DEPARTMENT OF THE ARMY TECHNICAL MANUAL

Transportability Guidance TRUCK, TRACTOR, 10-TON, 6X6, M123, M123C, M123D, AND M123A1C

Headquarters, Department of the Army, Washington, D;C.
24 February 1967

1. Purpose

This manual provides transportability guidance for movement of the Truck, Tractor, 10Ton, 6X6, M123, M123C, M123D, and M123AlC (fig. 1).

2. Scope

a. The information contained in this manual covers significant transportability and safety considerations in the movement of the item by various modes of transport. Included are slide and end-elevation drawings (figs. 2 and 3) and characteristics of the item.

b. Users of this publication are encouraged to submit recommended changes and comments to improve the publication. Comments should be keyed to the specific page, paragraph, and line of: the text in which the change is recommended. Reasons will be provided for each comment to insure understanding and complete evaluation. Report all deficiencies in this manual on DA Form 1598 (Record of Comments on Publications). Comments should be forwarded direct to the Commanding Officer, U.S. Army Transportation Engineering Agency, Military Traffic Management and Terminal Service, ATTN: MTT-TG, Fort Eustis, Va., 23604.

3. Description

The Truck, Tractor, M123 series, is a heavy duty vehicle designed primarily for use with a special purpose semitrailer in combat vehicle recovery operations. The M123 is equipped with a dual winch and a high-mounted fifth wheel, the M123C is equipped with a single winch and a low-mounted fifth wheel, the M123D is equipped with a dual winch and a low-mounted fifth wheel, and the M123A1C is equipped with a single winch and a low-mounted fifth wheel. The M123, M123C, and M123D trucks are powered by gasoline-driven engines, and the M123A1C truck is powered by a diesel engine. For the purpose of transportability guidance, all models are considered dimensionally similar. Where differences occur, each model is listed separately.

* This manual supersedes TB 55-13, 30 April 1963.

4. Modes of Transport

(Figures in parentheses throughout this manual are metric equivalents.)

a. Shipment by Air.

(1) The item is not transportable by U.S. Army aircraft.

(2) Based on a typical logistical mission of 2,500 nautical miles (4630 km), one way, the item is within the dimensional and weight capabilities of the C-130E and the C-133- and C-141 series U.S. Air Force aircraft.

(3) Based on a typical logistical mission of 1,000 nautical miles (1852 km), one way, the item is within the dimensional and weight capabilities of the C-124-, C-130-, C-133-, and C-141 series U.S. Air Force aircraft.

Caution: Sectionalization of the item will be required prior to loading in the C-130-series aircraft.

Note. The maximum U. S. Air Force aircraft cargo weight and rang capabilities are based on the following conditions:

Standard day conditions
Sea level operating conditions
Hard-surfaced runways
No weather alternate required
No wind conditions
Fuel reserve
Constant cruising altitude

In the event one or more of these operating conditions are changed, the maximum cargo load and/or range may be affected.

b. Shipment by Highway.

(1) *On road*. The item is transportable by highway under its own power. The width of the item exceeds the legal limitations for highway movement in CONUS and the recommended highway limitations in oversea areas. Special permits will be required in CONUS, and special routing may be required overseas. See figure 4 for turning characteristics.

(2) *Off road*: *soils trafficability data*. The vehicle cone index (VCI) is a number which tests have proven can be related to the characteristics of a particular vehicle. This number, when used in connection with the rating cone index (of the soil), can forecast the ability of that vehicle to repeatedly cross fine-grained soil, and sands with fines poorly drained. The rating cone index is obtained by use of the cone penetrometer and its associated equipment. See TB ENG 37 for use of the equipment in the field and for interpretation of index numbers.

Truck, Tractor, 10-Ton, XB6, M123 (typical), at curb weight, plus personnel-29,340 lb (13308.6 kg)-----VCI 49

c. Shipment by Rail. The item loaded on a railroad flatcar is transportable within the "Outline Diagram for Single Loads, Without End Overhang, on Open Top Cars"* for shipments within CONUS. In countries complying with the Berne International Rail Interchange Agreement, the item is transportable by rail but exceeds the height limitations, and verification of line clearances will be required. After removal of spare wheel and spare wheel davit, the item can be moved without limitation. See figures 5, 6, and 7 and table 1 for information regarding blocking and restraining on railroad flatcars.

d. Shipment by Water. The item is transportable by inland waterway cargo carriers and lighters of adequate capacity. It can be shipped by Mariner, Victory, and Liberty class seagoing vessels, subject to the following limitations:

Class	*Hatch size adequate*	*Hatch boom adequate*	*Hatches requiring terminal crane*
Mariner	Nos. 2, 3, 4, 5, 6, 7	Nos. 4, 6	Nos. 2, 3, 5, 7
Victory	All	Nos. 3, 4	Nos. 1, 2, 5
Liberty	Nos. 1, 2, 4, 5	Nos. 2, 4	Nos. 1, 5

*Detailed information available in Railway Line Clearance publication.

5. Sectionalization

The overall height of 112.0 inches (2.85 m) can be reduced to 93.0 inches (2.36 m) by lowering the windshield and by removing the floodlight, spare wheel, spare wheel davit, trolley tracks, level wind trolleys, hydraulic control handle, and operator's cab cover. Secure the removed equipment to the truck body forward of the fifth wheel. The overall length of 289.0 inches (7.34 m) can be reduced to 285.0 inches (7.24 m) by removing the rear tow pintle. No special tools are required, and the operations are within the capabilities of organizational maintenance personnel. See figure 8 for sectionalization diagram.

6. Item Characteristics and Related Data

(Data based on item in unloaded condition.) Nomenclature-Truck, Tractor, 10-Ton, 6X6, M123, M123C, M123D, and M123A1C.

	FSN	*LIN*	*Type Classification*
M123	2320-395-1875	X59600	Standard B
M123C	2320-294-9552	X59874	Standard B
M123D	2320-542-2509	X59737	Standard B
M123A1C	2320-226-6081	X59874	Standard A

M123 and M123C

Item Weight:

Front Axle	11,460 lb (5198.3 kg)
Bogie	17,480 lb (7928.9 kg)
Total	28,940 lb (13127.2 kg)

Center of Gravity:

Above Ground	42.0 inches (1.07 m)
From C/L Front Axle	109.6 inches (2.78 m)

M123D

Item Weight:

Front Axle	11,950 lb (5420.5 kg)
Bogie	16,850 lb (7643.2 kg)
Total	28,800 lb (13063.7 kg)

Center of Gravity:

Above Ground	42.0 inches (1.07 m)
From C/L Front Axle	106.2 inches (2.70 m)

M123A1C

Item Weight:

Front Axle	12,250 lb (5556.6 kg)
Bogie	16,850 lb (7643.2 kg)
Total	29,100 lb (13199.8 kg)

Center of Gravity:

Above Ground	42.0 inches (1.07 m)
From C/L Front Axle	105.0 inches (2.67 m)

M123, M123C, M123D, and M123A1C

Item Dimensions:

Length	289.0 inches (7.34 m)

Reduced Length	285.0 inches (7.24 m)
Width	114.0 inches (2.90 m)
Height	112.0 inches (2.85 m)
Reduced Height	93.0 inches (2.36 m)
Shipping Data.	
Operational:	
Volume	2,135.4 cu ft (60.43 cu m)
Area	228.8 sq ft (21.26 sq m)
Sectionalized:	
Volume	1,748.6 cu ft (49.49 cu m)
Area	225.6 sq ft (20.96 sq m)
Angle of Approach	40° 30'
Angle of Departure	75°
Turning Radii (R&L over front bumper)	37.5 ft (11.43 m)
Vehicle Classification	15
Soils Trafficability Data (para 4*b*(2).):	
Truck, Tractor, M123 (typical), at curb weight plus personnel	VCI 49
CONUS Freight Classification	Freight automobiles
Uniform Freight Classification (UFC)	Item 93340
CONUS Freight Classification	Freight automobiles, noi
National Motor Freight Classification (NMFC)	Item 190190
Tire Size	14.00 X 24 (0.36 X 0.61 m), 20-ply
Tire Pressure:	
Highway	50 psi (3.2 kg/sq cm)
Cross-Country	25 psi (1.8 kg/sq cm)
Mud, Sand, Snow	15 psi (1.1 kg/sq cm)
Publications	TM 9-2320-206-10 TM 9-2320-206-20 TB ENG 37

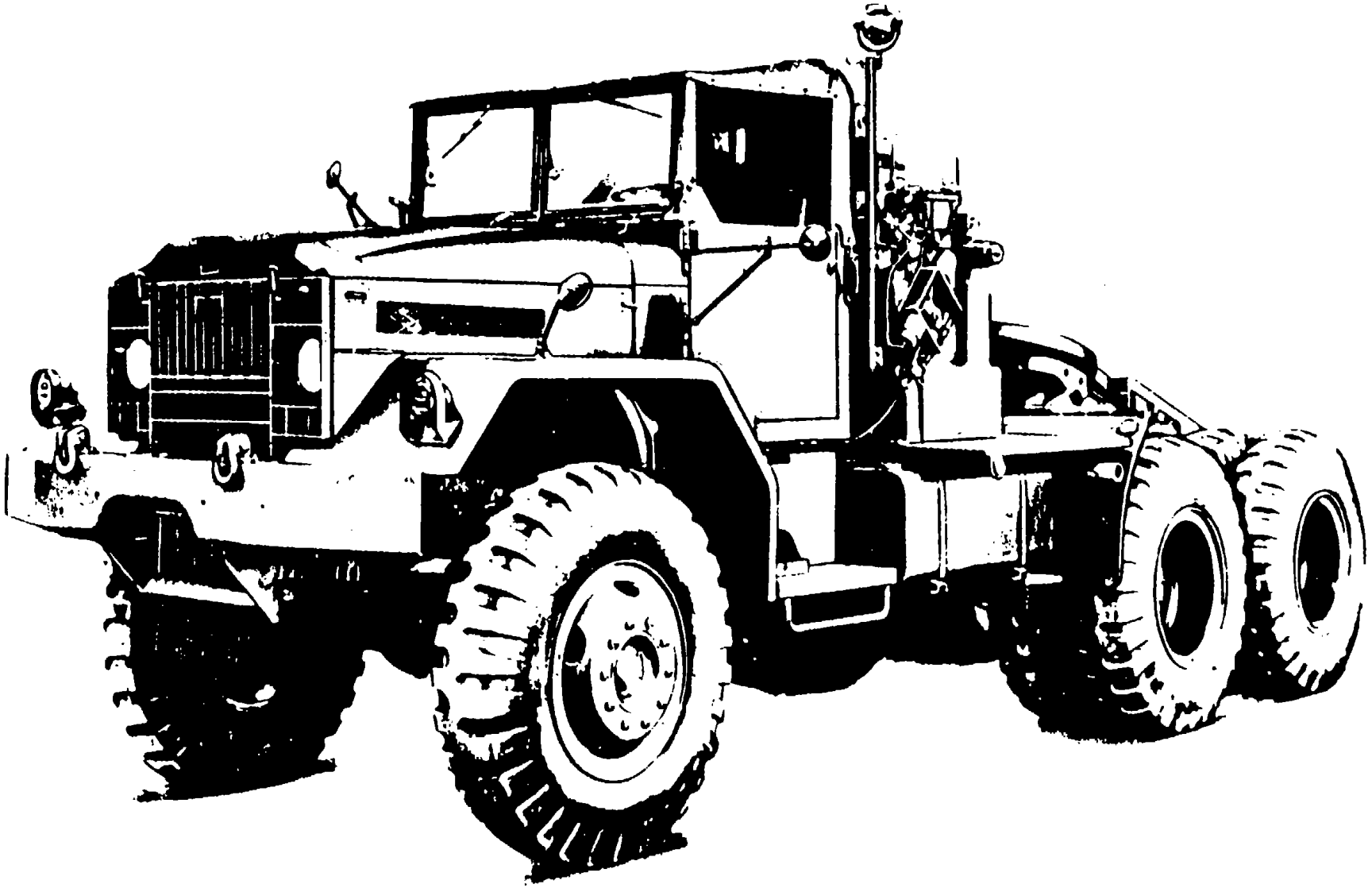

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Figure 1. Truck, Tractor, 10-Ton, 6X6, M123.

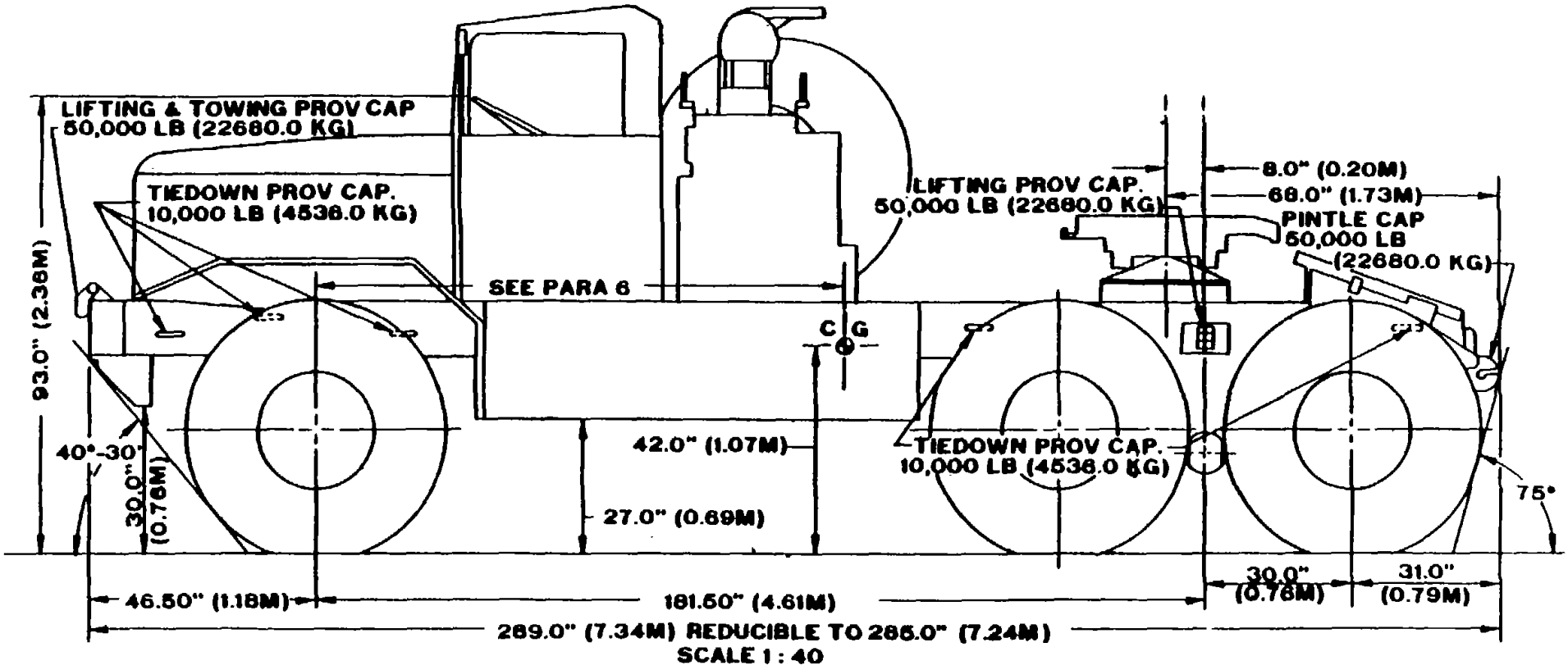

Figure 2. Side elevation.

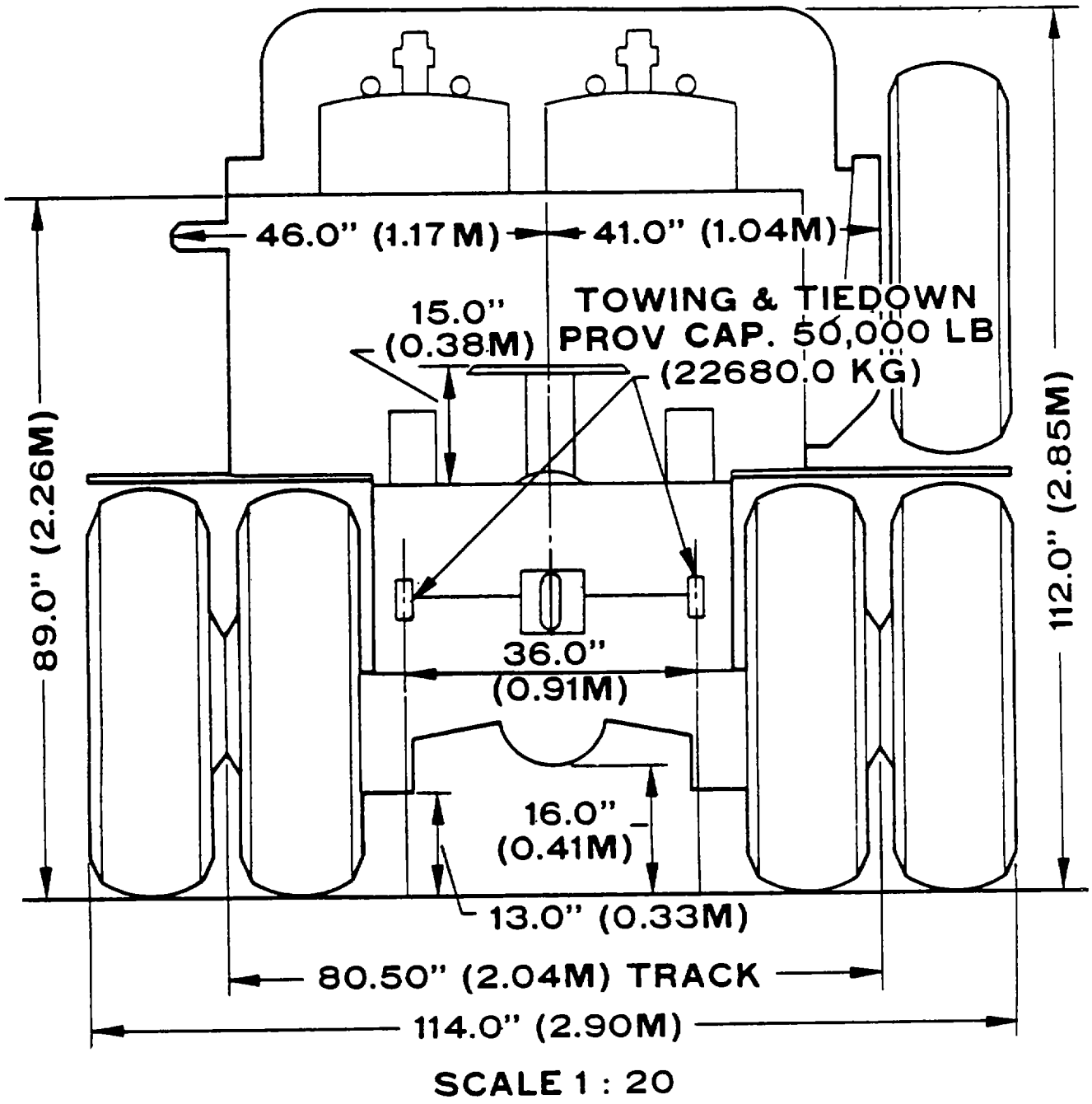

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Figure 3. End elevation

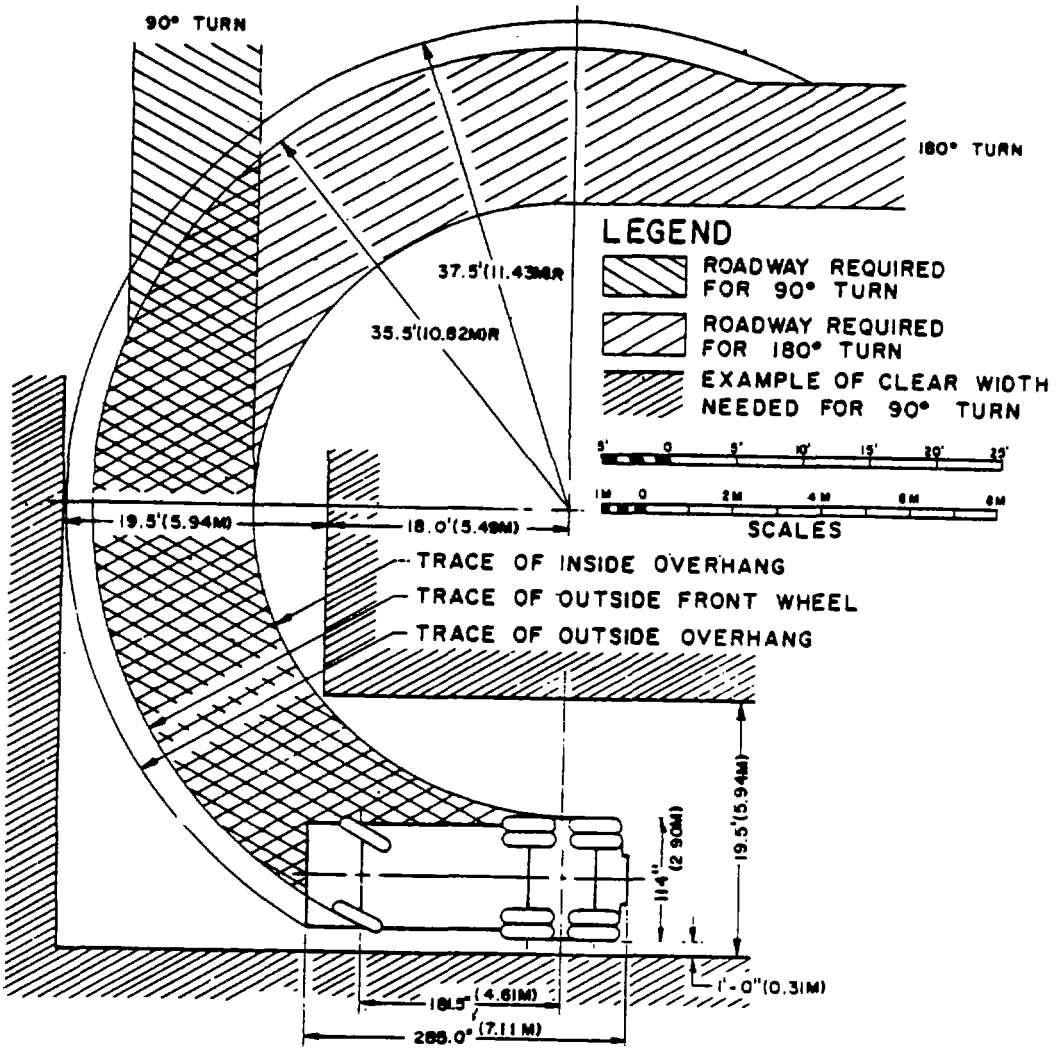

Figure 4. Turning characteristics diagram. Truck, Tractor, 10 Ton, 6X6, M123.

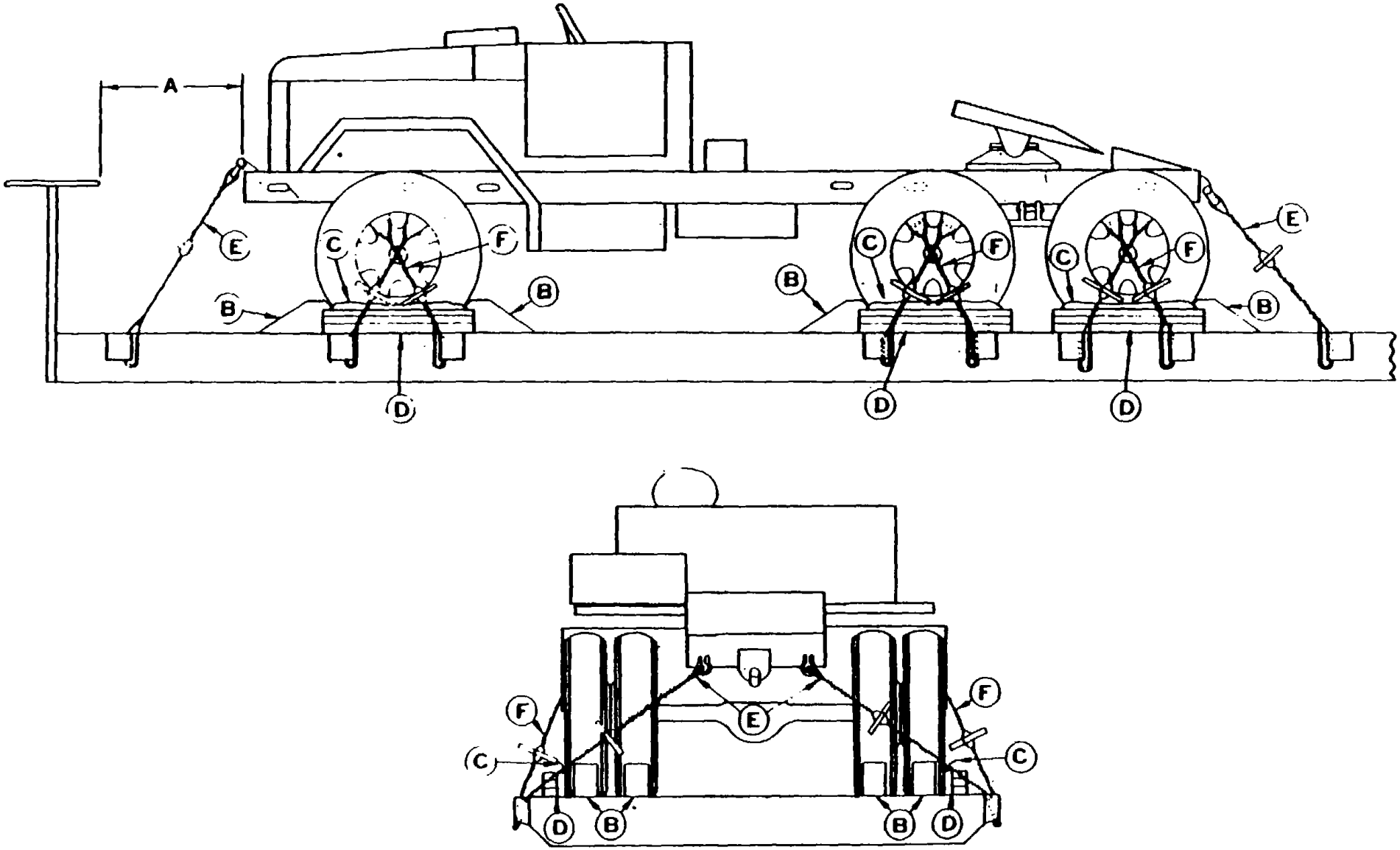

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Figure 5. Blocking and restraining diagram

Table 1. Bill of Material and Instructions for Blocking and Restraining Truck, Tractor, 10-Ton, 6 X 6, M123, on Railroad Flatcars With Wooden Floors

Bill of Material

Lumber	*Linear feet*
2-in. X 4-in	64
2-in. X 6-in	18
6-in. X 8-in.	24

Nails	*No. required*
12d (4-in.)	46
20d (4-in.)	88
40d (6-in.)	60

	No. required
Wire, No, 8 gage, black, annealed	300 ft (approx)
Rope, steel wire, 1/2-in.-dia. (not required when No. 8 gage wire is used exclusively.	70 ft (approx)
Chips, 1/2-in.	20 (when steel wire rope is used)
Thimbles, std, 1/2-in. (open-type)	4 (when steel wire rope is used)
Waterproof paper or burlap	As required

Material Specifications

Lumber: Douglas-fir or comparable lumber with straight grain and free from material defects, Fed Spec MM-L-651.

Nails: Common, cement-coated, Fed Spec FF-N-106.

Rope: 1/2-in., 6 X 9, IWRC steel cable, Fed Spec RR-W-410.

Wire: No. 8 gage, annealed, black, Fed Spec QQ-W-461.

Clips: U-bolt, Crosby, heavy-duty, or equal.

Item	*No. of pieces*	*Application*
A		Brake wheel clearance. Six-inch clearance required in back of, on both sides of, and above brake wheel, with 4 inches required below the wheel.
B	12	Block (sketch 1, fig. 6), 6-in. X 8-in X 24-in. Locate 45° portion of block against front and rear of front wheels, in front of inside and outside intermediate wheels, and in back of inside and outside rear wheels. Nail heel of the block to the car floor with three 40d nails, and toenail that portion of the block under the tire to the car floor with two 40d nails before items C and D are applied.
C	1 each item D	Suitable material, such as waterproof paper or burlap, etc. Locate bottom portion under item D, the top portion to extend 2 inches above item D.
D	6	Each to consist of one piece of 2-in. X 6-in. X 36-in. lumber and three pieces of 2-in. X 4-in. X 36-in. lumber (sketch 2, fig. 6). Nail one edge of the 2-in. X 6-in. X 36-in. piece to the bottom 2-in. X 4-in. X 36-in. piece with five 12d nails. Then place against the tire and nail to the car floor through the 2-in. X 4-in. X 36-in. piece with four 20d nails. Nail the other two 2-in. X 4-in. X 36-in. pieces to the one below in the same manner.
E	4 each unit	Eight strands of No. 8 gage, black, annealed wire. Attach to the shackles located at each end of the unit and to stake pockets on the same side of the car. Metal fillers sufficient to provide a suitable radius must be used to protect the wire at stake pockets and applied so as to prevent dislodgement. Twist wires taut with a rod, bolt, or suitable length of 2-in. X 2-in. lumber and secure to preclude unwinding. (sketch 3, fig. 6). Substitute, if desired, 1/2-in. IWRC steel cable, in a complete loop, and secure with four 1/2-in. cable clips. Thimble must be used at the stake pocket to protect the cable and secured to the cable with one cable clip (sketch 4, fig. 6).
F	12	Each to consist of six strands of No. 8 gage, black, annealed wire. Pass through the spokes or holes in the front and rear wheels and through the car stake pockets (sketch 1, fig. 7). Wires should be attached to-the wheel above the midpoint and the two twisted wire tiedowns installed so they form an "X" across the face of the wheel. Twist taut with a rod, bolt, or suitable length of 2-in. X 2-in. lumber, and secure to preclude unwinding.

General Notes

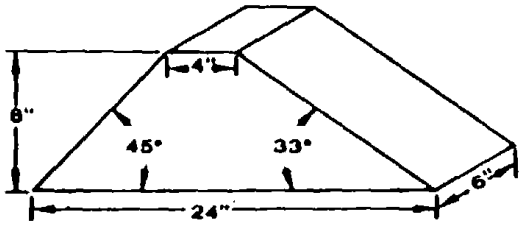
1. Load as shown is based on a flatcar 9 feet 2 inches wide (platform). Cars with wider platforms may be used.

2. All handbrakes will be applied with the hand levers wired or blocked. Gearshift levers for automatic or conventional transmissions must be placed and wire-tied in neutral position. Clutch pedal shall be secured in depressed position by wiring to floorboard plate, or by wiring a wood block to the pedal shaft beneath the floorboard.

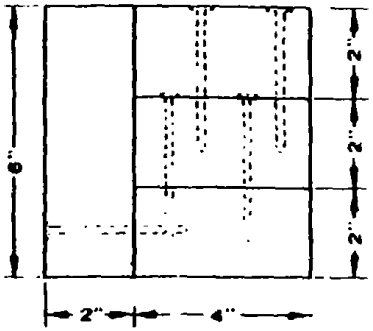
3. When No. 8 gage wire is used for tiedown purposes, the wire is to be threaded In a continuous length until all the required number of strands are formed (one complete loop consists of two strands).

4. Tires will be inflated to 10 psi above highway operating pressures.

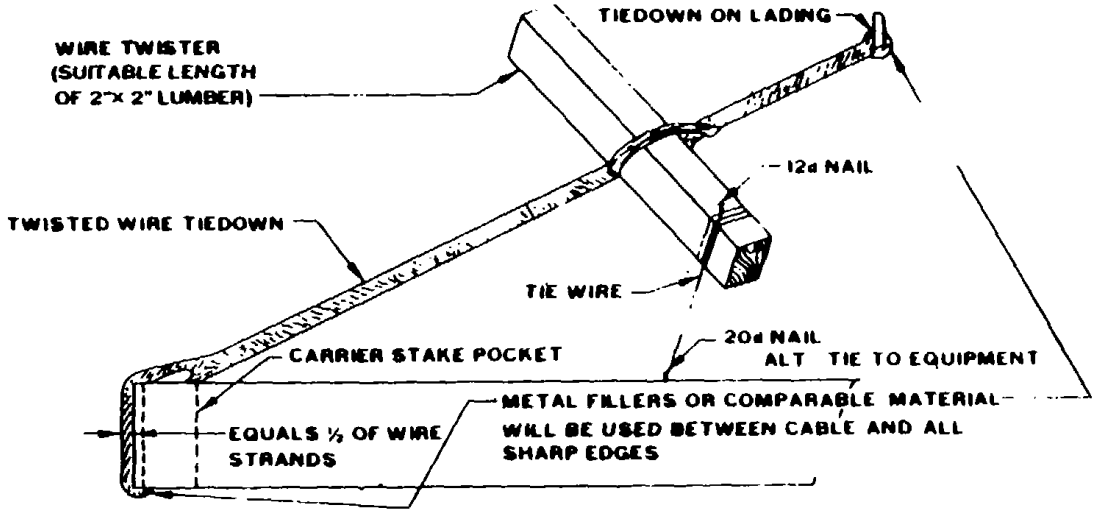
5. For further details, refer to Association of American Railroads (AAR) "Rules Governing the Loading of Commodities on Open Top Cars" and General Rules 4, 5, 9, 14, 16, 19A, and 19B therein.



SKETCH 1



SKETCH 2



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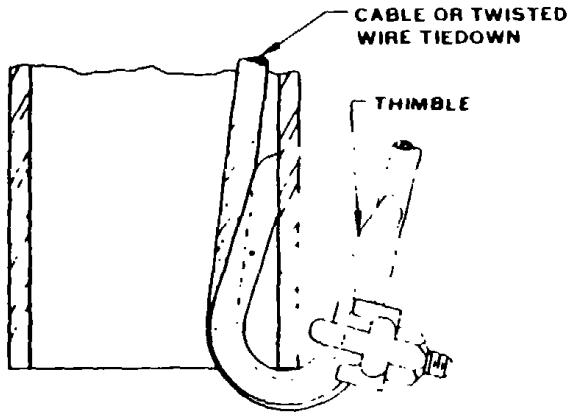

SKETCH 4

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Figure 6. Blocking detail diagram.

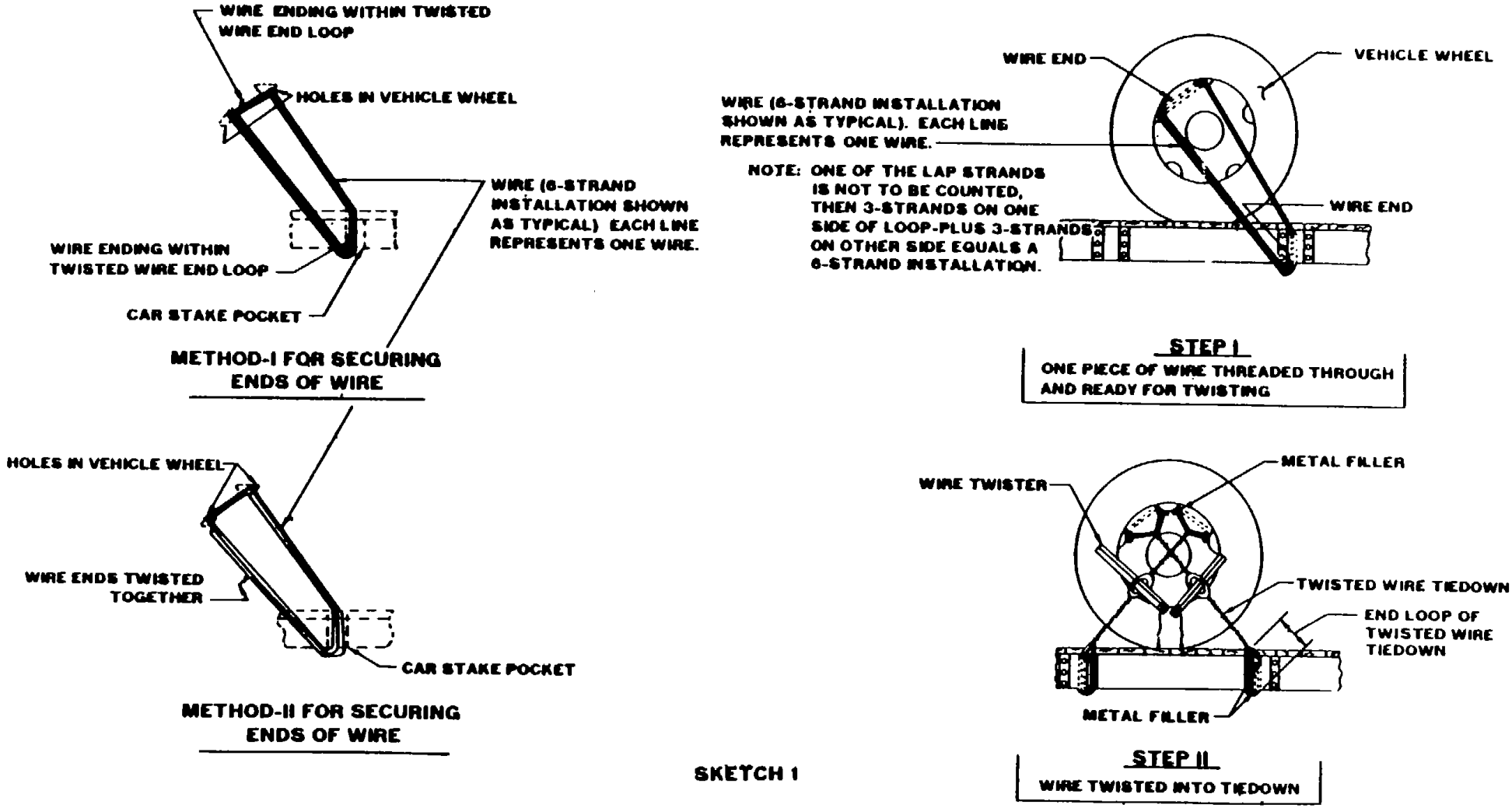

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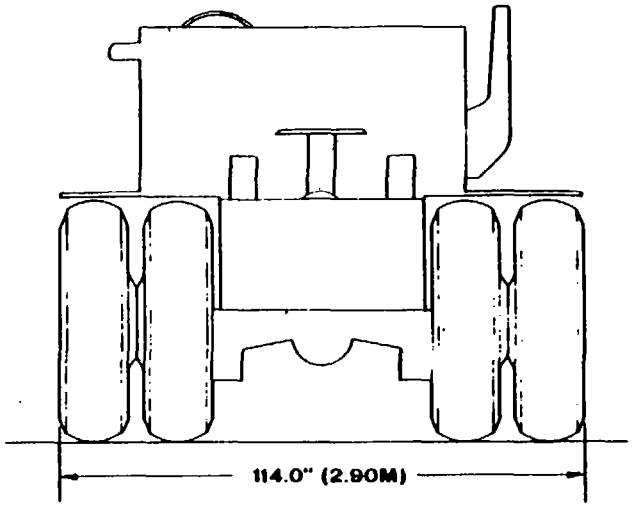
Figure 7. Wheel restraint detail



SHIPPING DATA

WT,	SEE PARA 6
VOL,	1,748.6 CU FT (49.49 CU M)
AREA,	225.6 SQ FT (20.96 SQ M)

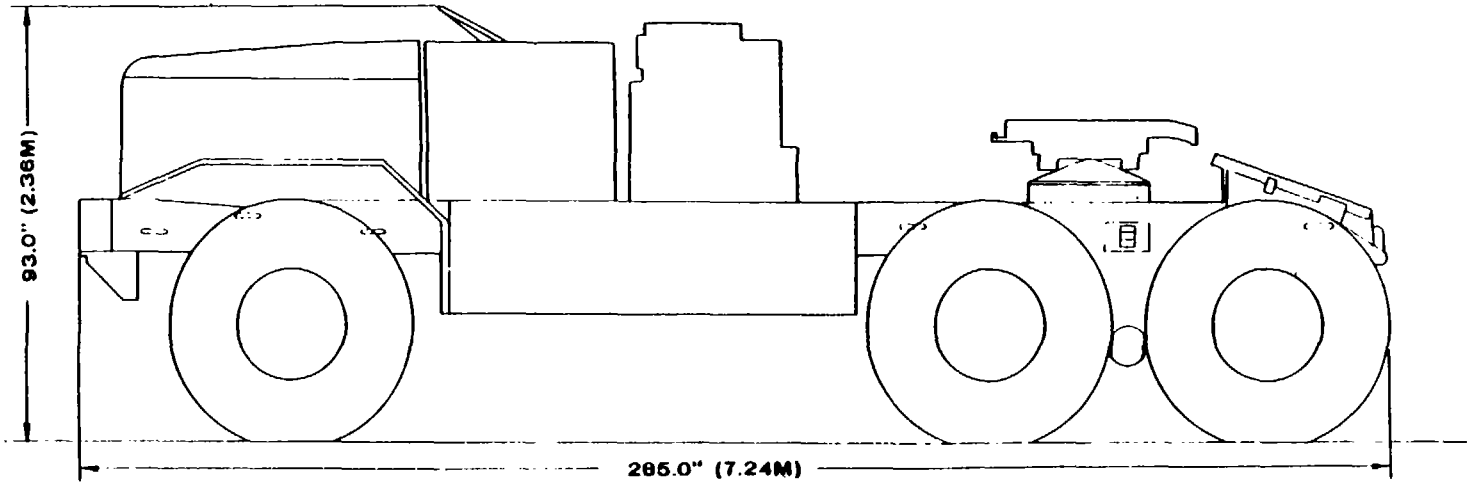


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Figure 8. Sectionalization diagram.

By Order of the Secretary of the Army:

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Chief of Staff.

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Gen Dep (5)
Trans Sec Gen Dep (3)
POE (2)
USA Tml Comd (2) except
USATCA (20)
Army Tml (2)
USAC (1)
USATEA (50)
4th LOGCOMD (5)
Instls (2)
Trans Dep (3)
MTMTS (6)
EAMTMTS (1)
CAMTMTS (3)
WAMTMTS (1)

NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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