TM 9-1786B

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE

Power Train, Track, Suspension, and Equipment For 13-Ton, High-Speed Tractor M5

(International Harvester)

WAR DEPARTMENT • *25 FEBRUARY 1944*

FOR ORDNANCE PERSONNEL ONLY

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TM 9-1786B, Ordnance Maintenance: Power Train, Track, Suspension, and Equipment for 13-ton, High Speed Tractor M5 (International Harvester), is published for the information and guidance of all concerned.

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G. C. MARSHALL,
Chief of Staff.

OFFICIAL:
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Major General,
The Adjutant General.

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

CONTENTS

CONTENTS—Cont'd

CHAPTER 1

INTRODUCTION

1. SCOPE.

a. The instructions contained in this manual are for the information and guidance of personnel charged with the maintenance and repair of the transmission, differential, final drives, electrical system, air system, suspension, winch frame, and body, for the 13-ton, High-speed Tractor M5. These instructions are supplementary to field and technical manuals prepared for the using arms. This manual does not contain information which is intended primarily for the using arms, since such information is available to ordnance maintenance personnel in 100-series technical manuals or field manuals.

b. This manual contains a description of, and procedure for, disassembly, inspection, repair, rebuilding, and assembly of the transmission, differential, final drive, transmission lubricating system, electrical system, and winch for the 13-ton, High-speed Tractor M5. It also contains a description of, and procedure for, inspection and repair of the suspension, frame, and body; and for removal and installation of the transmission and differential.

c. TM 9-786 contains vehicle operating and maintenance instructions.

d. TM 9-1786A contains maintenance and repair information for the Continental R6572 Engine, cooling system, fuel system, clutch group, and propeller shaft.

e. TM 9-1825A contains maintenance and repair information for the distributor, generator, cranking motor, and regulator.

f. TM 9-1826C contains maintenance and repair information for Zenith Carburetors.

g. TM 9-1828A contains maintenance and repair information for AC Fuel Pumps.

h. TM 9-1829A contains maintenance and repair information for the speedometer and tachometers.

2. MWO AND MAJOR UNIT ASSEMBLY REPLACEMENT RECORD.

a. Description. Every vehicle is supplied with a copy of AGO Form No. 478, which provides a means of keeping a record of each Modification Work Order completed, or major unit assembly re-

placed. This form includes spaces for the vehicle name and U.S.A. registration number, instructions for use, and information pertinent to the work accomplished. It is very important that the form be used as directed, and that it remain with the vehicle until the vehicle is removed from service.

b. Instructions for Use. Personnel performing modifications or major unit assembly replacements must record clearly on the form a description of the work completed, and must initial the form in the columns provided. When each modification is completed, record the date, hours and/or mileage, and MWO number. When major unit assemblies such as engines, transmissions, and transfer cases, are replaced, record the date, hours and/or mileage, and nomenclature of the unit assembly. Minor repairs and minor parts and accessory replacements need not be recorded.

c. Early Modifications. Upon receipt by a third or fourth echelon repair facility of a vehicle for modification or repair, maintenance personnel will record the MWO numbers of modifications applied prior to the date of AGO Form No. 478.

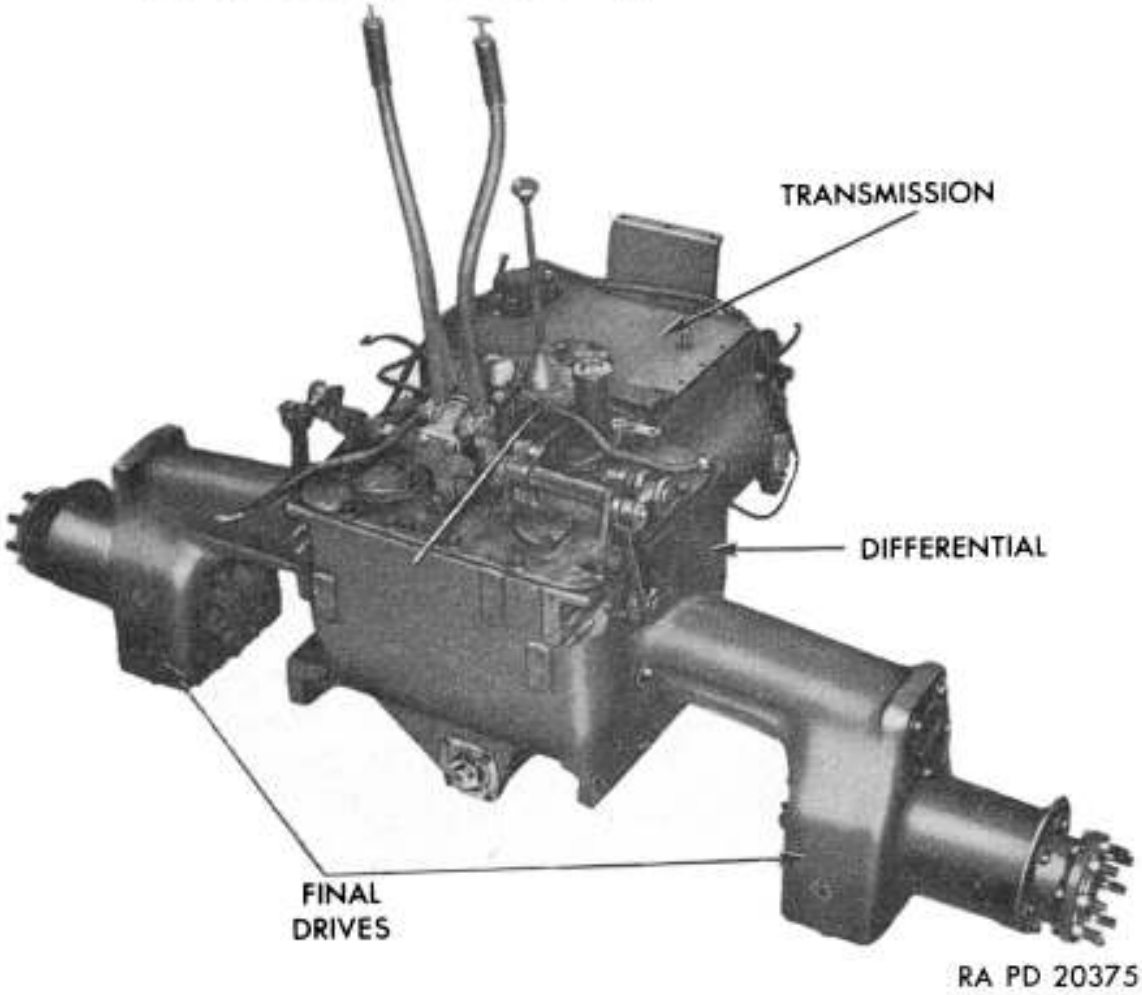

Figure 1 — Transmission, Differential, and Final Drives

CHAPTER 2

TRANSMISSION, DIFFERENTIAL, AND FINAL DRIVES

Section I

DESCRIPTION

3. DESCRIPTION (fig. 1).

a. The transmission case is attached to the differential and final drive housing. Together they encase the drive between the propeller shaft and sprockets. The cast steel differential and final drive housing is mounted to the left and right frame side channels at the front of the vehicle by dowel pins and bolts. The transmission case is secured to the rear face of the differential and final drive housing. The differential and final drive housing is divided into three com-

partments: the center compartment containing the differential and steering brake bands, and the two side compartments containing the final drives.

b. Engine power enters the transmission at the rear from the propeller shaft. When the transmission is shifted into one of its four forward speeds, the power passes through a train of gears to the transmission output bevel pinion and differential. The differential is of the controlled type; that is, it is equipped with brake drums and brake bands on each side. Braking one side causes that side to slow down, and the opposite side to speed up. This provides the means by which the tractor is steered. The brake bands are connected by suitable linkage to two steering levers mounted on the differential and final drive housing cover. The final drive pinion shafts are spline-connected to the two compensating gears in the differential, and the two final drive shafts are flange-connected to the hubs with sprockets which drive the tracks.

c. Removal and installation of the transmission, differential, and final drives as a unit are described in TM 9-786.

Section II

TRANSMISSION

4. DESCRIPTION AND OPERATION.

a. Description (fig. 2). The transmission is a constant-mesh type with helical gears. It has four forward speeds, one reverse speed, and includes the winch drive. The transmission has five shafts which are mounted in ball bearings in the transmission case. The case is bolted to the rear side of the differential and final drive housing. Shifting of the gears is accomplished by a lever mounted on the differential and final drive housing cover. This lever operates selectively any one of the three shifting shafts. Two of these shifting shafts have shifting yokes which engage sliding gear clutches to obtain the four forward speeds.