

TM 9-1711

WAR DEPARTMENT

TECHNICAL MANUAL



ORDNANCE MAINTENANCE

**WHITE, 160AX ENGINE,
HALF-TRACK VEHICLES**

JANUARY 26, 1942

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No. 9-1711 }

WAR DEPARTMENT
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**WHITE, 160AX ENGINE, HALF-TRACK
VEHICLES**

Prepared under the direction of the
Chief of Ordnance

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Section I

INTRODUCTION

Introduction	Paragraph 1
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1. INTRODUCTION.

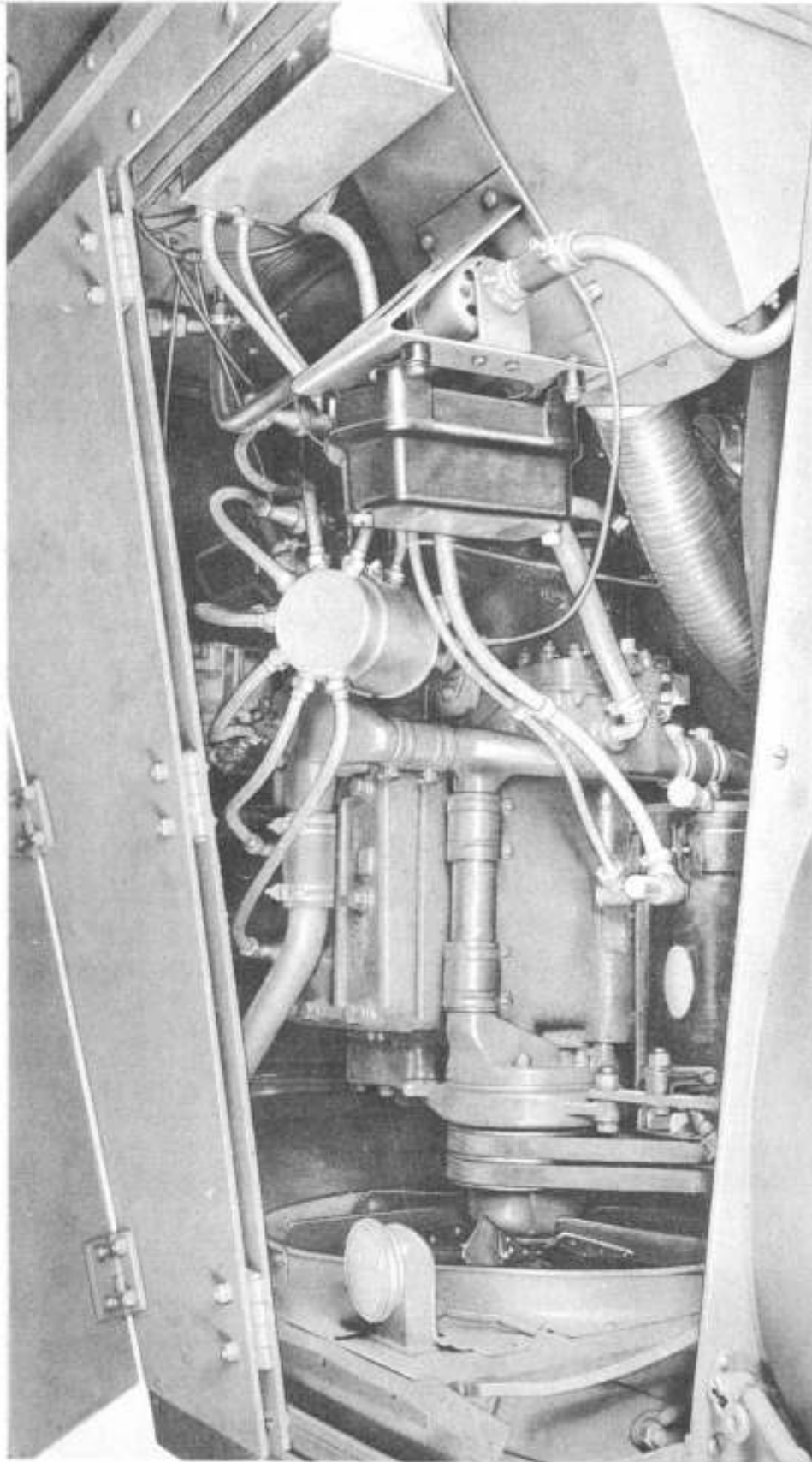
a. General. This manual is published for the information and guidance of ordnance maintenance personnel. It contains detailed instructions for removal, disassembly, inspection, maintenance, repair, assembly, and installation of the White, 160AX gasoline engine, and all its accessories for half-track vehicles. These instructions are supplementary to those in the field and technical manuals prepared for the using arm. Additional descriptive matter and illustrations are included to aid in providing a complete working knowledge of the materiel.

b. Vehicle generally. Information concerning the service maintenance, technical inspection, and lubrication of the entire vehicle will be found in TM 9-710.

c. Power train. For maintenance information pertaining to the power train, refer to TM 9-1710.

d. Chassis and body. For maintenance information concerning the chassis and body components, refer to TM 9-1712.

INTRODUCTION



RA PD 13801

Figure 1 – Engine, Installed, Left Side

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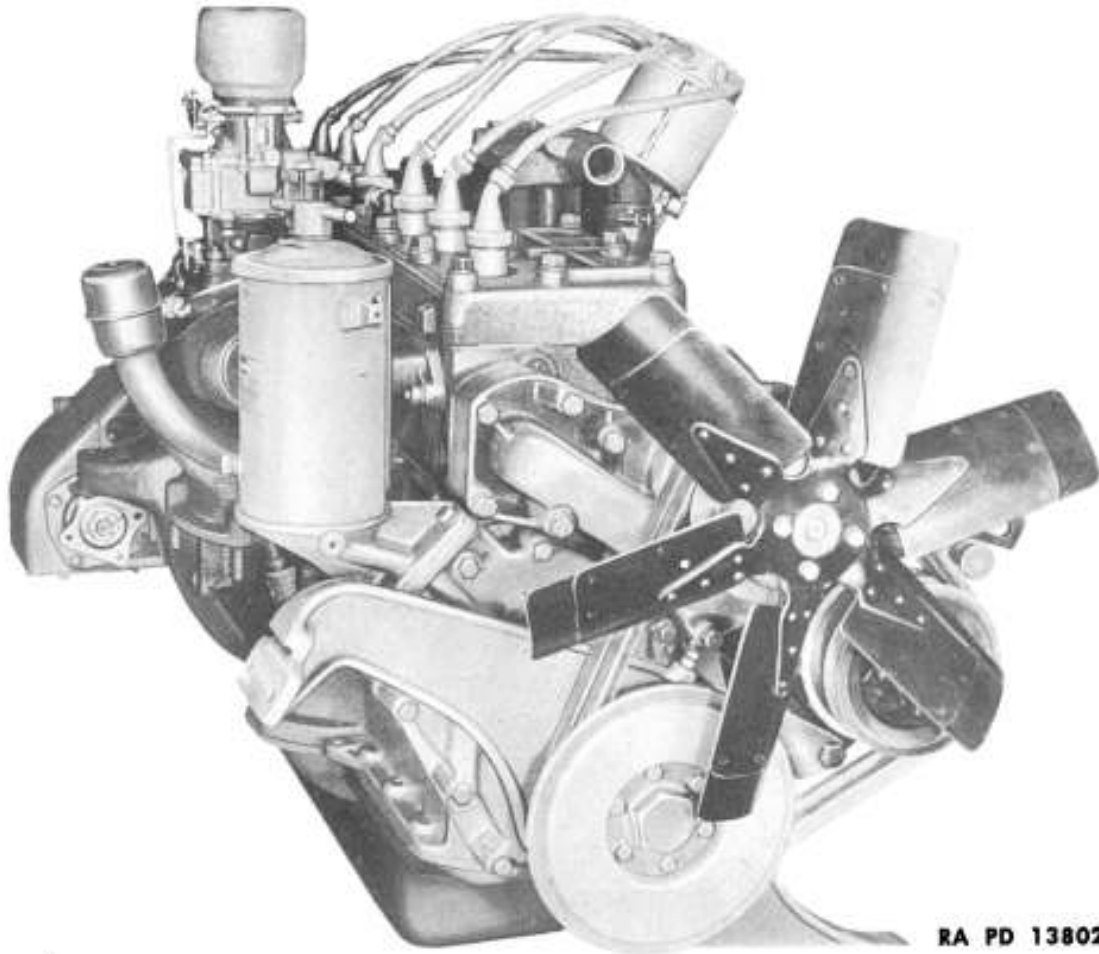


Figure 2 – Engine, Front

Section II

SERVICE MAINTENANCE

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Scope	3
Allocation of repair jobs.....	4

2. OBJECTIVE.

There is a decided difference between the purpose of organizational maintenance and that of service maintenance. Organizational maintenance is done by the using arms and has for its primary objective the routine preventive maintenance, care and adjustment of vehicles and their equipment, so that they will be in good operating condition always with a minimum of lost time for repairs. Service maintenance by light and heavy maintenance of the ordnance department has for its primary objectives supply, technical inspection and corrective action and in general all repairs beyond the capacity of the using arms. These are accomplished by either unit replacements, overhauling, rebuilding, reclaiming, manufacturing, or any other expedients considered most useful.

3. SCOPE.

The scope of maintenance and repairs by maintenance personnel is determined by the amount of time available; weather conditions; cover and concealment; shelter; proximity or exposure to hostile fire; equipment tools and parts available; besides skill of the personnel. Since all these factors are variable, no exact system or rules of procedure can be prescribed or followed.

4. ALLOCATION OF REPAIR JOBS.

The operations mentioned below augment those which may be performed by the using arms.

a. Clutch.

- (1) Clutch assembly.....Replace, repair, rebuild
- (2) Clutch housingReplace

b. Cooling system.

- (1) Fan assembly.....Repair or replace
- (2) RadiatorRepair
- (3) Water pump.....Repair, replace, rebuild

c. Electrical—generator and regulator.

- (1) Circuit breaker.....Adjust or repair
- (2) GeneratorRepair or rebuild
- (3) Voltage regulator.....Adjust, repair or rebuild
- (4) Current regulator.....Adjust, repair or rebuild

d. Electrical—ignition system.

- (1) Ignition switchRepair
- (2) DistributorRepair, rebuild

TM 9-1711**4****WHITE, 160AX ENGINE, HALF-TRACK VEHICLES****e. Electrical—starter.**

- (1) Starting motor.....Repair, rebuild
- (2) Starting switchRepair

f. Engine.

- (1) CamshaftReplace
- (2) Connecting rods.....Repair and replace
- (3) Connecting rod bearings.....Adjust and replace
- (4) Crankshaft.....Grind, polish, straighten
- (5) Cylinder.....Bore and hone
- (6) Crankshaft main bearings.....Replace
- (7) EngineRebuild, replace
- (8) FlywheelReplace
- (9) Pistons.....Grind and fit
- (10) Piston pinsFit
- (11) Piston ringsFit
- (12) Piston assemblyReplace
- (13) Timing gearsReplace
- (14) Timing gear cover.....Replace
- (15) Valves.....Reface, reseal, replace
- (16) Valve guides.....Replace and ream

g. Fuel system.

- (1) Carburetor.....Repair and rebuild
- (2) Fuel pump.....Repair and rebuild
- (3) Fuel tankRepair
- (4) Fuel gageRepair

h. Lubrication system.

- (1) Internal oil lines.....Repair, replace
- (2) Oil pump.....Repair, replace and rebuild

Section III**TECHNICAL INSPECTION**

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Inspection form	6
Practical application	7

5. DESCRIPTION.

Technical inspections are a follow-up and check on organizational maintenance inspections and other maintenance functions. They determine whether the vehicle should be continued in service or withdrawn from operation for overhaul. These inspections are covered in AR-850-15.

6. INSPECTION FORM.

War Department Quartermaster Corps Form No. 260, "Technical Inspection Report of Motor Vehicles," is the standard and official form for recording the inspection of all motor vehicles, including combat vehicles of the ordnance department. The extent to which use is made of this form or modification of it depends entirely on the technical availability of available personnel, the time factor, and the test and shop equipment available.

7. PRACTICAL APPLICATION.**a. External inspection of clutch.**

(1) Test foot lever and make sure of proper mounting. Examine return spring for wear or damage.

(2) Run vehicle to ascertain if clutch is smooth or jerky, or slips in operation.

b. Cooling system.

(1) Examine radiator and connections for signs of leakage, clogging or damage.

(2) Inspect fan.

(3) Inspect water pump for cracks and leaks.

c. Generator and regulator.

(1) Examine pulley for looseness.

(2) Check all shielding conduits and connections.

(3) Make sure all mounting and fastening screws are tight. Examine armature and brushes.

(4) Check voltage and current output of generator.

(5) Inspect regulator contact points for burning and gap distance, and check tension of armature springs.

(6) Examine regulator case for cracks.

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d. Ignition system.

(1) Inspect all harness and terminals for damage, wear and looseness.

(2) Examine and test ignition switch.

(3) Check distributor for loose mounting or loose connections. Remove upper half shield and inspect cap for cracks. Inspect breaker points and spring, high tension rotor, and metal inserts in cap for pitting and burning. Try cam for evidence of wear, looseness and breakage of governor springs.

e. Starting motor.

(1) Examine all connections and terminals.

(2) Inspect and test starting switch.

(3) Inspect commutator and brushes.

f. Engine.

(1) Check crankcase, block, head, and head gasket for cracks or leaks. See that all bolts are tight.

(2) Remove cover and examine valve lifters and springs.

(3) Run engine and listen for slapping pistons, knock at bearings or knock due to presence of carbon.

(4) Check oil pressure for loose engine bearings.

g. Fuel system.

(1) Inspect fuel pump mounting and connections; check operation. Examine fuel tanks for leaks or damage.

(2) Examine carburetor and air cleaner. Try all screws. Inspect connections to accelerator and dash.

(3) Check fuel gage and switch.

h. Lubrication system.

(1) Check oil pressure at gage.

(2) Check oil line connections and brackets for tightness.