

RESTRICTED

WAR DEPARTMENT

TECHNICAL MANUAL



**MEDIUM TRACTOR M4
(ALLIS-CHALMERS)**

FEBRUARY 1, 1943

RESTRICTED

TECHNICAL MANUAL
No. 9-785

WAR DEPARTMENT
Washington, February 1, 1943

MEDIUM TRACTOR M4

(ALLIS-CHALMERS)

Prepared under the direction of the
Chief of Ordnance

(with the cooperation of the Allis-Chalmers Manufacturing Company)

CONTENTS

PART ONE—Operating Instructions

| SECTION | | Paragraphs | Pages |
|----------------|----------------------------------|-------------------|--------------|
| I. | Introduction | 1- 3 | 4- 6 |
| II. | Description | 4- 5 | 7- 16 |
| III. | Operating instructions | 6- 21 | 17- 26 |
| IV. | Lubrication | 22- 25 | 27- 33 |
| V. | Preventive maintenance | 26- 32 | 34- 37 |
| VI. | General care and preservation .. | 33- 34 | 38 |
| VII. | Painting | 35- 40 | 39- 41 |
| VIII. | Materiel affected by gas | 41- 44 | 42- 44 |

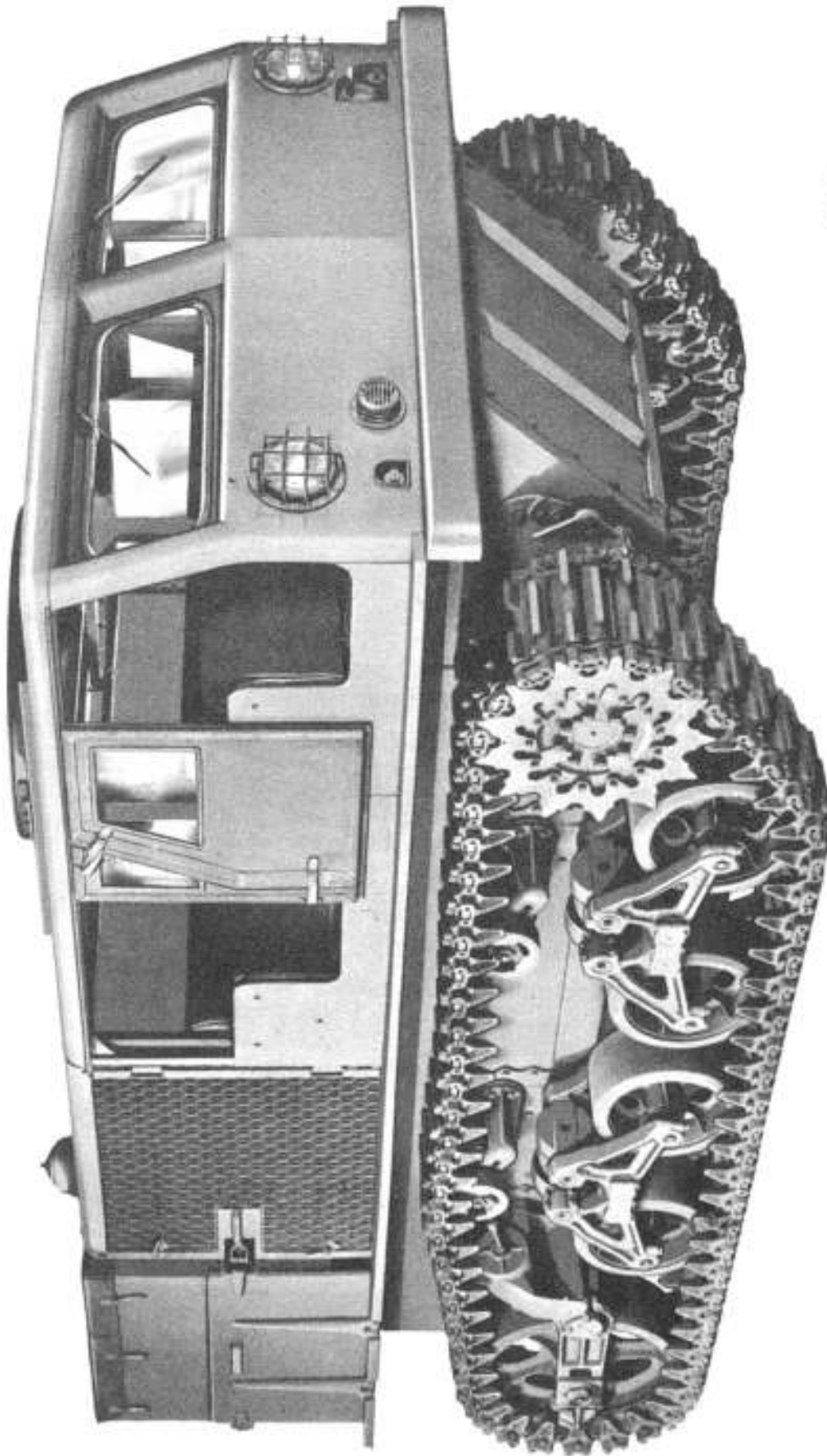
PART TWO—Organization Instructions

| | | | |
|-------|--|--------|--------|
| IX. | General information on maintenance | 45 | 45- 52 |
| X. | Tools and equipment | 46- 47 | 53 |
| XI. | Engine | 48- 52 | 54- 63 |
| XII. | Fuel and air system | 53- 61 | 64- 72 |
| XIII. | Cooling system (engine, transmission and differential, and torque converter) | 62- 66 | 73- 86 |
| XIV. | Lubrication system | 67- 69 | 87- 92 |

TM 9-785**MEDIUM TRACTOR M4**

| | Paragraphs | Pages |
|---|-------------------|--------------|
| SECTION XV. Electrical system | 70– 77 | 93–120 |
| XVI. Instruments | 78– 90 | 121–130 |
| XVII. Trailer brake control system ... | 91– 93 | 131–140 |
| XVIII. Torque converter, transmission and differential, and final drives | 94– 97 | 141–153 |
| XIX. Master clutch | 98–100 | 154–156 |
| XX. Steering brakes | 101–104 | 157–165 |
| XXI. Tracks and suspensions | 105–110 | 166–177 |
| XXII. Winch and power take-off | 111–114 | 178–183 |
| XXIII. Storage and shipment | 115–117 | 184–187 |
| XXIV. References | 118–119 | 188–189 |
| INDEX | | 190–197 |

MEDIUM TRACTOR M4



RA PD 59601

Figure 1 — Medium Tractor M4 — Right Front View

MEDIUM TRACTOR M4

PART ONE — Operating Instructions

Section I

INTRODUCTION

| | Paragraph |
|---|-----------|
| Purpose and scope | 1 |
| Content and arrangement of manual | 2 |
| References | 3 |

1. PURPOSE AND SCOPE.

a. This technical manual is intended to serve temporarily (pending the publication of a more complete revision) to give information and guidance to personnel of the using arms charged with the operation, maintenance and minor repairs of this materiel.

2. CONTENT AND ARRANGEMENT OF MANUAL.

a. Part One consists of specifications and photographs of the machine, lubrication charts and specifications, and general operating instructions. Part Two consists of illustrations and instructions on adjustments and minor repairs. This materiel has been prepared by the manufacturer's field service department, and all instructions given herein should be followed in detail to insure continuous reliable performance of the machine.

3. REFERENCES.

a. Section XXIII, at the end of this temporary manual, lists all standard nomenclature lists, technical manuals and other publications prepared or being prepared for the materiel described herein.

INTRODUCTION

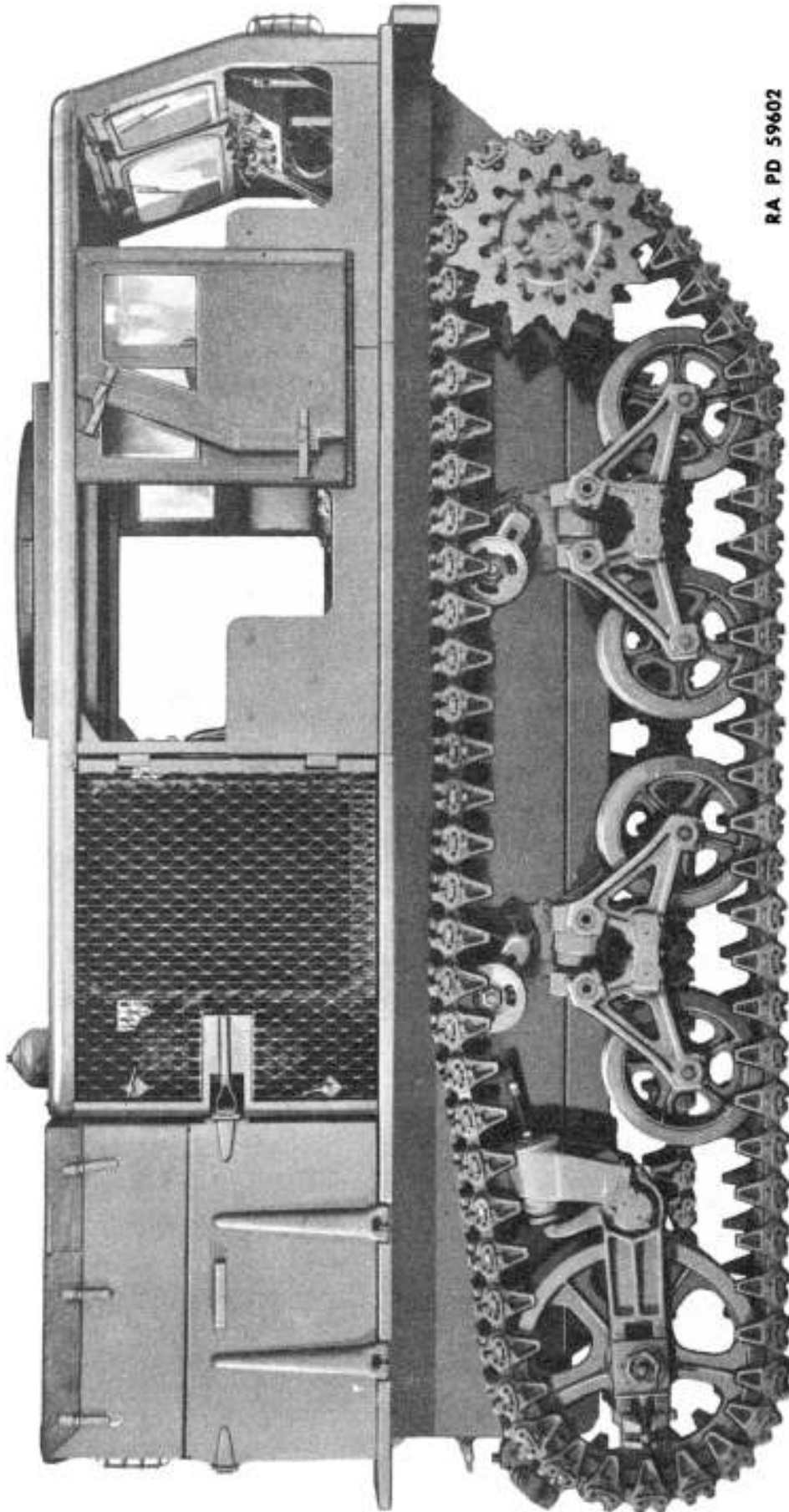
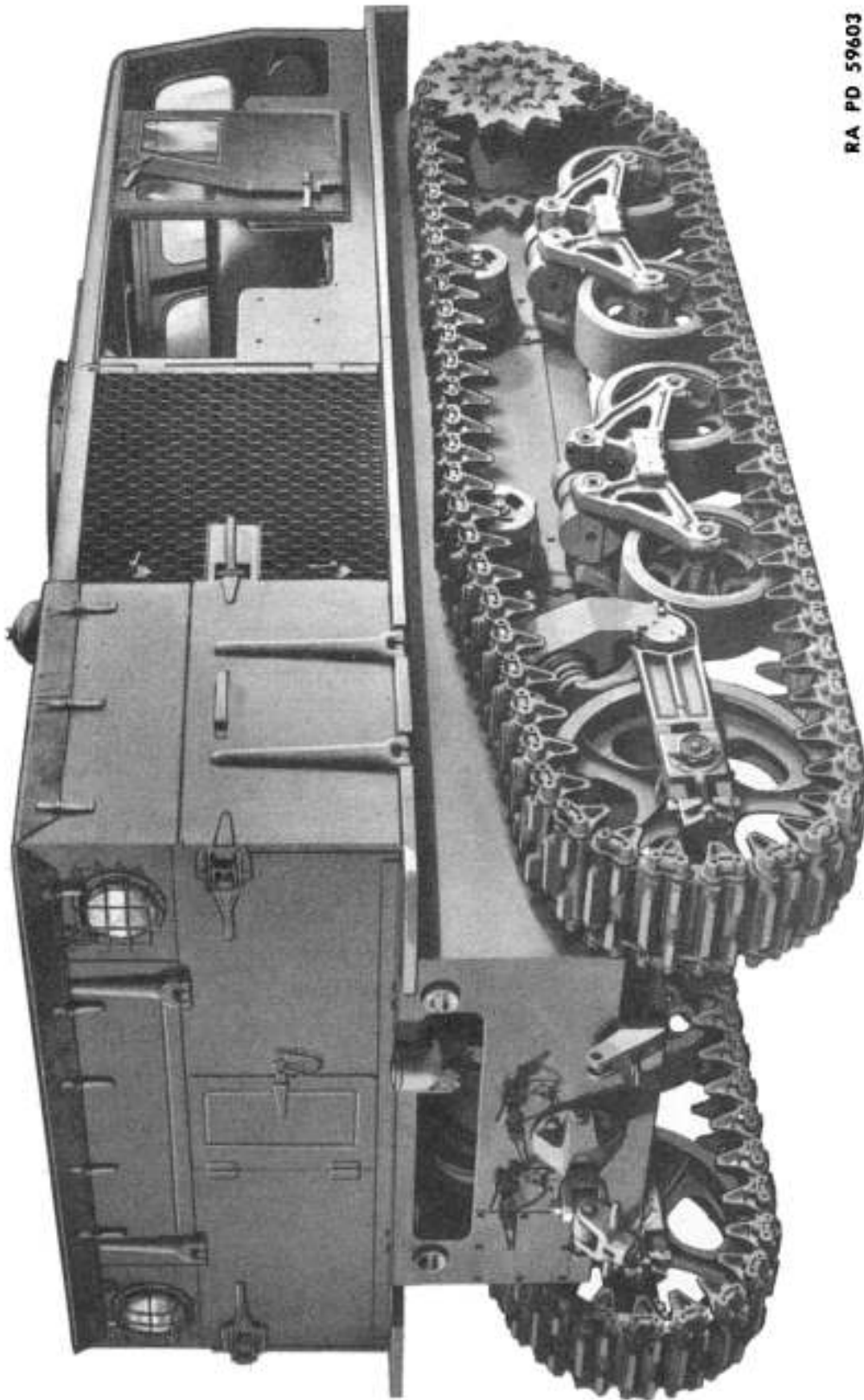


Figure 2—Medium Tractor M4—Right Side

MEDIUM TRACTOR M4



RA PD 59603

Figure 3—Medium Tractor M4—Right Rear View

Section II

DESCRIPTION

| | Paragraph |
|----------------|-----------|
| Description | 4 |
| Tabulated data | 5 |

4. DESCRIPTION.

a. **General.** This tractor is of the crawler or track-laying type and may be used for either highway or cross-country travel even under the difficult operating conditions provided by mountains, swamps, sand, or where it is necessary to cross small unbridged trenches. It has 3 forward speeds and 1 reverse speed, and because of its relatively low center of gravity, the tractor can easily climb slopes which may be as steep as 30 degrees, depending on the kind of footing available and the load being pulled.

b. **Engine.** Power is supplied by a 6-cylinder, water-cooled, 4-cycle, valve-in-head, gasoline engine (Waukesha) with a maximum rated horsepower of 225 at 2,100 revolutions per minute.

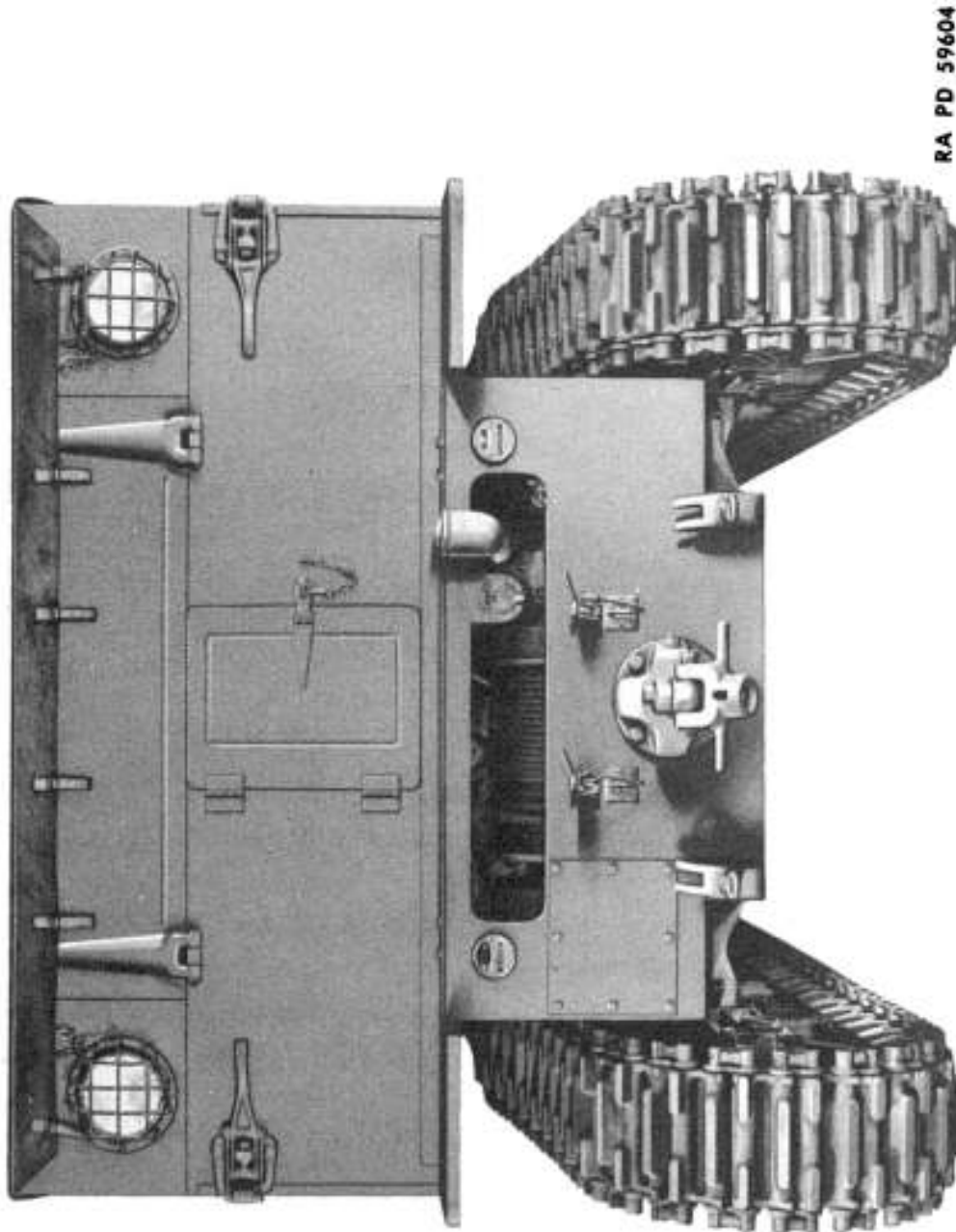
c. **Steering.** Steering is accomplished by means of a controlled differential. The action is controlled by means of brakes and hand levers.

d. **Seats.** The cab is divided into 2 compartments, with seating room for the driver and 2 men in the front compartment and double seats in the rear compartment accommodating 8 men. The cushions are canvas zipper bags padded with blankets. Back cushions are leather covered.

e. **Equipment.** Equipment on the tractor includes batteries and electrical ignition and lighting system, electric starting motor and generator, speedometer and engine tachometer, fire extinguisher, electric and air trailer brake controls, and winch. A gun ring in top of cab provides for mounting of a 30-mm or 50-mm machine gun, and an ammunition box on rear provides for carrying of 90-mm or 155-mm ammunition. Tools are carried in a box on left side fender.

f. **Tractor and Engine Numbers.** Engine number will be found on a plate on the right side of the engine block (viewing engine from flywheel end). Tractor number will be found on plate on rear of tractor.

MEDIUM TRACTOR M4



RA PD 59604

Figure 4—Medium Tractor M4—Rear View