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AD NUMBER: AD0492041

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AUTHORITY

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SPRINGFIELD ARMORY

RESEARCH AND DEVELOPMENT



EXTRA COPY

MEMORANDUM REPORT

PROJECT TITLE RIFLE, CALIBER .30,
LIGHTWEIGHT.

PROJECT NO. TS2-2015

REPORT TITLE TEST OF REAR SIGHT
ASSEMBLY FOR LIGHTWEIGHT RIFLE, CALIBER
.30, T-25.

SPRINGFIELD, MASSACHUSETTS

ITEM 30 R T-25 DATE 16 JAN 1950 SA-MR 11-2033

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SPRINGFIELD ARMORY
RESEARCH AND DEVELOPMENT DIVISION
MEMORANDUM REPORT SA-MR11-2033

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ABFowler/632/shp

16 January 1950

SUBJECT:

Test of Rear Sight Assembly for the Lightweight Rifle,
Caliber .30, T-25.

OBJECT:

To ascertain that various windage and elevation settings
of the subject sights do not change during prolonged firing.

SUMMARY:

A T-25 Rifle rear sight assembly was tested on a Caliber
.30, Browning Automatic Rifle, M1918A2, and on the Caliber .30,
T-25 Rifle. No changes in elevation or windage setting due to
firing occurred throughout the test.

REFERENCE:

J.O. 1375-6959

MATERIAL:

1. Rear Sight Assembly, SA-22284, for the Lightweight
Rifle, Caliber .30, T-25. Photograph 7143-SA shows the sight
assembled to the T-25 Rifle and Photograph 7142-SA shows the
components of the sight disassembled and grouped in their
proper relation. Component nomenclature corresponds to num-
bers on the photograph as follows:

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COMPONENTS AND ASSEMBLIES

- 1 Scale, Elevation
- 2 Aperture Assembly including Aperture Insert & Aperture Tube
- 3 Knob, Elevation
- 4 Spring, Elevation Knob
- 5 Screw, Zeroing, Rear Sight
- 6 Post, Rear Sight
- 7 Pin, Retaining, Elevation Knob
- 8 Pin, Rear Sight Post
- 9 Spring, Rear Sight Post
- 10 Plunger, Rear Sight Spring
- 11 Pin, Windage Lock
- 12 Lock, Windage
- 13 Screw, Windage Lock
- 14 Sleeve, Windage
- 15 Slide, Windage
- 16 Spring, Windage Slide
- 17 Spring, Windage Knob
- 18 Knob, Windage
- 19 Base, Rear Sight
- 20 Screw, Rear Sight Base

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2. Rifle, Browning Automatic, Caliber .30, M1918A2, Serial No. 79720, modified for assembly with T-25 Rifle rear sight.
3. Rifle, Lightweight, Caliber .30, T-25, Serial No. 1.
4. Ammunition
 - (a) Cartridge, Caliber .30, M2 Ball, Lot DMC-86146.
 - (b) Cartridge, Caliber .30, T65E2 Ball, Lot FAX30-1225

PROCEDURE:

1. The T-25 Rifle rear sight assembly was assembled to a Caliber .30, Browning Automatic Rifle, the receiver of which was modified to assemble with the sight. The rifle was fired, fast rate, with the following sight settings:
 - a. 100 rounds with the rear sight set at 100 yards elevation and at zero windage.
 - b. The sight was then set at the next higher click of elevation and the first right windage and fired another 100 rounds.
 - c. The sequence of advancing and setting the sight up and across, down and across, changing the setting every 100 rounds, was continued for 3300 rounds of firing.
 - d. The first portion of each 100 rounds was fired at elevation and at depression.
 - e. At the end of each 100 rounds, the sight was inspected to determine whether the elevation or windage setting had changed from those preselected. The sight assembly was carefully observed to determine if the sight post tended to flip down during firing.
2. As above, the rear sight was assembled to a T-25 Rifle and 720 rounds were fired. The only variation in procedure consisted in moving the elevation setting to the next higher 100 yards of elevation rather than to the next higher click. All firing was done full automatic.

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RESULTS AND DISCUSSIONS:

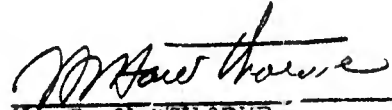
In no instances did the preselected elevation or windage settings of the T25 sight change, nor did the sight post fall during the entire period of firing with either of the weapons used in the test. However, high speed movies taken during automatic fire showed a tendency of the sight to wobble.

Mechanically, this sight appears to be of good design and to demonstrate good endurance life during firing. No rough handling tests were run.

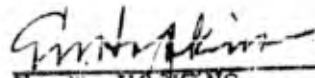
CONCLUSIONS:

On the basis of this test, it is concluded that the rear sight, SA-22284, does not change from a preselected setting during prolonged firing nor does the sight post fall.

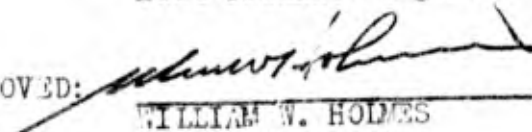
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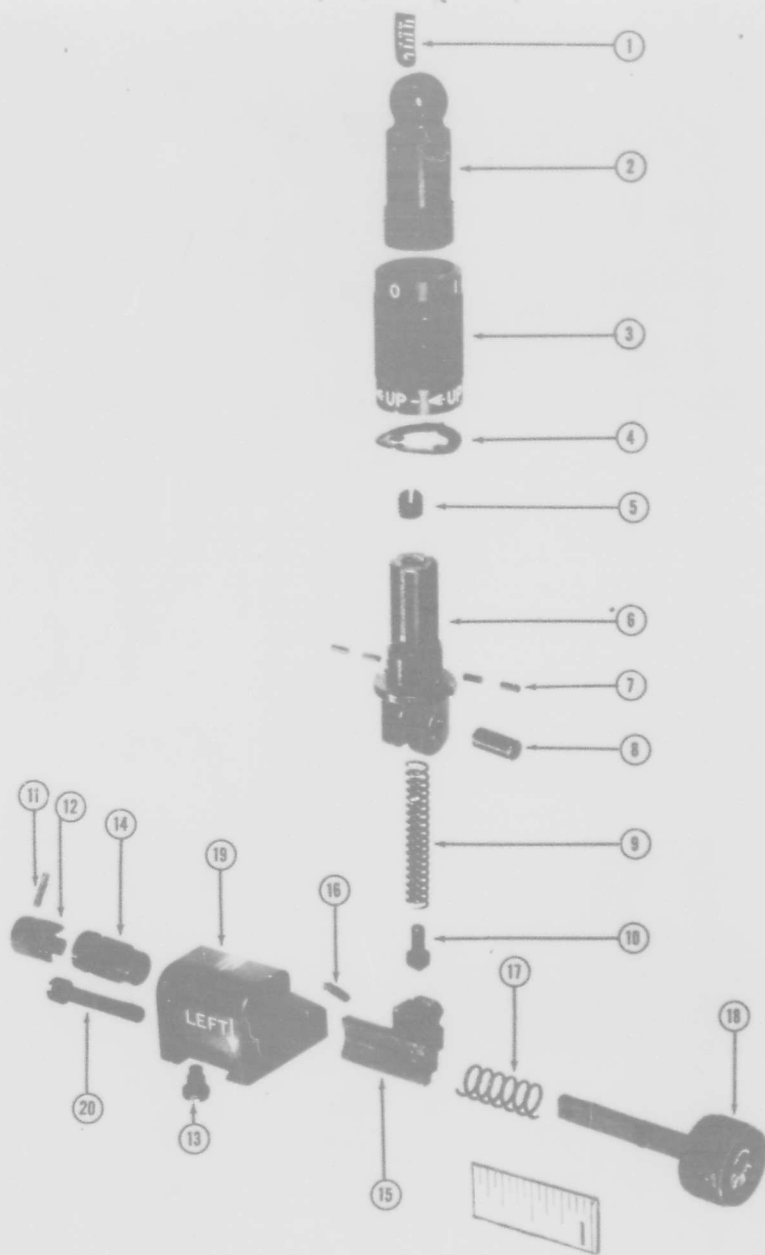

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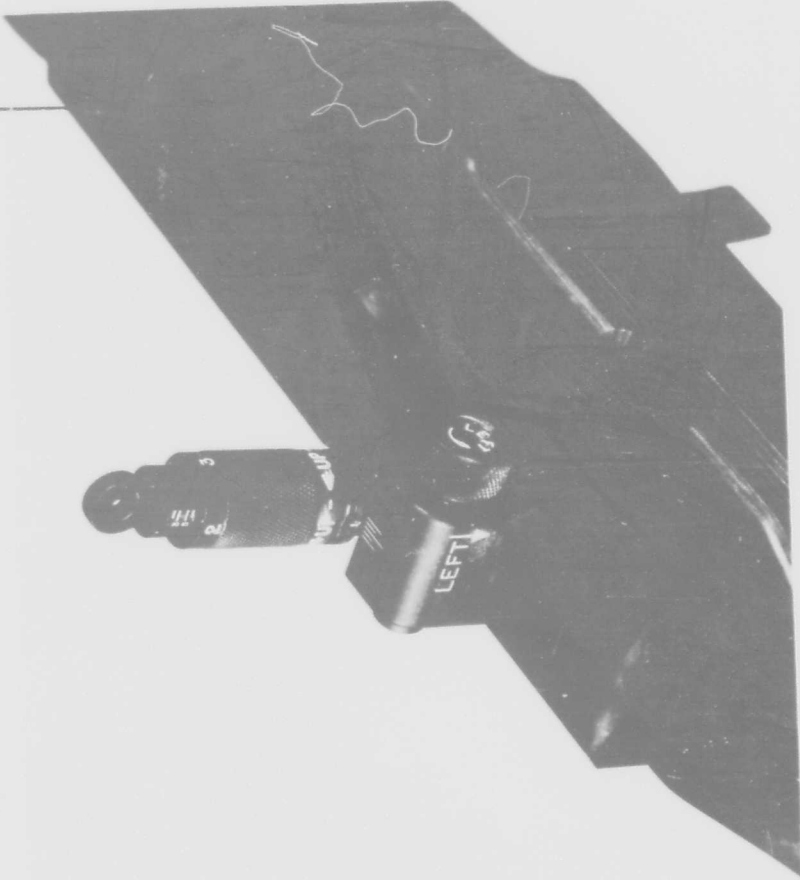

WILLIAM W. HOLMES
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7142-SA SPRINGFIELD ARMORY - ORDNANCE DEPT. 22 Dec. 1949
 REAR SIGHT GROUP SA-22284 - U.S. Rifle Cal. .30 T-25
 Parts removed and shown in relative positions

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143-SA SPRINGFIELD ARMORY - ORDNANCE DEPT. 22 Dec. 1949
REAR SIGHT SA-22334 - U.S. Rifle Cal. 30 T-25
Assembled

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