REPORT NO. 710/24

THIRD REPORT OF TESTS

on

COMPOSITE ARMOR PLATES

by

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

1934
PLATE NO. C - 5

DATE 5-18-34

Total Wt. of Plate -
23 lbs. per sq. ft.

Grooves - 3/16" wide by
1/4" deep on 5/8" centers.

Grooves staggered on back
of Dural, 1/4" over from
E of opposite groove on
front side.

After Rounds 1 and 2 were fired at the plate 5/32" washers
were put between the front 1/4" Homo. A. P. plate and the 5/8"
Grooved dural plate. The effect of the space seemed to increase
the turning of the cores. The Rounds 6 and 7 marked X were fired
at the rear of the plate. The results of this plate caused the
test of another which is in this report known as plate C-7.
Very satisfactory in turning bullet cores, also crushing and
cracking.

Armor Plate - Heated in standard manner by Henry Disston & Sons
Co. Oil Quench 1600°F - draw 1100°F - Brinell 400 to 430.

ARMOR PLATE COMPOSITION

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>.45/.55</td>
<td>.05/.60</td>
<td>.03</td>
<td>&lt;.03</td>
<td>.15/.25</td>
<td>1.10/1.30</td>
<td>.60/.80</td>
<td>.20/.30</td>
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<table>
<thead>
<tr>
<th>ROUND NO.</th>
<th>STRIKING VELOCITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2488 f.s.</td>
<td>No pen.</td>
</tr>
<tr>
<td>2</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>3</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>4</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>5</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>6</td>
<td>&quot;</td>
<td>Penetrated</td>
</tr>
<tr>
<td>7</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
</tbody>
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PLATE NORMAL, 100 YD. RANGE, .30 CAL. M1922 A.P. BULLETS,
MANN BARREL UNLESS NOTED OTHERWISE.

Best Available Copy
This composite plate was made of 1/4" A.P. 2-3/8" sheets of Dural groove & 1/8" A.P.,
The 1/4" A.P. being the front of the sample. The 1st round was fired at the plate as per sketch. Rds. 2, 3 & 4 fired at sample, after a 5/32" space was made between 1/4" A.P. & 1st sheet of Dural. Rds. 5, 6 & 7 fired at sample, after a 5/32" space was made between 1/8" A.P. & 2nd sheet of Dural, the 1st space was closed. Note on photo #710/63 the turning effect the groove Dural has on the core.
Armor Plate - Oil quench in standard manner by Watertown Arsenal. Oil quench 1600°F, draw. 1100°F, Brinell 400 to 450.

ARMOR PLATE COMPOSITION

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<td>.45/.55</td>
<td>.10/.60</td>
<td>.03 &lt;.03</td>
<td>.15/.25</td>
<td>1.10/1.30</td>
<td>.60/.80</td>
<td>.20/.30</td>
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ROUND STRIKING VELOCITY REMARKS

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<tr>
<th>NO.</th>
<th>VELOCITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9488</td>
<td>pricked back</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Only one shows its nose.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Only one shows its nose.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Good - no penetrations</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Good - no penetrations</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Good - no penetrations</td>
</tr>
<tr>
<td>7</td>
<td></td>
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