units



Atwater Lace (From Profile)



A Lace Threading Units



Nothing has been said about color, and all that needs be said is that these are commonly two-tone weaves. Use one color for warp, the second for weft. The stronger the value difference between the two colors, the stronger the designs will be. A special problem was presented in adapting this warp to a suit yardage because of the inch and a half stripes of light and dark grey in the warp. The pattern selected was number 16, and for a very definite reason. The outlines between the light and dark stripes were scallops rather than a straight line cutting through a design unit. This gave a planned effect to the stripes. Also, it is a beautiful and practical pattern.

I decided to make an efficiency test of the weaving of this yardage since the warp presented no bothersome problems. I first practiced a bit to determine the proper beat to give me 30 shots per inch and the most efficient weaving motions. I then started timing with the winding of eight medium-sized bobbins. Four of these I placed in four identical shuttles to save time. Weft ends were left dangling, as fastening is not necessary in a yardage. I wove half an hour and it was time to wind eight more bobbins. I wove until I had exactly one yard. I had pinned a tape measure at one side of the fabric at the beginning to measure quickly. The yard had required exactly one hour and five minutes including bobbin winding on the very efficient Blum winder. Then it was time for a "coffee break". This can be a true yard-an-hour project, if one is interested in speed, but I should not care to carry it on for eight hours a day. Three such periods are enough for one good day for most of us. The secret of this speedy production is rhythm. And rhythm means weaving by feel rather than by sight.

The only processing this fabric needs after it is removed from the loom is steam pressing. I believe anyone especially interested in weaving wools will find the fancy twills more rewarding than simply fancy yarn.

UNDERSTANDING DRAFTS

A threading draft is a graphic representation of the arrangement of warp threads through heddles on the various loom harnesses, used as a basis for textile designing and for threading the heddles. A study of weaving literature indicates that there are many ways for making the draft representation, and it is from these differing draft forms, or notation conventions, that the great confusion about drafts stems.

Why are there so many different drafting systems? It is because drafting systems have originated independently in many different places, and because the written draft has been used to meet different special circumstances. Many of the drafts found in handweaving literature are only partial drafts; that is, they are written to serve as threading guides but not as a basis for designing. The reason for these special systems is that authors have looked upon handweavers as pure copyists, unable to design or origi-

In other cases the authors themselves have been the copyists, taking their drafts from short-form notes made by previous weavers. There are countless short-form systems. Some of them originated in the early days when paper was so scarce that a draft had to be compressed to the limit. Others come from a weaver's personal notes, written for his own personal interpretation into a draft at some more convenient time. Then there are other reasons for deviating draft forms: a person publishing for handweavers thinks that he has devised a superior system for drafts or in studying drafts from old sources feels that some system he has come upon is superior to the ones commonly used, or he even wishes to be an innovator or to be "original" and therefore chooses to make his drafts look different. And there are those of us who prepare weaving manuscripts for publication on the typewriter and have a tendency to write drafts on a typewriter instead of drawing them. Probably the greatest confusion stems from the writer who does not understand drafts and threading systems (techniques) and goes to count-

less sources, old and new, for his drafts; he sets up a drafting convention or system of notation and simply fits all drafts into this framework by rote copying, without clarifying to himself the meanings of the various symbols or without making any actual conversions of the various drafts to fit one common system.

If a weaver is to use drafts from all of his available sources and understand the drafts, it is necessary that he first have a good knowledge of one completely adequate system, and next that he understand other systems sufficiently to rewrite (convert) any draft he wishes to use to this system

A problem which came to my desk once (a problem which is constantly recurring in variation) illustrates the importance of understanding drafts. A hard-working, sincere weaver had warped his loom with a 36 inch wide warp of fine worsted set at 30 ends per inch. He wished to weave this (warp and weft identical) in a small 4-harness weave which would give a rough but inconspicuous texture. He studied his weaving books and selected a 6-thread draft for which a photograph illustrated an attractive effect. But when he wove according to directions the result was such a disappointment that he went back to the book, selected a second draft, and rethreaded the loom. The result was again disappointing, so, with extraordinary patience he went to his book the third time and once again rethreaded the loom. It was on the failure of the third threading that he wrote for help, explaining that he was willing to rethread again, but this time wished to be sure in advance. Of course the basic approach was wrong since he was looking at photographs of pieces woven in coarse yarns of black and white -- quite different from his materials -- and a small sample in advance would have shown him all these things. But the tragedy of the situation was evident when I looked at the three drafts and the

proposed fourth one in the book he had used. They were all the same draft. Each one was written in a slightly different manner. Further examination of the book showed this same little 6-thread draft (the common 4-harness Point Twill) given in eight different forms, each time presented as a different draft, and with nothing in the text to indicate the actual identity. If this man had understood this simplest of all drafts, in order to try the four different effects all he needed to do was change his treadling order. Now, the author of this widely-used book certainly had no conscious desire to confuse the user of the book. But it is evident that the author had simply taken drafts from many sources and had not organized them so the user could understand them. (Many Guild members have written asking me why I did not include this book in the "\$100 Weavers Library" given in the Sept 1954 BULLETIN. This story illustrates the reason. The book, commonly used by beginners, should be used only by the weaver who is sufficiently experienced to convert the drafts.)

Accepting the fact that the weaver must use a draft form, and symbols and conventions connected with it, which can be uniformly applied, the next step is setting up the requirements of the form. First, it must be graphic so as to show the weaver exactly how the heddles are to be threaded, and it must indicate clearly the beginning and end of the draft. It must indicate every thread so clearly that through studying it the weaver may deduce what technique the draft is written in, the visual arrangement of the pattern, the composition and extent of each pattern element, the potential for designing borders or for rearranging the various design elements to suit special warp circumstances, the number of threads involved in the whole and in the various parts, and whether or not it will produce a tabby. The draft form must be logical, with a definite reason for every symbol and every symbol must meet all circumstances instead of only a few. It must be adequate as a

foundation for designing (that is: weaving on paper or draft developing) as well as for threading. If it is a full thread-by-thread draft, it must show every single thread in order to give a weaver an image of the pattern; for instance, one small figure which is repeated say six times cannot be given once with "6 times" or "6x" written under it. If such a shortening is desired, then a special abbreviated form (which will be taken up later) must be used. The draft form must be flexible, so as to be adaptable to the characteristics peculiar to every type of textile construction (technique).

Another important factor is that a draft must be based upon existing conventions. Innovations, even though they may seem completely logical, will serve only to further confuse an already complex problem. For instance, a suggestion has been made that in presenting drafting conventions I change the conventional symbols for tabbys a and b, to R and L to indicate right and left. Now this is a thoughtful suggestion, and it would clarify the use of tabbys in some cases. However, tabby designations must indicate many different situations: the threading which will produce a tabby, the raising or lowering of harnesses to produce tabby sheds, the throwing of shuttles in tabby sheds, the use of the tabby in designing as well as in weaving, the depressing of treadles which are tied to produce tabbys, the conversion of a draft to make it produce a tabby, and others. Now, the use of right and left designations could clarify the situations of treadling the right-hand tabby treadle or the left-hand tabby treadle, or throwing the shuttle from the right or the left, but it happens that these two factors are quite superficial in most cases, since it is in only certain techniques that direction makes any difference (as long as the weaver is consistent). But it is also true that in many practical circumstances it is necessary to step on the left hand tabby treadle while throwing the

shuttle from the right, or visa versa, so confusion would result if one tried to designate R and L. This type of symbolism confuses the two separate situations of representation and instruction. Another error in the use of these symbols is that capital letters are used to designate design elements, while small, or lower-case, letters represent technique elements, and tabbys are technique elements so the capital letter is not appropriate. Further, regarding the instituting of a new system for designating tabbys, we make the general, dogmatic statement that no person writing drafts for other weavers has the right to make innovations which are contrary to accepted use. The purpose of a teacher is to explain in logical fashion the material the student has at hand, and not to force upon the student an invented language which is not in universal use, whether the language be words or symbols.

Therefore, the drafting system which is presented here -- the one based on the German system which has always been used by the Shuttle Craft Guild and is in increasingly general use throughout the world, will not innovate, but will eliminate. That is, in cases where several symbols, systems or conventions are used by different people to represent a single thing, the one which presents the situation in the most graphic, logical, and flexible manner is selected.

The first thing to realize is that a threading draft is simply a diagram of the arrangement of threads on the loom, and a tie-up is a diagram of the harness-treadle connections. Consequently a draft should always be mentally related to an actual loom threading. The upper left diagram on the Diagram Sheet (pages 10 and 11) indicates the relationship between the loom parts, the warp threads, and the threading draft. The loom has a 13-thread warp threaded to the simplest of all symmetrical weaves, the Point Twill. At the right is the draft from which this threading was made. This is a 6-thread draft which is repeated twice; in order to complete

the symmetry of the threading so that both sides of the warp weave identically, the first thread of the draft is added at the end as a balance unit.

Now for the conventions of the graphic draft form shown here. Since the weaver's chief activity is weaving, and consequently his view of the loom is from the front, the harness which is nearest to him when he sits at the loom is numbered one, and further harnesses are numbered in order from front to back. This order is reproduced in the draft with the harness space which is nearest the viewer, the lower space, numbered one. Now it is altogether possible to look at the loom from back to front and consider the harness nearest the warp beam as number one, and continue the numbers forward. This is the system used by the Scandinavian weavers and consequently the one found in many Scandinavian books, though there is a trend toward the more normal order of numbering from front to back. This is a very important point for the person who wishes to understand his drafts, because it necessitates a simple conversion of "backward" reading drafts to the opposite direction. As far as the weaving is concerned, the draft direction makes no difference, but we are considering the understanding of the draft and its use in designing as well as its reproduction in threading. The normal and natural approach in any system built on numbers is to start with one and progress forward. However, many drafts are apparently illogical as they seem to start with 4 (or 6, or 8, or 9) and progress backward. The weaver must realize that regardless of how the current author has specified his harness order, such seemingly backward drafts were originally written for the old numbering system with harness one at the back, and since the author has not converted, the user must redraft the pattern so it will read forward. This means changing 4,3,2,1, for instance, to read 1,2,3,4. The way to make this conversion, regardless of the complexity of the draft, is to simply turn the

book or paper upside down and read the draft from left to right, while setting down the new draft from right to left. This rewriting of the draft will often lead to surprising discoveries: the weaver may find that a weave he thought was a stranger is simply an old friend in a new dress. So converting can be the basis for recognition, and recognition of standard forms is one of the requisites of draft analysis.

This discussion leads normally to the problem of the direction of the draft. Drafts for handweavers are written, contrary to general writing convention, from right to left. Before this seemingly backward direction becomes natural, the new weaver feels imposed upon in being forced to "go against nature" in reading his drafts. But the reason for this reversal is a sound one and it must be recognized as fundamental: the right-handed person normally threads a loom from right to left. If the threader tries to work from left to right the process of threading becomes extremely awkward and laborious. The draft must be read in the same direction in which the actual operation is made, which is a sound "form follows function" theory. Therefore all other loom conventions follow, and are indicated, in the normal left-to-right direction.

There are a few further draft conventions. A true draft gives one full repeat of the basic loom threading, and only one repeat. When one comes to the end, or the left side of a draft, he should be confident that every thread represented is a part of the draft and no threads have been omitted, so to continue with the threading he must return to the beginning of the draft and repeat it. A draft repeat, or, more dangerously, a partial draft repeat, should never be indicated. At the end of the draft, above the last thread, there should be a figure which indicates the exact number of threads in the total draft. If the draft is longer than 20 threads (see the three drafts under the tie-up diagram on the draft sheet) each tenth thread should be indicated by a line and

and the appropriate thread number to facilitate working with the draft in threading and designing. These figures apply to the draft itself, and not to the warp ends of any specific threading. For instance, if a 4-thread selvage is added for a threading, the first thread of the draft does not become number five, because such a change would signal to the threader that when the draft is repeated the selvage threading is repeated too. The drafting of selvages, borders, pattern balance units and pattern adjustments constitute using the draft for making a threading schedule. A full threading schedule is seldom written in draft form except for the purpose of making a diagrammatic development to test on paper the way an arrangement will weave. A detailed article on making threading schedules was given in the BULLETIN for July 1952. As this BULLETIN is still available (50¢, or to Guild members 35¢) the subject will not be repeated here.

(This article will be continued in May)

In a recent newspaper I read the comments by jury for a large photography exhibit. Many of the statements could apply to any art or craft and were so apt that I am quoting below, with word substitutio

"The abstract designs were emphatic in line, color and some of them exhibited rare technique. This is a day in which pattern, design and color have become a real part of everyday living. There were many that had everything except the little touch of originality which separated them from those picked for the final show. In WEAVING, a fine TEXTILE has an air of the spontaneous about it yet the actual planning may take hours. A basic part of the training of a good WEAVER is learning to see. Copy first, and originate afterward is a fine principle for the beginner -- or maybe for you and me."

- Sample 1 is (7)
- Sample 2 is (8)
- Sample 3 is (16)
- Sample 4 is (19)
- Sample 5 is (21)
- Sample 6 is (22)

The patterns show up, of course, much better on the dark warp, but sometimes the subtle touch is wished. The interest of the eight harness twills is illustrated by what happened here. We planned to give 3 4-harness and 3 8-harness patterns. But when it came to selecting, we were so excited by the 8-harness ones that we forgot the others.

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