

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

TRANSPORTABILITY GUIDANCE
TRUCK, CARGO, 2 1/2-TON, 6X6, M34

Headquarters, Department of the Army, Washington, D.C.

20 February 1967

Table with 3 columns: Section Name, Paragraph, Page. Rows include Purpose, Scope, Description, Modes of transport, Sectionalization, and Item characteristics and related data.

1. Purpose

This manual provides transportability guidance for movement of the Truck, Cargo, 2 1/2-Ton, 6x6, M34 (fig. 1).

2. Scope

a. The information contained in this manual covers significant transportability and safety considerations in the movement of the item by the various modes of transport. Included are side- 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 Commander, U.S. Army Transportation Engineering Agency, Military Traffic Management and Terminal Service, ATTN: MTT-TG, Fort Eustis, Va. 23604.

3. Description

The Truck, Cargo, M34, is a general purpose vehicle with and without winch. For transportability guidance purposes, both models are considered similar. Where differences occur, each model is listed separately.

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 2,500.0 nautical miles (4625.0 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.
(3) Based on a typical logistical mission of 1,000.0 nautical miles ( 1950.0 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.

This manual supersedes TB 55?25, 21 August 1962.

(4) After sectionalization as described in paragraph 5, the item can be transported for a 1,000.0.-nautical miles mission in the C-119 G U.S. Air Force aircraft.

Note. The maximum U. S. Air Force Aircraft weight and range capabilities are based on the following conditions:

- Standard day conditions
- Sea level operating conditions
- Hard-surface 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. Dimensions and weight of the item are

Item 1. Truck, Cargo, 21½-Ton, 6 x 6, M34, WWN, at curb weight plus personnel—  
12,586 lb (5709.0 kg). VCI 52

Item 2. Truck, Cargo, 21½-Ton, 6 x 6, M34, WWN, at curb weight plus personnel—  
12,586 lb (5709.0 kg) and 5,000-lb (2268.0 kg) cross-country payload.

c. *Shipment by Rail.* The item loaded on a railroad flatcar is transportable within the "Outline Diagramn for Single Loads, without End Overhang, on Open Top Cars" \*for shipment within CONUS; it is also transportable in countries complying with the Berne International Rail Interchange Agreement. See figures 5, 6, and 7 and table 1 for information regarding blocking and restraining on railroad

flatcars. See figure 8 and table 2 for information regarding loading on cushioned rub-rail 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
Mariner	Nos. 2, 3, 4, 5, 6, 7
Victory	All
Liberty	Nos. 1, 2, 4, 5

Hatch beam adequate	Hatches required terminal cross
Nos. 2, 3, 4, 5, 6.	No. 7
Nos. 3, 4	Nos. 1, 2, 5
Nos. 2, 4	Nos. 1, 5

5. **Sectionalization**

The overall height of 104.75 inches (2.66 m) can be reduced to 82.0 inches (2.08 m) by re-

moving the tarpaulin bows, and cab top and by folding the windshield. Sectionalization is a routine operation requiring no special tools. See figure 9 for sectionalization diagram.

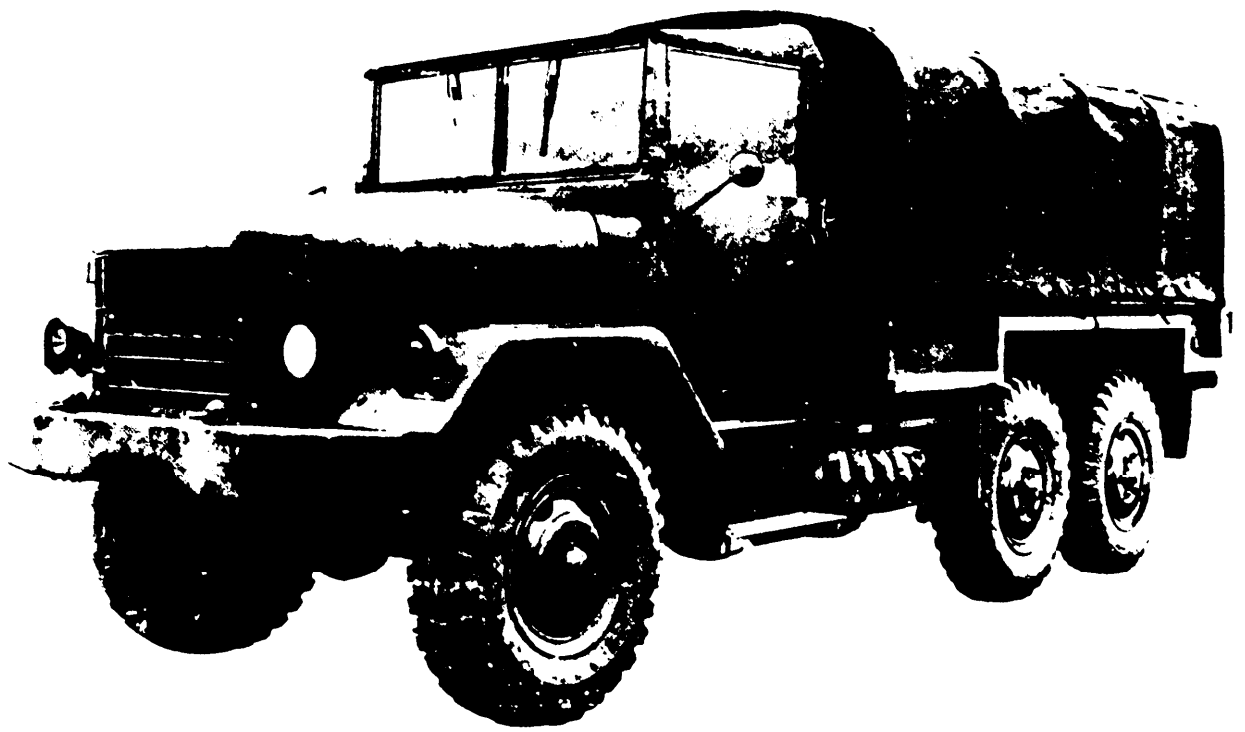
\*Detailed information available in Railway Line Clearances Publication

**6. Item Characteristics and Related Data**

( Data based on item in unloaded condition unless otherwise indicated. )

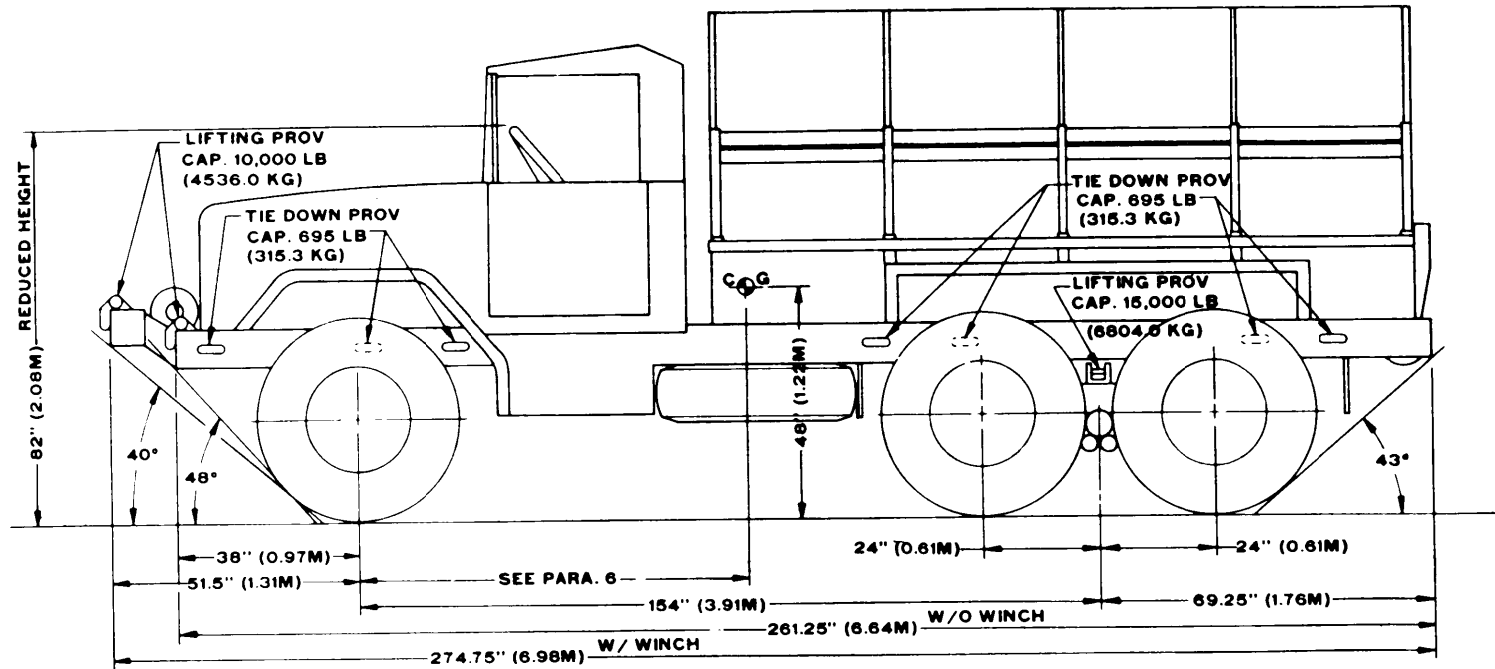
	WWN	WOWN
Nomenclature-Truck, Cargo, 211/2-Ton, 6x6, M34		
FSN .....	2320-835-8536	2320-739-7545
LIN .....	X40146	X40009
Type Classification .....	Limited Standard	Limited Standard
Item Weight:		
Front Axle .....	5,900 lb (2676.3 kg)	5,405 lb (2451.7 kg)
Bogie .....	6,286 lb (2851.3 kg)	6,370 lb (2889.4 kg)
Total .....	12,186 lb (5527.6 kg)	11,775 lb (5341.1 kg)
Center of Gravity:		
Above Ground .....	48.0 inches (1.22 m)	48.0 inches ( 1.22 m)
From C/L Front Axle .....	77.0 inches (1.96 m)	81.0 inches (2.06 m)
Item Dimensions:		
Length .....	274.75 inches (6.98 m)	261.25 inches (6.64 m)
Width .....	88.0 inches (2.24 m)	88.0 inches (2.24 m)
Height .....	104.75 inches (2.66 m)	104.75 inches (2.66 m)
Reduced Height 82.0 inches (2,08 m)		82.0 inches (2.08 m)
Shipping Data:		
Operational:		
Volume .....	1,465.7 cu ft (41.51 cu m)	1,393.6 cu ft (39.47 cu m)
Area .....	167.9 sq ft (15.60 sq m)	159.7 sq ft (14.84 sq m)
Weight 12,186 lb (5527.6 kg)		11,775 lb (5341.1 kg)
Reduced:		
Volume .....	1,147.3 cu ft (32.47 cu m)	1,091.0 cu ft (30.90 cu m)
Area .....	167.9 sq ft (15.60 sq m)	159.7 sq ft (14.84 sq m)
Weight .....	12,186 lb (5527,6 kg)	11,775 lb (5341.1 kg)
Angle of Approach .....	40°	48°
Angle of Departure .....	43°	43°
Turning Radii:		
(R&L over front bumper) .....	36.0 ft (10.97 m)	35.0 ft (10.66 m)
<i>With of Without Winch</i>		
Vehicle Classification:		
Unloaded- .....	5	
W/Cross-Country Payload- .....	8	
W/Highway Payload .....	10	
Soils Trafficability Data (para 4b (2) ):		
Item.1 Truck, Cargo, M34, WWN, at curb weight plus personnel .....	-VCI 52	
Item 2. Truck, Cargo, M34, WWN, at curb weight plus personnel and cross-country payload	VCI 62	
CONUS Freight Classification .....		
Uniform Freight Classification (UFC)- .....	Freight automobiles	Item 93340

CONUS Freight Classification- - - - -Freight automobiles, not  
 National Motor Freight Classification (NMFC) - - - - - Item 190190  
 Tire Size - - - - - 11:00 x20 (0.28 x 0.51 m),12-ply  
 Tire Pressure:  
     Highway - - - - - 70 psi (4.9kg/sqcm)  
     Cross-Country - - - - - 35 Psi (2"5kg/sqcm)  
     Mud, Sand, Snow - - - - - 15 Psi (1"1kg/\$qcm)  
 Publications - - - - -TM 9-2320-200-10  
                                   TM 9-2320-209-20  
                                   TM 9-2320-209 20P  
                                   TB ENG 37



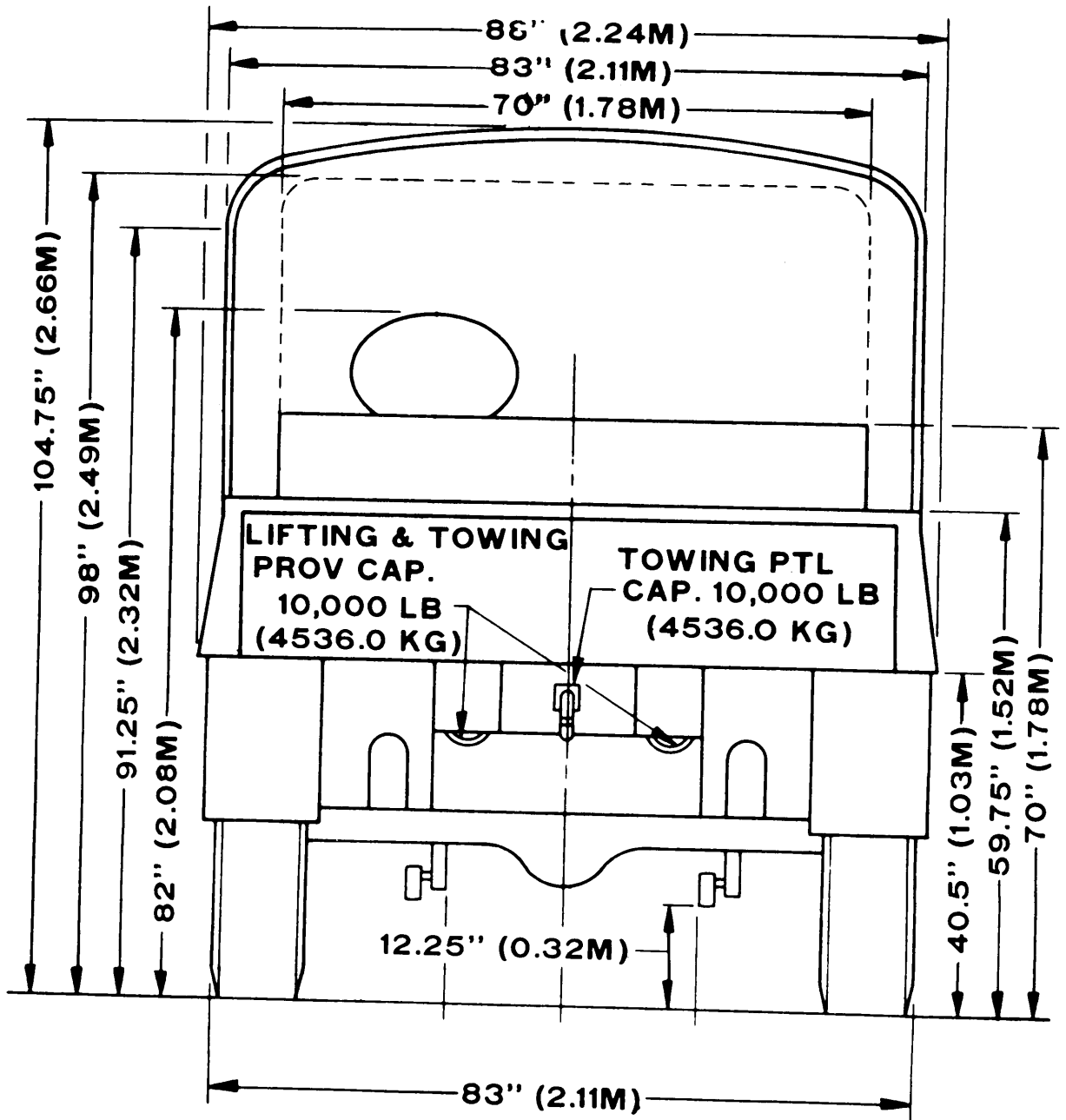
*Figure 1. Truck, Cargo, 2 1/2-Ton, 6x6, MS4.*

Figure 2.



SCALE 1:40

Figure 2. Side elevation.



SCALE 1:20

Figure 3. End elevation

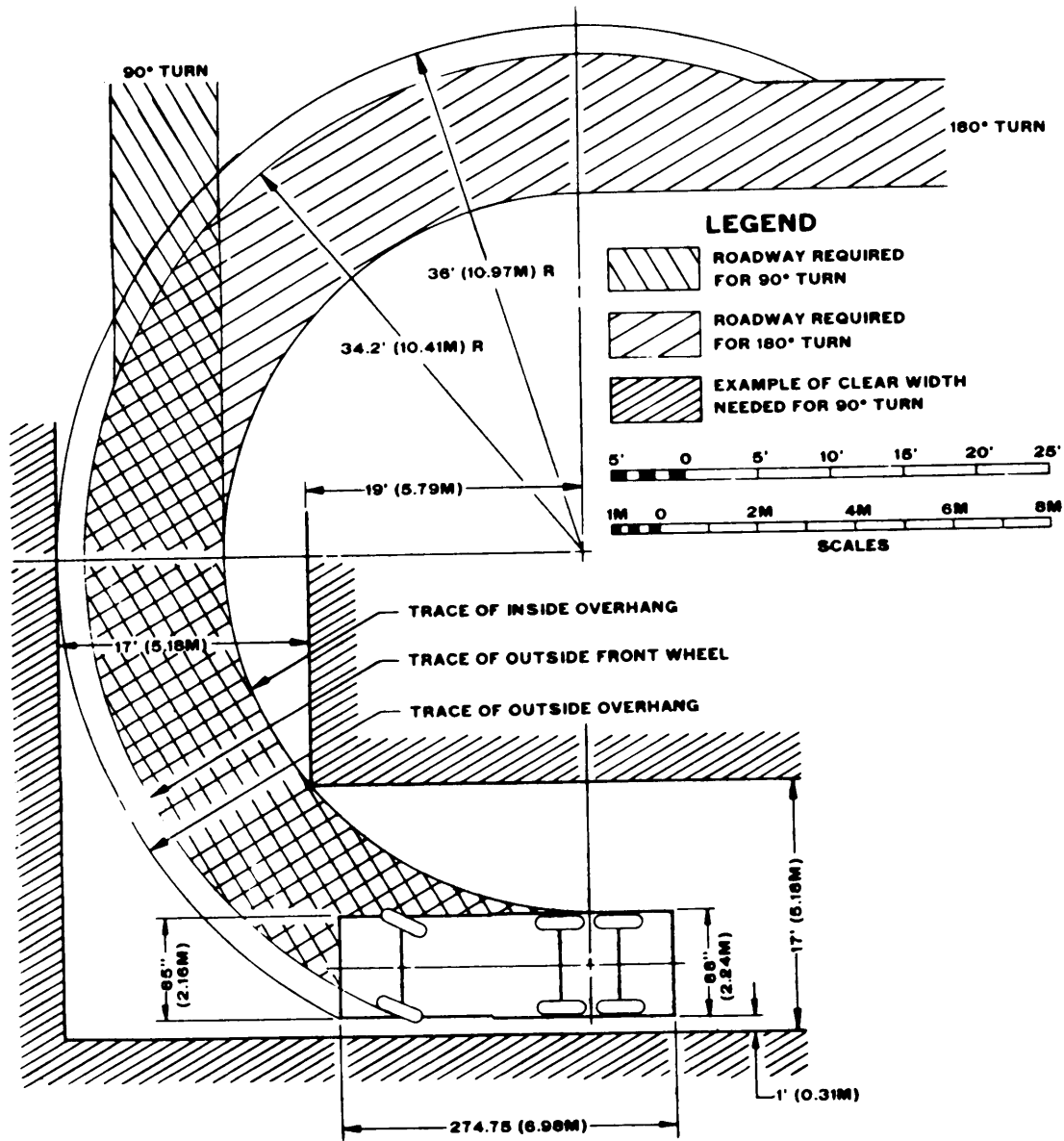
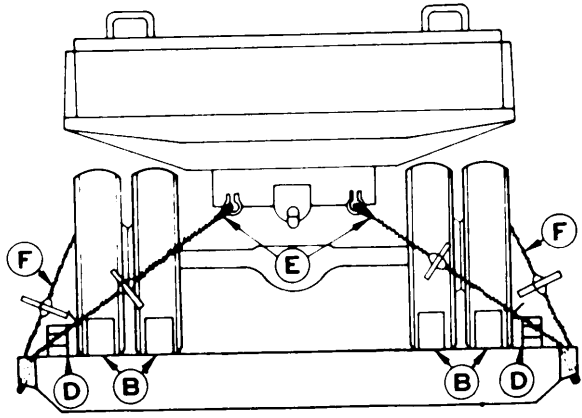
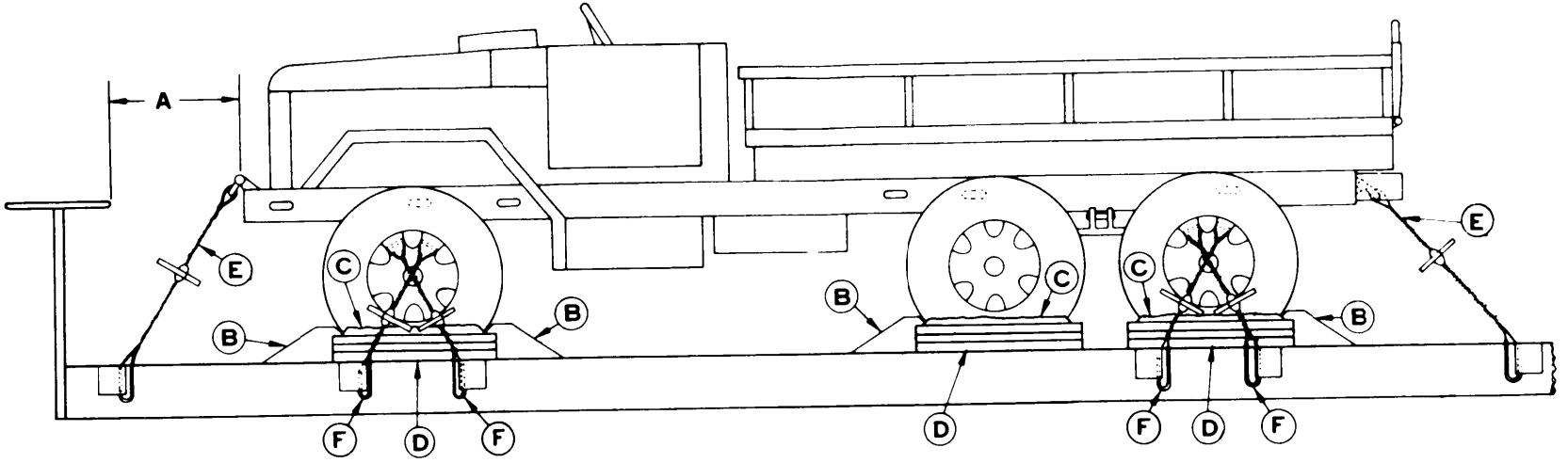


Figure 4. Turning characteristics diagram. Truck, Cargo, 2 1/2-ton, 6x6, M34, WWh







**Table 1. Bill of Material and Instructions for Blocking and Restraining Truck, Cargo, 2½-Ton, 6 x 6, M34, on Railroad Flatcars With Wooden Floors**

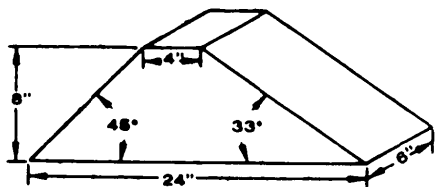
Bill of Material			
<i>Lumber</i>			
2-in. x 4-in. ....	<i>Linear Feet</i>	Wire, No. 8 gage (not required when steel rope is used) ...	300 ft (approx)
2-in. x 6-in. ....	54	Rope, steel wire, ½-in.-dia. (not required when No. 8	70 ft (approx)
6-in. x 8-in. ....	18	gage wire is used).	
	16		
<i>Nails</i>			
12d (4-in.) ....	<i>No. Required</i>	Clips, ½-in. ....	28
20d (4-in.) ....	42	Thimbles, std, ½-in. (open-type) .....	12
40d (5-in.) ....	84	Waterproof paper or burlap .....	As required
	40		

**Material Specifications**

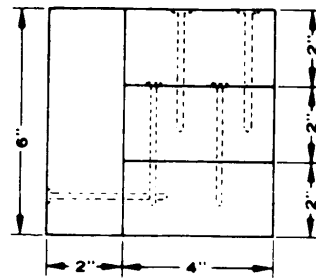
- Lumber:** Douglas-fir or comparable lumber with straight grain and free from material defects, Fed Spec MM-L-751.
- Nails:** Common, cement-coated, Fed Spec FF-N-105.
- Rope:** ½-in., 6 x 19, IWRC steel cable, Fed Spec RR-W-410.
- Wire:** No. 8 gage, annealed, black, Fed Spec QQ-W-461.
- Clips:** "U"-bolt, Crosby, heavy-duty, or equal.

<i>Item</i>	<i>No. of pieces</i>	<i>Application</i>	<i>Item</i>	<i>No. of pieces</i>	<i>Application</i>
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.			located at each end of the unit and to stake pockets on the same side of the car. When load exceeds 22,000 lb, 8 strands of No. 8 gage wire will be used. 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, ½-in. IWRC steel cable, in a complete loop, and secure with four ½-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).
B	8	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 intermediate wheels, and in back of 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.	F	8	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. When load exceeds 22,000 lb, additional items F will be applied to the intermediate rear wheel.
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			
		Six strands of No. 8 gage wire. Attach to the shackles			

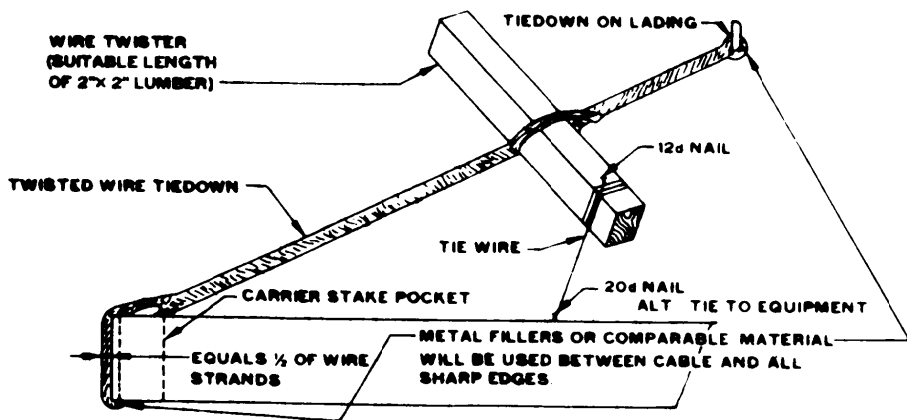
1. Load as shown is based on a flatcar 9 feet 2 inches wide (platform). Cars with wider platforms may be used.
2. All handbrakes will be applied with the hand levers wired or blocked. Gearshift levers for automatic or conventional transmissions must be placed and wire-tied in neutral position. Clutch 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, 15, 19A, and 19B therein.



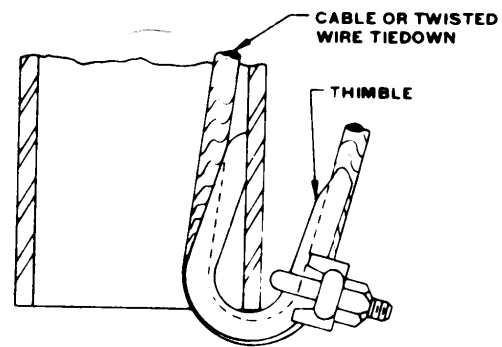
SKETCH 1



SKETCH 2

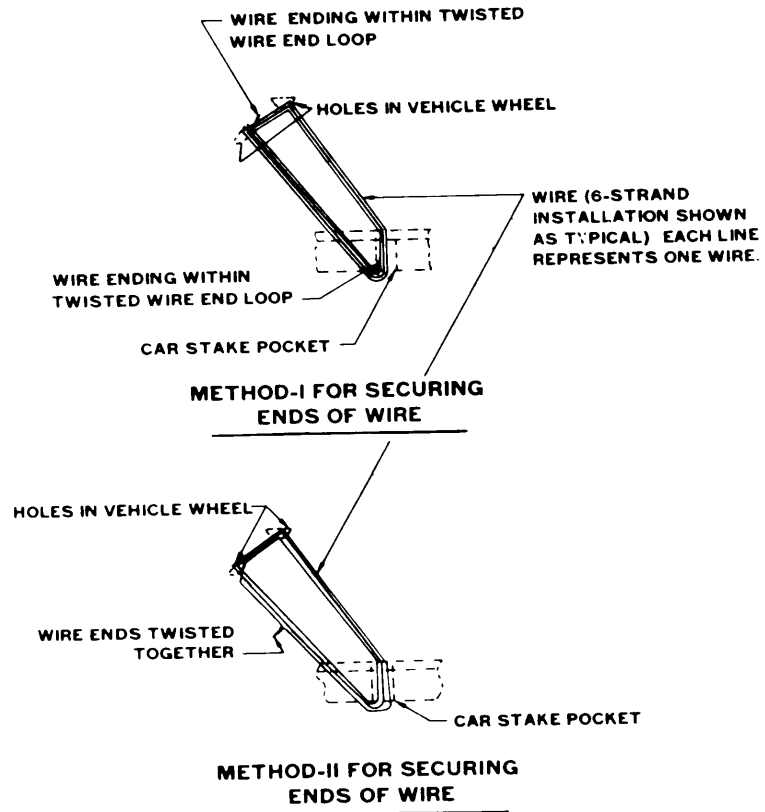


SKETCH 3



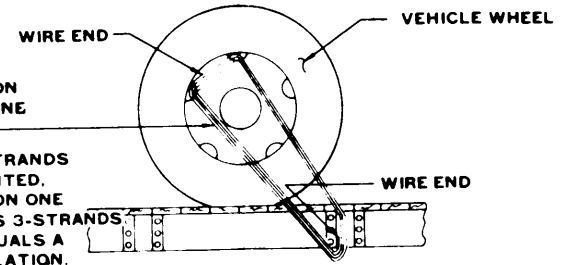
SKETCH 4

Figure 6. Blockina detail diagram.

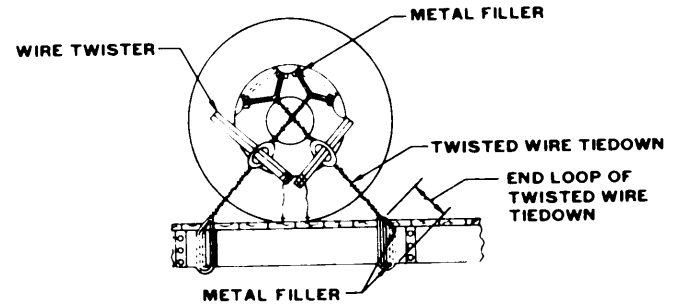


WIRE (6-STRAND INSTALLATION SHOWN AS TYPICAL). EACH LINE REPRESENTS ONE WIRE.

NOTE: ONE OF THE LAP STRANDS IS NOT TO BE COUNTED. THEN 3-STRANDS ON ONE SIDE OF LOOP-PLUS 3-STRANDS ON OTHER SIDE EQUALS A 6-STRAND INSTALLATION.



**STEP I**  
ONE PIECE OF WIRE THREADED THROUGH AND READY FOR TWISTING

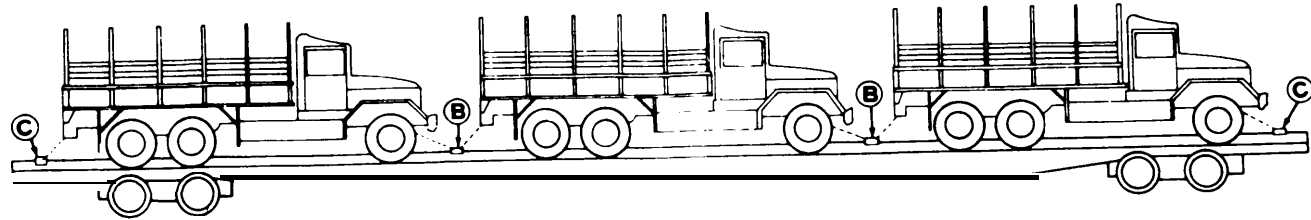


**STEP II**  
WIRE TWISTED INTO TIEDOWN

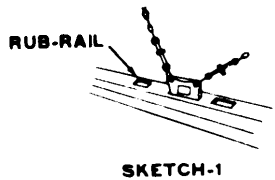
SKETCH 1

Figure 7. Wheel restraint diagram.

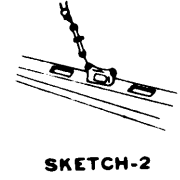




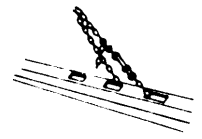
SIDE VIEW



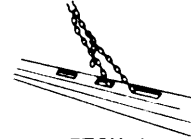
SKETCH-1



SKETCH-2

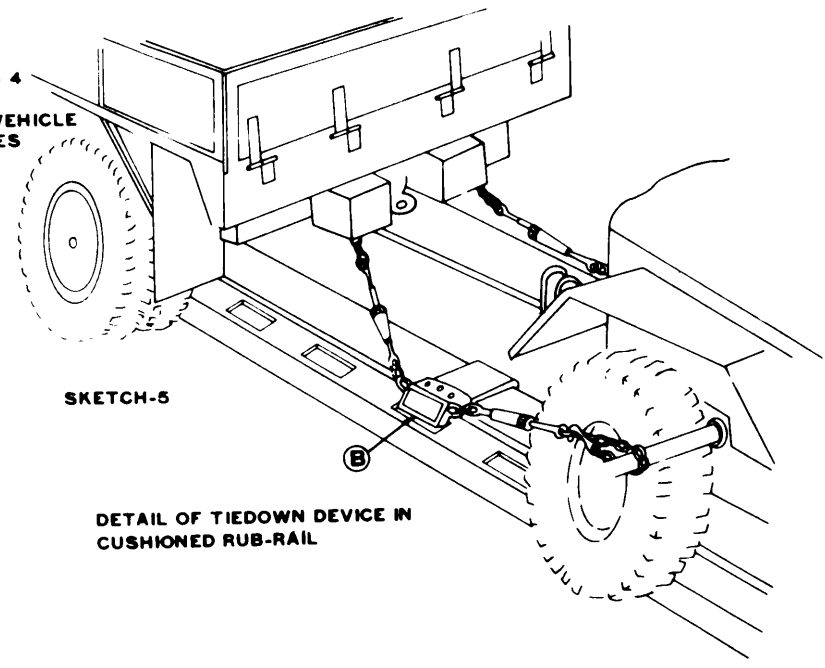


SKETCH-3



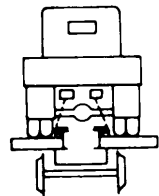
SKETCH-4

NOTE:  
 MINIMUM REQUIREMENT - 4  
 CHAINS PER VEHICLE 2  
 CHAINS ON ONE END OF VEHICLE  
 MUST HAVE TURNBUCKLES  
 FOR TAKE UP.  
 4 TURNBUCKLES FOR  
 TAKE UP PER VEHICLE  
 PREFERRED.

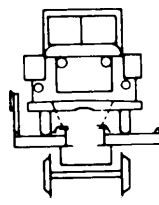


SKETCH-5

DETAIL OF TIEDOWN DEVICE IN CUSHIONED RUB-RAIL



REAR VIEW



FRONT VIEW

Figure 8. Loading diagram on cushioned rub-rail flatcars.



**Table 2. Instructions for Loading Truck, Cargo, 5-Ton, 6 x 6, M54, and Similar Type Vehicles, With or Without Winch, Empty, Loaded on G85 or G89 Cushioned Rub-Rail Flatcars or Similar Railroad Flatcars**

<i>Item</i>	<i>No. of pieces</i>	<i>Application</i>	<i>Item</i>	<i>No. of pieces</i>	<i>Application</i>
A	-----	Brake wheel clearance. Six-inch clearance required in back of, on both sides of, and above brake wheel, with 4 inches required underneath brake wheel.	C	4	----- Brandon single chain tiedown device with ½-in.-dia Excelloy chain, or similar, proof-tested at 27,500 lb. Locate as shown. Attach chain around the front axle of the first vehicle facing one end of the car and through the lifting clevis located at the rear of the vehicle facing the opposite end of the car. Substitute, if desired, ½-in.-dia chain with grabhook and turnbuckle equipped with a safety-lock device, proof-tested at a minimum of 22,500 lb. Attach one end of the chain to the rub-rail of the car by looping the chain through the slots in the rub-rail. Attach the other end of the chain to the vehicle in the same manner as described above. See General Instructions following these specifications for further details.
B	As required	Brandon double chain tiedown device with ½-in.-dia Excelloy chain, or similar, proof-tested at 27,500 lb. Locate between the vehicles as shown. Attach one chain around the front axle of one vehicle, and attach the other chain through the lifting clevis located at the rear of the other vehicle as shown in sketch 5. Substitute, if desired, ½-in.-dia chain with grabhook and turnbuckle equipped with a safety-lock device, proof-tested at a minimum of 22,500 lb. Attach one end of the chain to the rub-rail of the car by looping the chain through the slots in the rub-rail. Attach the other end of the chain to the vehicle in the same manner as described above. See General Instructions following these specifications for further details.			

### GENERAL INSTRUCTIONS

1. When ordering specialized railroad freight equipment, shippers should order cars equipped with tiedown devices in the quantities specified for items B and C (sketches 1 and 2, fig. 8). In the event conventional chain tiedowns are supplied in lieu of the tiedown devices specified, two of the four tiedowns required for each vehicle must have an adjustable turnbuckle equipped with a safety lock device (see sketch 3, fig 8) located in the chain for tensioning purposes. The chains must be applied in the following manner:
  - a. Attach the two chain tiedowns without the turnbuckle (see sketch 4, fig. 8) to one end of the vehicle and to the car tiedown facility. Pull as tight as possible by hand, and attach the hook to an appropriately located link of the chain.
  - b. Attach the two chains with the adjustable turnbuckles to the opposite end of the vehicle and to the car tiedown facility. All four chain tiedowns should then be made taut by tightening the turnbuckles.

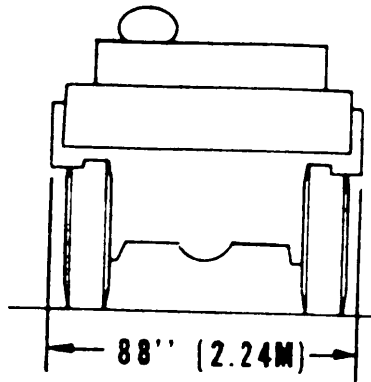
*Note.* Load binders are not to be used in lieu of turnbuckles to tension tiedown chains.
2. Vehicles must face in the same direction and be uniformly spaced along the length of the car to allow sufficient space at each end of the car and between the vehicles for securement. Apply tiedowns parallel to each other at the same end of the vehicle and down from the vehicle point of attachment to the car tiedown facility. The angle of the tiedown must not be greater than 45°.
3. Tiedowns installed around front axles shall not come in contact with electrical wiring, hydraulic lines, vehicle controls, or other appurtenances. If tiedowns cannot be installed without contact with any of the aforementioned appurtenances, then point of attachment at the front of the vehicle shall be the lifting clevis, the same as at the rear of the vehicle.
4. Handbrakes on vehicles must not be set.
5. Gearshift levers for automatic or conventional transmissions must be placed and wire-tied in neutral position.
6. Open hooks must be secured with wire over the opening to prevent the hook from becoming disengaged from the chain link to which it is secured.
7. Turnbuckles used to tighten chains must be wired or locked to prevent them from turning during transit unless the turnbuckles are equipped with self-locking devices.

8. When conventional chains are tensioned, care should be taken to avoid tensioning to such extent that rub-rail may start to rise. Brandon, or similar tiedown, devices attached to the vehicle tiedown shackles should not be tensioned beyond the point where the springs of the vehicle start to compress. After chains are tightened, they should be struck with hammer or bar to eliminate any possible misalignment of links. Further tightening may be required to take up any slack that develops because of link alignment.

9. Brandon tiedown devices are not to be attached to the slots in the cushioned rub-rail adjacent to the position of the recessed trailer hitches. This is to preclude the flange edge of the device, which rests over the inner side of the car's center sill, from coming in contact with any portion of the trailer hitch when in recessed position and thereby restricting the action of the cushioned rub-rail. When placement of vehicles on cars determines that securement points to the car would fall in this area, conventional chain tiedowns (with or without turnbuckles) attached through the rub-rail slots will be used instead of Brandon devices.

10. See Association of American Railroads (AAR) "Rules Governing the Loading of Commodities on Open Top Cars" and General Rules 4, 5, 7, and 19-A therein for further details.

### SHIPPING DATA



#### W/O WINCH

WT 11,775 LB (5341.1 KG)  
 VOL 1,091.0 CU FT (30.90 CU M)  
 AREA 159.7 SQ FT (14.84 SQ M)

#### W/WINCH

WT 12,186 LB (5527.6 KG)  
 VOL 1,147.3 CU FT (32.47 CU M)  
 AREA 167.9 SQ FT (15.60 SQ M)

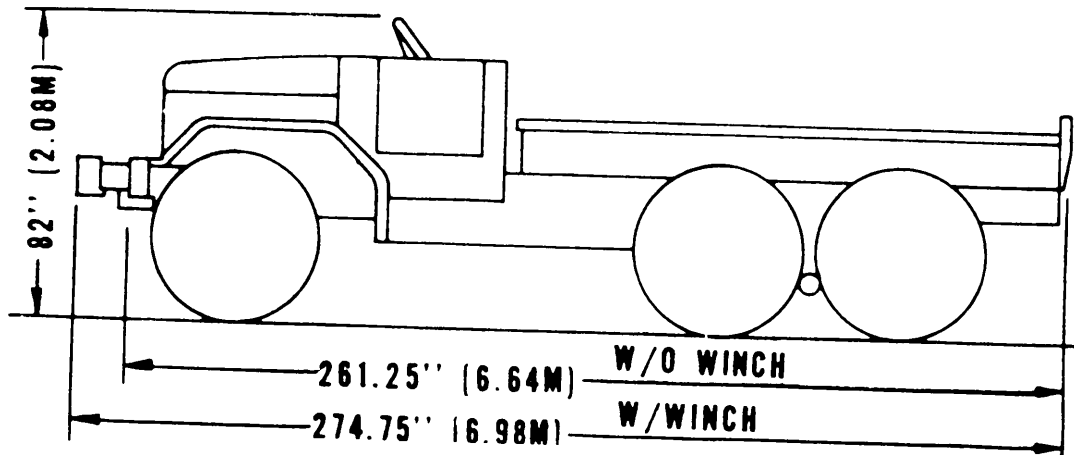


Figure 9. Sectionalization diagram.

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,  
*General, United States Army,*  
*Chief of Staff.*

Official:

KENNETH G. WICKHAM,  
*Major General, United States Army,*  
*The Adjutant General.*

Distribution:

Active Army:

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CofEngrs (1)	Centers (2)
TSG (1)	Svc Colleges (2)
Dir of Trans (5)	Br Svc Sch (2)
USAAVNCOM (5)	Gen Dep (5)
USAMC (5)	Trans Sec, Gen Dep (3)
USA CD Agcy (2)	Trans Dep (3)
USCONARC (5)	Army Dep (2)
ARADCOM (2)	Arsenals (2)
ARADCOM Rgn (2)	USATEA (50)
OS Maj Cored (10)	POE (2)
4th Log Cored (5)	USA Tml Cored (2) except
MDW (2)	USATCA (20)
Armies (S)	Army Tml (2)

NG: State AG (3).

USAR: None.

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