

TM 9-1803B

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE

Power Train, Body, and Frame for 1/4-Ton 4x4 Truck

(Willys-Overland Model MB and Ford Model GPW)

This is a reprint of TM 9-1803B, Power Train, Body, and Frame for 1/4-Ton 4x4 Truck. (Willys-Overland Model MB and Ford Model GPW). No distribution will be made to personnel possessing the original publication.

WAR DEPARTMENT

8 APRIL 1944

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE

Power Train, Body,
and Frame for
1/4-Ton 4x4 Truck

(Willys-Overland Model MB and Ford Model GPW)

This is a reprint of TM 9-1803B, Power Train, Body, and Frame for 1/4-Ton 4x4 Truck. (Willys-Overland Model MB and Ford Model GPW). No distribution will be made to personnel possessing the original publication.

WAR DEPARTMENT
Washington 25, D. C., 8 April 1944

TM 9-1803B, Ordnance Maintenance: Power Train, Body, and Frame for ¼-ton 4 x 4 Truck (Willys-Overland Model MB and Ford Model GPW), is published for the information and guidance of all concerned.

[A.G. 300.7 (17 Nov 43)
O.O.M. 461/(TM-9) Rar. Ars. (4-15-44)]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

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

DISTRIBUTION: R 9 (4); Bn 9 (2); C 9 (5).

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

CONTENTS

	Paragraphs	Pages
CHAPTER 1. INTRODUCTION	1- 2	4- 6
CHAPTER 2. POWER TRAIN	3-35	7- 98
SECTION I. Power train description.....	3	7
SECTION II. Transmission	4- 9	7- 24
SECTION III. Transfer case	10-15	24- 38
SECTION IV. Propeller (drive) shafts and uni- versal joints	16-21	38- 45
SECTION V. Front axle	22-28	45- 86
SECTION VI. Rear axle	29-34	86- 97
SECTION VII. Fits and tolerances.....	35	98
CHAPTER 3. BODY AND FRAME.....	36-47	99-136
SECTION I. Springs and shock absorbers.....	36-38	99-110
SECTION II. Steering gear and drag link	39-40	111-122
SECTION III. Body	41-42	122-128
SECTION IV. Frame	43-46	128-136
SECTION V. Fits and tolerances.....	47	136
CHAPTER 4. SPECIAL TOOLS	48-49	137-139
REFERENCES		140-142
INDEX		143- 148

★This Technical Manual supersedes TB 1803-1, dated 8 December 1943. For supersession of Quartermaster Corps 10-series Technical Manuals, see paragraph 1 j.

**ORDNANCE MAINTENANCE — POWER TRAIN, BODY, AND FRAME FOR ¼-TON 4 x 4 TRUCK
(WILLYS-OVERLAND MODEL MB AND FORD MODEL 6PW)**

CHAPTER 1

INTRODUCTION

I. SCOPE.

a. The instructions contained in this manual are for the information and guidance of personnel charged with the maintenance and repair of the power train, body, and frame of the ¼-ton 4 x 4 truck. 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 TM's or FM's.

b. This manual contains a description of, and procedure for, removal, disassembly, inspection, and repair of the transmission, transfer case, axles, body, and frame.

c. TM 9-803 contains operating instructions and information for the using arms.

d. TM 9-1803A contains instructions for the information and guidance of personnel charged with the maintenance and repair of the 4-cylinder engine used in these vehicles.

e. TM 9-1825B contains information for the maintenance of the Auto-Lite electrical equipment.

f. TM 9-1826A contains information for the maintenance of the Carter carburetor.

g. TM 9-1827C contains information for the maintenance of the Wagner hydraulic brake system.

h. TM 9-1828A contains information for the maintenance of the A. C. fuel pump.

i. TM 9-1829A contains information for the maintenance of the speedometer.

j. This manual includes pertinent ordnance maintenance instructions from the following Quartermaster Corps 10-series Technical Manuals. Together with TM 9-803 and TM 9-1803A, this manual supersedes them:

- (1) TM 10-1103, dated 20 August 1941.
- (2) TM 10-1207, dated 20 August 1941.
- (3) TM 10-1349, dated 3 January 1942.
- (4) TM 10-1513, Changes 1, dated 15 January 1943.

INTRODUCTION

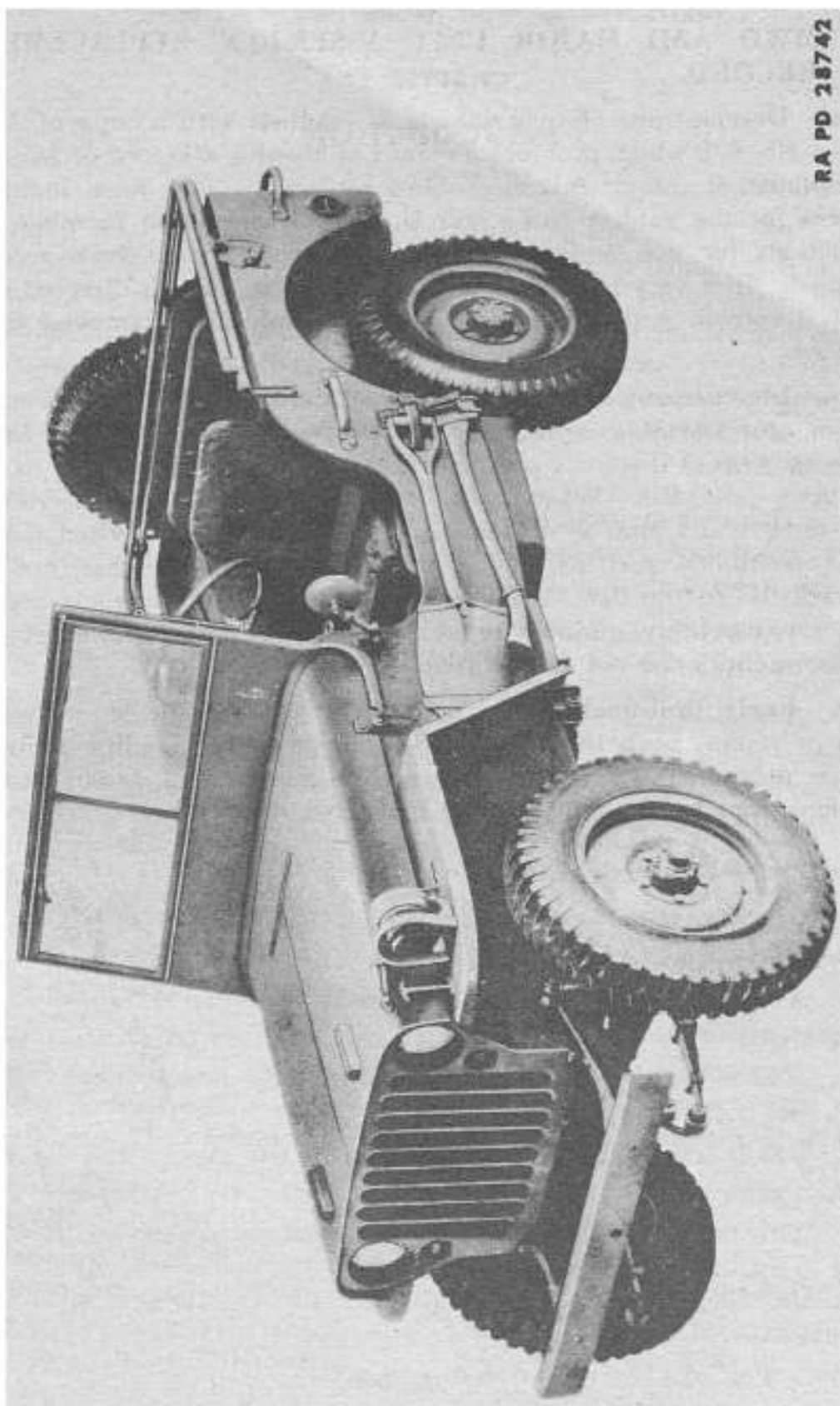


Figure 1 — 1/4-ton Truck 4 x 4 — Three-quarter Front View

**ORDNANCE MAINTENANCE — POWER TRAIN, BODY, AND FRAME FOR ¼-TON 4 x 4 TRUCK
(WILLYS-OVERLAND MODEL MB AND FORD MODEL GPW)****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 MWO's completed or major unit assemblies replaced. 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 this 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 engine, transmission, transfer case, 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 of a vehicle for modification or repair, by a third or fourth echelon repair facility, maintenance personnel will record the MWO numbers of modifications applied prior to the date of AGO Form No. 478.

CHAPTER 2
POWER TRAIN

Section I

POWER TRAIN DESCRIPTION

3. POWER TRAIN DESCRIPTION.

a. The power from the engine is transmitted to the driving wheels through a transmission and a transfer case, each of which provides a means of selecting the gear reduction. The power from the transfer case is transmitted to the front and rear axles through propeller shafts equipped with universal joints. The transmission is located at the rear of the engine and is secured to the clutch housing (fig. 2). The various gears in the transmission (par. 4) are controlled by a shift lever. The transfer case is mounted directly onto the rear of the transmission. The transmission output shaft extends from the rear of the transmission into splines of the main drive gear in the transfer case. The transfer case is provided with two levers, one to select the transfer case ratio, and the other to engage or disengage the front axle (fig. 5). A hand brake drum is mounted on the rear axle output shaft. Each axle is of the spiral bevel hypoid gear full-floating type, equipped with the conventional differential.

Section II

TRANSMISSION

4. DESCRIPTION AND DATA.

a. **Description.** The transmission (fig. 3) is of the 3-speed type with synchronized second and high speed gears. The transmission and transfer case are mounted on rubber on the frame center cross-member. The gearshift lever is incorporated in the gearshift housing.

b. **Data.**

Make	Warner
Model	T84J
Type	Synchronous Mesh
Speeds:	
Forward	3
Reverse	1
Ratios:	
Low	2.665 to 1
Second	1.564 to 1

ORDNANCE MAINTENANCE — POWER TRAIN, BODY, AND FRAME FOR 1/4-TON 4x4 TRUCK
(WILLYS-OVERLAND MODEL MB AND FORD MODEL 6PW)

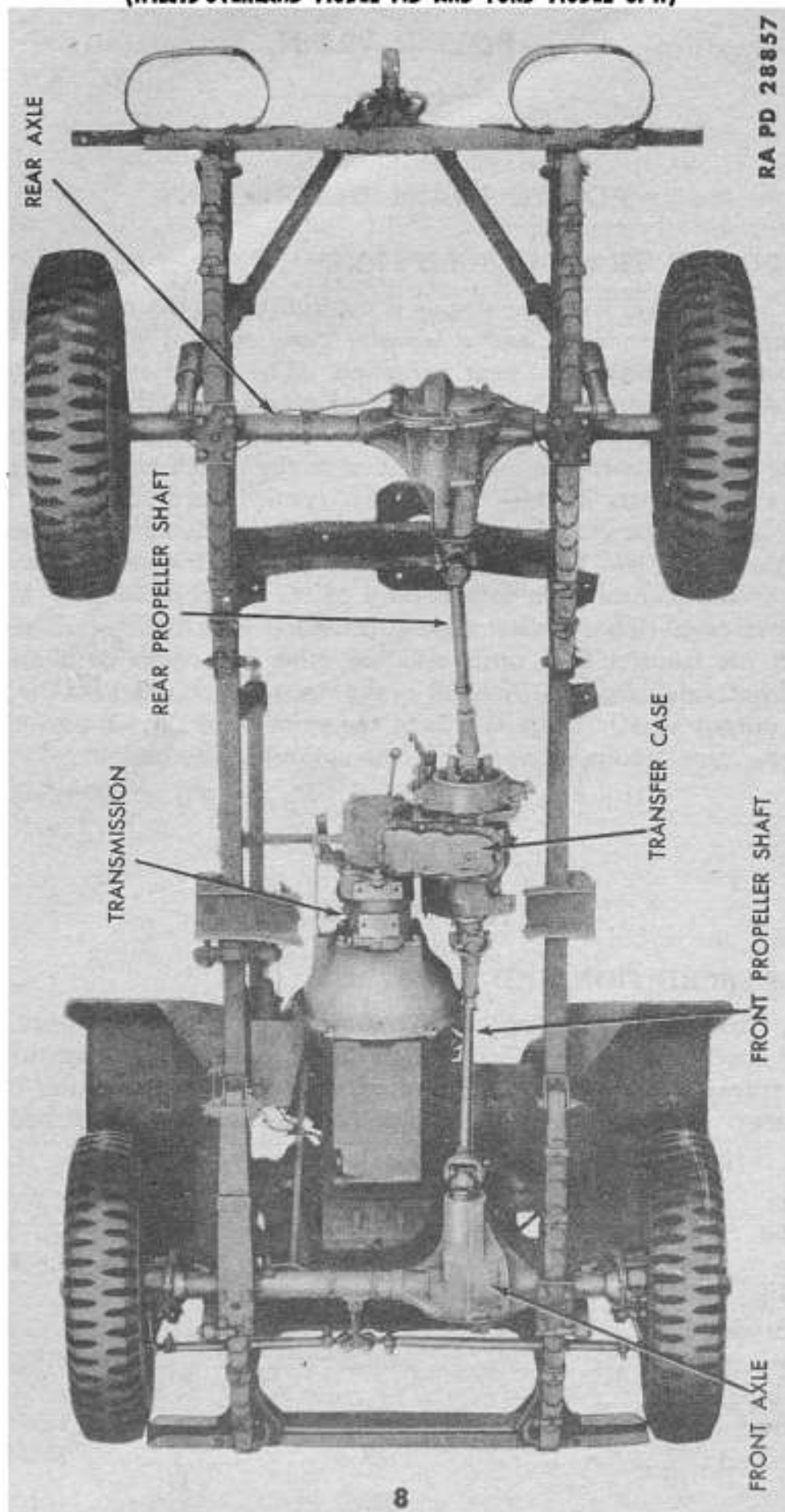


Figure 2 — Power Train