

PHOTOGRAPH THIS SHEET

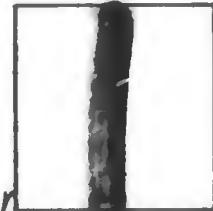
AD A951116

DTIC ACCESSION NUMBER



LEVEL

Watertown Arsenal Labs, MA



INVENTORY

Rept. No. 313/18

DOCUMENT IDENTIFICATION

Feb. 42

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Approved for public release;
Distribution Unlimited

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LABORATORY

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Report No. 313/18

AD A951116

3" AA Liner M3
(C2113)

Repaired By Metal Spraying

P. R. Kusting

Feb. 1942

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WATERTOWN ARSENAL
WATERTOWN, MASS.

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Rock Island Arsenal

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Aberdeen Proving Ground

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Other establishments
requesting work.

O.O. 472.93/7358
W.A. 473.93/8554
A.P.G. 472.91/579
W.A. 472.13/410

3" A.A. Liner M3

(C2113)

Repaired By Metal Spraying

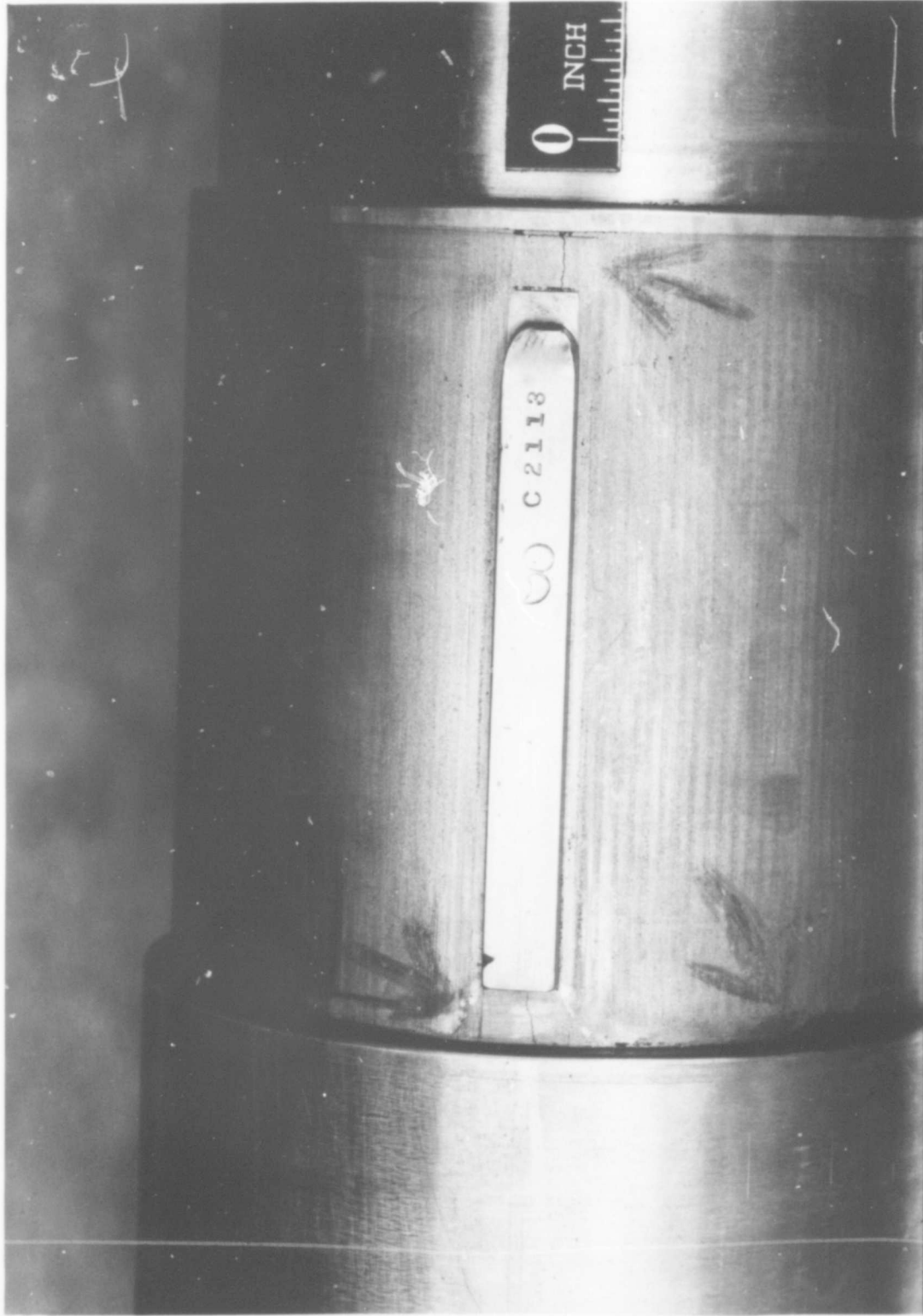
P. R. Kosting

1. 3" A.A. Liner, Serial Number 848, was machined undersize approximately #04 over the key zone section and between the two keys.
2. In order to determine whether satisfactory repairs could be made by metal spraying, the section between the keys (diameters 5#62 and 5#593) was repaired by the above method.
3. After finish machining the surface appears satisfactory except for several small cracks at the end of the keys. Before metal spraying the surface was roughened and undercut around the edges to insure a proper bond.
4. The Liner was given the regular proof firing tests and was then fired a total of 2065 rounds. Cracks exist in the key zone section.

Feb. 1942

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50118 9-10-41

ABERDEEN PROVING GROUND

ORDNANCE DEPT.

View shows 3" M3 Liner No. 848 which was machined .04" underside over the key zone section and between the two keys and then repaired by a metal spraying process at Watervliet Arsenal.

Key

- 1 Hor. sq. equals 1"
- 1 Vert. sq. equals .001"

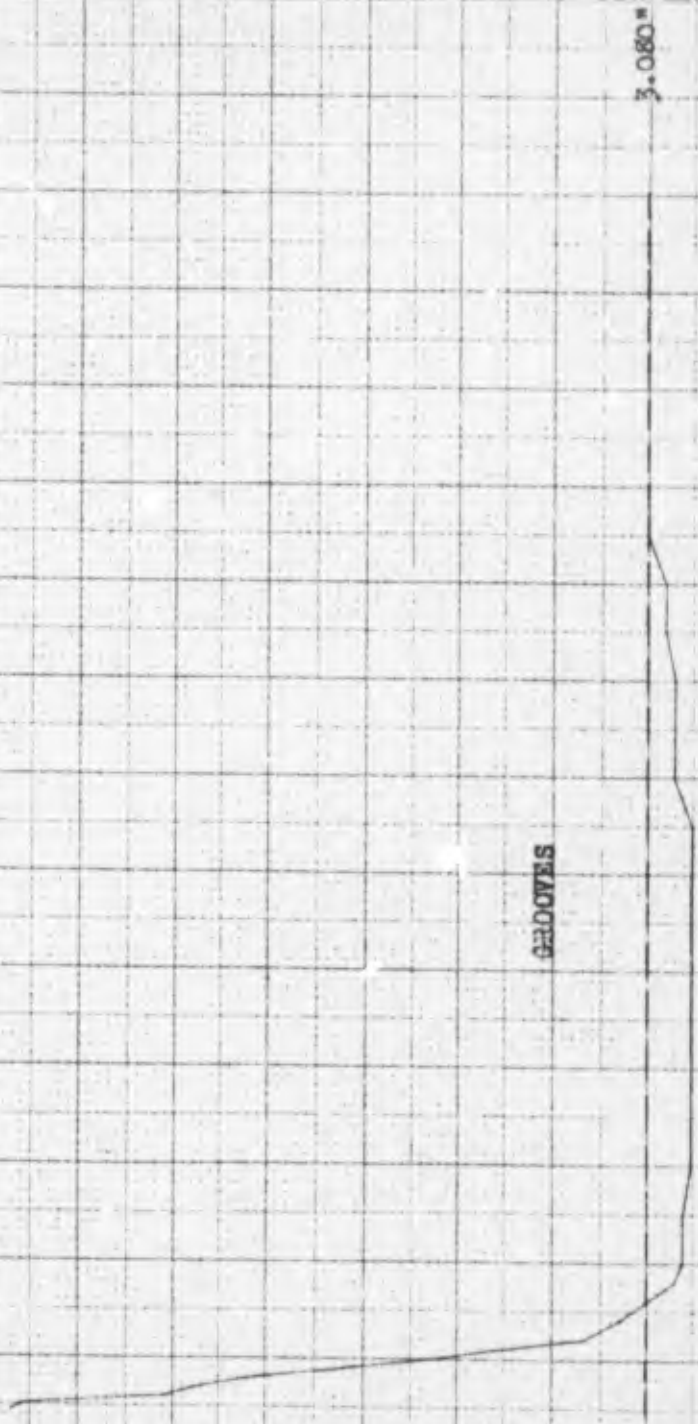
Stargauge Curve

3" AA Liner, #S48, M3, (02113)
After 197 1/4 rounds, 6/17/41.

After Firing: Bore moderately clogged.

Total length of liner
Number of lands and grooves

150.37"
28



GROOVES

3.080"

3.080"

.000"
.130"
.120"
.110"
.100"
.090"
.080"
.070"
.060"
.050"
.040"
.030"
.020"
.010"
.000"

3.080"

Inches, true
face of liner.

150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

BORE - 24.5" to 150.25"
Before Firing
After Firing
GAUGE SECTION, A.P.G.

CHAMBER - 0 to 23.5"
3.905" - 3.106" - 3.100"

A. E. Jewell,
ASST. ENGR.

LANDS

3" Liner #848, K3, (C2113).
9/10/41

From A	Vertical	Horizontal	45° Right	45° Left
.25	5.6145	5.615	5.615	5.616
1	5.6125	5.6135	5.613	5.613
2	5.6085	5.609	5.6085	5.6085
3	5.6035	5.603	5.6025	5.603
4	5.5975	5.597	5.597	5.597
5	5.5915	5.592	5.5915	5.592

Crack running forward of key at 12 o'clock .35"
severing to the right .5", left 1.25".
Light machine tool finish.
(Crack running rearward of key .42";
annular crack .5" right of key 4.3" from A).

Gauge Section
Aberdeen Proving Ground

A. E. Jewell,
Assoc. Engr.

History of Liner:--

Liner 848 was proof fired July 25, 1940 at the Proving Ground. It has been stargauged 7 times and at present has been fired 2065 times. It has been subjected to nearly every type of firing possible. It has been put in and taken out of several different tubes approximately 34 times. It is our opinion that this liner has received a thorough test of its life.

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