

square black. If it is below the warp we leave the square white. In this way, pick after pick of weft we fill the whole draw-down. We must be very careful when doing it: a single mistake means one more harness-frame, and of course it remains a mistake which will be repeated over and over again if we actually use the draft for weaving.

When a sample of cloth does not show very well the warp and weft, the only way to make the draw-down is to cut out a piece of the sample (more than one repeat) and with a pin pull out one pick of weft after another. When one pick of weft is detached from the fabric but still remains between the warp ends it is quite easy to count the "unders" and "overs" and to mark them on the draw-down. A magnifying glass is a great help.

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## COMPOUND SLEYING.

The proper time to think about sleying is not when the warp is already made, but when we start figuring it out. The first step in any weaving project is to decide on the yarn to be used. The second - on the weave. Then we turn to the selection of the sett of warp. Whether we use formulas (as in the article in this issue of MW) or graphs, or somebody else's advice - the number of ends per inch is never so definite as not to allow certain deviations one way or another. If not for this fact, the life of a weaver would be a misery.

Fortunately we can always change a little the sett to suit our means, but the question is how much we can change this number.

If the number is accurate i.e. found from a formula, or taken from a recipe, we can change it both ways by about 5%. For instance if the theoretical sett is 19, then we can take either 18 or 20, but not 16 or 24. But if we have a sett like 37, then there is no choice except 36, because neither 35, 37, 38, or 39 can be sleyed in the usual way.

When the sett of warp is found in the graphs giving only the lowest possible number of ends per inch, then whatever correction we make must go only up, never down. The graphs cannot be very accurate - one more reason to keep on the safe side. Thus we do not correct the found number for a smaller one, but we can go up by about 10%. Thus if we found a sett of 25, we can go up to 27½, which in this case means 27 (3 ends in No.9 reed).

But there are cases when we cannot find a satisfactory way of plain sleying even with a complete selection of reeds such as: 5,6,8,9,10,12,14,15,16,18,20 and 24. For instance a formula gives us 13 ends per inch. Even with 5% both ways we can only have 13 and nothing else. If the quality of the fabric does not allow greater deviation than 5% then the thing simply cannot be done. With a smaller selection of reeds there are many quite common setts which cannot be used. What do we do then?

The answer is Compound Sleying, i.e. passing unequal numbers of ends through different dents. For instance we find that the best sett for our project is 22½. If we use straight sleying, we have a choice of 20 or 24, both beyond the 5% limit. But if we take reed No.15 and sley: one end in the first dent, and two ends in the second, and so on - we get exactly 22½ ends per inch.

The mathematics of compound sleying are a little involved; therefore we give the following table for setts from 4 to 120 ends per inch. We have number of reed on top, sleying on the left, and the sett is found in the table.

Reed:	5	6	8	9	10	12	14	15	16	18	20	24
Sley:												
0-1			4	4½	5	6	7	7½	8	9	10	12
0-1-1		4	5½	6	6½	8	9½	10	10½	12	13½	16
1	5	6	8	9	10	12	14	15	16	18	20	24
1-1-2	5½	8	10½	12	13½	16	18½	20	21½	24	26½	32
1-2	7½	9	12	13½	15	18	21	22½	24	27	30	36
1-2-2	8½	10	13	15	17	20	23½	25	26½	30	33	40
2	10	12	16	18	20	24	28	30	32	36	40	48
2-2-3	11½	14	18½	21	23	27	32½	35	37	42	46	56
2-3-3	13	16	21½	24	26½	32	37	40	42½	48	53	64
3	15	18	24	27	30	36	42	45	48	54	60	72
3-3-4	17	20	27	30	33½	40	46½	50	53½	60	66	80
3-4-4	18	21	29½	33	36½	44	51	55	58½	66	73	88
4	20	24	32	36	40	48	56	60	64	72	80	96
4-4-5	22	26	35	39	43	52	61	65	69	78	86	102
4-5-5	23½	28	37½	42	46½	56	65	70	75	84	93	106
5	25	30	40	45	50	60	70	75	80	90	100	120

Sleying for instance 0-1-1 means: skip one dent, one end in one dent, one end in one dent; 2-3-3 means: 2 ends in one dent, 3 ends in one dent, 3 ends in one dent.

Of course compound sleying leaves marks on the fabric, but so does any sleying except when we have one end per dent. The sleyings: 0-1-1, 1-1-2, and 1-2-2 leave more distinct marks than any other and should be avoided except when the fabric is thoroughly washed after weaving.

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