

TM 9-1727E

RESTRICTED

WAR DEPARTMENT

TECHNICAL MANUAL



ORDNANCE MAINTENANCE

**CONTROLLED DIFFERENTIAL, FINAL DRIVE,
TRACKS AND SUSPENSION FOR
LIGHT TANKS M5, M5A1, AND
75-MM HOWITZER MOTOR CARRIAGE M8**

25 JUNE 1943

FOR ORDNANCE PERSONNEL ONLY

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Prepared under the direction of the
Chief of Ordnance

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

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ORDNANCE MAINTENANCE—CONTROLLED DIFFERENTIAL, FINAL DRIVE, TRACKS AND SUSPENSION

Section I

INTRODUCTION

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1. PURPOSE AND SCOPE.

a. Technical Manual No. 9-1727E is published for the information and guidance of all ordnance personnel charged with maintenance and overhauling of the Light Tanks M5, M5A1, and the 75-mm Howitzer Motor Carriage M8.

b. Technical Manual No. 9-1727E covers the Light Tanks M5, M5A1, and the 75-mm Howitzer Motor Carriage M8. It includes complete maintenance information on the controlled differential, final drive, and tracks and suspension. The other Technical Manuals covering these vehicles are listed in section IV.

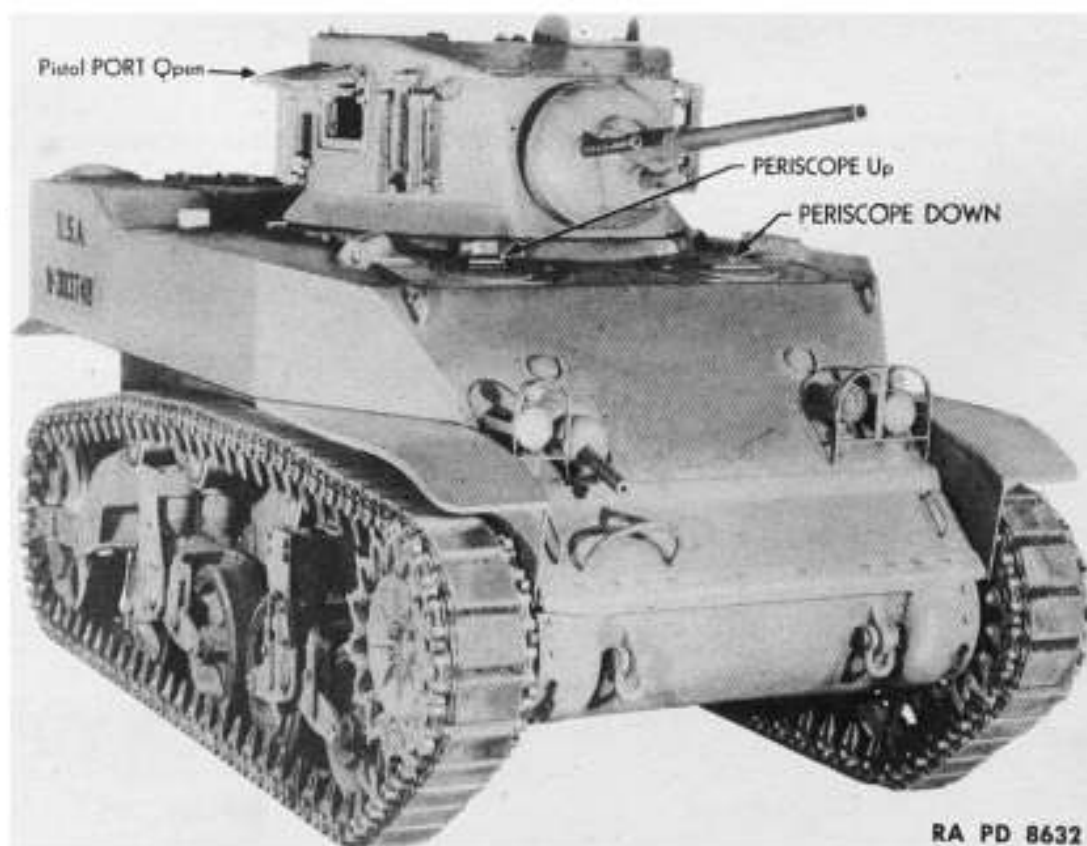


Figure 1—Light Tank M5—Right Front View

INTRODUCTION

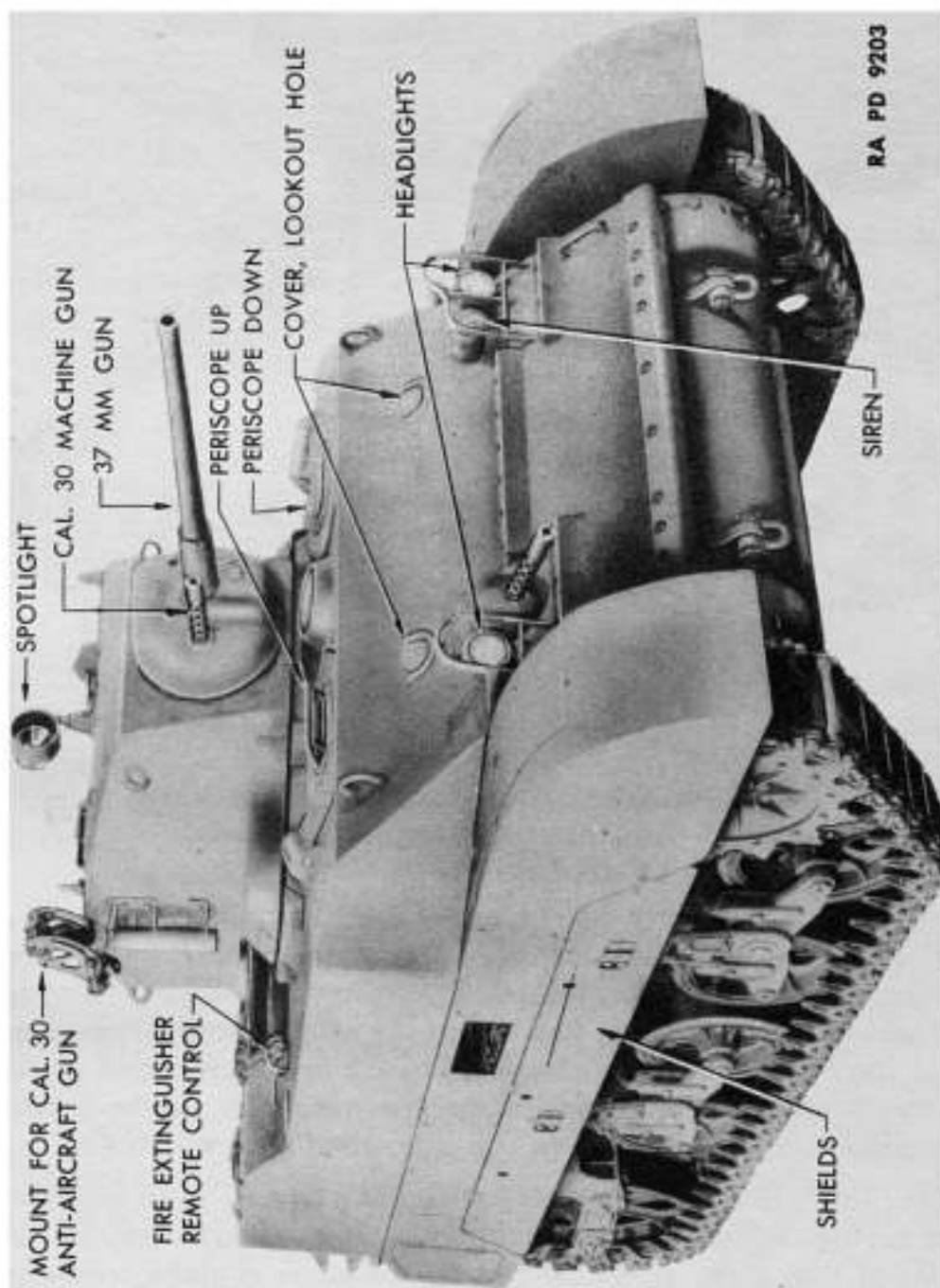


Figure 2—Light Tank M5A1—Right Front View

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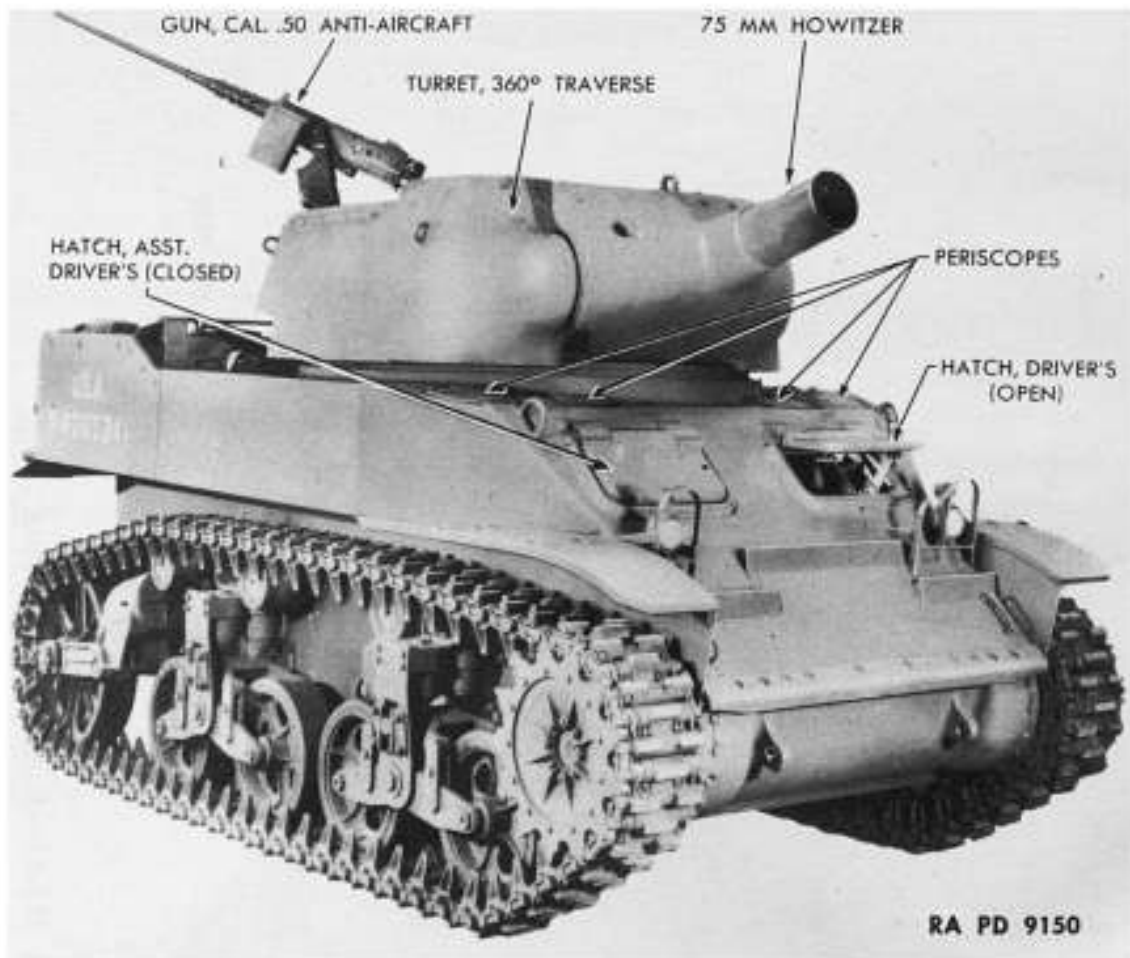


Figure 3—Motor Carriage M8—Right Front View

2. DESCRIPTION OF VEHICLES.

a. The Light Tank M5 (fig. 1) and Light Tank M5A1 (fig. 2), are armored, full track-laying combat vehicles, each carrying a crew of four men. They are each powered by two liquid-cooled, 90-degree, V-type, eight-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 75-mm Howitzer Motor Carriage M8 (fig. 3) is an armored, full track-laying, 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. ORGANIZATION MAINTENANCE.

a. **Scope.** The scope of maintenance and repair by the crew and other units of the using arms is determined by the availability of suitable tools, availability of necessary parts, capabilities of the mechanics, time available, and the tactical situation. All of these are variable and no exact system of procedure can be prescribed.

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b. Allocation of Maintenance. Indicated below are the maintenance duties for which tools and parts have been provided for the using arm personnel. Other replacements and repairs are the responsibility of ordnance maintenance personnel but may be performed by using arm personnel when circumstances permit, within the discretion of the commander concerned. Echelons and words as used in this list of maintenance allocations are defined as follows:

SECOND ECHELON: Line organization regiments, battalions, companies (first and second echelons).

THIRD ECHELON: Ordnance light maintenance companies, ordnance medium maintenance companies, ordnance divisional maintenance battalions, and post ordnance shops.

FOURTH ECHELON: Ordnance heavy maintenance companies, and service command shops.

FIFTH ECHELON: Ordnance base regiments, ordnance bases, arsenals, and manufacturers' plants.

SERVICE (Including preventive maintenance): (par. 23 a (1) and (2), AR 850-15 (10-6-42)).

Consists of servicing, cleaning, lubricating, tightening bolts and nuts, and making external adjustments of subassemblies or assemblies and controls.

REPLACE: (par. 23 a (4), AR 850-15 (10-6-42)).

Consists of removing the part, subassembly or assembly from the vehicles and replacing it with a new or reconditioned or rebuilt part, subassembly or assembly, whichever the case may be.

REPAIR: (par. 23 a (3) and (5), in part, AR 850-15 (10-6-42)).

Consists of making repairs to, or replacement of the part, subassembly or assembly that can be accomplished without completely disassembling the subassembly or assemblies, and does not require heavy welding, or riveting, machining, fitting and/or balancing.

REBUILD: (par. 23 a (5), in part, and (6), AR 850-15 (10-6-42)).

Consists of completely reconditioning and replacing in serviceable condition any unserviceable part, subassembly or assembly of the vehicle, including welding, riveting, machining, fitting, alining, balancing, assembling and testing.

NOTE: Operations allocated will normally be performed in the echelon indicated by "X." Operations allocated to the echelons as indicated by "E" may be accomplished by the respective echelons in emergencies only.

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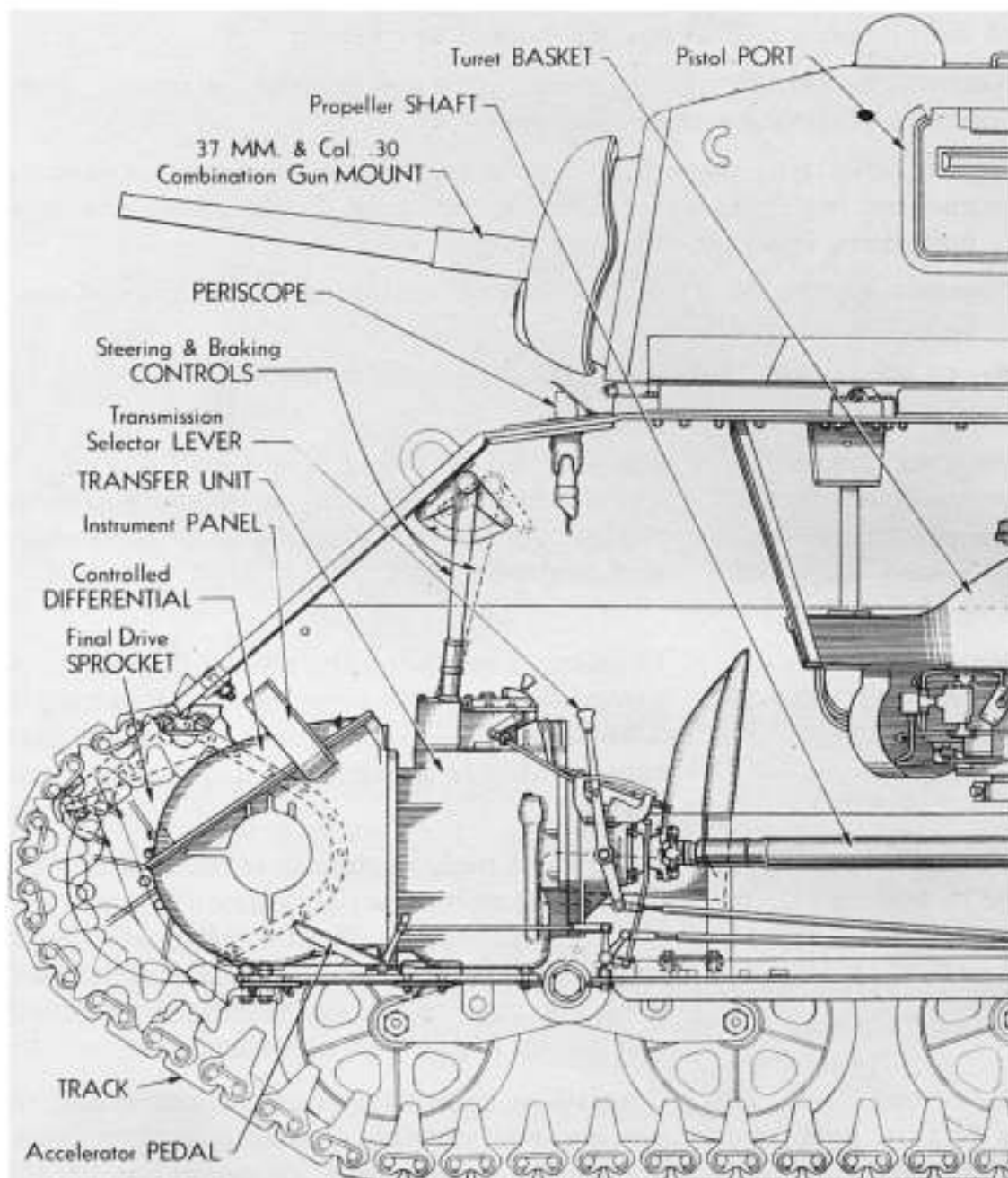


Figure 4—Light Tank M5—Sectionalized
(Balance of illustration on opposite page)

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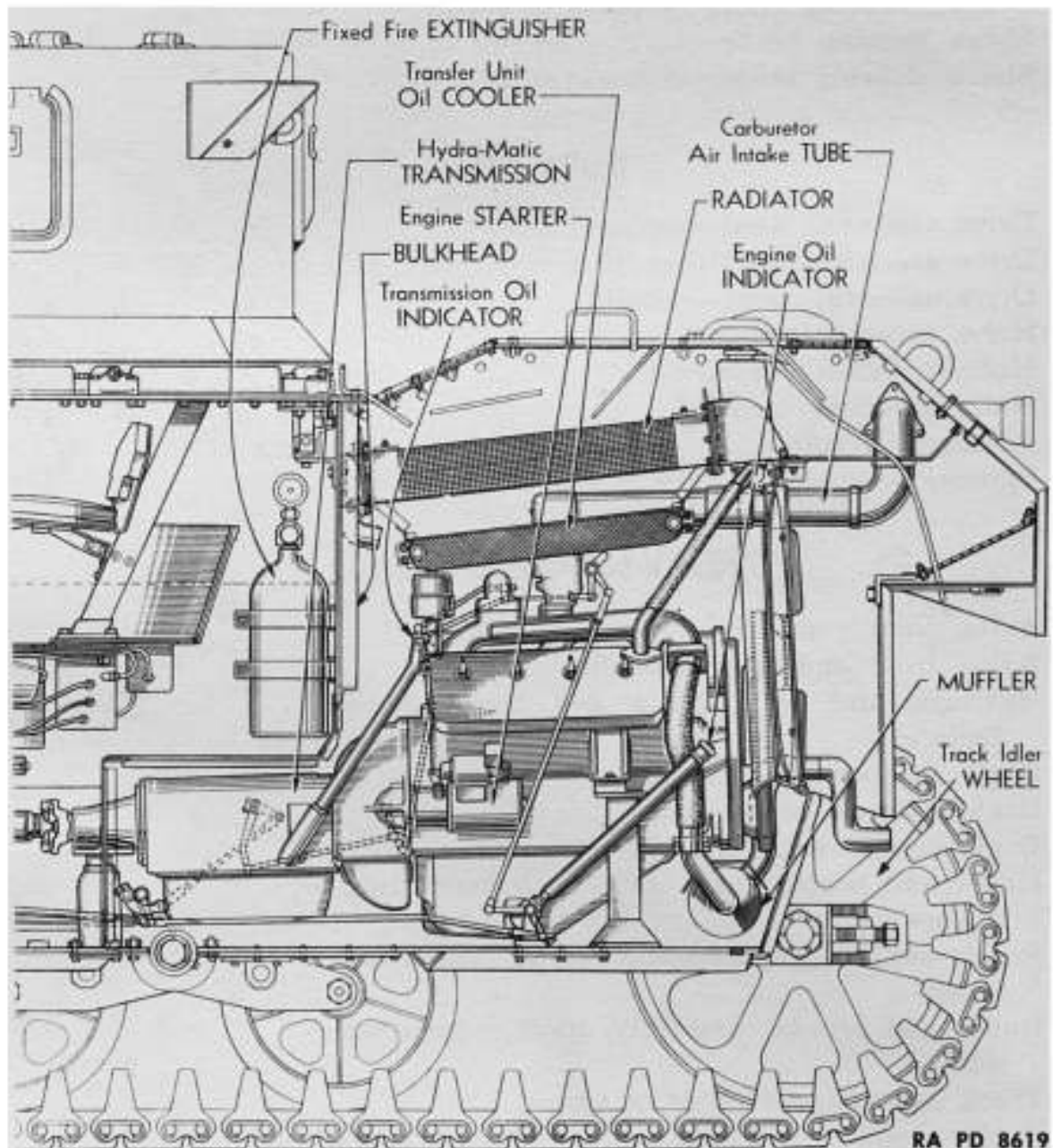


Figure 4—Light Tank M5—Sectionalized
(Balance of illustration on opposite page)

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**ORDNANCE MAINTENANCE—CONTROLLED DIFFERENTIAL,
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DIFFERENTIAL ASSEMBLY, CONTROLLED

	ECHELONS			
	2nd	3rd	4th	5th
*Differential assembly, controlled—replace		X		
Differential assembly, controlled—repair		X		
Differential assembly, controlled—rebuild			E	X
Drums, steering brake—replace or repair		X		
Shoes, steering brake—service and/or replace	X			
Shoes, steering brake—repair (reline)		X		

DRIVE, FINAL

Drive assembly, final—replace	X			
Drive assembly, final—repair		X		
Drive assembly, final—rebuild			E	X
Hubs, sprocket—replace	X			
Hubs, sprocket—repair		X		
Hubs, sprocket—rebuild			E	X
Sprockets—replace	X			
Sprockets—rebuild			E	X

TRACK SUSPENSION GROUP

Axles, front and rear—replace or repair		X		
Axles, front and rear—rebuild			E	X
Bearings, and seals, bogie and idler wheels— replace	X			
Bogie components—replace	X			
Bogie components—repair		X		
Bogie components—rebuild			E	X
Roller and bracket assembly, track supporting— replace	X			
Roller and bracket assembly, track supporting— repair		X		
Roller and bracket assembly, track supporting— rebuild			E	X
Track assembly—replace or repair	X			
Track assembly—rebuild			E	X
Wheels, bogie—replace	X			

⊙NOTE: The second echelon is authorized to remove and reinstall engine and transmission assemblies, transfer units, controlled differential assembly and other items marked by an asterisk. However, when it is necessary to replace an item marked by an asterisk with a new or rebuilt part, subassembly or unit assembly, the assembly marked by an asterisk may be removed from the vehicle by the second echelon *only after authority has been obtained from a higher echelon of maintenance.*