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TM 9-1223

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE

TWIN CAL. .50

MACHINE GUN MOUNT M33

AND

MULTIPLE CAL. .50

MACHINE GUN MOUNT M45

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Ordnance maintenance lubrication instructions in this Technical Manual, together with instructions in TM 9-710, dated 23 February 1944, and War Department Lubrication Order No. 118, dated 27 March 1943, supersede OFSB 6-G-147A, dated 27 March 1943.

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1 JUNE 1944

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WAR DEPARTMENT
Washington 25, D. C., 1 June 1944

TM 9-1223, Ordnance Maintenance: Twin Cal. .50 Machine Gun Mount M33 and Multiple Cal. .50 Machine Gun Mount M45, is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

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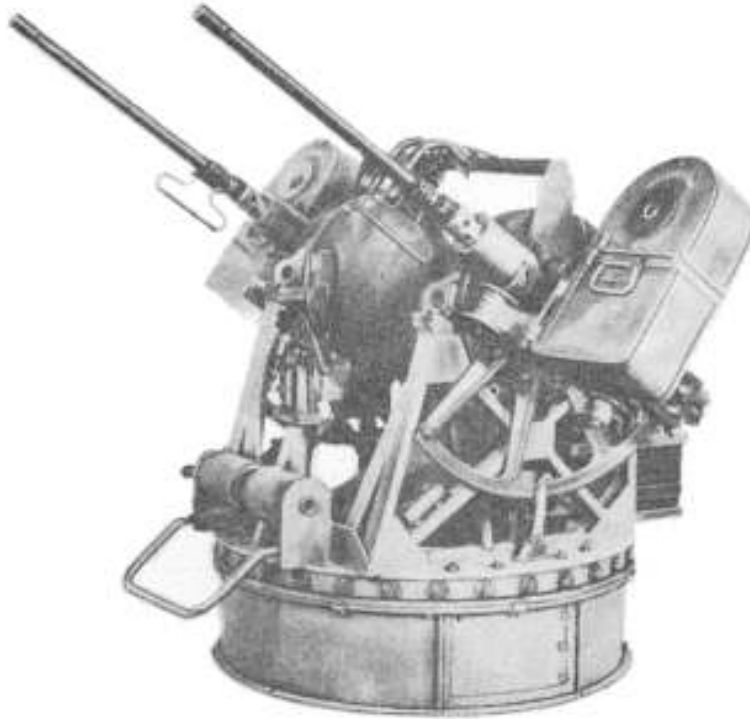
(For explanation of symbols, see FM 21-6.)

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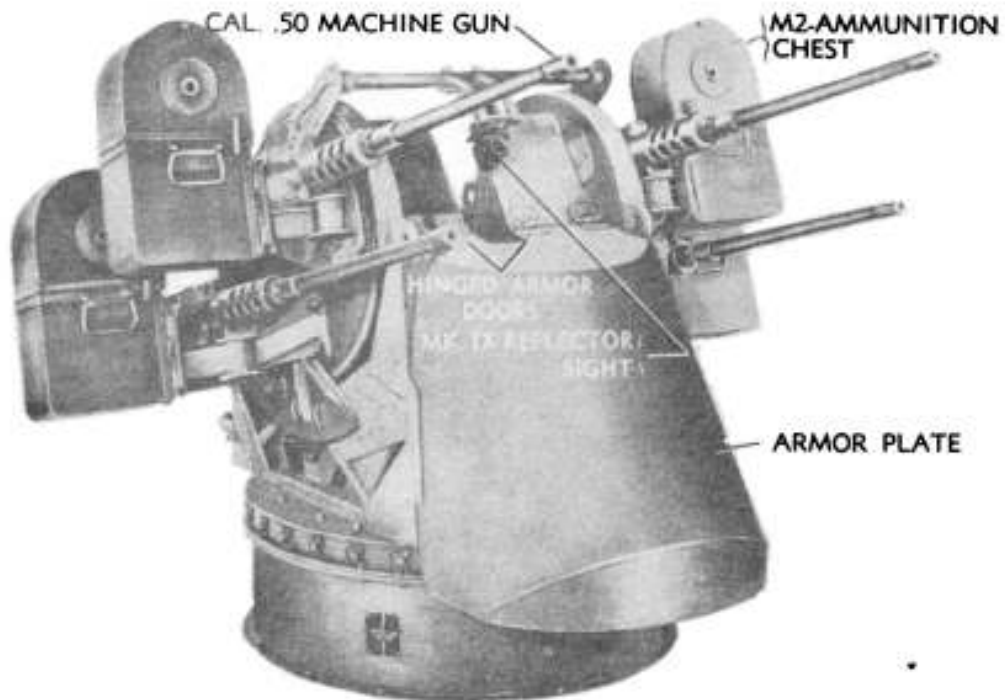
TM 9-1223

**ORDNANCE MAINTENANCE – TWIN CAL. .50 MACHINE GUN MOUNT M33
AND MULTIPLE CAL. .50 MACHINE GUN MOUNT M45**



RA PD 82620

Figure 1 – Twin Cal. .50 Machine Gun Mount M33 (Without Armor)



RA PD 59423

Figure 2 – Multiple Cal. .50 Machine Gun Mount M45 (With Armor)

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Ordnance maintenance lubrication instructions in this Technical Manual, together with instructions in TM 9-710, dated 23 February 1944, and War Department Lubrication Order No. 118, dated 27 March 1943, supersede OFSB 6-G-147A, dated 27 March 1943.

Section I

INTRODUCTION

1. SCOPE.

a. This Technical Manual is published for the information and guidance of Ordnance maintenance personnel. It contains instructions for disassembly, assembly, inspection, maintenance, and repair of the Twin cal. .50 Machine Gun Mount M33 and the Multiple cal. .50 Machine Gun Mount M45, supplementary to those in TM 9-223. This manual does not contain information on operation, adjustment, and maintenance normally performed by using arms since such information is available to Ordnance maintenance personnel in TM 9-223.

2. CHARACTERISTICS.

a. The twin and multiple machine gun mounts (figs. 1 and 2) are power-driven, semiarmored gun mounts with self-contained power units. They can be mounted on a half-track, trailer, or any suitable fixed base or on the ground. The mounts can be traversed through 360 degrees and elevated through an arc of -10 degrees to +90 degrees from the horizontal. Fire is directed by a pair of control handles placed directly in front of the operator's seat within the mount.

3. DIFFERENCES BETWEEN MODELS.

a. The major difference between M33 and M45 Mounts is that the M33 carries *two* caliber .50 machine guns and the M45 carries *four* caliber .50 machine guns. Operation, controls and component parts are similar on both mounts, with necessary structural and electrical changes made on the M45 mounts to accommodate two machine guns on each trunnion. Specific differences between the two models are listed below:

(1) GUNS. On the M33 Mount, the two guns are mounted through the agency of ring spring adapters. Two studs projecting from the adapter casing are latched in the forward mounting yoke. The four guns for the M45 Mount use heavy barrel supports in place of the ring spring adapters and are mounted by gun securing pins which pass through the forward gun receiver hole.

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**ORDNANCE MAINTENANCE — TWIN CAL. .50 MACHINE GUN MOUNT M33
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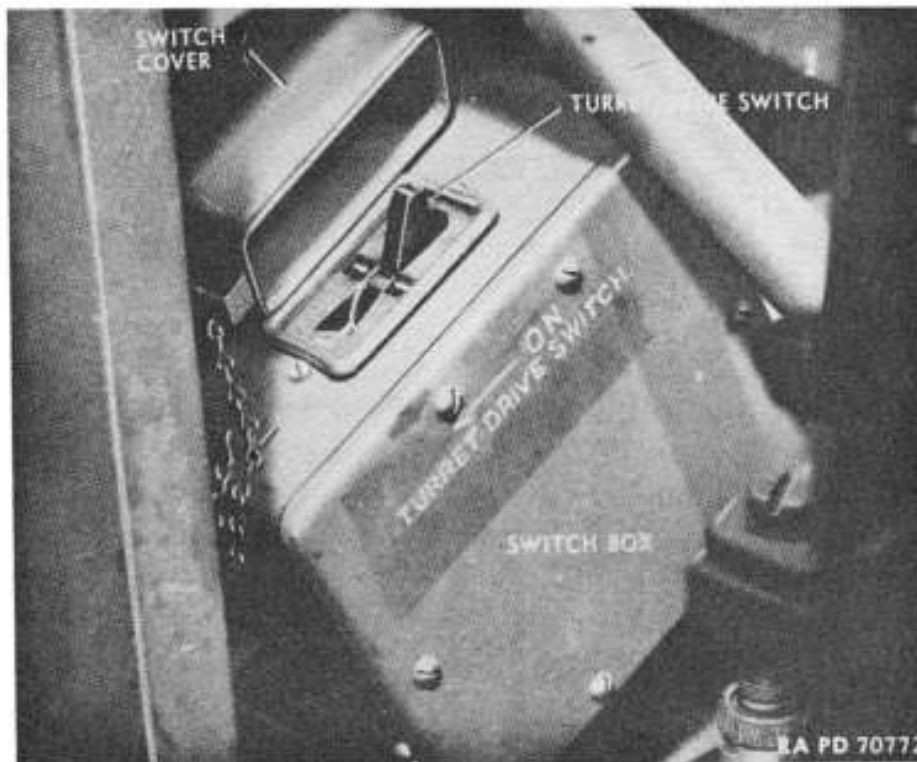


Figure 3 — Turret Drive Switch Box of Early Manufacture — M45 Mount

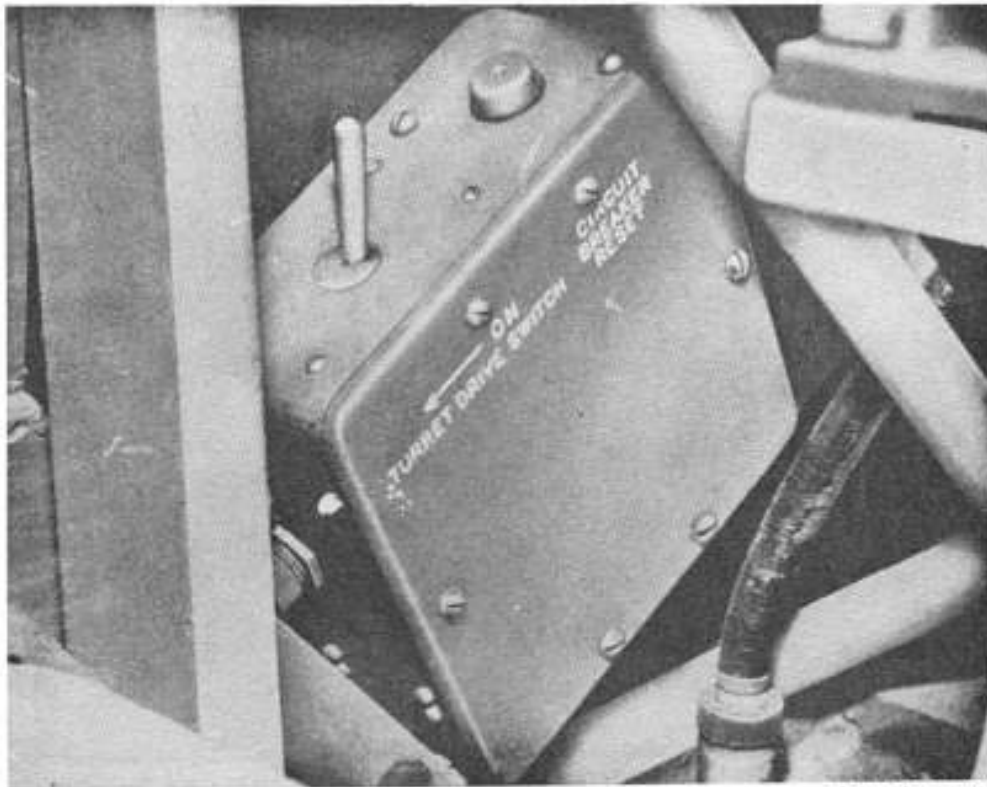
NOTE: *M33 Guns with ring spring adapters can be assembled on M45 Mounts. Guns with heavy barrel supports cannot be assembled on M33 Mounts.*

(2) ELECTRIC CIRCUITS.

(a) M45 Mount. The two 6-volt storage batteries are connected in series to supply power for the turret drive motor, firing circuit relay, and for the four solenoids in the firing circuit. They also supply current for the indicator lamps in the firing circuit and the motor overheat circuit and for the Mk. IX Reflector Sight. The turret drive switch is located on the mount frame below the gunner's right hand. A sight interlock switch mounted on the side of the turret drive switch box permits illumination of the Mk. IX Sight for bore-sighting adjustments without operating the power drive. The firing circuit switch may be operated independently, so that the guns may be fired without the turret drive operating.

(b) M33 Mount. The two storage batteries supply power for the turret drive motor, the two firing solenoids, and for the light bulbs in the firing circuit indicator lamp and the Mk. IX Reflector Sight. The batteries are connected in series with the negative side grounded to the mount frame. Power is taken off the positive terminal. The power charge is connected across the batteries, and maintains the

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**Figure 4 – Turret Drive Switch Box of Present Manufacture
– M45 Mount**

charge. All circuits stem from a large junction box mounted on the frame in back of the gunner's seat. The M33 Mount does not have the following: motor thermostat, overheat lamp, firing circuit relay, sight interlock switch, or circuit breaker reset button as provided on M45 Mounts. The turret drive switch must be closed in order to energize the firing circuit. The Mk. IX Reflector Sight may be illuminated independently of the turret drive circuit.

b. Differences Between Early and Late M45 Mounts.

(1) The following additions or modifications have been made on the late model M45 Mounts:

- (a) The voltmeter has been removed and a hydrometer installed.
- (b) The combination turret drive switch and circuit breaker has been replaced with a turret drive switch and separate circuit breaker equipped with reset button. The metal snap-on switch cover on top of box has been omitted (figs. 3 and 4). A capacitor for spark suppression has been added to the wiring circuit in the box (fig. 5).

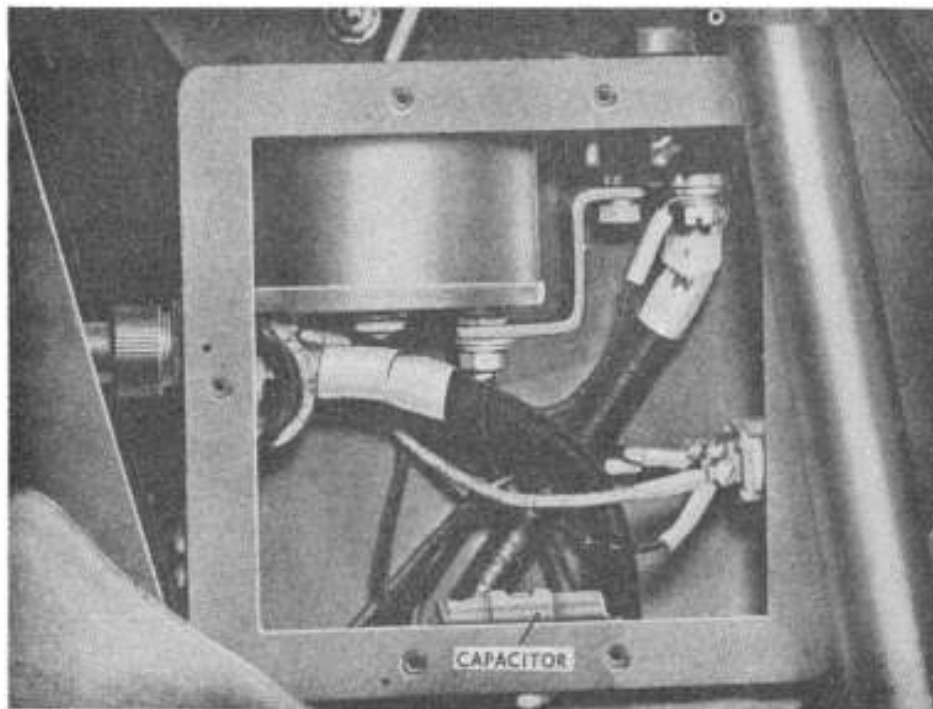
(c) Batteries of the same capacity, but with larger physical dimensions have been installed.

(d) Foot platforms for the right and left cannoneers have been installed at the rear of the mount.

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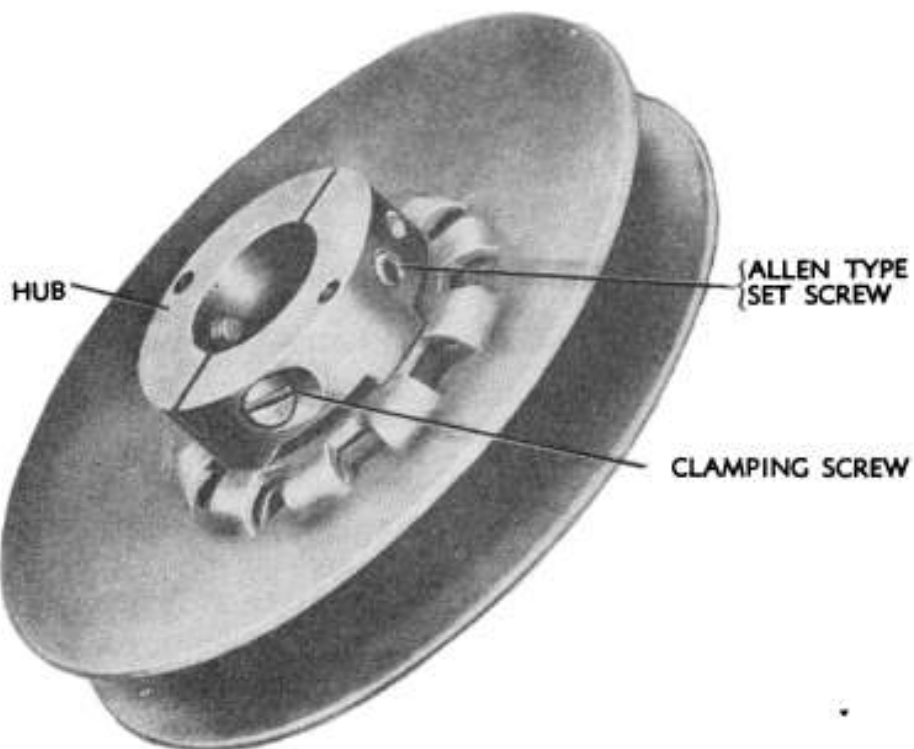
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**ORDNANCE MAINTENANCE — TWIN CAL. .50 MACHINE GUN MOUNT M33
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**Figure 5 — Capacitor in Position in Turret Drive Switch Box
— M45 Mount**



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Figure 6 — Power Drive Pulley With Split Hub Clamping Feature