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REPORT NO. T10/23

UNCLASSIFIED

SECOND REPORT OF TESTS OF COMPOSITE PLATES

ORDNANCE
TECHNICAL DATA DIVISION
MS-B710/23

BY

D. J. MARTIN
1ST. LT., ORD. DEPT.

MAY 28, 1934

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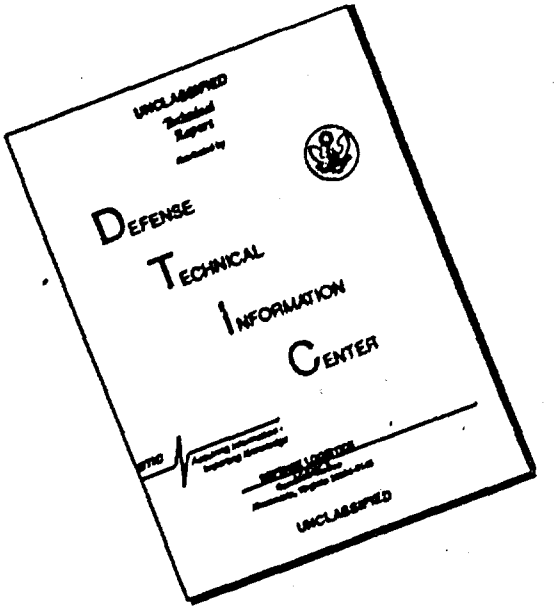

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REPORT NO. 710/23

SECOND REPORT OF TESTS

of

COMPOSITE PLATES

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UNANNOUNCED

by

D. J. MARTIN
1st. Lt., Ord. Dept.

1934

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Four types of composite plate were tested in an effort to find a more suitable combination of plates and spacings.

The results indicate that 1/4" spaces are too large. The 1/8" spacing used in the first composite plate W. A. Report 710/14 was more efficient.

These combinations were not as good as that shown in W. A. Report 710/14. The plates were, therefore, not submitted to test with cal. .30, A. P., High Vel. ammunition.

Respectfully submitted,

D. J. Martin
1st Lt., Ord. Dept.

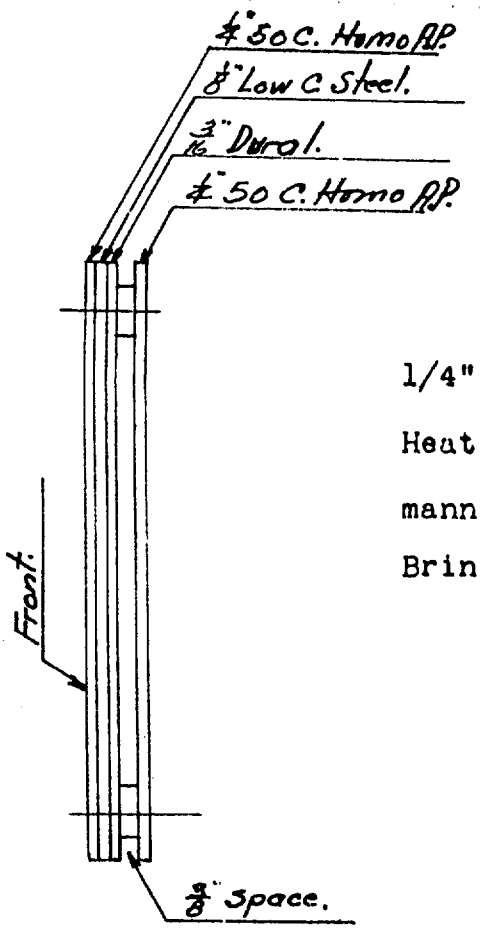


PLATE NO. C - 1

DATE 5-28-34

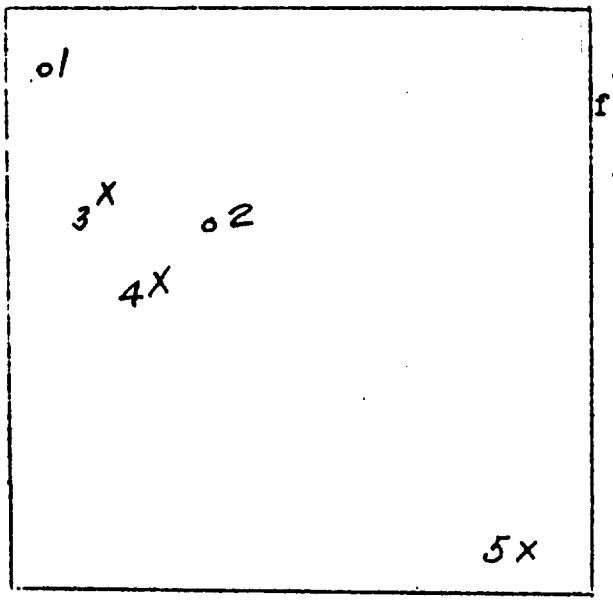
1/4" 50C. Homogeneous Disston plate

Heat treated by Disston Co. in standard manner, oil quench 1600°F, Draw 1100°F

Brinell 400 to 430.

ARMOR PLATE COMPOSITION

C.	Mn.	P.	S.	Si.	Cr.	Mo.	Va.
.45/.55	.40/.60	<.03	<.03	.15/.25	1.10/1.30	.60/.80	.20/.30

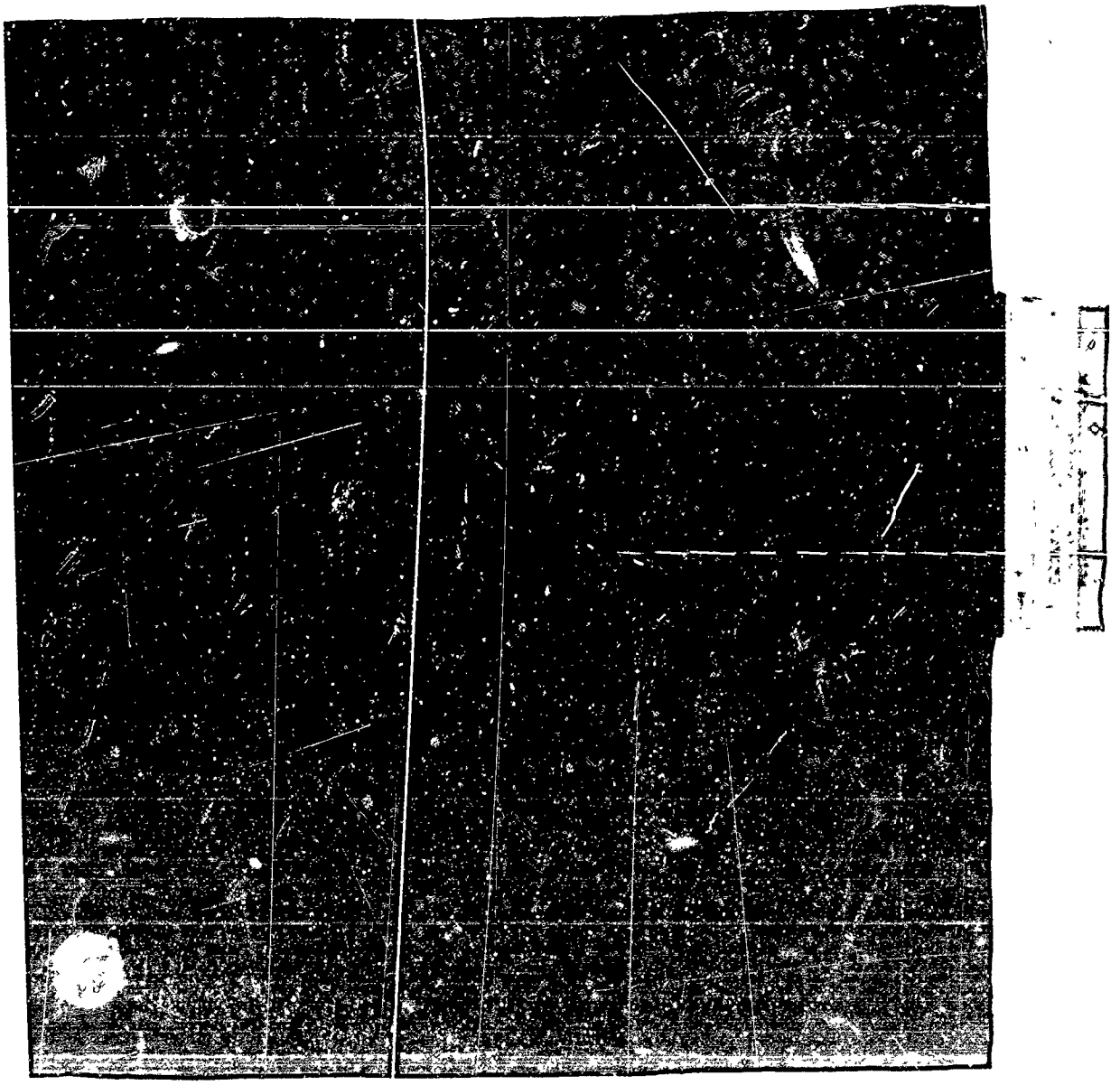


	ROUND NO.	STRIKING VELOCITY	REMARKS
at front	(1	(service)2488	(Partial exc.
	(2	" "	(to back pl.
at back	(3	" "	About the
	(4	" "	same as at
	(5	" "	front.

Holes Marked O fired at front of Plate.

" " X " " back of Plate.

PLATE NORMAL, 100 YD. RANGE, .30 CAL. M1922 A.P. BULLETS, ~~[illegible]~~ UNLESS NOTED OTHERWISE.
Springfield Rifle



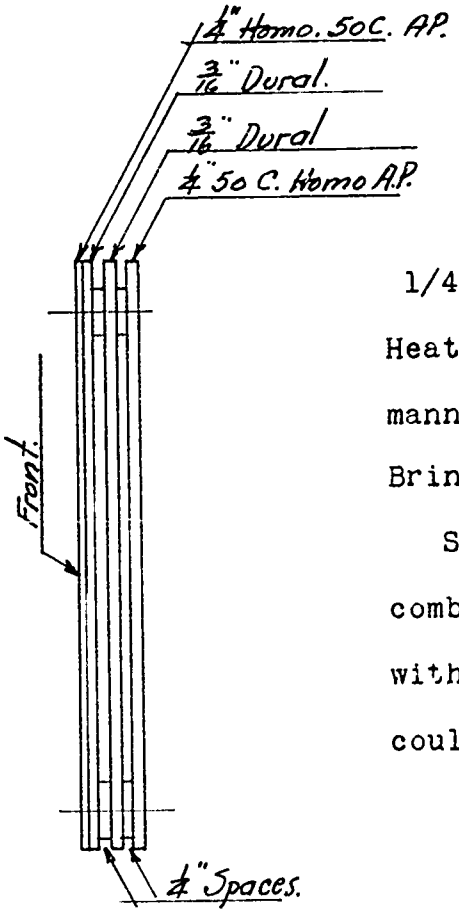


PLATE NO. C - 2

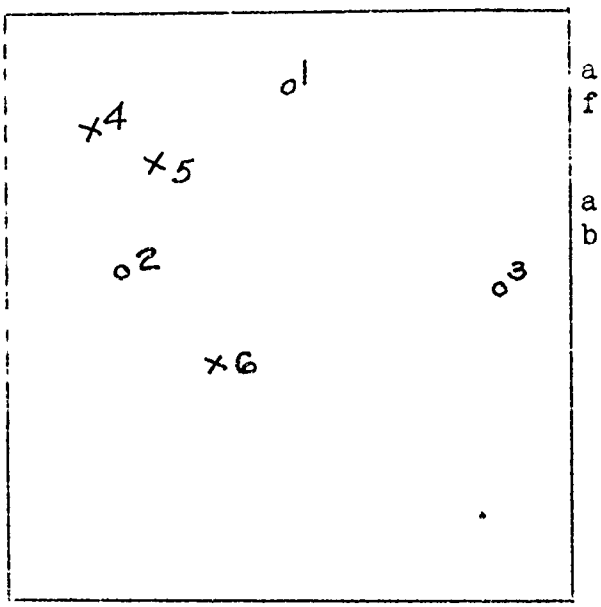
DATE 5-28-34

1/4" 50C. Homogeneous Disston Plate Heat Treated by Disston Co. in standard manner, oil quench 1600°F. and Draw 1100°F. Brinell 400 to 430.

Spacing of 1/4" found to be to great combination C-4 in this report tried with 1/8" spaces, to see if improvement could be obtained.

ARMOR PLATE COMPOSITION

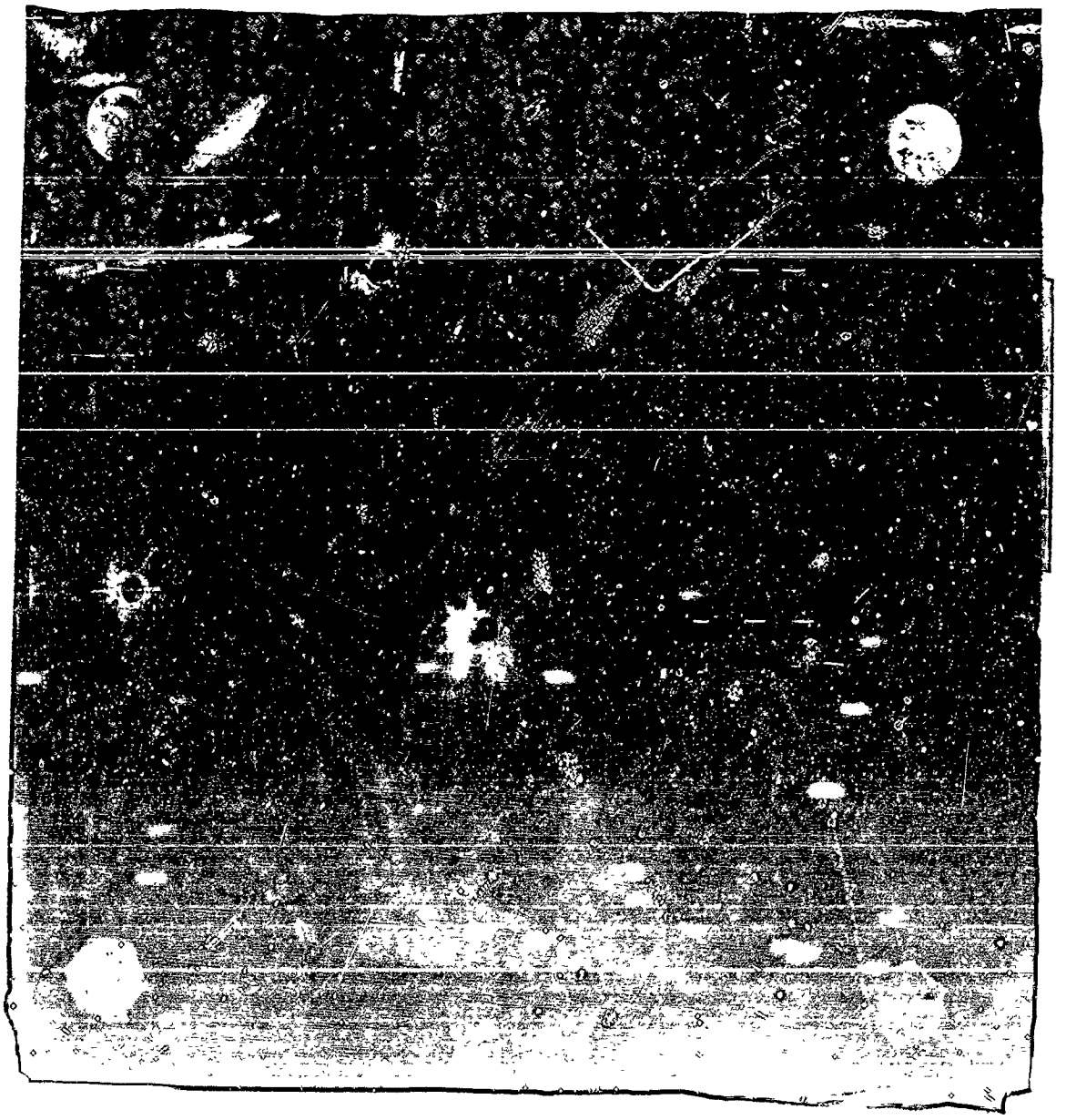
C.	Mn.	P.	S.	Si.	Cr.	Mo.	Va.
.45/.55	.40/.60	<.03	<.03	.15/.25	1.10/1.30	.60/.80	.20/.30



	ROUND NO.	STRIKING VELOCITY	REMARKS
at front	(1	2488	Not as good as C-1
	(2	"	
	(3	"	
at back	(4	"	About same as front.
	(5	"	
	(6	"	

Holes marked O fired at front of Plate.
" " X " " back of Plate.

PLATE NORMAL, 100 YD. RANGE, .30 CAL. M1922 A.P. BULLETS, ~~MMMK EXRDEX~~ UNLESS NOTED OTHERWISE.
Springfield Rifle



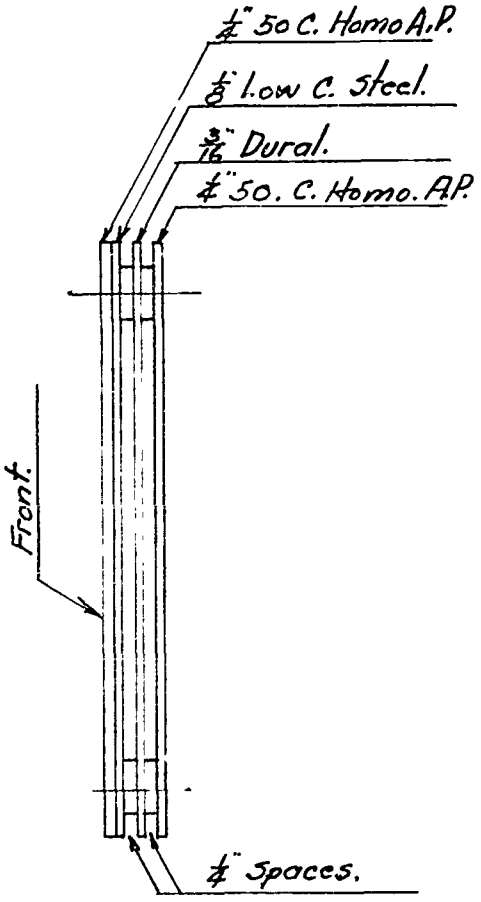


PLATE NO. C-3

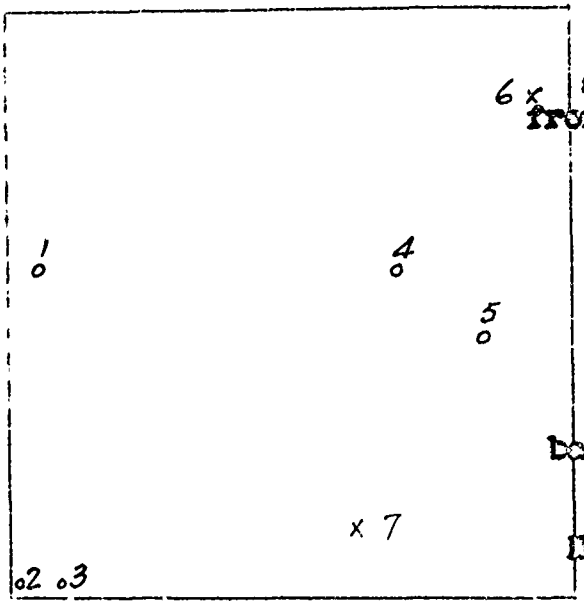
DATE 5-23-34

1/4" 50 C. Homogeneous Diston plate. Heat treated by Diston & Co. in standard manner, oil quench 1600°F, draw 1100°F, Brinell 400 to 450.

Apparently 1/4" is too much space.

ARMOR PLATE COMPOSITION

C.	Mn.	P.	S.	Si.	Cr.	Mo.	Va.
.45/.55	.40/.60	<.03	<.03	.15/.25	1.10/1.30	.60/.80	.20/.30

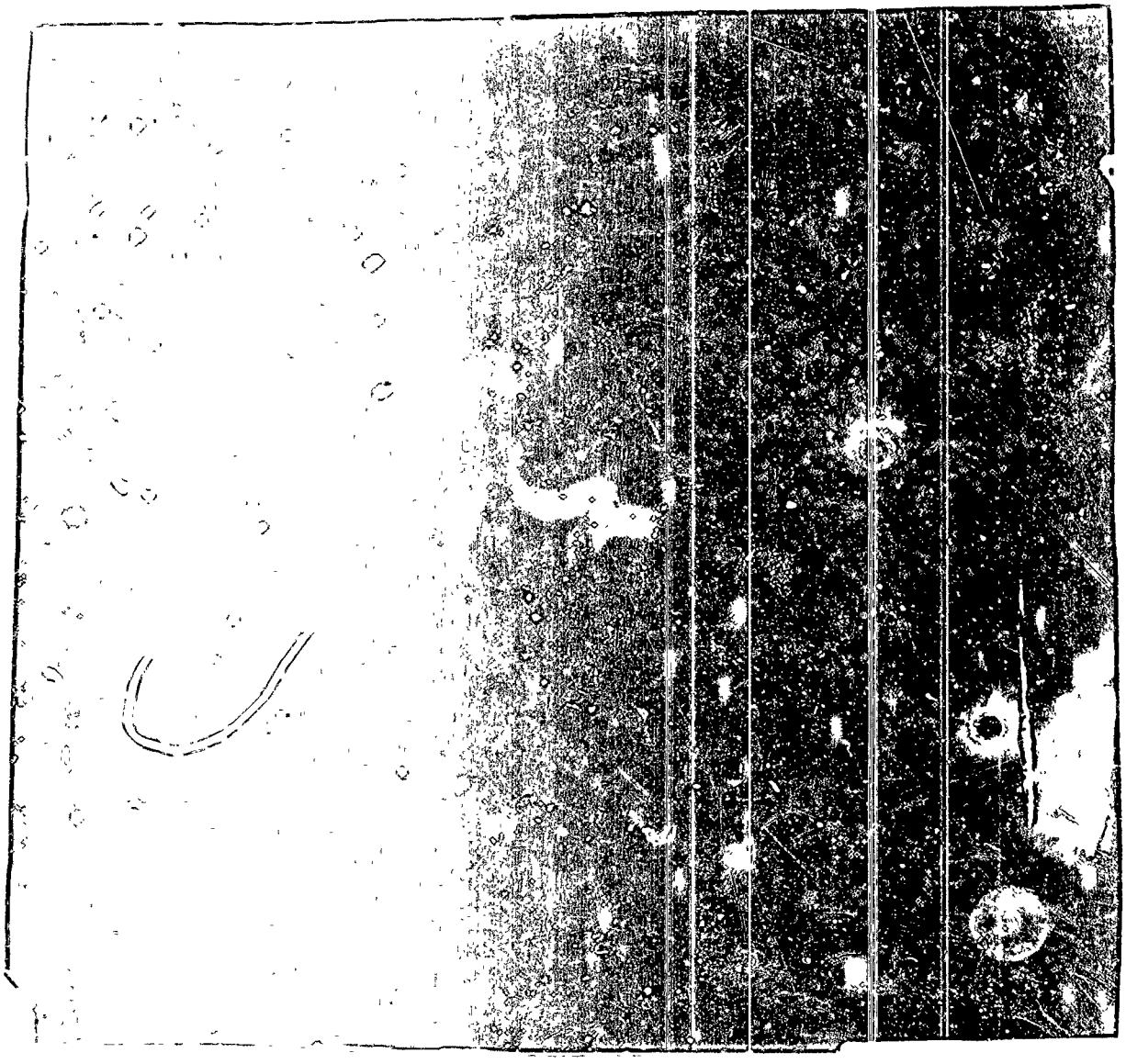


	ROUND NO.	STRIKING VELOCITY	REMARKS
at front	1	2480 (service)	Partial
	2	"	"
	3	"	"
	4	"	"
	5	"	"
at back	6	"	about same as at front
	7	"	"

Holes marked O fired at front of plate. " " X " " back " ".

PLATE NORMAL, 100 YD. RANGE, .30 CAL. M1922 A.P. BULLETS, [redacted] UNLESS NOTED OTHERWISE.

Springfield Rifle



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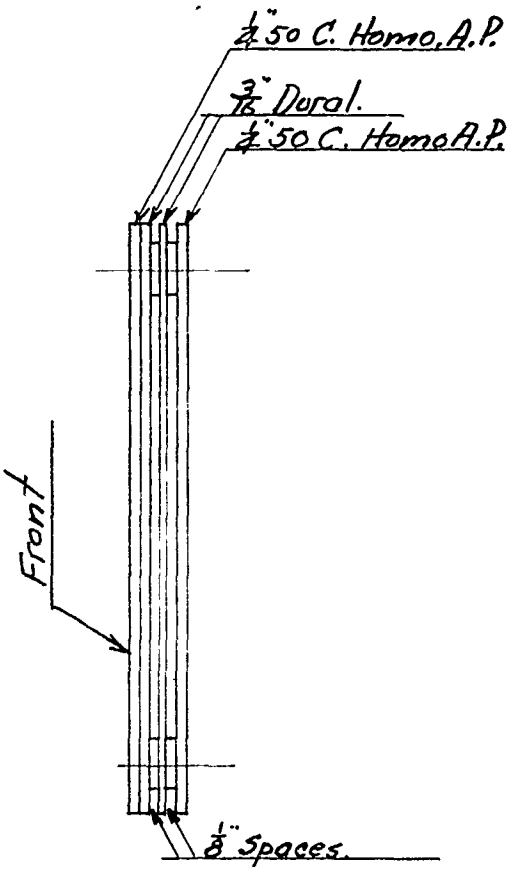


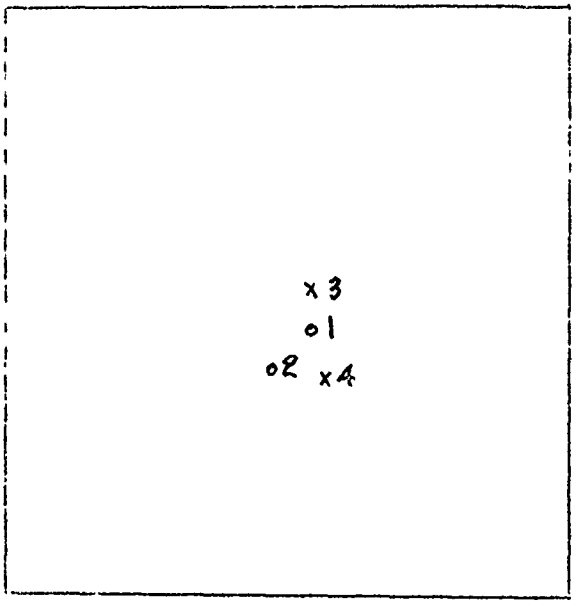
PLATE NO. C-4

DATE 6-13/34

This plate is of the same combination as Plate C-2 with the exception of the spaces. The spaces on this plate are 1/8" against 1/4" on Plate C-2. The results are about the same as those of C-1, C-2 and C-3. 1/4" 50 C. Homogeneous Bisston Plate. Heat treated in the standard manner, oil quench 1600°F, draw 1100°F, Brinell 400 to 430.

ARMOR PLATE COMPOSITION

C.	Mn.	P.	S.	Si.	Cr.	Mo.	Va.
.45/.55	.40/.60	<.03	<.03	.15/.25	1.10/1.30	.60/.80	.20/.30



ROUND NO.	STRIKING VELOCITY	REMARKS
1	Service V	C.I.P. at Front of plate
2	"	C.I.P.
3	"	C.I.P. at Back of plate
4	"	C.I.P.

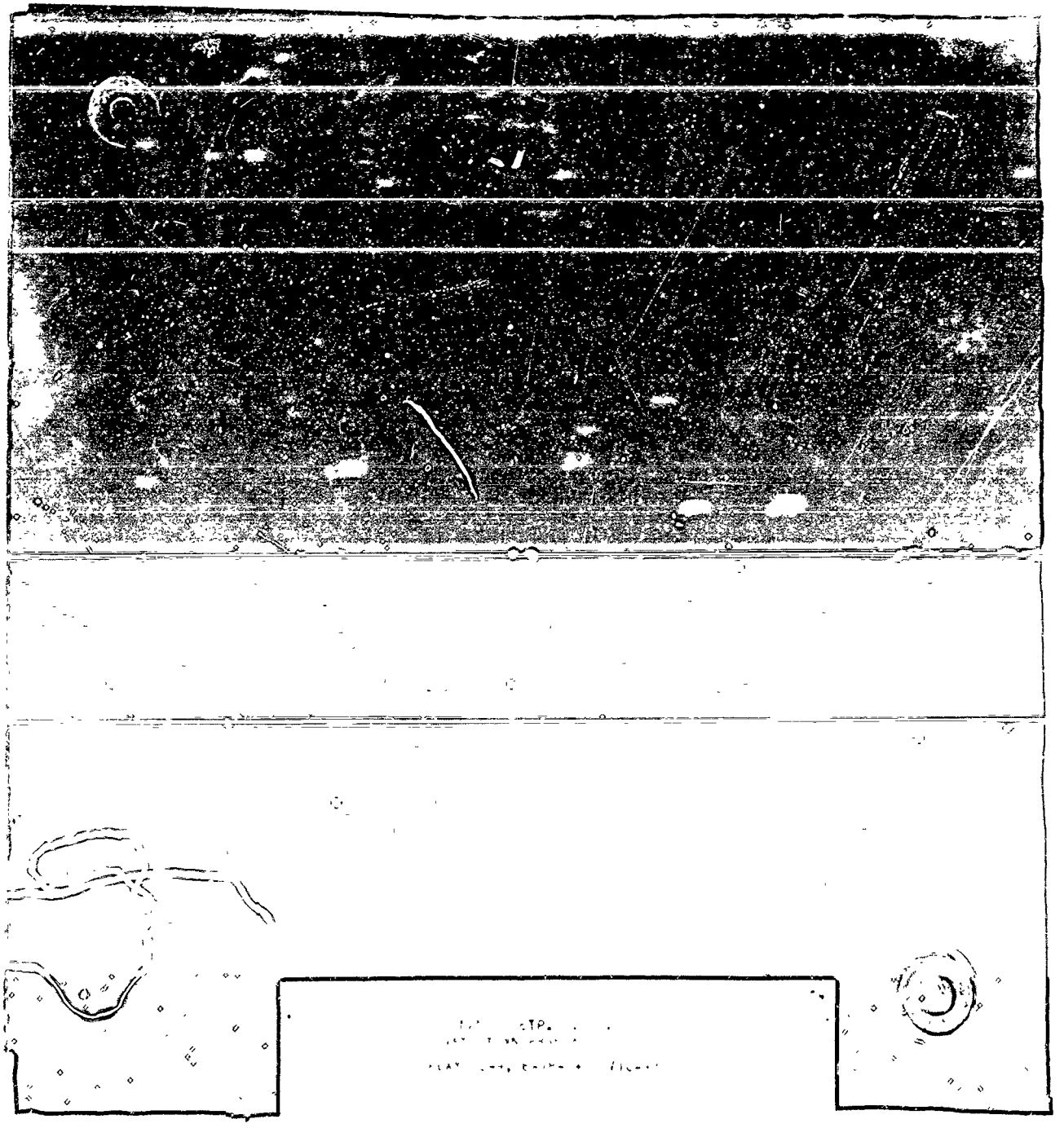
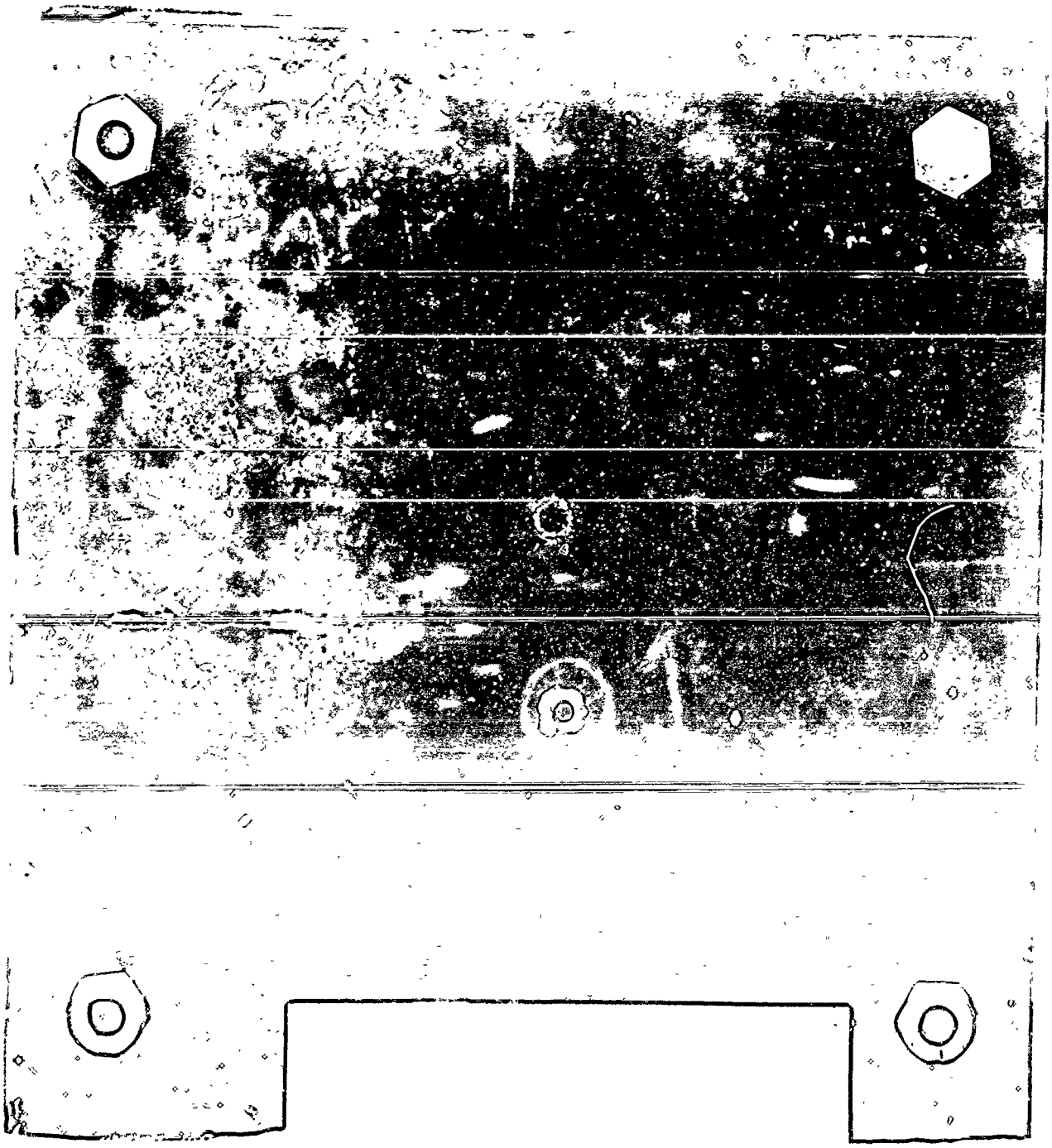



PLATE NORMAL, 100 YD. RANGE, .30 CAL. M1922 A.P. BULLETS, MANN BARREL UNLESS NOTED OTHERWISE.