ON THE ANALYSIS OF A CERTAIN SIX-BY-SIX FOUR-GROUP LATTICE DESIGN[1]

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1. Introduction. The lattice consists of groups of randomized incomplete blocks with certain restrictions being imposed on the randomization within each group, and the number of varieties is a perfect square. For example, if the number of varieties is $k^2 = 36$, then the orthogonal groups for a triple lattice, not considering randomizing within the blocks or between blocks, are as follows: (the numbers signify varieties).

GROUP X

Blocks						
(1)	1	2	3	4	5	6
(2)	7	8	9	10	11	12
(3)	13	14	15	16	17	18
(4)	19	20	21	22	23	24
(5)	25	26	27	28	29	30
(6)	31	32	33	34	35	36

GROUP Y

Blocks						
(1)	1	7	13	19	25	31
(2)	2	8	14	20	26	32
(3)	3	9	15	21	27	33
(4)	4	10	16	22	28	34
(5)	5	11	17	23	29	35
(6)	6	12	18	24	30	36

GROUP Z

Blocks						
(1)	1	8	15	22	29	36
(2)	2	9	16	23	30	31
(3)	3	10	17	24	25	32
(4)	4	11	18	19	26	33
(5)	5	12	13	20	27	34
(6)	6	7	14	21	28	35

This design is constructed so that no variety appears with another variety more than once in the same block. This important characteristic makes the analysis simple, as it enables the results to be treated as a factorial design. The analysis is well described by Yates [3, 4, 5] and Cochran [1].

Suppose another group, U, is now formed from a six by six lattice, for example, the following group:

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[1] Certain of the ideas presented here are embodied in the author's unpublished doctoral thesis by the same title, Library, George Washington University, Washington, D. C., 1943.

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