TM 9-1818 B

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE

POWER TRAIN, CHASSIS, AND BODY FOR 10-TON 6 x 4 TRUCK (MACK)

WAR DEPARTMENT *7 JUNE 1944*

WAR DEPARTMENT TECHNICAL MANUAL

TM 9-1818B

ORDNANCE MAINTENANCE

POWER TRAIN, CHASSIS, AND BODY FOR 10-TON 6 x 4 TRUCK (MACK)

WAR DEPARTMENT

7 June 1944

RESTRICTED *DISSEMINATION OF RESTRICTED MATTER*—The information contained in restricted documents and the essential characteristics of restricted materiel may be given to any person known to be in the service of the United States and to persons of undoubted loyalty and discretion who are cooperating in Government work, but will not be communicated to the public or to the press except by authorized military public relations agencies. (See also paragraph 23 b, AR 380-5, 15 March 1944.)

WAR DEPARTMENT
Washington 25, D. C., 7 June 1944

TM 9-1818B, Ordnance maintenance: Power train, chassis, and body for 10-ton 6 x 4 truck (Mack), is published for the information and guidance of all concerned.

[A.G. 300.7 (17 Aug 43)]

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 (8)
(For explanation of symbols, see FM 21-6).

CONTENTS

ORDNANCE MAINTENANCE—POWER TRAIN, CHASSIS, AND BODY FOR 10-TON 6 x 4 TRUCK (MACK)

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 Mack 10-ton, 6 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 personnel in 100-series TM's, FM's, or AR's.

b. This manual contains a description of, data on, and procedure for, removal, disassembly, cleaning, inspection, repair, and assembly of the power train, front axle, steering gear, brakes, wheels, springs and shock absorbers, frame, cab, body, and sheet metal.

c. For the removal and installation of the above components, refer to TM 9-818.

d. For ordnance maintenance on the generator and other electrical equipment, air brake system, instruments, and fire extinguisher, refer to the following pertinent technical manuals: Generator and electrical equipment, TM 9-1825A; Air-brake system, TM 9-1827A; Speedometer and tachometer, TM 9-1829A; and Fire extinguisher, TM 9-1799.

2. MWO AND MAJOR UNIT ASSEMBLY REPLACEMENT RECORD.

a. Description. Every vehicle is supplied with a copy of W.D., A.G.O. Form No. 478 which provides a means of keeping a record of each MWO completed or major unit assembly 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 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, 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 W.D., A.G.O. Form No. 478.

CHAPTER 2

POWER TRAIN

Section I

3. DESCRIPTION.

a. Transmission of power rearward from the clutch is through the transmission, which is in unit assembly with the engine, and a two-section propeller shaft to the forward rear axle. From the power divider, which is incorporated in the gear carrier of the forward axle, the drive continues, in line, through an interaxle propeller shaft to the rearward axle. Driving and braking torques are provided for by two torque rods, one for each axle. These have ball stud connections at the tops of the axle gear carriers, and are ball stud anchored on a frame crossmember which is midway between the axles. The drive line between the transmission and the forward rear axle has a center bearing carried by a frame crossmember which also carries the disk-type parking brake.

Section II

TRANSMISSION

4. DESCRIPTION AND DATA (fig. 1).

a. Description. The duplex-type transmission comprises two gear cases assembled integrally one behind the other, with the rear wall of the forward unit forming a single partition between the two sections. The forward section is a selective sliding-gear type transmission providing 5 forward speeds and 1 reverse, manually selected by a shifter lever. Driving torque is transmitted from the front section to the rear section by the spline shaft which engages the auxiliary main drive pinion. By means of the auxiliary spline shaft gear clutch, which is manually controlled by a separate shifter lever, 2 different gear ratios are produced by the rear or auxiliary section. Thus the transmission with the auxiliary unit provides 10 forward and 2 reverse speeds. Removal of the transmission assembly from the vehicle is covered by TM 9-818.

b. Data.

Make	Mack
Model	TRD-37
Type	Duplex
Mounting	Unified with clutch and engine
Number of forward speeds	10
Number of reverse speeds	2
Shift	Manual, two levers

ORDNANCE MAINTENANCE—POWER TRAIN, CHASSIS, AND BODY FOR 10-TON 6 x 4 TRUCK (MACK)

Gear ratios:	Slow	Fast
First speed	9.30	6.74
Second speed	5.27	3.82
Third speed	2.65	1.92
Fourth speed	1.38	1.00, direct
Fifth speed	1.08	0.78
Reverse speed	9.39	6.80

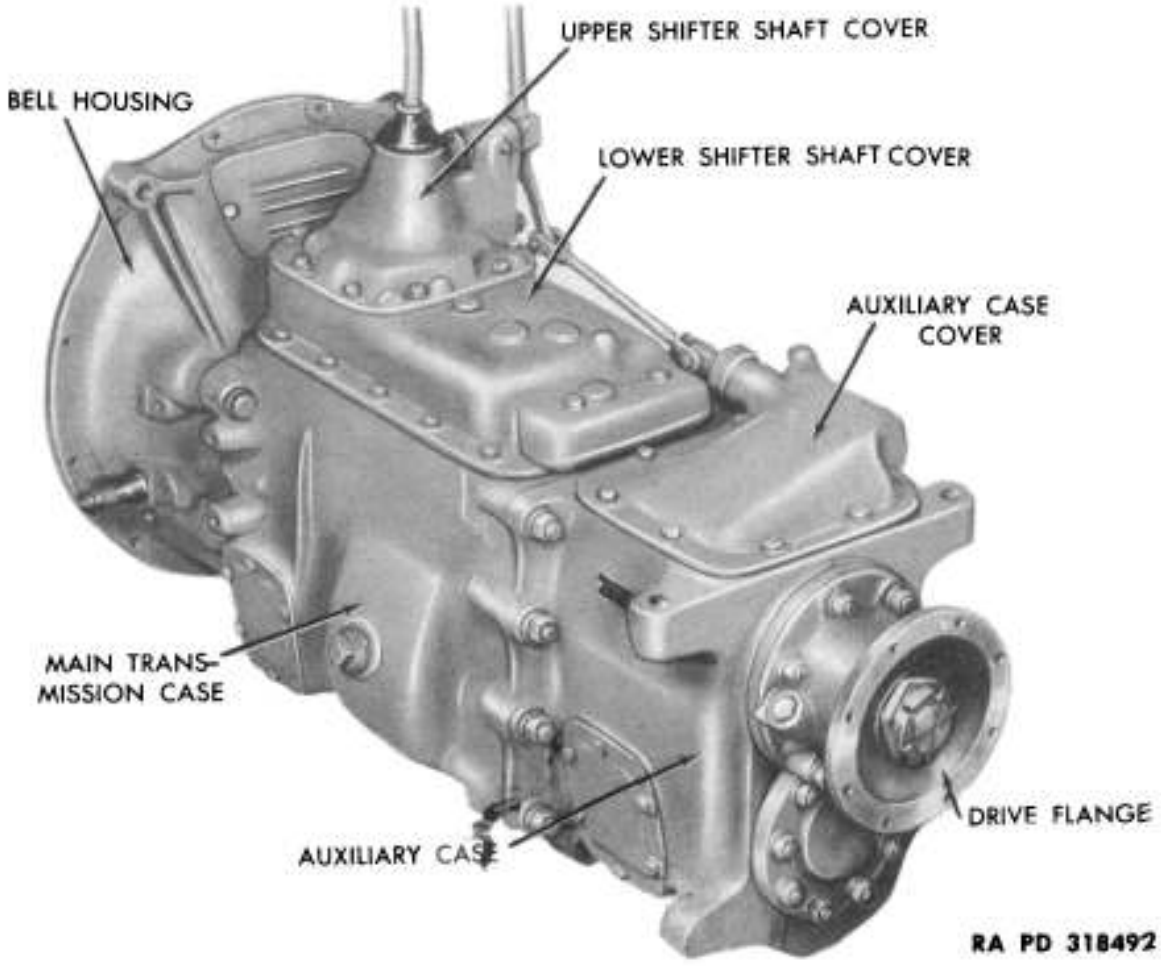

Figure 1—Transmission Assembly

Bearings:

Main drive pinion rear bearing.....SKF 6313-2Z

Spline shaft:

Spigot bearing.....SKF 1-71033

Rear bearing....Timken 496D cone, Y-1-S493 spacer, 493 cups

Countershaft:

Front bearing.....SKF I-74309

Rear bearing cup.....Mack 468 KB 21A

Rear bearing cone.....Timken 621S

Auxiliary countershaft:
Front bearing cup.....Timken 612
Front bearing cone.....Timken 621S
Rear bearing cup.....Timken 612X
Rear bearing cone.....Timken 623
Auxiliary spline shaft:
Spigot bearing.....SKF I-74309 or Hyatt A-1309TS
Rear bearing cones.....Timken 476A
Rear bearing cup.....Mack 469 KB 21
Reverse shaft bearings.....Hyatt 95932

5. DISASSEMBLY INTO SUBASSEMBLIES (figs. 2 and 3).

a. Preliminary.

(1) CLEAN EXTERIOR OF TRANSMISSION. If facilities are available, thoroughly steam-clean all external surfaces of transmission and then wipe dry, using clean rags. Otherwise use dry-cleaning solvent, either as a spray or with a brush. After surface has been thoroughly cleaned, dry with compressed air.

(2) DRAIN OIL. Remove drain plugs from bottom of transmission case and auxiliary case, and drain oil.

b. Disassembly.

(1) REMOVE CONTROL MECHANISM.

(a) Remove Upper Shifter Cover Assembly with Levers (fig. 4). Remove two cotter pins, withdraw both clevis (rod end) pins, and lift off auxiliary shifter shaft rod. Remove six short and two long cap screws with lock washers, and lift off cover assembly.

(b) Remove Auxiliary Case Cover Assembly (fig. 5). Remove seven cap screws with lock washers, and lift off cover with shaft and fork attached.

(c) Remove Lower Shaft Cover Assembly (fig. 6). Remove 11 short and 2 long cap screws with lock washers. Lift off cover with shafts and forks attached.

(2) REMOVE AUXILIARY TRANSMISSION.

(a) Remove Drive Flange (fig. 8). Lock auxiliary spline shaft by sliding auxiliary spline shaft gear clutch into mesh and meshing first speed sliding gear and second speed sliding gear at the same time, with the countershaft gear directly below. Remove cotter pin. Using socket wrench (41-W-3031-950) and bar (41-B-312-200), remove drive flange nut (fig. 7). Using puller (41-P-2905-60), withdraw drive flange.

(b) Remove Auxiliary Transmission (fig. 9). Remove eight auxiliary case stud nuts with lock washers. Remove cotter pin, nut, and flat washer from auxiliary case dowel bolt and remove bolt. Withdraw auxiliary transmission from studs.

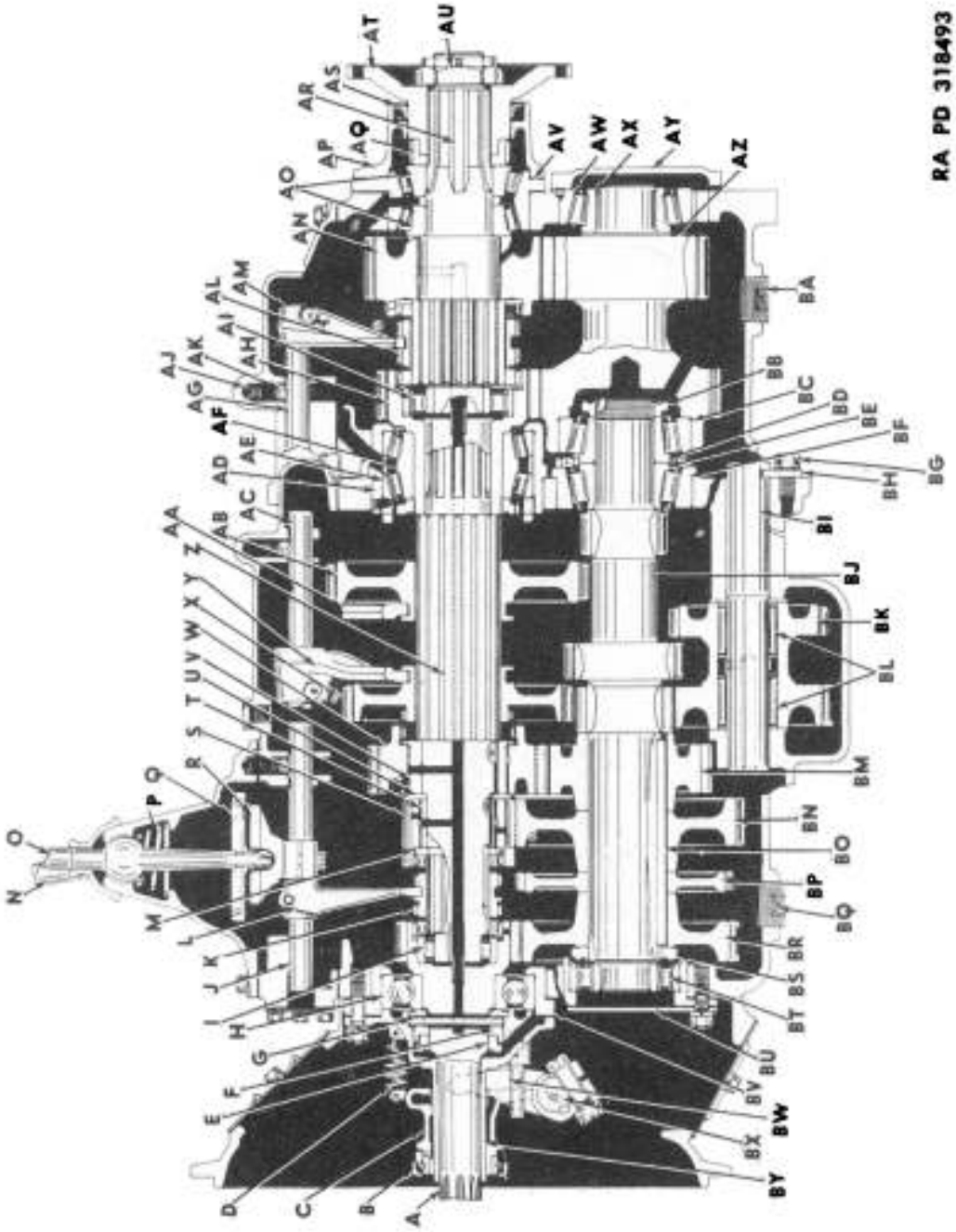

Figure 2—Cross-section of Transmission