

**TM 9-1727D**

**RESTRICTED**

**WAR DEPARTMENT**

**TECHNICAL MANUAL**



**ORDNANCE MAINTENANCE**

**TRANSFER UNIT FOR LIGHT TANKS M5, M5A1,  
AND 75-MM HOWITZER MOTOR CARRIAGE M8**

**APRIL 28, 1943**

**FOR ORDNANCE PERSONNEL ONLY**



TM 9-1727D

**RESTRICTED**

**TECHNICAL MANUAL }  
No. 9-1727D }**

**WAR DEPARTMENT  
Washington, April 28, 1943**

**ORDNANCE MAINTENANCE**

**TRANSFER UNIT FOR LIGHT TANKS M5, M5A1,  
AND 75-MM HOWITZER MOTOR CARRIAGE M8**

---

**Prepared under the direction of the  
Chief of Ordnance**

**(with the cooperation of the Cadillac Motor Car Division,  
General Motors Corporation)**

---

**CONTENTS**

	<b>Paragraphs</b>	<b>Pages</b>
<b>SECTION I. Introduction</b> .....	<b>1-3</b>	<b>1-6</b>
<b>II. Transfer unit</b> .....	<b>4-23</b>	<b>7-195</b>
<b>III. References</b> .....	<b>24-25</b>	<b>196</b>
<b>INDEX</b> .....		<b>197-201</b>

TM 9-1727D

1-3

# **ORDNANCE MAINTENANCE—TRANSFER UNIT FOR LIGHT TANKS M5, M5A1, AND 75-MM HOWITZER MOTOR CARRIAGE M8**

## **Section I**

### **INTRODUCTION**

	Paragraph
Purpose and scope .....	1
Description of vehicles.....	2
References .....	3

#### **1. PURPOSE AND SCOPE.**

a. TM 9-1727D is published for the information and guidance of all ordnance personnel charged with the maintenance and overhauling of Light Tanks M5, M5A1, and 75-mm Howitzer Motor Carriage M8. It includes complete maintenance information on the transfer unit. The other technical manuals covering these vehicles are listed in section III.

#### **2. DESCRIPTION OF VEHICLES.**

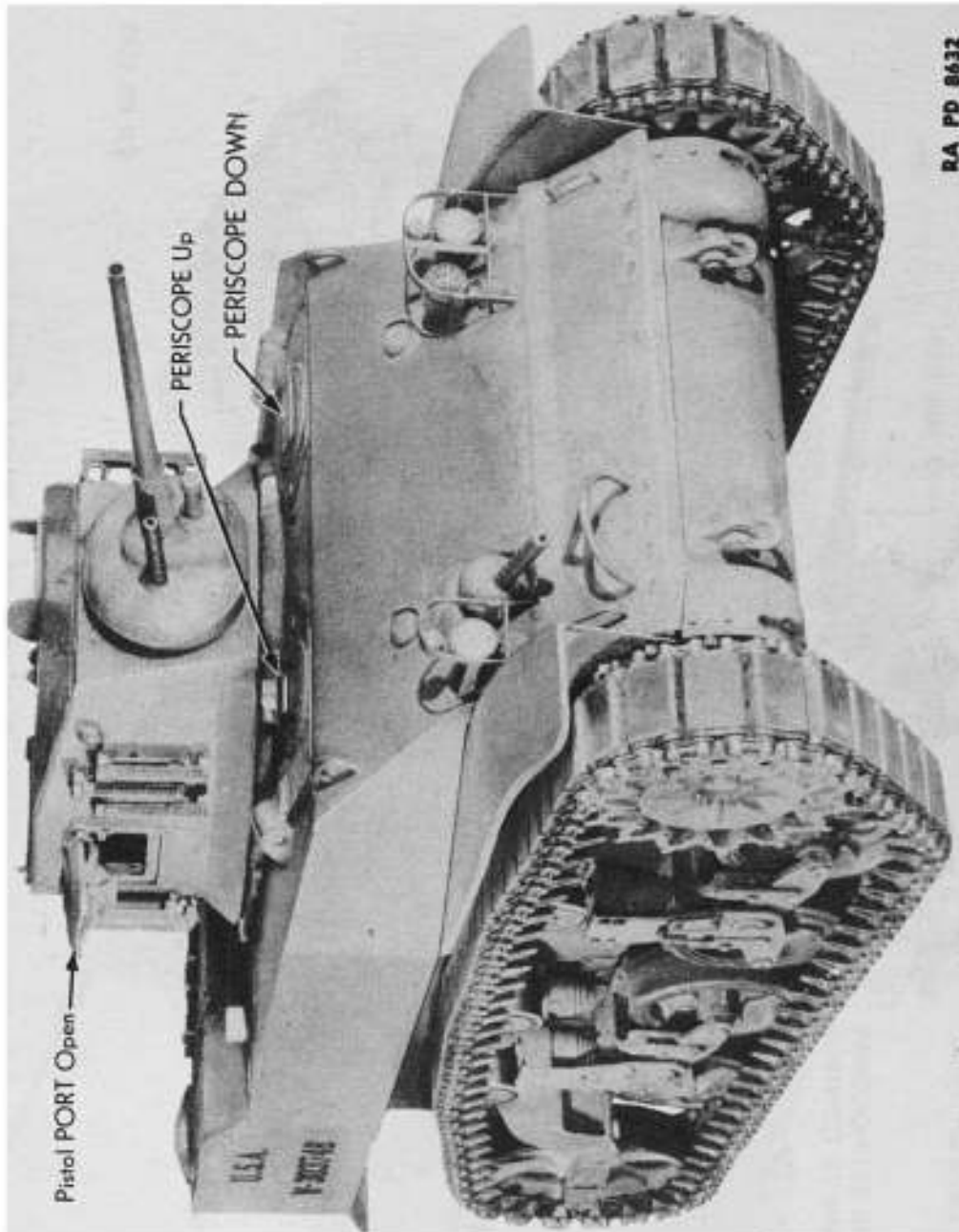
a. The Light Tanks M5 and M5A1 are armored, full-tracklaying combat vehicles, each carrying a crew of four men. They are each powered by two liquid-cooled, 90-degree, V-type, 8-cylinder engines, located in the engine compartment in the rear of the hull. Power is transmitted to the final drives and tracks through two Hydra-Matic transmissions, two propeller shafts, a two-speed, step-down transfer unit, and the controlled differential (fig. 4).

b. The Motor Carriage M8 (fig. 3) is an armored, full-tracklaying, self-propelled mount for a 75-mm howitzer. It carries a crew of four men. It is powered by the same engines, transmissions, and power train as the Light Tank M5.

#### **3. REFERENCES.**

a. Section III of this volume lists all technical manuals, standard nomenclature lists, and other publications relative to the materiel described herein.

## INTRODUCTION

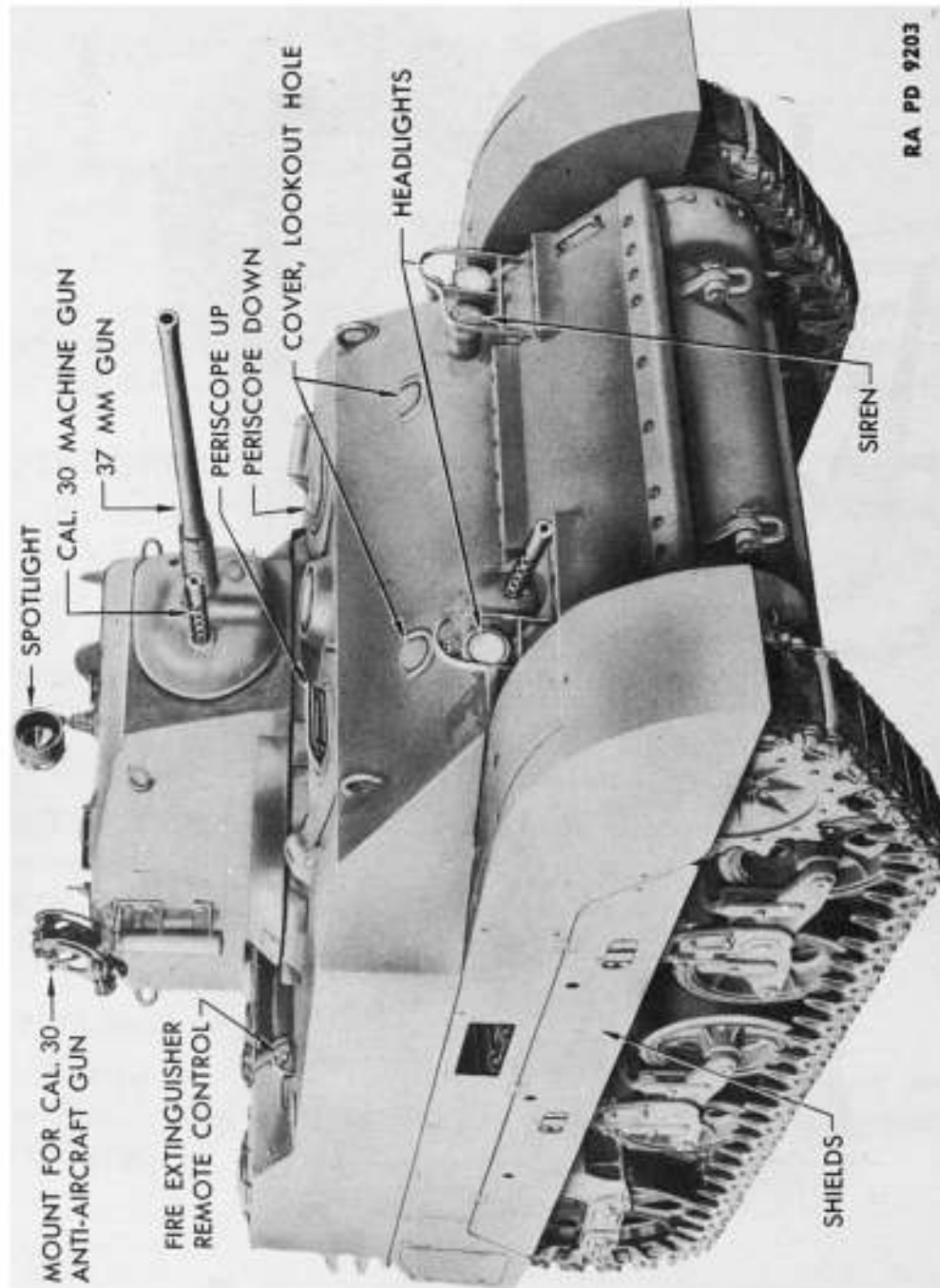


**Figure 1 — Light Tank M5 — Right Front View**

TM 9-1727D

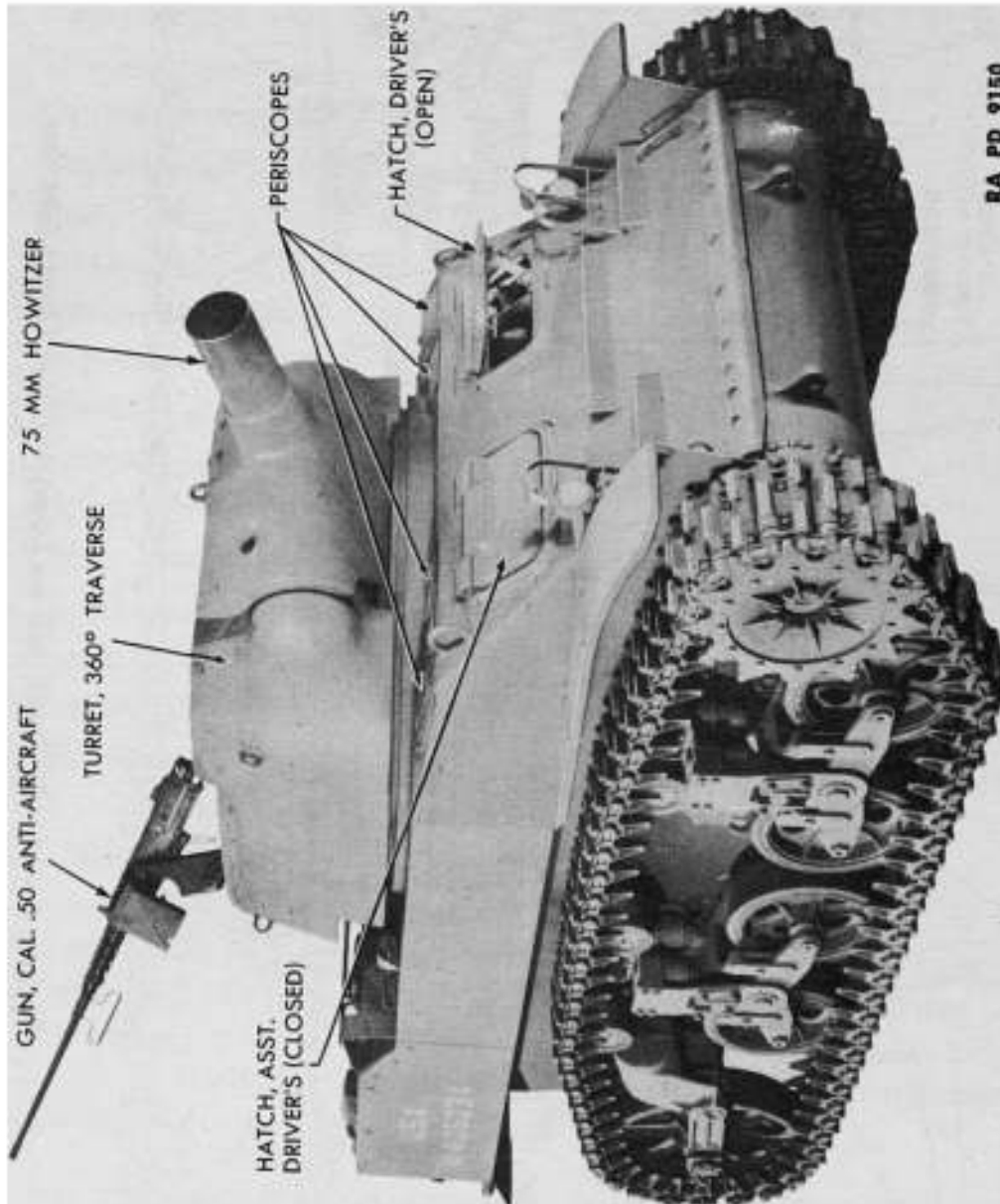
3

**ORDNANCE MAINTENANCE—TRANSFER UNIT FOR LIGHT TANKS  
M5, M5A1, AND 75-MM HOWITZER MOTOR CARRIAGE M8**



**Figure 2 — Light Tank M5A1 — Right Front View**

## INTRODUCTION

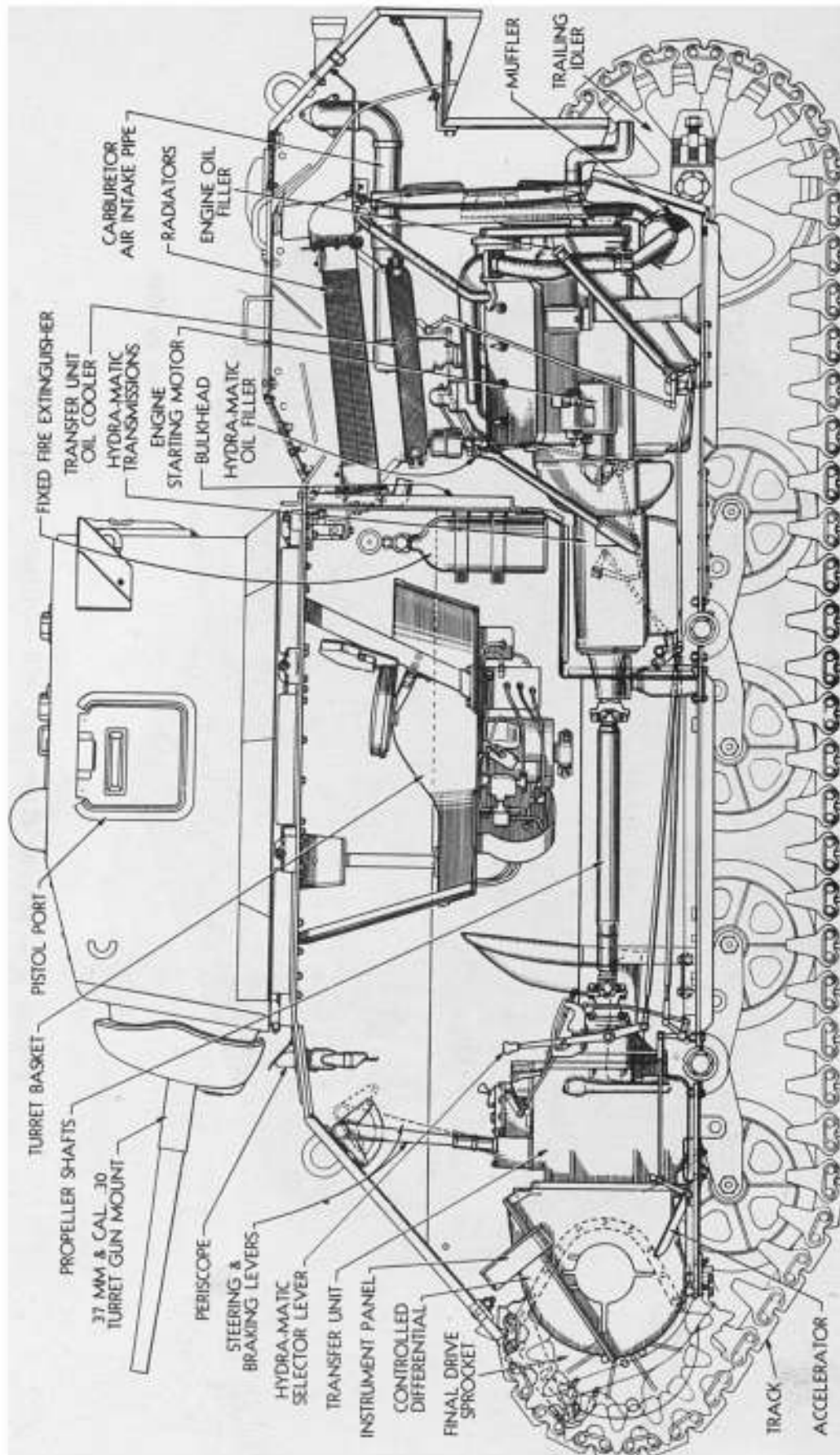


**Figure 3 — Motor Carriage M8 — Right Front View**

TM 9-1727D

3

# ORDNANCE MAINTENANCE—TRANSFER UNIT FOR LIGHT TANKS M5, M5A1, AND 75-MM HOWITZER MOTOR CARRIAGE M8



RA PD 8619

**Figure 4 — Light Tank M5 — Longitudinal Cross Section**



## Section II

**TRANSFER UNIT**

	Paragraph
Description .....	4
Operation .....	5
Tabulated data and specifications .....	6
Allocation of maintenance duties by echelons.....	7
Inspection in vehicle .....	8
Trouble shooting .....	9
Service in vehicle.....	10
Replacement of components in vehicle.....	11
Removal of transfer unit from vehicle.....	12
Disassembly of transfer unit .....	13
Disassembly of transfer unit components.....	14
Inspection and repair of transfer unit and components.....	15
Assembly of transfer unit components.....	16
Assembly of transfer unit .....	17
Installation of transfer unit.....	18
Limits and tolerances .....	19
Torque tightnesses .....	20
Special tools .....	21
Preparation for extreme conditions.....	22
Packing and shipping .....	23

**4. DESCRIPTION.**

a. The transfer unit performs two distinct functions. It takes the power of the two engines, delivered to the transfer unit by the propeller shafts, and combines these two power flows into one. It also provides a two-speed, hydraulic-controlled gear reduction which, combined with the reductions in the transmissions, permits a total of six forward speeds and one reverse speed.

b. The transfer unit is located in the front end of the vehicle, mounted on a flange on the rear of the controlled differential housing (fig. 5).

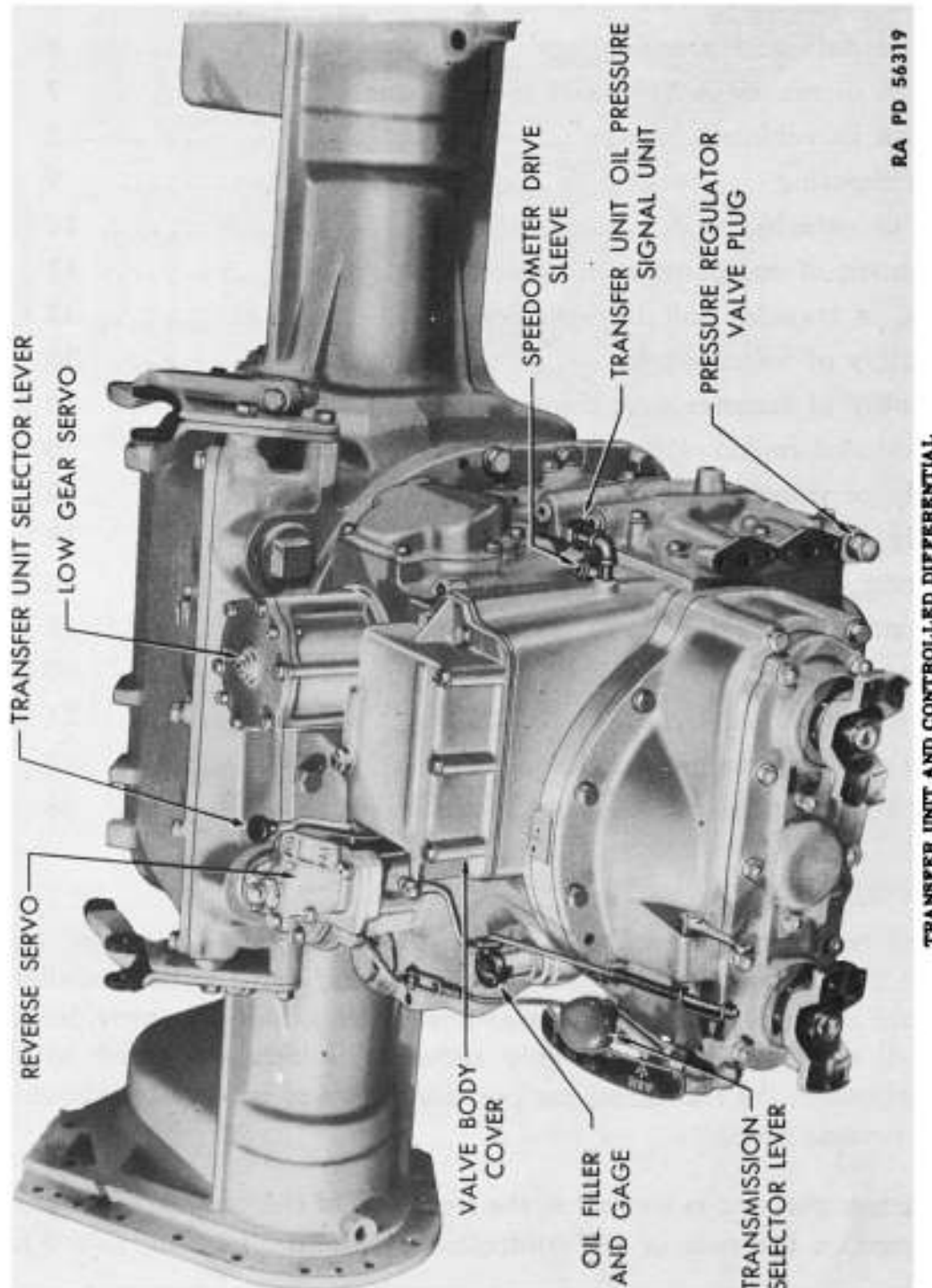
c. The transfer unit case is composed of two sections, a large main case at the front which contains the mechanism for the gear reduction unit and the hydraulic control parts, and a smaller case at the rear which contains the connector unit by means of which the torque from the two propeller shafts is combined into the one transfer unit main shaft.

72/450

TM 9-1727D

4

**ORDNANCE MAINTENANCE—TRANSFER UNIT FOR LIGHT TANKS  
M5, M5A1, AND 75-MM HOWITZER MOTOR CARRIAGE M8**



**Figure 5 — Transfer Unit and Controlled Differential**