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MS-13710/23
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REPORT NO. T10/23

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AD-A954405

SECOND REPORT OF TESTS
OF
COMPOSITE PLATES

ORDNANCE
TESTING AND RESEARCH
MS-13710/23
OFFICE OF ORDNANCE RESEARCH AND DEVELOPMENT

BY

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

MAY 28, 1934

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WATERTOWN, MASS.

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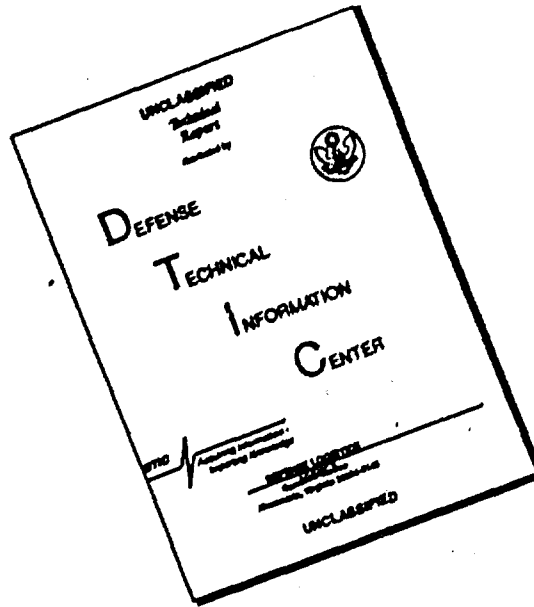
W. A. Form, No. 2.

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REPORT NO. 710/23
 SECOND REPORT OF TESTS
 of
 COMPOSITE PLATES



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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.

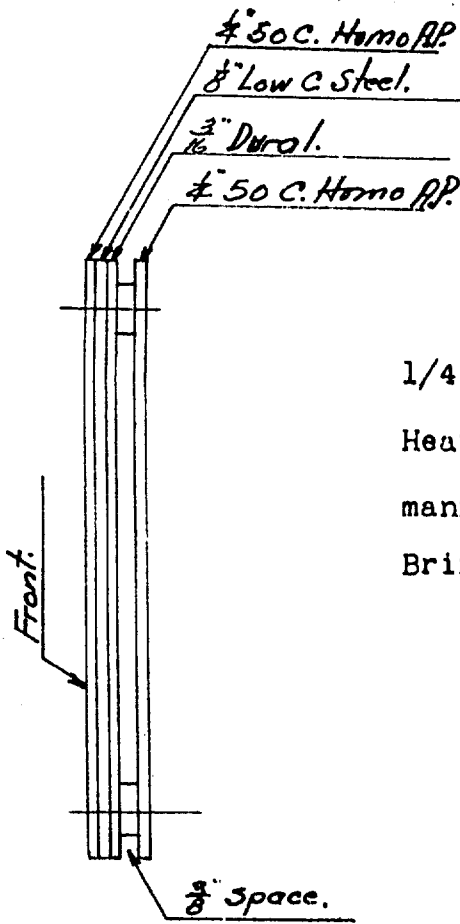
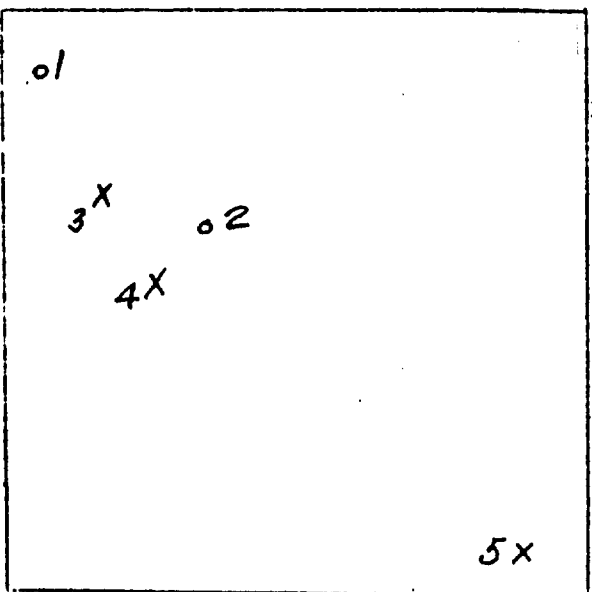


PLATE NO. C - 1
 DATE 5-28-34

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

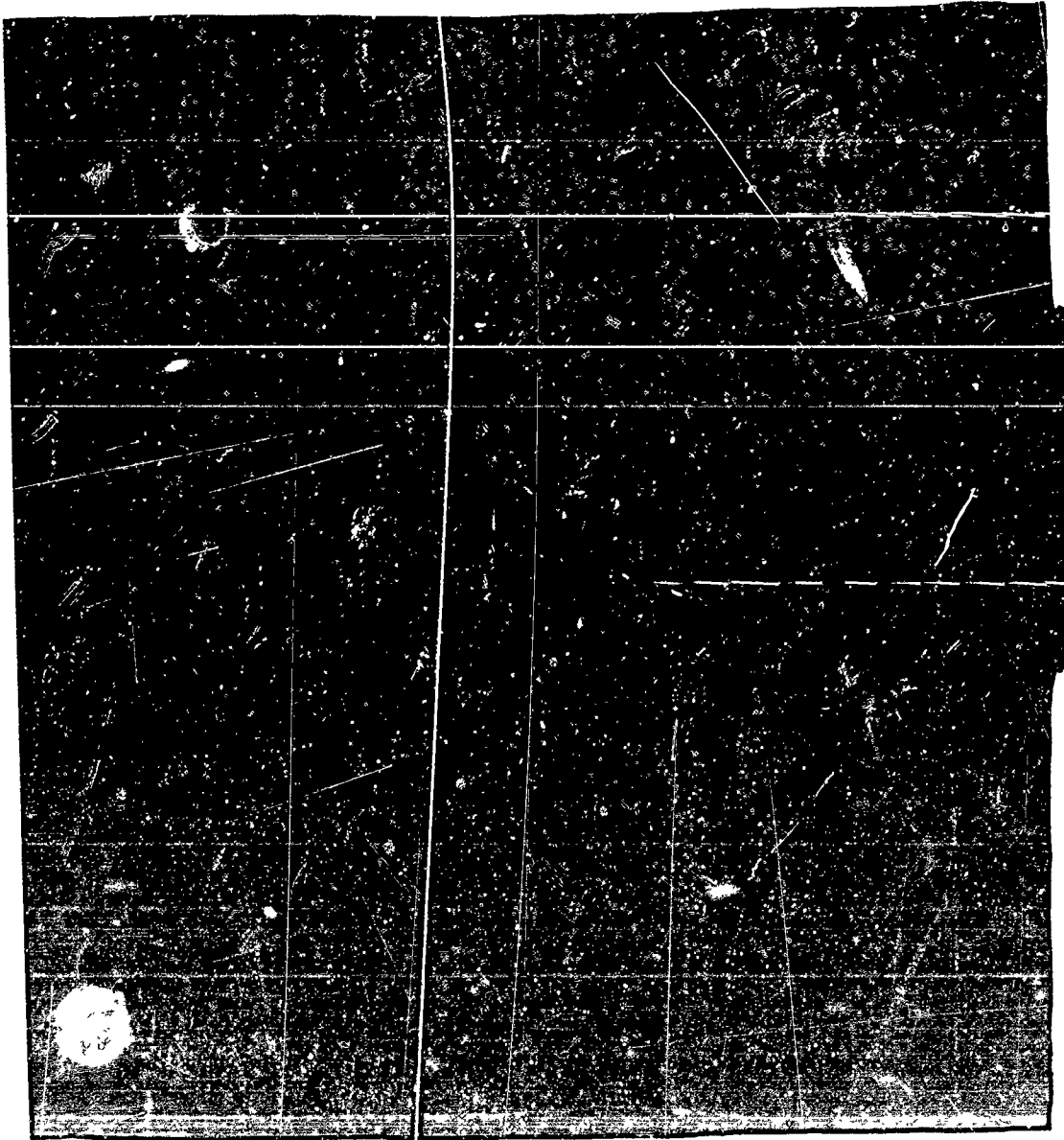
C.	Mn.	P.	S.	Si.	Cr.	Mo.	Va.
.45/.55	.40/.60	<.03	<.03	.15/.25	1.10/1.30	.60/.80	.20/.30



ROUND NO.	STRIKING VELOCITY	REMARKS
at (1 service) front(2)	2488	(Partial exc. (to back pl.
at (3 back(4 (5	" "	About the same as at front.
Holes Marked O	fired at front of Plate.	
" " X	" " back of Plate.	

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





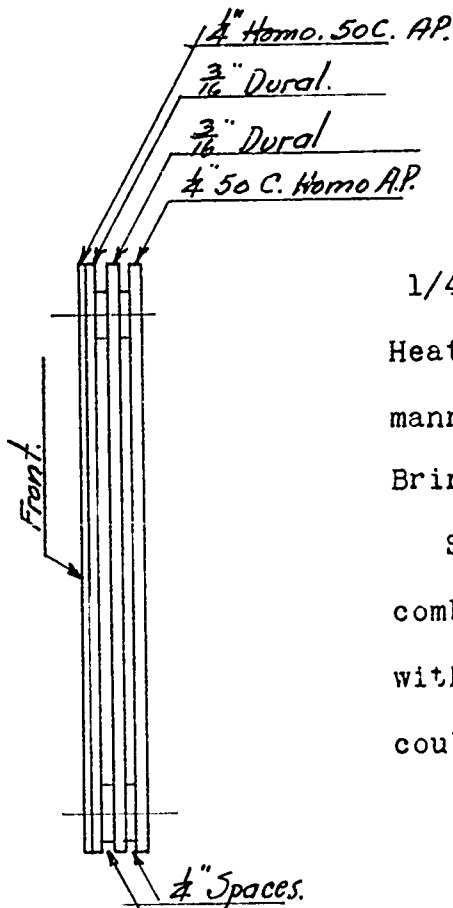


PLATE NO. C - 2

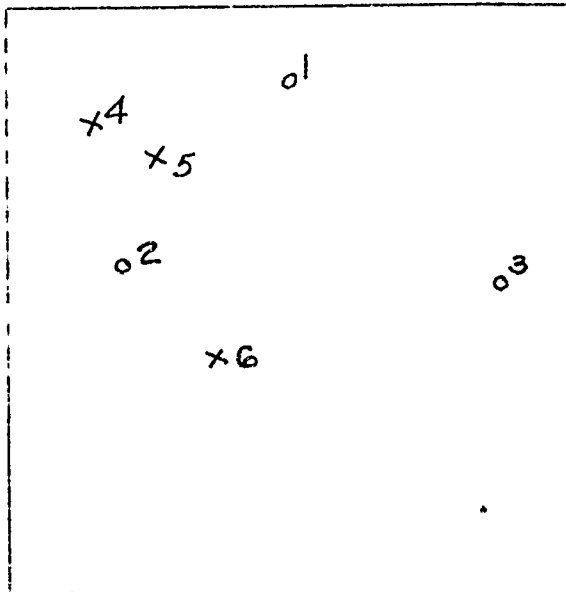
DATE 5-28-34

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

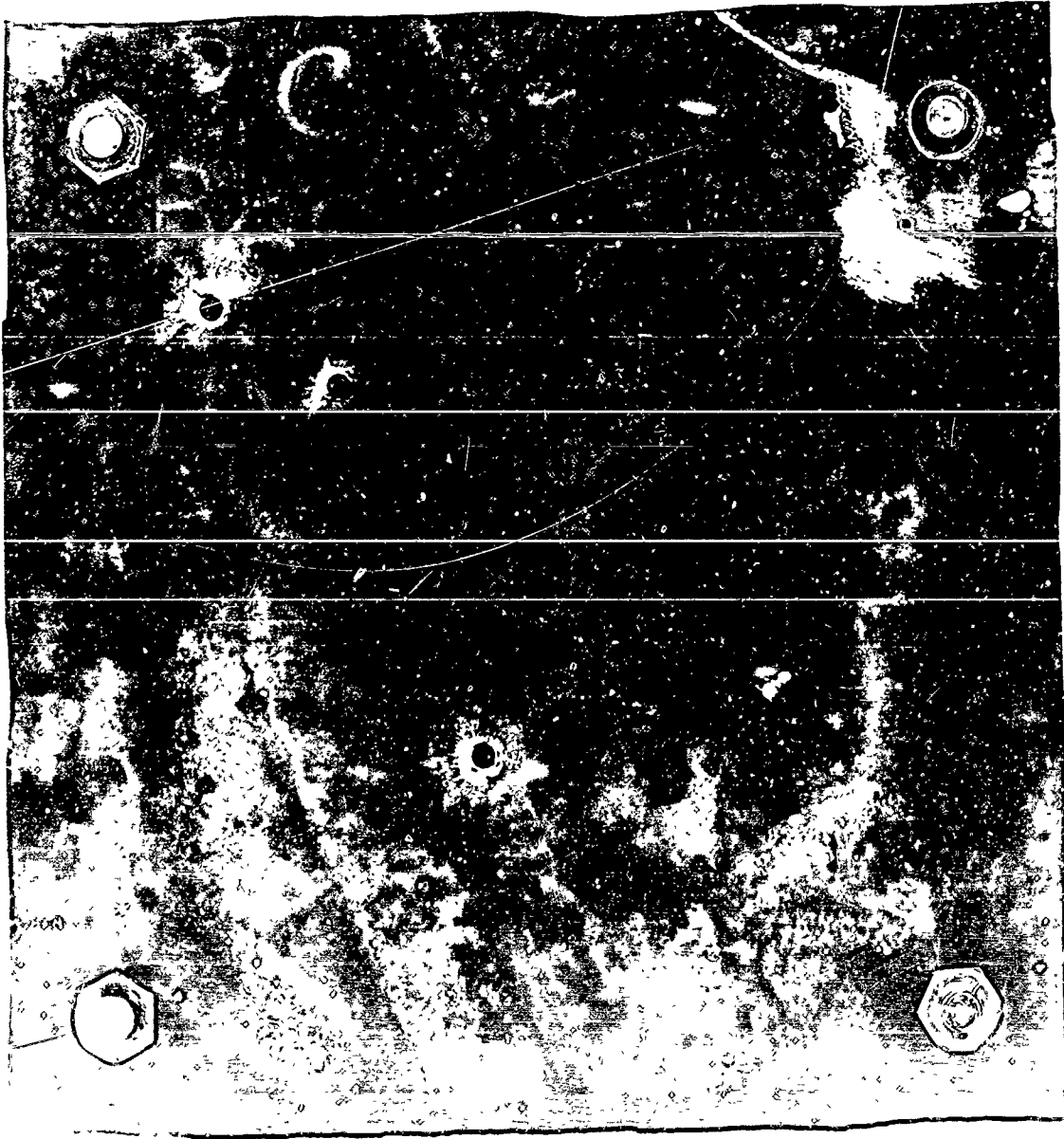
C.	Mn.	P.	S.	Si.	Cr.	Mo.	Va.
.45/.55	.40/.60	<.03	<.03	.15/.25	1.10/1.30	.60/.80	.20/.30

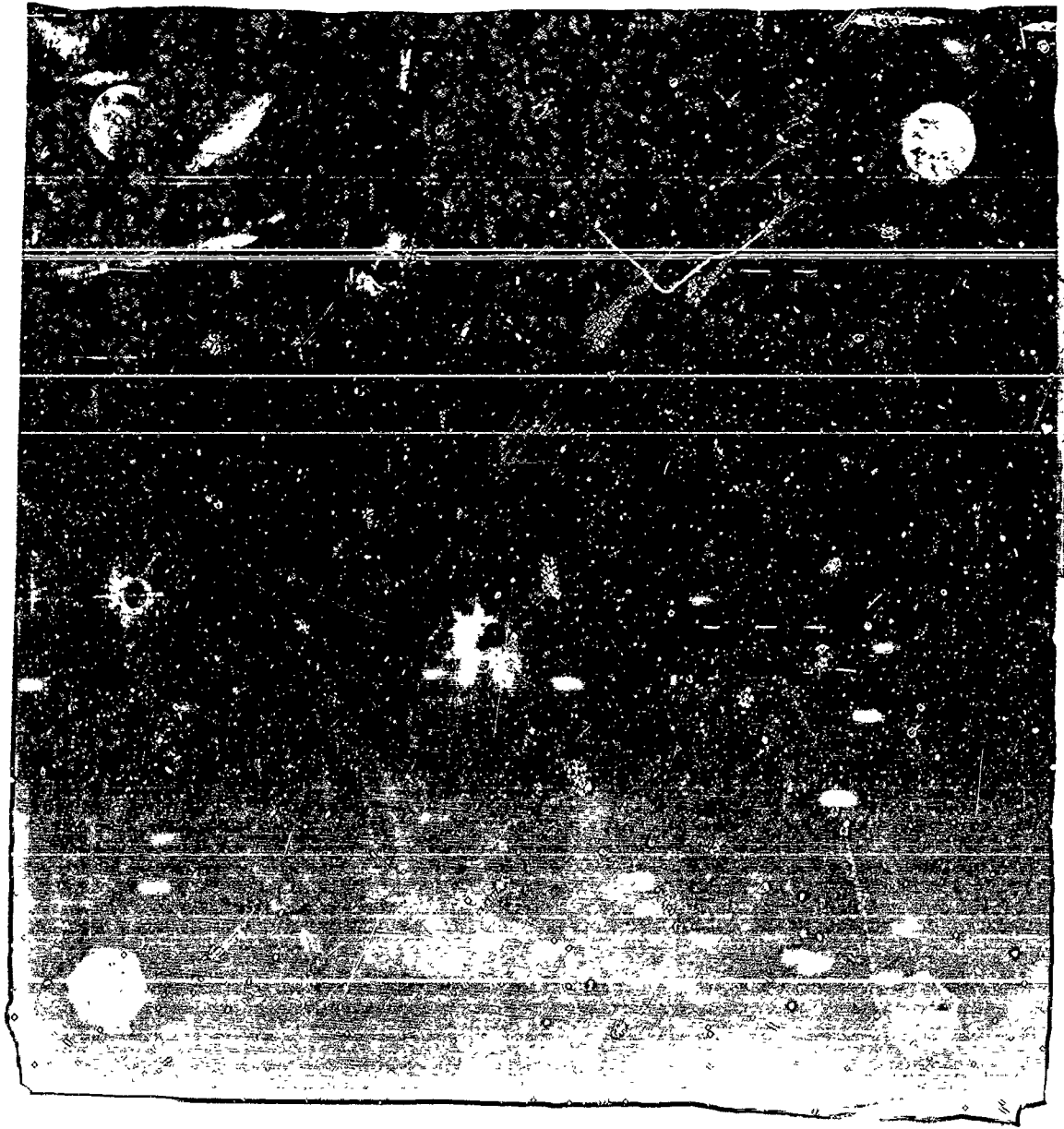


ROUND NO.	STRIKING VELOCITY	REMARKS
at (1	2488	Not as good
front (2	"	as C-1
(3	"	
at (4	"	About same
back (5	"	as front.
(6	"	

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

PLATE NORMAL, 100 YD. RANGE, .30 CAL. M1922 A.P. BULLETS,
 MMSK BARDX UNLESS NOTED OTHERWISE.
 Springfield Rifle





710-39



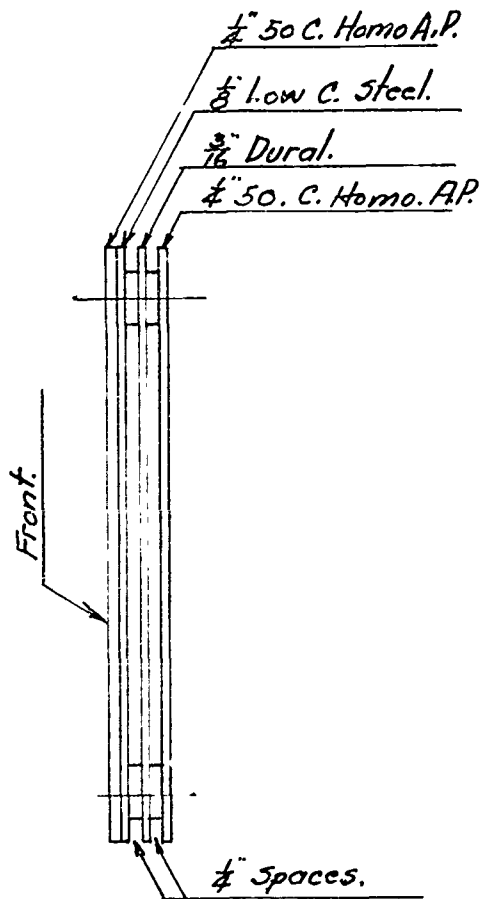


PLATE NO. 6-3

DATE 6-23-34

$\frac{1}{4}$ " 50 C. Homogeneous Duxton plate.
 Heat treated by Duxton & Co. in
 standard manner, oil quench 1600°F ,
 draw 1100°F , Brinell 400 to 450.

Apparently $\frac{1}{4}$ " is too much space.

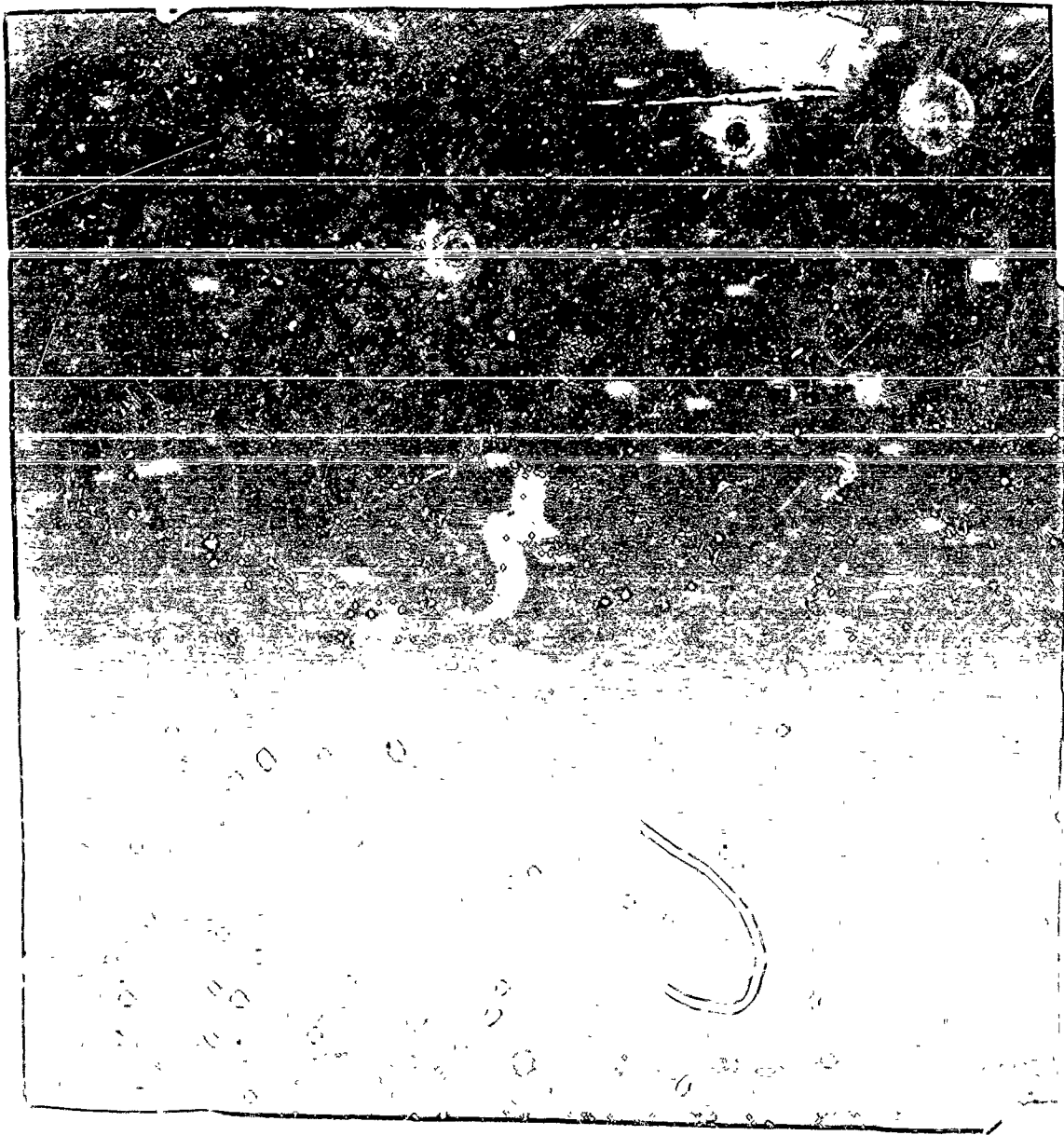
ARMOR PLATE COMPOSITION

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

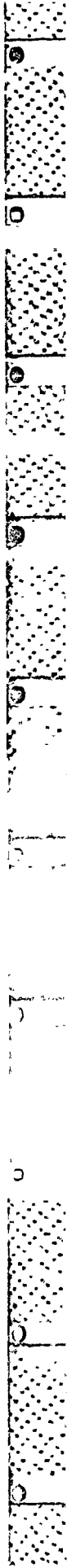
ROUND NO.	STRIKING VELOCITY	REMARKS
1	2400 (service)	Partial
2	"	"
3	"	"
4	"	"
5	"	"
6	"	about same as at front
7	"	"

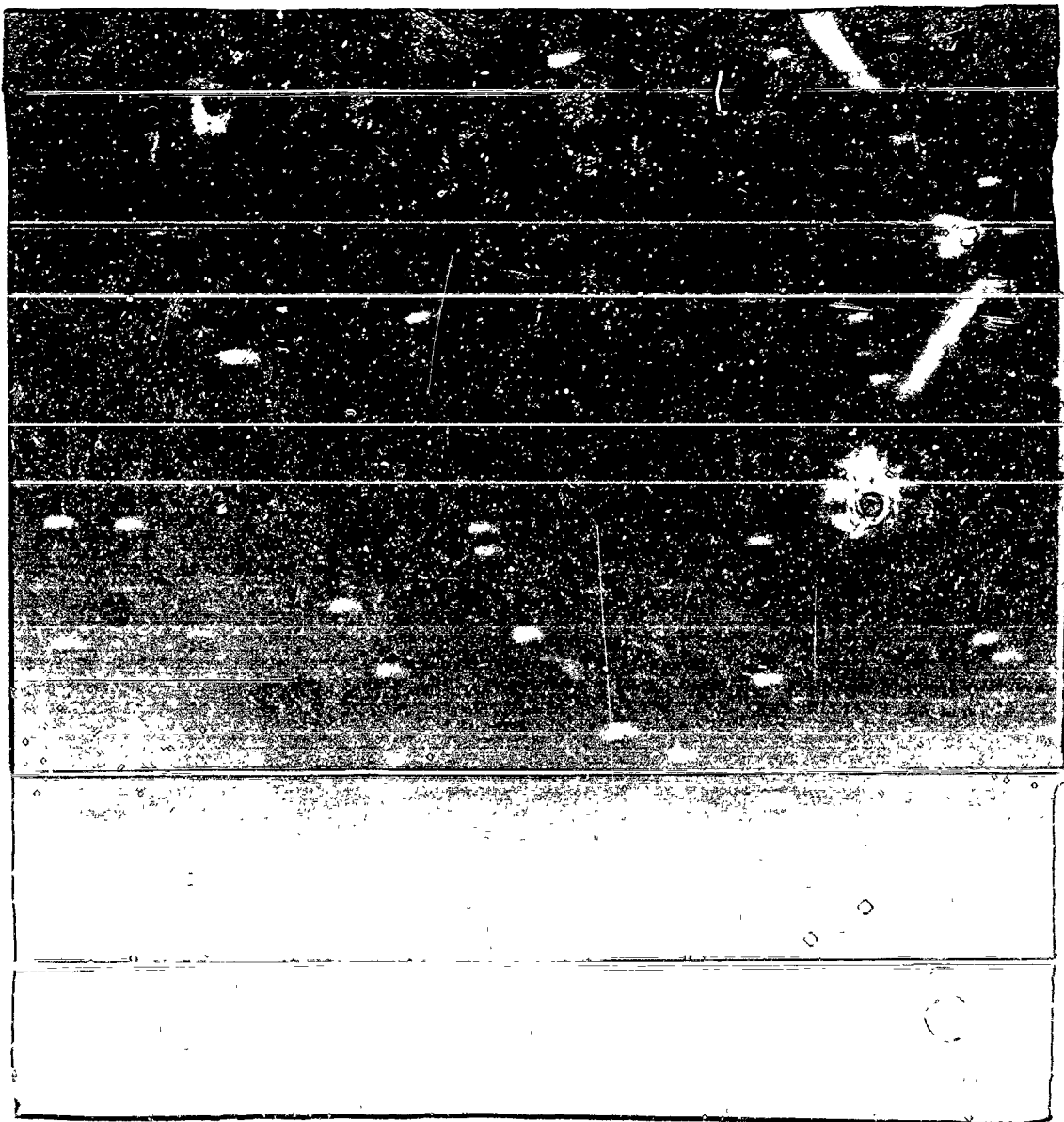
6 x at front
 4
 5
 x 7
 Holes marked 0 fired at front of /
 " " X " " back " "

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



Pl. 54 4-6-50 J. 410





2004
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Part 1, Section 17, Code A

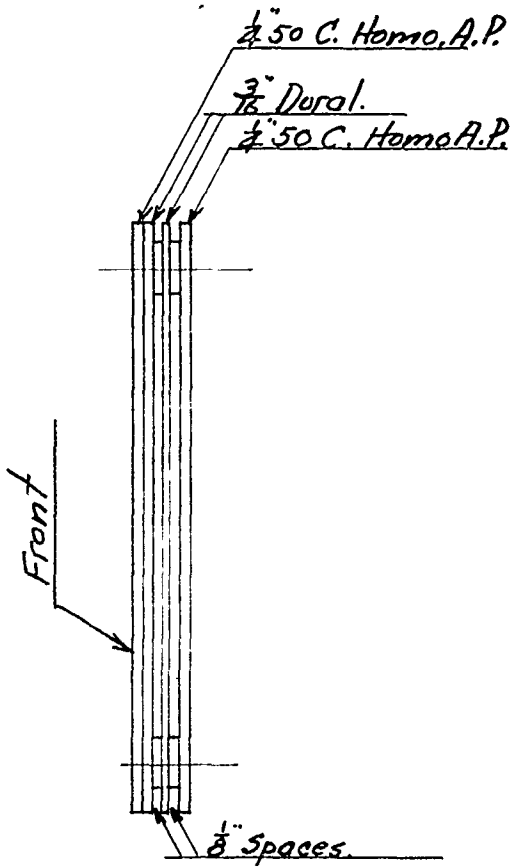
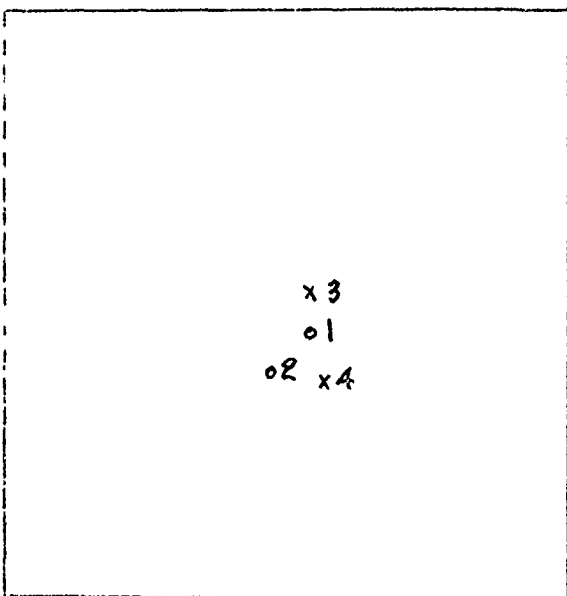


PLATE NO. C-4
 DATE 6-13/34

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.

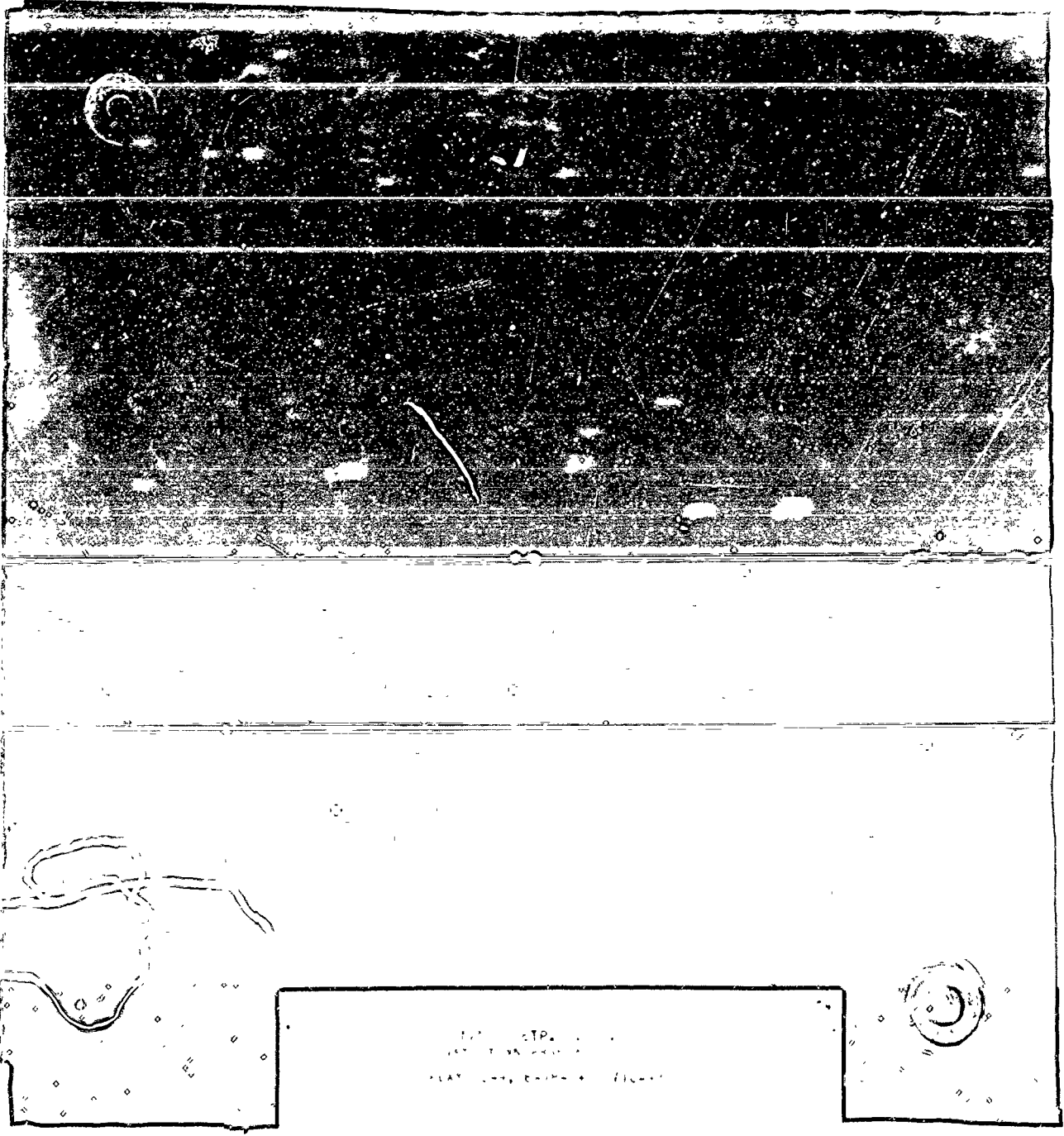
ARMOR PLATE COMPOSITION

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	Dorvico V	G.I.P.) at Front
(2	"	G.I.P.) of
(3	"	G.I.P.) at Back
(4	"	G.I.P.) of
		G.I.P.) plate

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



1971-1972
1973-1974
1975-1976



