

**TM 9-1795A**

**WAR DEPARTMENT**

**TECHNICAL MANUAL**



**ORDNANCE MAINTENANCE  
POWER TRAIN FOR  
HEAVY WRECKER M1, SERIES 2  
(Axles, Transmission, Wheels, and Tires)**

**SEPTEMBER 25, 1942**

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**POWER TRAIN FOR HEAVY WRECKER M1, SERIES 2**  
**(Axles, Transmission, Wheels, and Tires)**

PREPARED UNDER THE DIRECTION OF THE  
 CHIEF OF ORDNANCE  
 (WITH THE COOPERATION OF THE WARD LA FRANCE TRUCK CORPORATION)

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# CHAPTER 1

## INTRODUCTION

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### 1. PURPOSE AND SCOPE.

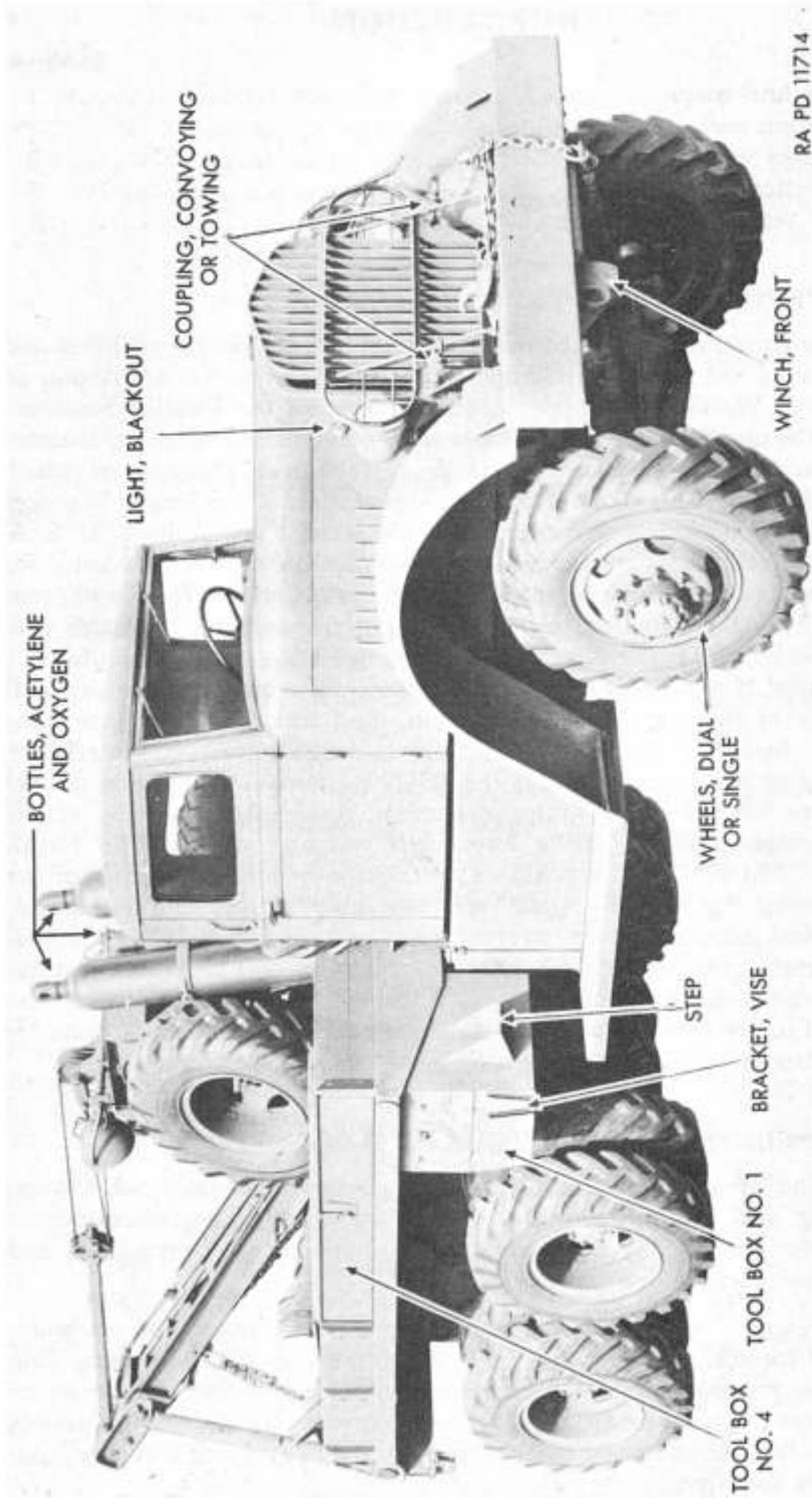
The instructions contained in this manual are for the information and guidance of the personnel charged with the maintenance and repair of the Heavy Wrecker M1, series 2. Information on the detailed construction of the unit, disassembly and assembly procedure, inspection, maintenance and repair is contained in four Technical Manuals of which this is the first. This manual covers a description of the Heavy Wrecker M1, series 2, including differences between series 1 and series 2; U. S. A. registration numbers of the vehicle, a description of and procedure for the disassembly, inspection, repair and assembly of the front axle, rear axle, universal joints and propeller shafts, transmission, transfer case and wheels and tires. The second manual (TM 9-1795B) contains a description of and procedure for the disassembly, inspection, repair and assembly of the engine, cooling system, electrical system, engine components, fuel and exhaust system, clutch, and complete vehicle lubrication. The third manual (TM 9-1795C) contains a description of and procedure for the disassembly, inspection, repair and assembly of the crane, power take-off, drive lines, winches, and cables. The fourth manual (TM 9-1795D) contains a description of and procedure for the disassembly, inspection, repair and assembly of the brakes, frame, springs and shock absorbers, steering, body and sheet metal. TM 9-1795D also contains instructions for packing, shipping and storage; information on the preparation of the unit for use at both extremes of temperature and under other unusual operating conditions; and instructions for general decontamination of the unit.

### 2. DESCRIPTION AND NATURE OF MATERIEL.

a. The Heavy Wrecking Truck M1, series 2, is used for towing, salvaging and recovering heavy equipment, as well as for numerous repair operations away from base repair shops, where heavy hoist and winch equipment is needed.

b. Power is delivered from a gasoline engine through the transmission and transfer case to one front and two rear axles, thereby providing drive and traction on 10 wheels and tires. There are two single pneumatic tires in front, and eight pneumatic tires in the rear. Dual wheels and tires may be mounted on the front, thereby providing drive through 12 wheels and tires.

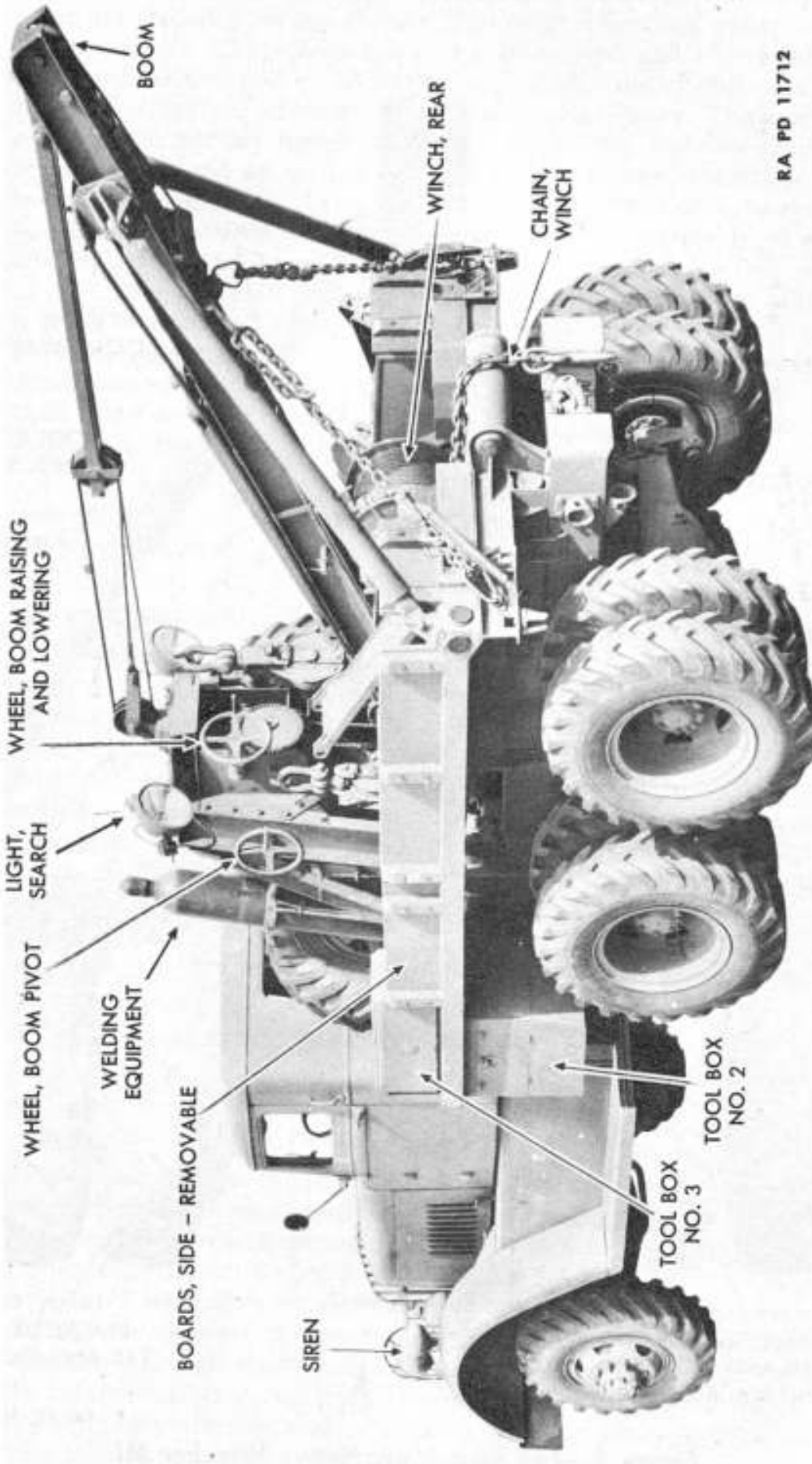
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**Figure 1—Three-quarters Front View Heavy Wrecker M1**

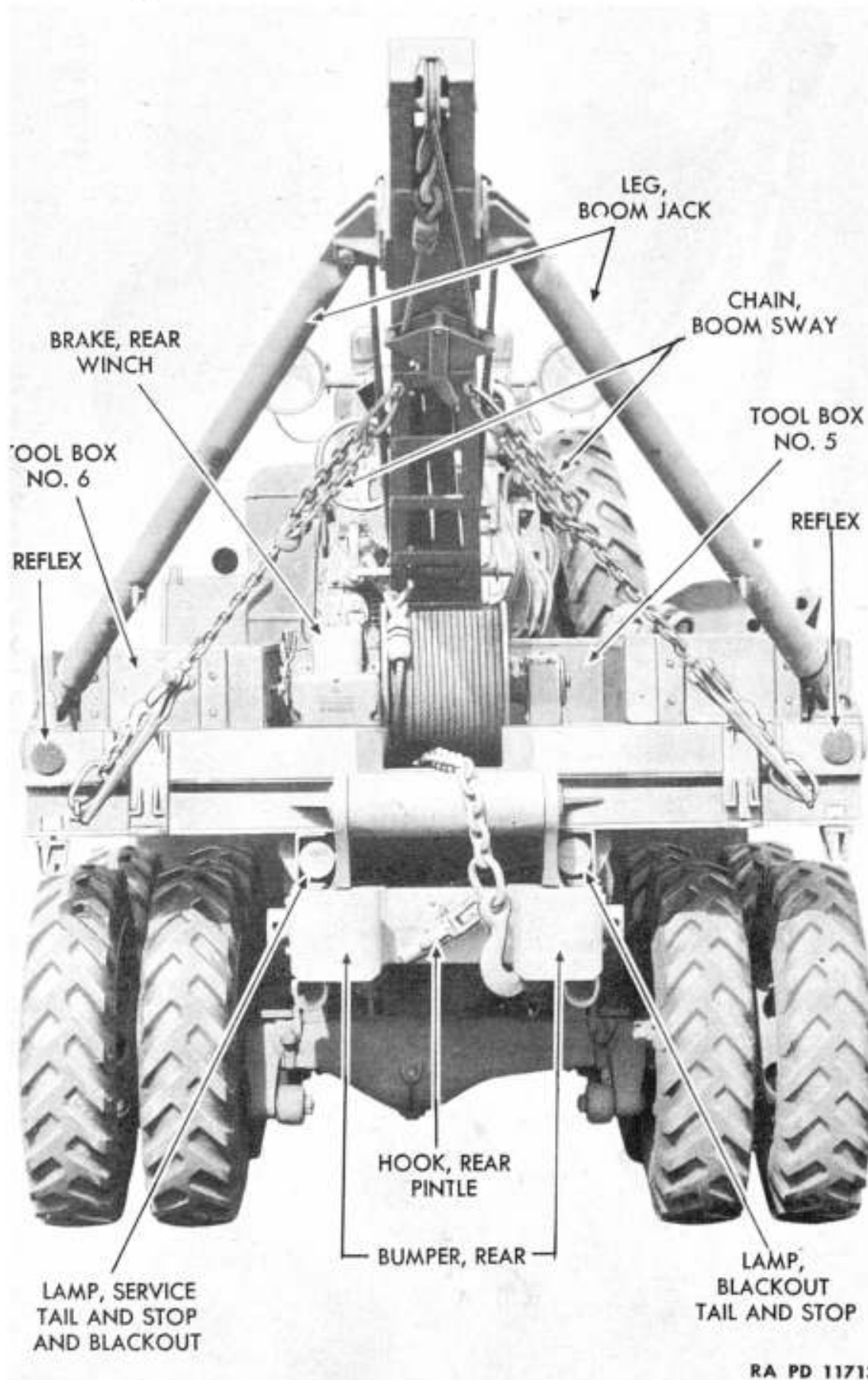
### INTRODUCTION



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**Figure 2—Three-quarters Rear View Heavy Wrecker M1**

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**Figure 3—Full Rear View Heavy Wrecker M1**



## INTRODUCTION

c. The crane, front winch and rear winch, boom, and auxiliary equipment are mounted on the chassis. The front winch has a direct pull of 20,000 pounds. The rear winch has a two-speed and reverse gear box and has a direct pull of 47,500 pounds. These direct pulls can be increased by the use of single or double snatch blocks. The rear winch has controls for air operation of the clutch, for its two speeds and reverse gears and for gas throttle control. The crane operation is controlled by a gearshift lever, throttle control lever, and a lever for air operation of the clutch. The boom can be swung sidewise or raised and lowered by the boom operating wheels and has a free lifting capacity of five tons. Special equipment for repairing, towing and salvaging materiel is mounted on and in compartments mounted on the wrecker. This equipment consists of tow bar, tow cable, tow chains, single and double snatch blocks, ground anchors with spades, welding and cutting tools, rope and rope blocks, shovels, wrecking bars, sledge hammers, axes, saws, etc., together with a large assortment of smaller hand tools.

d. To assure correct inspection and assembly of the various units covered in this manual the clearances and tolerances listed in paragraph 158 must be observed.

### 3. DIFFERENCES AMONG MODELS.

a. There are three distinct series of vehicles. Series 1 and series 2 are used by the U. S. Army, and series 3 is used by the British Army. Series 1 vehicles are equipped with a front winch only, while series 2 vehicles are equipped with both front winch and rear winch. This major difference permits quick identification between the series. Axle ratios in the series are different, giving series 2 vehicles a slightly lower top speed but more performance ability than series 1 vehicles. Constructional changes necessitated by these lower ratios, such as larger universal joints and propeller shafts, have also been incorporated.

	Series 1	Series 2
Axle ratio .....	7.50 to 1	8.27 to 1
Transfer case low ratio .....	1.66 to 1	2.55 to 1
Universal joints (number) .....	6N	7N
Tires .....	11.25-20	11.00-20

b. In addition to the above differences, the method of driving winches is different in the two series, and minor differences exist in the crane. Extra items of miscellaneous equipment supplied on series 1 and series 2 units are similar. Series 3 units (British) are the same in all details as series 2 units except that they do not have trailer air connections and have a standard differential instead of a high-traction differential. Standard and high-traction carrier assemblies and differential assemblies are interchangeable, but the differential side gears and pinion gears alone are not interchangeable. Series 3 units are also painted a different color from that of the U. S. Army units.

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c. The Kenworth and Ward La France Series 2 vehicles vary in the methods of control of the front winch shift lever, the power take-off, the front winch jaw clutch, and the transfer case shift. Ward La France employs cables to control these items and Kenworth uses a system of levers, bell cranks, and control rods. See figure 94 for the Kenworth system and for Ward La France.

#### 4. SPECIFICATIONS AND DATA.

Model .....	Series 2
Model number .....	1,000
Weight (gas, oil, water, and all equipment) .....	27,130 lb
Maximum capacity of payload (including crew) .....	8,000 lb
Total gross weight .....	27,580 lb
Length, over-all (uncrated) .....	348 in.
Width, over-all (uncrated) .....	100 in.
Height, over-all (uncrated) .....	121½ in.
Wheel base .....	181 in.
Tread—front .....	73⅛ in.
Tread—rear .....	74¾ in.
Minimum turning circle diameter .....	88 ft (approximate)
Ground clearance .....	12 in.
Fording depth .....	39 in.
Fording depth limited by .....	Carburetor
Drawbar or pintle height .....	37 in.
Pintle model .....	Timken T-19-C
Serial number location .....	} Left front corner of frame and } left front corner of body rack
Chassis weight .....	15,800 lb
Body weight including tool boxes .....	1,850 lb
Ground contact (zero penetration) gross .....	706 sq in.
Ground contact (zero penetration) actual .....	558 sq in.
Ground pressure (average) .....	39 psi (pounds per square inch)
Ground pressure (actual) .....	49½ psi
Center of gravity above ground .....	42 in.
Bridging limit—angle of approach .....	50°
Bridging limit—angle of departure .....	45°
Towing facilities—front .....	Tow hooks (Union Forging FS-191 and 2)
Towing facilities—rear .....	Pintle hook (Timken T-19-C)
Hoisting facilities .....	Crane and rear winch (Gar Wood US-5)
Hoisting facilities—weight .....	5,305 lb (With boom but without cables)