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MILITARY SPECIFICATION

MOBILITY, TOWED AEROSPACE GROUND EOUIPMENT, GENERAL REQUIREMENTS FOR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers general design and performance requirements for the mobility of towed ground support equipment. The complete mobility requirements for an item of towed aerospace ground equipment not specifiec herein shall be specified in the individual equipment specification (see 6.4).

1.1.1 Applicability. The requirements and tests contained in this specification apply to the mobility aspects of all manually propelled and towed items of ground equipment. They represent the minimum acceptable mobility features. When it is known that the equipment will require mobility features that are more severe than the mobility features stated herein, the mobility features may be modified in the individual equipment specification.

1.1.1.1 General application. Prior to use of this specification, the required operating conditions of the item of equipment under consideration should be reviewed to determine which mobility requirements relate directly to the equipment. The tests specified herein mav be supplemented to meet the requirements of the individual item of equipment. These tests are considered minimal and should not be reduced in scope. This is considered a performance specification with limited design parameters.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

O-A-548	Antifreeze, Ethylene Glycol, Inhibited
TT-C-520	Coating Compound, Bituminous, Solvent Type, Underbody (for Motor Vehicles)
VV-B-680	Brake Fluid, Automotive
VV-F-800	Fuel Oil, Diesel
VV-G-76	Gasoline, Automotive
ZZ-I-550	Inner Tube, Pneumatic Tire
ZZ-T-381	Tires, Pneumatic, Vehicular (Highway)
ZZ-T-391	Tire, Solid Rubber, and Wheels, Solid Rubber Tire, (Industrial)
ZZ-T-410	Tire, Pneumatic, Industrial
ZZ-T-1083	Tires, Pneumatic, Low Speed, Off Highway

Military

MIL-P-514	Plates, Identification, Instruction and Marking, Blank
MIL-L-2104	Lubricating Oil, Internal-Combustion Engine, Tactical Service
MIL-F-3541	Fittings, Lubrication
MIL-H-3992	Hose and Hose Assembly, Rubber: Air and Vacuum Brake, Automotive
MIL-C-4751	Casters, Rigid and Swivel, Precision Heavy Duty, and Shock Absorbing
MIL-H-5606	Hydraulic Fluid, Petroleum Base; Aircraft, Missile, and Ordnance
MIL-C-7474	Casters, Industrial
MIL-W-8005	Wheels and Hubs, for Industrial Pneumatic Tires
MIL-L-10324	Lubricating Oil, Gear, Sub-Zero
MIL-G-10924	Grease, Automotive and Artillery
MIL-T-12459	Tire, Pneumatic; For Military Ground Vehicles

STANDARDS

Military

MIL-STD-1223	Administrative Wheeled Vehicles Treatment, Painting, Rustproofing, Undercoating, Identification Marking, Data Plates and Warranty Notice Stardards
MIL-STD-1472	Human Engineering Design Criteria for Military Systems, Equipment and Facilities

MS24374	Casters, Rigid and Swivel, Precision, Spring Mounted
MS24380	Casters, Industrial
MS27149	Casters, Rigid and Swivel, Precision, Heavy Duty
MS27281	Casters, Rigid and Swivel, Precision, Spring Mounted, Pneumatic Tired
MS35387	Reflector, Indicating, Clearance
MS35423	Light, Marker, Clearance - Service
MS35746	Coupling, Automotive - Air Brake Lines
MS51117	Pintle Assembly, Towing - 100,000 Lbs. Capacity, Manual Release
MS51118	Pintle Assembly, Towing - 40,000 Lbs. Capacity, Manual Release
MS51335	Pintle Assembly, Towing - 18,000 Lbs. Capacity, Manual Release
MS51336	Lunette - Coupler, Drawbar, Ring
MS52105	Fifth Wheel Assembly - 33 Inch Universal, Truck-Tractor, 25,000 Lbs. Capacity
MS53034	Fifth Wheel Assembly - 36 Inch Universal, Truck-Tractor, 45,000 Lbs. Capacity
MS53036	Kingpin, Fifth Wheel, 2 Inch
MS53037	Kingpin, Fifth Wheel, 3-1/2 Inch
MS53044	Wheel, Pneumatic Tire-Disk Type with Ring for Tactical Wheeled Vehicles

DRAWING

Ordnance Corps

C7387807	Wheel Assembly, Disc Type, 16 x 4.50 "OE", 5 Hole, 5-1/2 Dia. Bolt Circle, 3-3/8 Dish

(Copies of specifications, Standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

Department of Transportation
Federal Motor Venicle Safety Standards and Regulations

393.14	Lamps and Reflectors, Large Semitrailers and Full Trailers
393.15	Lamps and Reflectors, Small Semitrailers and Full Trailers
393.26	Requirements for Reflectors
393.40	Adequacy of Brakes
393.41	Parking Brakes
393.42	Brakes Required on All Wheels

393.43	Breakaway and Emergency Braking
393.45	Brake Tubing and Hose, Adequacy
393.50	Reservoirs Required
393.52	Brake Performance

(Application for copies should be addressed to the Department of Transportation, Federal Highway Administration, Washington, D. C. 20591.)

Society of Automotive Engineers, Incorporated

SAE Standards and Recommended Practices

J133	Kingpin Performance
J555	Truck, Truck Tractor, Trailer and Motor Coach Wiring
J559	Seven Conductor Jacketed Cable for Truck and Trailer Connections
J560	Seven Conductor Electrical Connector for Truck Trailer Jumper Cable
J585	Tail Lamps (Rear Position Light)
J586	Stop Lamps
J588	Turn Signal Lamps
J592	Clearance, Side Marker, Identification, and Parking Lamps
J667	Brake Test Code, Inertia Dynamometer
J682	Rear Wheel Splash and Stone Throw Protection
J695	Turning Ability and Off-Tracking
J697	Safety Chain of Full Trailers or Converter Dollies
J700	Fifth Wheel Kingpin
J702	Brake and Electrical Connection Locations
J848	Fifth Wheel Kingpin - Heavy Duty
J849	Connection and Accessory Locations for Towing Doubles Trailers and Multi-Axle Trailers
J875	Trailer Axle Alignment

(Application for copies should be addressed to the Society of Automotive Engineers, Two Pennsylvania Plaza, New York, New York 10001.)

The Tire and Rim Association, Incorporated

Year Book

(Application for copies should be addressed to the Tire and Rim Association, Incorporated, Command Building, 34 North Hawkins Avenue, Akron, Ohio 44313.)

US Army Test & Evaluation Command

AD-719084 TECOM Material Test Procedures

(Application for copies should be addressed to the Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314.)

State of California

Vehicle Code of California

(Application for copies should be addressed to the Department of Motor Vehicles, 2570 24th Street, Sacramento, California 95809.)

3. REQUIREMENTS

3.1 General. This specification covers the required mobility for, and standard components to be used in, the design of towed or manually-propelled aerospace ground equipment. When self-propulsion means are required by the individual equipment specification, it shall be in addition to the requirements of this specification. Self-propulsion capability shall not interfere with the mobility features for towing. The mobility features shall be classified as shown in table I.

3.1.1 Individual equipment specifications. In the event the mobility requirements of this specification conflict with the requirements of an individual equipment specification, the requirements of this specification shall govern. Conflicting specifications and all deviations from these requirements shall be referred to the responsible procuring activity of the Army, Navy, or the Air Force (see 6.5).

3.2 Classification of requirements. The requirements for mobility are classified as follows:

Item	See Requirement
General design (applicable to all)	3.3
Additional requirements by types	3.4
Additional requirements by groups	3.5
Brakes	3.6
Bumper	3.7
Casters	3.8
Fenders	3.9
Landing gear	3.10
Lighting devices and wiring	3.11
Mudflaps	3.12
Pintle hook, rear	3.13
Reflectors	3.14
Safety chains	3.15
Tires and tubes	3.16
Towbars and lunette eyes	3.17
Wheels	3.18
Markings	3.19.

TABLE I. Classification of Mobility Features

TYPE		APPLICABLE GROUP			
I	Mobile on paved level surfaces (hangar and flight line)				
	Class 1 - Manually propelled for short distances in hangars, shops, and assembly buildings	A	B	C	-
	Class 2 - Towable at slow speed in and around hangars, shops, and assembly buildings	A	B	C	-
	Class 3 - Manually propelled for shipboard application	A	B	C	-
II	Mobile on paved and unpaved level surfaces (entire airfield, especially flight lines)	A	-	C	D
III	Mobile on highways and generally level or improved cross-country terrain within the perimeter of the airbase or airfield	A	-	C	D
IV	Mobile on snow and ice (type III for arctic airfield)	A	-	C	-
*V	Mobile on highways and unimproved cross-country terrain found outside the perimeter of the airbase				

GROUPS
Group A - Two wheel running gear **Group B - Three wheel running gear Group C - Four wheel running gear Group D - Semitrailers

* Type V mobility tests shall be run only at Aberdeen Proving Ground, Maryland, or alternate recommended by TECOM (Test & Evaluation Command).

** Group B may be used only with the approval of the applicable government activity.

3.3 General design (applicable to all types, classes, and groups). The following requirements shall apply to all equipment within the scope of this specification.

3.3.1 Ease of operation, maintenance, and repair. The equipment shall be so constructed that normal adjustments, repairs, and overhaul can be readily accomplished by operating personnel. The equipment shall be constructed to provide for the use of conventional, general-purpose hand tools for maintenance purposes.

3.3.1.1 Disturbance to other elements. The equipment shall be constructed to permit the replacement and adjustment of components and accessories with minimum disturbance to and without removal of other elements of the unit.

3.3.1.2 Operating clearances. Maintenance provisions and operating features insuring operating clearances for facilitating maintenance and servicing operations at extremely low temperatures by operating personnel wearing heavy gloves or mittens and bulky clothing and footgear shall be in accordance with MIL-STD-1472.

3.3.1.3 Intricate devices. Intricate locking devices, controls, and threaded fastenings that can be easily overtorqued by operators shall not be used.

3.3.1.4 Quick-disconnect fastenings. Covers or access plates that must be removed for component adjustments or for component or parts removal shall be equipped with durable quick-disconnect fastenings or combinations of quick-disconnect fastenings and hinges.

3.3.2 Chassis frame. The chassis frame shall be designed and constructed to support the maximum gross load and maintain chassis alignment under stated conditions of operation and transportability without applying undue stress or load on equipment or stores. When the frame contains a floor, the floor shall be so sloped that spilled liquids can be completely drained from an opening in a central location, without dropping on other components.

3.3.2.1 Interference. The chassis frame of all towable ground equipment with running gear and mounted equipments shall be so designed that there will be no interference between the equipment and the towing vehicle under specified operating conditions.

3.3.2.2 Unit or integral frame. Unit or integral frame construction is permitted wherein all towing and running gear will be mounted directly to the item of equipment without the necessity for a separate chassis frame. Integral frame shall provide the required structural strength of any applicable separate frame.

3.3.3 Running gear. Government and industry standard towed AGE components specified herein shall be used. To facilitate logistics, preference shall be given use of government standard towed AGE components. The equipment shall be so designed that it will not sway, skid, yaw, tilt, or jackknife during towing and braking operations.

3.3.3.1 Axles. Axle ratings shall include sufficient safety factor to carry the load specified at the ground, for the operating surface conditions, and for the speeds at which the axle is to be towed.

3.3.4 Towing force. The towing force required to move equipment from rest on a smooth, dry, level, paved surface, such as brushed concrete or macadam, free of loose material shall not exceed 75 pounds per ton of maximum gross weight. The towing force shall be measured at the drawbar and shall be considered as acting parallel to the operating surface of the vehicle.

3.3.5 Lubrication fittings. Lubrication fittings shall conform to MIL-F-3541 and shall be located in accessible, protected positions. Extended fittings shall be provided to lubricate parts or assemblies that are not readily accessible for direct lubrication or which are likely to be overlooked because of inaccessibility. Pressure relief fittings shall be provided where the use of high pressure lubricating equipment may cause damage.

3.3.5.1 Lubrication chart. A lubrication chart shall be provided directing attention to all lubrication fittings and shall specify the range and grade of lubricant required for critical temperatures. The chart shall be permanently attached to the unit in an accessible and convenient location. The chart shall be inscribed on a nonferrous plate conforming to MIL-P-514.

3.3.6 Lubricants and service products. All mobility features of towable equipment shall be designed for servicing with the lubricants and service periods specified in table II.

TABLE II. Lubricants and Refill Chart

ITEM	TYPE REFILL AND SERVICE			OPERATION PERIOD (HRS. OPER.)		
	SAE	API	MILITARY SPECIFICATIONS	CHECK	CLEAN	REFILL OR REPLACE
Chassis lubrication	Multi-Purpose	NLGI Grade 1	MIL-G-10924	AR		AR
Engine crankcase oil (See engine manual for ambient temperature recommendation) Gasoline	10 *20 30 *40	MS	MIL-L-2104	D	AR	100
Diesel (1% maximum sulphur in fuel)	10 *20 30 *40	DM DS	MIL-L-2104			
Shock absorbers			MIL-H-5606			
Hydraulic system			MIL-H-5606	D	2000	2000
Powershift Transmission Type C1	10W	MS DM	MIL-L-2104	D		1000
Type A	Automatic transmission Fluid type A - Suffix A					
Differentials, planetary huts, steering gear box, conventional gear systems Above 32°F	140	EP	MIL-L-2105	200	AO	1000
Below 32°F	90		MIL-L-10324			
Hydraulic brake fluid	70 R3		VV-B-680	100	AO	AR
Cooling system Below 32°F	Ethylene glycol		O-A-548	D	1000	Seasonal
Above 32°F	Water and 5% corrosion inhibitor solution					
Fuel system (See engine manual for ambient temperature fuel recommendation) Gasoline	VV-G-76	Class A Above 50°F Class B Below 50°F		D	AO	AR
Diesel	VV-F-800	DF2 Regular grade (1% max. sulphur content) DF 1 Winter grade (0.5% max. sulphur content)				

AR - As required
AO - At overhaul
D - Daily (8-10 Hours)

*Base oils used to get a viscosity of SAE 20, 40, or 10W-30 are to be qualified to MIL-L-2104

3.3.7 Dimensions and loading criteria. The following dimensional and loading criteria shall apply to all towed vehicles that will be used on federal, state, and overseas roads. For the purpose of this specification, combination weights and dimensions will be determined using a truck tractor that would be used for hauling comparable trailers in industry. The tractor data shall be that available in the tractor manufacturer's commercial catalogs of current or revised issue made available to the applicable government agency.

3.3.7.1 Dimensions. The dimensions shall be as follows:

Height - 132 inches maximum

Width - 96 inches maximum (including all appurtenances). Fixtures and equipment permanently attached to the trailer shall not extend more than 9 inches beyond the outside face of the tires or skids on either side of the vehicle

Length - 50 foot maximum for combination of trailer and truck tractor.

3.3.7.2 Weight. The maximum gross combination weight, subject to the following axle loading limitations, shall be 36,000 pounds when the furthest axle center-to-center spacing is less than 10 feet. For each 1-foot increase above 10 feet, the loading may be increased by 850 pounds up to a maximum weight of 60,000 pounds. For the purpose of this specification, bogies having axles spaced 42 inches or less center-to-center shall be considered as one axle.

3.3.7.2.1 Axle loadings. The axle loading shall be 16,000 pounds maximum. Axle alignment shall be in accordance with SAE J875.

3.3.8 Towing provisions. All equipment, except type I, class 1, and any group D, shall be designed for towing, in train, four trailers of the same weight and sizes behind a prime mover. Group D (semitrailers) shall be designed for towing not more than two in a train with applicable converter dolly installed under the second semitrailer. Bulky stands, shelters, and similar wheeled equipment items shall be designed for towing singly.

3.3.9 Ground clearance, ramp breakover, approach and departure angles. All equipment shall be designed to enter (approach), negotiate (up or down), and leave (depart) a solid surface (ie, one piece) ramp having a slope of 20°. Ground clearance, angles of approach, ramp breakover, and departure shall be selected accordingly. The length of the incline shall be not less than 1.2 times the wheelbase of the equipment. Ground clearance shall be not less than that specified for a particular type or class of mobility.

3.4 Additional requirements by types. The following requirements shall apply to individual types of equipment as outlined in table III. Towed vehicles shall comply with all Federal Motor Vehicle Safety Standards in effect on the date of manufacture.

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TABLE III. Additional Requirements By Types

ITEM	REQUIREMENT	TYPE I PAVED-LEVEL SURFACE (HANGAR) GROUPS A-B-C		
		CLASS 1	CLASS 2	CLASS 3
1	General design	Paragraph 3.3		
2	Roadability:			
	(a) Negotiate obstructions and depressions	1 inch high or deep	1 inch high or deep	2 inches high or deep
	(b) Towing power	Manual	GSE Tug	Manual
	(c) Height of towing pintle hook or manual force (inches above ground to center of opening)	10-24	10-24	N/A
	(d) Height of fifth wheel when loaded (inches above ground)	N/A	N/A	N/A
	(e) Towing speed (mph)	2-1/2	5	2-1/2
	(f) Turning speed right or left at maximum cramping angle (mph)	2-1/2	5	2-1/2
	(g) Withstand sudden stops without damage from (mph)		5	-
	(h) Slope operation:			
	Sides	8°	8°	15°
	Longitudinal	20°	20°	15°
3	Ground Clearance (3.3.9), minimum, inches	2-1/2	6-1/2	3-1/2
4	Casters (if used), minimum size, inches	4	Comply with 3.8 6	5
5	Tires and tubes, pneumatic:			
	Minimum size	Comply with 3.16.1 3.50 x 6, 4 ply	Comply with 3.16.1 4.00 x 8, 6 ply	Comply with 3.16.1 3.50 x 6, 4 ply acceptable
	Solid rubber	Not to be used		
6	Wheels	Comply with 3.18.1	Comply with 3.18.1	Comply with 3.18.1, 3.18.3
7	Brakes:			Comply with 3.6.3
	Parking	Comply with 3.6.1	Comply with 3.6.1	Per equip spec
	Service		Comply with 3.6.2	Per equip spec
8	Fenders	None	Par. 3.9	None
9	Mudflaps	None	Par. 3.12	None
10	Bumpers	None	Par. 3.7	None
11	Special requirements	None	None	Per equip spec

TABLE III. Additional Requirements By Types (Cont'd)

TYPE II	TYPE III	TYPE IV	TYPE V
PAVED AND IMPROVED UNPAVED SURFACES (ENTIRE LEVEL AIRFIELD)	HIGHWAY AND IMPROVED SURFACE AND CROSS-COUNTRY TERRAIN	TYPE III PLUS SNOW AND ICE (ARCTIC AIRFIELD)	HIGHWAY AND UNIMPROVED SURFACE AND CROSS-COUNTRY
GROUPS A-C-D	GROUPS A-C-D	GROUPS A-C	GROUPS A-C-D
Applicable to all types			
GSE Tug 10-24 50 +1 -0 Paved highway - 20 Graded gravel - 10 Belgian block - 8 8 20 8° 20° Up and down	Truck-tractor 30-48 50 +1 -0 Paved highway - 60 Graded gravel - 25 Belgian block - 20 Cross-country terrain-20 8 20 11.5° Side slope 20° Up and down	All type III requirements plus those specified in equipment specification	50 +1 -0 60 20 20 20 10 60 11.5° Side slope 20° Up and down Compatible with prime mover
8	14 (Under landing gear)		14
Comply with 3.8 20	Not to be used		Not to be used
Comply with 3.16.1 or 3.16.2 6.00 x 9, 6 ply Special application only. See 3.16.3	Comply with 3.16.2 6.70 x 15, 4 ply Not to be used		See equipment specification
Comply with 3.18.1 or 3.18.2 For solid rubber, 3.18.3	Comply with 3.18.2		See equipment specification
Comply with 3.6.1 Comply with 3.6.2 Special 3.6.2 and 3.6.3	Comply with 3.6.1 All wheels Comply with 3.6.2 All wheels		See 3.6.1 See 3.6.2
Par. 3.9	Par. 3.9		See 3.9
Par. 3.12	Par. 3.12		See 3.12
Par. 3.7	Par. 3.7		See 3.7
None (maybe brakes)	Slope performance Par. 3.4.1.1 Par. 3.4.1.2		Slope performance Par. 3.4.1.1 Par. 3.4.1.2

3.4.1 Special requirements by types

3.4.1.1 Fording ability. When specified (see 6.5), the equipment shall be waterproofed and equipped for fording hard-bottomed water crossings deep enough to submerge its running gear, and shall withstand such submergence for at least 15 minutes in a salt water solution with a specific gravity of 1.03 without damage and with no requirement for preparation or servicing before and after fording operations.

3.4.1.2 Springs and shock absorbers. Equipment designed for type III mobility shall be equipped with multi-leaf, compression coil, torsion bar, torsion coil, air, or equivalent, spring suspensions of sufficient strength to sustain the total gross loads under stated conditions of operation without evidence of overload or permanent set. Clearance between the springs and spring stops shall be sufficient to prevent frequent bottoming. Shock absorbers, vibration-damping devices, or design features shall be provided to meet specified shock and vibration transmission limits. The degree of road shock mitigation may be determined to be critical for specific items of mounted equipment. If so, the limits should be specified by the procuring activity.

3.5 Additional requirements by groups. The following requirements shall apply to individual groups of aerospace ground equipment as outlined in table IV.

3.5.1 Special requirements by groups

3.5.1.1 Steering geometry, group C. Vehicles or towed equipment containing four-wheel running gear shall be provided with a towbar and automotive knuckle-type steering assembly incorporating tie rods having end joints of ball stud and ball socket type. The inside cramping angle shall be not less than 40°. Total load imposed on the trailer shall be so distributed that 35 $\pm$5 percent of the total load is carried on the front axle. The towbar shall steer the wheels through suitable linkage. The towbar and steering mechanism shall be so fabricated that additional turning force cannot be applied to the towbar or the steering mechanism after the maximum cramping angle has been reached. The front and rear tread width shall be equal. Caster, camber, toe-in, turning ability, ball joints, ball studs, and tie-rod sockets shall conform to SAE J695 for the basic Ackerman Principle of Automotive Steering.

3.5.1.1.1 Articulating wheel running gear. When required, group C trailer vehicles shall have a fully articulating type front and rear wheel, balanced chassis frame suspension system, furnished complete as an assembly with all running gear parts and components. This shall afford coupling to the payload container so as to maintain relatively constant wheel loading and ground contact over operating surfaces having as obstacles obstructions not less than a minimum of one-half the wheel diameter used. It shall preclude rack and torque

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TABLE IV. Additional Requirements By Groups

ITEM	REQUIREMENT	GROUP A RUNNING GEAR 2-WHEEL	GROUP B RUNNING GEAR 3-WHEEL
1	Towbar: Type	Yes Rigid	Yes Optional design
2	Weight distribution (%): Front wheels Rear or main wheels Lunette eye	 N/A 85 +5-0 15 +0-5	Equal distribution ±5% on each wheel
3	Landing gear (3.10)	See 3.10	No
4	Wiring:	NOTE: Normally not required for Groups A, B, and C items; equipment specification.	
	Lighting Turn signals Voltage Intervehicle connector Intervehicle cable Rear lamps Spare bulbs Clearance and marker lamps Service type	Complete Yes 12V SAE - 7 Prong Combination tail stop - Both sides at rear	Complete Yes 12V - Operate from 12V prime mover SAE - 7 Prong Combination tail stop - Both sides at rear
5	Fifth wheel and kingpin		
6	Brakes: Service Parking		
7	Chassis		
8	Bogie		
9	Safety chains	Yes	Yes

TABLE IV. Additional Requirements By Groups (Cont'd)

GROUP C RUNNING GEAR 4-WHEEL	GROUP D RUNNING GEAR SEMITRAILERS
Yes Hinged - Special requirements	
35 ±5 65 ±5	See equipment specification
No	See 3.10
however, must be furnished as outlined when specified in	
Complete Yes 12V - Operate from 12V prime mover SAE - 7 Prong- Front-Male Rear-Female Combination tail stop - Both sides	Complete (circuit breakers) Yes 12V - Operate from any prime mover SAE - 7 Prong- Front-Male Rear-Female. Covered SAE-120-inch - To connect with commercial truck Combination tail stop - Both sides Complete set - 12V packaged ICC required One amber clearance, front each side One amber blackout, front each side One red clearance, rear each side
	Special requirements (3.5.1.2.1)
	Special requirements (3.5.1.2.2) Manual (3.6.1)
	Special requirements(3.5.1.2.2.1.5)
	Special requirements (3.5.1.2.2.2)
Yes	

stresses from being transmitted to the payload container. Stops shall be provided to prevent unnecessary vertical wheel movement, and the running gear shall be so designed that the vehicle fully equipped, loaded with gross rated payload equipment, and its front or rear wheels cramped at any operating angle can negotiate such obstacles. Parts failure, interference or objectionable distortion of the running gear articulating assembly or chassis frame shall not occur when blocks 8 inches high are placed under any wheel or under any combination of two or more wheels.

3.5.1.2 Group D. Semitrailers shall be provided with a landing gear and shall be so designed that there will be no interference between the semitrailer and its towing vehicle when the two are coupled and assume angles from 0 to 90° with the semitrailer longitudinal axis during operation. The weight distribution shall be as specified in the equipment specification.

3.5.1.2.1 Upper fifth-wheel assembly (including kingpin). The upper fifth wheel shall be of such size as to completely cover the lower fifth wheel when the lower fifth wheel is coupled to the kingpin of the upper fifth wheel and turned at any angle with the semitrailer. The upper fifth-wheel assembly shall be constructed as follows:

a. Skid plate - carbon steel

b. Channel support plate - carbon steel

c. Channels - carbon steel

d. Bolts - alloy steel.

3.5.1.2.1.1 Fifth-wheel loading. The design loading for the fifth-wheel assembly shall not exceed 24,000 pounds for semitrailers used on state highways on an unrestricted basis. In extreme cases where missiles or other heavy loads are transported, the maximum load on the upper fifth wheel shall not exceed 45,000 pounds. The lower fifth wheel shall conform to MS53034.

3.5.1.2.1.1.1 Upper fifth-wheel plate. The upper fifth-wheel plate shall be not less than 3/8 inch thick. It shall be reinforced on the upper surface through use of commercial angle iron, channels, and ribs and shall include an access hole to permit servicing the brake connections and coupling sockets. The upper fifth-wheel plate shall be compatible with the Ordnance lower fifth wheel shown on MS52105.

3.5.1.2.1.1.1.1 Pickup plate. A pickup plate compatible with the size and weight of the applicable semitrailer shall be provided as an extension of the upper fifth-wheel plate. It shall extend sufficiently forward to protect the equipment item from damage when coupling to and uncoupling from a truck tractor. The pickup plate shall be the same width as the fifth wheel.

3.5.1.2.1.2 Kingpin. The fifth-wheel kingpin for each semitrailer shall be as shown on MS53036 and the applicable SAE standard. The kingpin shall be welded in place. Kingpin for the 45,000-pound lower fifth wheel (MS53034) shall conform to MS53037-1. The kingpin performance shall conform to SAE J133. Angular location of the kingpin shall be in accordance with SAE J700 and J848. Soft ride and other special kingpin installations shall be as specified in the individual equipment specification.

3.5.1.2.1.2.1 Kingpin horizontal location. The horizontal location of the kingpin shall be limited by the following criteria as illustrated in the current issue of SAE handbooks.

a. Swing radius - 56-1/2 inches maximum measured from the centerline of the kingpin to the furthest corner of the vehicle

b. Landing wheel clearance - 90 inches minimum measured 6 inches below the kingpin rearward to the leading edge of any obstruction.

3.5.1.2.1.2.2 Kingpin vertical location. The vertical location of the fifth-wheel kingpin shall be such that the distance from the ground to the underside of the upper fifth-wheel plate is 50 +1 -0 inch when the semitrailer is level and fully loaded.

3.5.1.2.1.3 Safety latch. The fifth wheel shall be equipped with a safety latch that will prevent the trailer from dropping should the kingpin become disengaged or fail to latch during transit. The safety latch shall incorporate a mechanism to prevent the releasing of the safety latch until the landing gear is completely lowered.

3.5.1.2.1.4 Pads. Ringed pads that pivot about the landing wheel axles shall be provided for use on soft terrain. A means shall be provided for holding the pads in the retracted position. Maximum ground pressure for pads shall be not more than 30 psi.

3.5.1.2.2 Service brakes. Semitrailers shall be provided with service brakes of the internal-expanding, two-shoe, wedge type, cam-action, air-actuated type controllable from the driver's seat of the towing tractor. The system shall be complete in accordance with Motor Carrier Safety Regulations, including emergency breakaway features, air filters, air reservoir, slack adjusters, relay emergency valves, and air hose connectors fitted with dummy couplings. Installation shall be in accordance with the brake manufacturer's recommendations.

3.5.1.2.2.1 Brake performance. The service brake system shall be so designed, constructed, and installed that the brakes of the semitrailer will apply in synchronism with the tractor brakes, and the rearmost axle of the train will develop braking power at the fastest rate.

3.5.1.2.2.1.1 Hose couplings. Semitrailer airbrake hose couplings shall be rigidly mounted in protected locations at the front and rear of the semitrailer. The couplings shall be as specified on MS35746. Dummy caps shall be provided for all couplings, and shall be securely fastened to the semitrailer frame to prevent loss.

3.5.1.2.2.1.2 Brake lining. Brake lining shall be of the molded, heavy duty type conforming to Motor Carrier Safety Regulations.

3.5.1.2.2.1.3 Emergency devices. The airbrake system shall provide for control of the semitrailer by application of the service brakes on the prime mover. Emergency devices shall be provided and so arranged that a brake application will occur in the event of undue loss of air pressure or a breakaway of the trailer from the prime mover. The emergency system shall conform to the requirements of the California Vehicle Code, section 26508, and when provided shall also serve as a parking brake. This item shall conform to Motor Carrier Safety Regulation 393.41.

3.5.1.2.2.1.4 Braking ability. When fully loaded and coupled to the specified prime mover, the semitrailer shall be capable of stopping within 30 feet from a speed of 20 mph on dry, smooth, level pavement free of loose material.

3.5.1.2.2.1.5 Chassis. The chassis, or equivalent, including subframe shall be of rugged construction and of the lightest weight practicable consistent with the sturdiness required for the intended service.

3.5.1.2.2.1.5.1 Frame. The chassis frame shall be constructed to support the maximum gross loads, and shall maintain necessary chassis alignment and stability under the most severe operating conditions.

3.5.1.2.2.1.5.2 Side members. Side members shall be of proper section and of sufficient strength for the intended service conditions. Each side member shall withstand severe cross-country operation and brake application. Where necessary, local reinforcements shall be provided to support frame channel flanges at points of concentrated loads.

3.5.1.2.2.1.5.3 Cross members. Cross members shall be properly spaced to minimize intervening spans. They shall be so designed and installed as not to interfere with ready removal and installation of trailer components, or with necessary component adjustment.

3.5.1.2.2.2 Bogie. When required (see 6.4), a four-wheel rear bogie of the fully articulated, balanced-spring-suspension type designed to prevent wheel (axle) hop, instantaneous axle overload, and spring windup shall be furnished complete with stops, axles, springs, torque rods, and other necessary parts. Stops shall be provided to prevent unnecessary vertical movement. Lateral float shall not exceed 1/4 inch on either bogie axle. The bogie shall be so

designed that the fully loaded and fully equipped vehicle will not incur part failure, interference, or objectionable distortion of the chassis frame or bogie assembly when blocks 8 inches high are placed under any wheel or under any combination of two or more wheels.

3.5.1.2.2.2.1 Obstructions. The bogie shall be so designed that with the vehicle fully equipped and loaded with rated cross-country payload, part failure, interference or objectionable distortion of the bogie assembly (or chassis frame) will not occur when blocks 8 inches high are placed under any wheel or under any combination of two or more wheels.

3.6 Brakes

3.6.1 Parking brakes. The parking brakes shall be either the automotive type with internal expanding shoe, proper backing plates, and drum, or the automotive disc type. The brakes shall be easily and quickly applied by means of a single manual control (hand lever) not exceeding 18 inches in length from the pivot point that will simultaneously operate all brakes to lock the wheels against rotation. Brake actuation forces shall not exceed 200 pound inches. When service brakes are provided, the parking brakes may be either entirely separate from the service brakes or mechanically connected through an independent mechanism. The number of brakes required shall be based on an analysis of the maximum gross load, speed, center of gravity, rolling radius, operating surface friction, and the performance requirements of the equipment specification.

3.6.1.1 Parking brake performance. The parking brakes shall lock the wheels so that the wheels will skid and not roll on dry, level, brushed concrete free of loose material when the vehicle, with maximum gross load, is subjected to a towing force sufficient to move it. The vibrations and shocks encountered on the applicable operating surfaces shall not cause the brakes to engage. Moving force shall be applied in both the forward and reverse directions. The parking brakes shall hold the vehicle, with maximum gross load, whether headed up or down a 11.5° incline.

3.6.1.2 Parking brake protection. The braking surfaces shall be adequately protected against the entry of grease, grit, slush, rain, or mud that may be encountered during operation.

3.6.2 Service brakes. Air, air-over-hydraulic, or inertia-actuated mechanical- or hydraulic-type service brakes shall be provided on all wheels. The service brakes shall safely control the loaded vehicle under any operating condition. This applies to operation in forward and reverse directions when being loaded or unloaded from aircraft. When the actuation medium is not specified in the equipment specification, inertia-actuation means shall be provided for types I and II equipments.

3.6.2.1 Service brake performance. Under all conditions of loading, the service brakes shall hold the vehicle motionless and control it whether headed up or down a 11.5 incline, and shall stop the vehicle from a speed of 20 mph in not more than 30 feet from the point at which initiation of the brake actuating force begins. Deceleration and stopping distance shall be demonstrated on a dry, hard, approximately level road surface free from loose material. Inertia-actuated service brakes shall be designed to permit backing with not more than a 1-second delay after application of backing force.

3.6.2.2 Service brake protection. The braking surfaces shall be adequately protected against the entry of grease, grit, slush, rain, or mud that may be encountered during operation.

3.6.2.2.1 Stopping device. An automatic means of stopping towed items of equipment shall be provided to prevent uncontrolled run-away in case of separation from the towing vehicle or any other towing means such as a hoist line, cable line, or chain. The stopping device shall be capable of automatic actuation during normal as well as emergency operation. The release of any holding device or mechanism shall be accomplished as a part of the normal towing operation. Neither auxiliary manual releases, manual triggering devices, nor auxiliary towing eyes shall be used to facilitate this operation. The stopping device shall be capable of safely stopping any towed equipment item when separation from the towing vehicle, cable, or chain occurs on inclined planes up to 20° in elevation.

3.6.2.3 Air brake receptacles. Two trailer brake receptacles conforming to MS35746 shall be mounted on the front of the equipment. Two receptacles shall be mounted on the rear of the equipment and located in accordance with SAE J702 and SAE J849.

3.6.2.4 Master cylinder. The master cylinder shall be of the compensating type with a self-controlled fluid reservoir.

3.6.2.5 Brake drums. The brake drums shall be demountable without disturbing wheel bearings. They shall have flanges or ribbing that will prevent objectionable distortion when the brake is applied. Preferably, brake drums shall include a window, equipped with a dust-tight cover of a design that will prevent ready loss of parts, to facilitate inspection of brakes. Brake drums and backing plates, or dust shields, shall provide labyrinth design to exclude dust, mud, snow, and other foreign material to the maximum practicable extent.

3.6.2.6 Brake lines. The brake lines shall be securely anchored to the chassis and sufficiently protected from damage. Fittings on lines shall be SAE standard types. When used, air hose shall conform to MIL-H-3992. Brake lines shall be readily detachable at the axle ends. A metal protective loom shall be provided at each point where lines pass through metal members, except where a through-frame connector is provided. Pressures in lines shall not exceed those recommended by the brake manufacturer. Arrangements for removing air (bleeding) from hydraulic lines shall be provided and shall be readily operable without requiring special tools or equipment.

3.6.2.7 Additional Department of Transportation requirements. The service brakes shall also meet any additional requirements imposed by Motor Carrier Safety Regulations 393.40, 393.42, 393.43, 393.45 through 393.50 and as specified herein. The provisions of 393.42 shall apply except the trailer weight shall be assumed not to exceed 1,500 pounds when determining if service brakes are to be installed.

3.6.3 Deadman braking. When specified in the equipment specification, deadman braking shall be furnished to render the vehicle immobile either in the absence or incapacitation of the operator or towbar disconnect on manually moved or self-propelled trailers.

3.7 Bumper. A heavy-duty bumper shall be provided at the rear of the assembly for protection against damage when backing and in case the equipment is pushed from the rear to assist in traversing unimproved roads. The bumper shall withstand the forces imposed during pushing of the complete assembly by another vehicle without damage to lights or other components when operating under the worst conditions applicable to the specific type of mobility.

3.8 Casters. Casters shall conform to the following standards. Sizes and types shall be in accordance with the requirements of the individual equipment specification for weight and service.

TYPE CASTER	APPLICABLE STANDARDS	APPLICABLE SPECIFICATIONS
Industrial	MS24380	MIL-C-7474
Heavy-duty precision	MS27149	MIL-C-4751
Shock-mounted precision	MS24374	MIL-C-4751
Pneumatic-tired precision	MS27281	MIL-C-4751.

3.9 Fenders. Fenders shall be of rugged construction and shall be capable of supporting an evenly distributed 250-pound load. The fenders shall be of adequate dimensions to prevent water, mud, and slush from being thrown on the chassis or equipment by the tires. The underside of the fenders and adjacent parts subject to being sprayed with mud and slush from the wheels shall be given a heavy application of high grade vehicle undercoating material conforming to TT-C-520. Undercoating shall be applied in accordance with MIL-STD-1223.

3.10 Landing gear. All landing gears shall hold the equipment in the level position when parked, either empty or loaded to maximum gross load. It shall be fully retractable when the equipment is attached to the towing vehicle. In the retracted position, it shall provide the minimum ground clearance for the applicable type, class, or group of mobility. Landing gear shall provide vertical adjustment of not less than ±4 inches from the level position.

3.10.1 Landing gear for group A items. The landing gear for group A equipment shall be selected and designed according to the maximum gross weight as follows:

a. Equipment weighing less than 250 pounds - A retractable leg with skid base configuration will be acceptable

b. Equipment weighing 250 to 1,500 pounds - A retractable, solid, rubber-tired caster will be acceptable on items weighing less than 1,500 pounds. The landing gear shall not be required to support the equipment in any position other than the level position. A crossbar or handles shall be provided for readily aligning the lunette eye of such items with the pintle of the towing vehicle

c. Equipment weighing more than 1,500 pounds - A sealed bearing, retractable, full-swiveling, adjustable, acme screw-type landing gear equipped with a hand wheel for actuation shall be provided. Not less than 8 inches in adjustment from level position, 4 inches up and 4 inches down measured at the horizontal centerline of the lunette, shall be provided to facilitate coupling to the towing medium. A pneumatic-tired caster shall be provided for pneumatic-tired items weighing over 1,500 pounds. Pneumatic-tired wheels shall be mounted on a cantilever spindle and hub to facilitate tire replacement. Single or dual wheels will be acceptable.

3.10.2 Landing gear for group D items. Group D items shall be provided with a two-wheel landing gear of the two-speed, vertical-screw type capable of supporting the front of the fully loaded semitrailer when not coupled to the towing vehicle. The landing gear shall be secured to the semitrailer with locknuts and shall be easily removable. The landing gear shall have a static rating capable of accommodating the gross weight and adjustable to permit coupling and uncoupling of the semitrailer from truck tractors having unloaded fifth-wheel heights ranging from 46 to 56 inches.

3.10.2.1 Actuation. The landing gear shall be manually operable by means of a crank conveniently located at the curbside and streetside and shall be capable of simultaneous or individual operation. The raising and lowering mechanism shall include a power ratio sufficient for ease of manual operation. Not more than 30 pounds of force on a 12-inch crank handle shall be required for raising and lowering the landing gear.

3.10.2.2 Ground clearance. The landing gear with wheels shall be installed on the semitrailer to provide a minimum 14-inch ground clearance when the gear is retracted. When low-bed semitrailers are provided, ground clearance shall be not less than 8 inches.

3.10.2.3 Lubrication. Adequate means for lubrication of the landing gear shall be incorporated.

3.11 Lighting devices and wiring

3.11.1 Lighting devices and wiring, general application. All lighting devices and wiring shall be designed for operation from a 12V power supply (see 6.2).

All wiring shall conform to the general and trailer sections of SAE J555. Lighting devices shall conform to the following specifications:

Clearance And Sidemarker Lamps

Amber	MS35423-1
Red	MS35423-2
Identification	SAE J592
Stop lamps	SAE J586
Tail lamps	SAE J585
Turn signals	SAE J588, class A.

3.11.2 Vehicles less than 80 inches wide. Items less than 80 inches wide shall contain the lighting devices, and in the location as required by Motor Carrier Safety Regulation 393.15.

3.11.3 Vehicles 80 inches or more wide. Items 80 inches or more in overall width shall contain the lighting devices, and in the locations as required by Motor Carrier Safety Regulation 393.14.

3.11.4 Intervehicle connector receptacle, front. A male receptacle conforming to SAE J560 shall be provided on the front surface and located in accordance with SAE J702 or J560. The receptacle shall have a spring-loaded cover.

3.11.5 Intervehicle connector receptacle, rear. A female receptacle conforming to SAE J560 shall be provided on the rear and located in accordance with SAE J849. The receptacle shall have a spring-loaded cover.

3.11.6 Intervehicle connection cable. The intervehicle connection cable shall consist of a cable conforming to SAE J559 with plugs conforming to SAE J560 attached to each end. One plug shall be female (socket) and the other plug shall be male (pin). The total length of the assembled intervehicle cable shall be 120 $\pm$1 inch.

3.12 Mudflaps. Mudflaps shall be provided on the rear fenders and shall conform to SAE J682.

3.13 Pintle hook, rear. Equipment shall be fitted with one of the following pintle hooks mounted on the rear in accordance with SAE J849:

MS51117	100,000 pounds capacity
MS51118	40,000 pounds capacity
MS51335	18,000 pounds capacity.

3.14 Reflectors. Reflectors shall be as follows, mounted in accordance with Motor Carrier Safety Regulation 393.26.

Red	MS35387-1
Amber	MS35387-2.

3.14.1 Reflectors for small equipment. Small equipment (typically type I, class 1) shall be equipped with reflectors mounted as follows:

a. One red reflector to be mounted on the rear

b. One amber reflector on each side and one amber reflector on the front.

3.14.2 Vehicles less than 80 inches wide. Vehicles less than 80 inches wide shall be equipped with reflectors as follows:

a. On the front, two amber reflectors, one at each side

b. On each side, one amber reflector at or near the front and one red reflector at or near the rear

c. On the rear, two red reflectors, one on each side.

3.14.3 Vehicles 80 inches or more wide. Vehicles 80 inches or more in width shall be equipped with reflectors in accordance with Motor Carrier Safety Regulation 393.14.

3.15 Safety chains. Equipment designed for mechanical towing shall be provided with safety chains in accordance with SAE J697, except two chains shall be used.

3.16 Tires and tubes

3.16.1 Industrial pneumatic tires and tubes. Industrial pneumatic tires and tubes shall conform to ZZ-T-410 and limited to the sizes and ply ratings specified in MIL-W-8005. Loads, speeds, and applications shall be as specified in MIL-W-8005.

3.16.2 Transport-type pneumatic tires and tubes. Transport-type pneumatic tires and tubes shall conform to ZZ-T-550, ZZ-T-381, ZZ-T-1083, or MIL-T-12459, as applicable. In addition, the tires and tubes shall conform to the Tire and Rim Association Yearbook and Military supplement thereto. Tires and tubes shall be of the sizes and ply ratings specified in table V.

3.16.2.1 Wide base tires. Wide base tires may be used when vehicle performance requires high flotation, low silhouette, commercial tires.

TABLE V. Military and Commercial Transport-Type Tires

TIRE SIZE	SEE NOTE	PLY RATING	TREAD[1]	HIGHWAY			TYPE OF SERVICE[4]
				INFLATION PRESSURE (PSI)[2]	LOAD CAPACITY (LBS)[3]	MAXIMUM SPEED (MPH)[2]	
6.70-15	5	4	Hwy	26	1115		Highway
7.10-15	5	4	Hwy	26	1195		Highway
7.60-15	5	4	Hwy	26	1310		Highway
7.50-15	5	10	Hwy	80	3310	20	Special
8.25-15	5	14	Hwy	100	4450	20	Special
9.00-15	5	12	Hwy	80	4680	20	Special
10.00-15	5	14	Hwy	85	5480	20	Special
11.00-15	6	16	Hwy		5065	50	Special
6.50-16	5	6	Hwy	45	1420		Highway
7.00-16	6	6	NDCC	45	1580	50	Highway
				20	985		Off-road
9.00-16	5	8	Hwy	50	2640		Highway
9.00-16	5	10	NDMS	50	2420	50	Highway
				25	1760		Off-road
7.50-20	5	8	Hwy	60	2620	50	Highway
			NDMS	65	2740		Special
8.25-20	5	10	Hwy	65	3180		Highway
				75	4550	20	Special
9.00-20	5	10	Hwy	70	3960	50	Highway
9.00-20	6	8	NDCC	50	3240	50	Highway
10.00-20	6	14	NDCC	25	5210		Off-road
10.00-20	5	12	Hwy	75	5150		Highway
11.00-20	5	14	Hwy	75	5730		Highway
11.00-20	6	12	NDCC	75	5150		Highway
				35	3300		Off-road
12.00-20	5	14	Hwy	80	6020		Highway
12.00-20	6	14	NDMS	80	6020	50	Highway
12.50-20	6	12	NDCC	35	5330		Off-road
14.00-20	6	20	NDCC	50	9030	50	Highway
14.00-24	6	20	NDMS	90	10050	50	Highway
16.00-25	6	24	NDCC	60	11820	50	Highway
18.00-25	6	28	NDCC	70	18100	30	Highway
14.75-20		12	NDCC	50	6330	50	Off-road

[1] Treads: Hwy - Highway; NDCC - Non-directional cross-country; NDMS - Non-directional mud and snow.

[2] Inflation pressure, load capacity, and maximum speed based on Tire and Rim Association recommendations. Where this information and subsequent information published by the Tire and Rim Association differ, the latter shall apply.

[3]For variation of load ratings with inflation pressure, see TRA Yearbook and Military Supplement. Maximum values are specified.
[4]Type of Service: Highway - Improved surfaces; Special - Low-bed trailer and transporters on improved surfaces; Off-road - Off-road surfaces, speed determined by the situation.
[5]ZZ-I-550, ZZ-T-381, ZZ-T-1083, or TRA Yearbook, as applicable.
[6]ZZ-I-550, MIL-T-12459, or military supplement to TRA Yearbook as applicable.

3.16.3 Solid rubber tires. The use of solid rubber tires shall be limited to equipment where no standard pneumatic tire can be used because of adverse combination of low silhouette, clearance, and load capacity. When used, solid rubber tires shall be of the pressed-on, or high-profile cushion type with nonskid tread conforming to ZZ-T-391. The sizes and load capacities shall be as specified in table VI. Application of such tires to Air Force equipment requires prior approval of the Aerospace Ground Equipment Engineering Division. The provisions of this section are not applicable to solid tired, wheeled casters that are otherwise covered by Government specifications.

TABLE VI. Size and Load Capacity for Cushioned, Pressed-On Type Tires-Maximum Speed 10 MPH

SIZE*	LOAD CAPACITY (LBS)
10-1/2 by 5 by 5	1,730
13 by 4-1/2 by 8	1,770
16-1/4 by 5 by 11-1/4	2,400
18 by 5 by 12-1/8	2,590
15-1/2 by 6 by 10	2,960
16-1/4 by 6 by 11-1/4	3,020
18 by 6 by 12-1/8	3,300
21 by 5 by 15	2,900
21 by 7 by 15	4,520
21 by 8 by 15	5,320

*(outer diameter) by (face width) by (inner diameter) in inches.

3.16.4 Semipneumatic tires. Semipneumatic tires shall not be furnished on equipment to which this specification is applicable.

3.16.5 Inflation pressure. After a tire size has been selected, the required inflation pressure shall be selected from the Tire and Rim Association data. Dual ratings, one for highway service at 50 mph and one for off-road service, may be used. The inflation pressure of all tires shall be equal and shall be that required for the most heavily loaded tire. (See table V for loads and inflation pressure for various applications.)

3.17 Towbars and lunette eyes

3.17.1 Hinged type towbars. A positive-type latch shall be provided to hold the towbar in the up (vertical) position at any cramping angle position of the front wheels. The towbar also shall have a stop in the up position to prevent contact with the equipment item. When required by the equipment specification, the parking brakes shall be actuated by placing the towbar in the up position.

3.17.1.1 Towbar material. Towbars shall be fabricated from material of sufficient strength to resist permanent deformation under all types of operation specified herein.

3.17.2 Lunette eye. The towbars shall have a lunette eye conforming to MS51336. Lightweight, hollow lunette eyes conforming to envelope dimensions of MS51336 may be used on all type I and type II flight line trailers.

3.18 Wheels. All main wheels of an equipment item shall be of the same size. Where a particular towing vehicle or prime mover is specified, the wheels and tires of both vehicles shall be interchangeable. Auxiliary retractable wheels shall be exempt from this requirement.

3.18.1 Wheels and hubs for industrial pneumatic tires. Wheels and hubs for industrial pneumatic tires shall conform to MIL-W-8005.

3.18.2 Wheels for transport-type tires. Wheels for transport-type tires shall conform to table VII.

3.18.3 Wheels for solid tires. Wheels for solid tires shall be industry standard and commercially available. Wheels shall have ball or roller bearings, grease seals, and dust caps, and shall be removable for wheel replacement.

3.19 Markings. In addition to the marking required by the individual equipment specification, the following markings shall be provided.

TABLE VII. Defense Department Standardized Wheels[1]

TIRE SIZE	APPLI-[2] CATION	NOMINAL RIM[3] DIAMETER AND RIM CONTOUR (TRA)	ORDNANCE[4] WHEEL DWG. NO.	NO. OF STUDS	STUD CIRCLE DIAMETER (INCHES)	DISH OR OFFSET (INCHES)	APPROXIMATE WEIGHT (COMPLETE) (LBS)
6.70-15	S	15x5 K	CS	5			
7.10-15	S	15x5 K	CS	5			
7.60-15	S	15x5-1/2 K	CS	5			
7.50-15	S&D	15x6.0	CS	6			
8.25-15	S&D	15x6.5	CS	6			
9.00-15	S&D	15x7.5 Military	MS53044-1	6	8-3/4	6-1/8	65.5
10.00-15	S&D	15x7.5 Military	MS53044-1	6	8-3/4	6-1/8	65.5
11.00-15	S	15x7.5 Military	MS53044-1	6	8-3/4	6-1/8	65.5
6.50-16	S	16x4.50E ODC	C7387807	5	5-1/2	3/8	19.5
7.00-16	S	16x4.50E OHC	C7387807	5	5-1/2	3/8	19.5
9.00-16	S	16x6.50M SDC	MS53044-2	5	6-7/8	4	43.2
9.00-16	D	16x6.50H SDC	MS53044-3	5	6-7/8	5-7/8	47.2
7.50-20	S&D	20x6.0	CS	6			
8.25-20	S&D	20x6.5	CS	6			
9.00-20	S	20x7.5 Military	MS53044-5	6	8-3/4	6-3/16	87.7
10.00-20	S	20x7.5 Military	MS53044-4	6	8-3/4	5-1/8	87.7
11.00-20	S	20x7.5 Military	MS53044-4	6	8-3/4	5-1/8	87.7
9.00-20	D	20x7.5 Military	MS53044-5	6	8-3/4	6-3/16	84.5
10.00-20	D	20x7.5 Military	MS53044-6	10	11-1/4	6-1/8	88.5
11.00-20	D	20x7.5 Military	MS53044-6	10	11-1/4	6-3/4	88.5
12.00-20	S&D	20x7.5 Military	MS53044-7	10	11-1/4	7-1/8	91.0
14.75-20	S	20x10.0 Military	MS53044-8	10	11-1/4	7-1/8	138.1
14.00-20	D	20x10.0 Military	MS53044-8	10	11-1/4	8-7/8	139.2
14.00-24	S	24x10.0 Military	MS53044-9	10	13.189	8-7/8	179.0
16.00-25	S	25x11.25 Comm EM	Comm EM	12	15	9.95	388.6

[1] These wheels are to be used for mounting the tires specified in table V.
[2] S - Single; D - Dual
[3] Contour: ODC - Optional drop center
OHC - Optional hump contour
EM - Earthmoving
[4] CS: Commercial standard, demountable, disc-type wheels to be used pending availability of military standard wheels. The use of standard wheels and applicable tires is preferred.

3.19.1 Transportation data plate. A transportation data plate in accordance with MIL-P-514 shall be securely attached adjacent to the nameplate. The transportation data plate shall include the following:

TRANSPORTATION DATA PLATE

Shipping weight	Overall width
Shipping cubage	Overall height
Overall length	CG location

T.O. or T.M. Number.

3.19.2 Allowable towing speed marking. Each item of equipment shall have the maximum allowable towing speed permanently and legibly marked in a conspicuous location.

3.19.3 Tire inflation pressure. The inflation pressure of the tires shall be plainly marked on the equipment as near to each tire as practicable.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Acceptance tests. Mobility acceptance tests shall be performed on developmental test items, preproduction test items, qualification test items, or sampling test items as provided for in the equipment specification.

4.3 Test loads, observations, and rejection

4.3.1 Test loads. During the tests specified herein, items of equipment designed to transport aircraft components or other loads shall be loaded with the specified load or a load that simulates fragility as well as the weight and center-of-gravity location of the specified load.

4.3.2 Test observations. Each equipment item shall be closely observed for the following performance characteristics during subjection to each test specified herein:

a. Trackability

b. Ease of handling

c. Backup ability, except mobilizers or vehicles using Ackerman type steering system

d. Tendency to yaw, sway, and skid

e. Tendency to dogwalk on high-crowned roads

f. Tendency to tilt, turnover, or jackknife

g. Ground clearance

h. Interference between equipment item and towing vehicle

i. Contact of wheels with ground.

4.3.3 Rejection. The following shall be considered as causes for rejection:

a. Undesirable roadability features

b. Instability

c. Damage, distortion, or excessive wear resulting from any test

d. Contact of any part of the equipment, except the wheels, with the ground or ramps during normal operation

e. Interference between the equipment and its towing vehicle during normal operation.

4.4 Tests applicable to all types of mobility

4.4.1 General examination. The equipment, drawings, or other data defining the equipment shall be examined to determine compliance with the standard component, tire or caster size, clearance, and other design requirements specified herein. Any deviation from these requirements not specifically permitted by the equipment specification shall be cause for rejection.

4.4.2 Servicing and maintenance. All normal preventive maintenance and servicing operations specified in the handbook shall be performed to determine their adequacy, ease of accomplishment, and the accessibility of parts and assemblies for performances of same. Insofar as practicable, these tests shall be conducted as part of the normal preventive maintenance, servicing, and inspections performed in accomplishing the testing specified herein. Interferences or obstructions to servicing or preventive maintenance shall be recorded in detail on the test data sheets and referred to the engineering office of the procuring activity for disposition. At least one complete disassembly of the trailer shall be accomplished to determine adequacy of overhaul methods. Removal of one major component in order to remove another shall be cause for rejection.

4.4.3 Weight distribution. Weight distribution shall be measured, and shall be in accordance with 3.4 or 3.5 as applicable. Equipment designed to transport aircraft components or other loads shall be loaded with the actual load or a simulation thereof for this test. Simulation shall duplicate fragility as well as weight and center-of-gravity of the actual load. Payload shall be loaded in reference to the center-of-gravity of the vehicle.

4.5 Tests applicable to specific types of mobility

4.5.1 All types of mobility shall be tested as outlined in table VIII and as further defined herein.

4.5.2 Axle hop. Observations shall be made during brake tests to assure that no axle hop is evident during brake tests. Not less than five observations shall be made with the vehicle fully loaded and not less than five observations made with vehicle empty or partially loaded as stated in the equipment specification.

4.5.3 Instantaneous axle overload. The vehicle shall be instrumented with automatic recording-type strain gages or accelerometers to record loads and assure that the axle design load rating is not exceeded during brake and road tests. Axle design load rating shall be supplied by the vehicle manufacturer and shall be a certified rating obtained from the axle manufacturer and furnished to the engineering office of the procuring activity.

4.5.4 Spring overload (windup). The vehicle shall be instrumented with automatic, recording-type strain gages to record stresses and assure that the springs are not overloaded during brake and road tests due to windup or normal spring action. Design load capacity of springs shall be furnished by the vehicle manufacturer and shall be a certified copy of rating furnished by the spring manufacturer.

TABLE VIII. Tests

TYPE OF MOBILITY AND TESTS	TYPE I		
	CLASS 1	CLASS 2	CLASS 3
	A-B-C		
General examination	Paragraph 4.4 applicable to all types		
Roadability tests:			
Test course and condition	1 inch high at alternate 5 to 6-foot intervals perpendicular to direction of travel		2 inches high perpendicular to direction of travel
Obstructions			1-5/8 dia cable at 45° to direction of travel
Motive power	Manual (Pushed or pulled)	Vehicle towed	Same as type I, class 1
Pintle height, towing vehicle	N/A	10-30 inch	Same as type I, class 1
Surface	Paved-level, concrete or asphalt		Same as type I, class 1
Loading	Maximum gross load		Same as type I, class 1
Distance (miles)	2	5	1/3
Speed, average, maximum (mph)	2-1/2 - 3	5 - 7-1/2	2-1/2 - 3
Turns at maximum cramping angle:			
Right and left	25 each	50 each	Same as type I, class 1
Turning speed (mph)	2-1/2	5	
Ramp test	Yes	Yes	Yes
Ground clearance (minimum)	2-1/2 inches	6-1/2 inches	3-1/2 inches
Towing force:			
Maximum required from rest:	50 pounds per ton of weight	50 pounds per ton of weight	Per equip spec
Surface	Dry, level concrete	Dry, level concrete	Same as type I, class 1
Loading	Maximum gross loading	Maximum gross loading	Same as type I, class 1

TABLE VIII. Tests (Cont'd)

TYPE II	TYPE III AND TYPE IV		TYPE V
A-C-D	A-C-D	A-C	A-C-D
	Aberdeen Proving Ground Aberdeen, Maryland		Aberdeen Proving Ground Aberdeen, Maryland
Vehicle or truck-tractor towed	Vehicle or truck-tractor towed		Vehicle or truck-tractor towed
10-30 inch (kingpin height - 50 +1 -0)	30-48 inch (kingpin height - 50 +1 -0)		30-48 inch (kingpin height - 50 +1 -0)
Level paved high-way; Graded gravel road; Test course for type I	Level paved high-way; Graded gravel road; Cross-country terrain; Belgian block; Snow and ice		
2 cycles maximum gross load and empty	3 cycles maximum gross load and one cycle empty	As specified in equipment specification (type IV only)	3 cycles maximum load 2 cycles half load 1 cycle empty
600 100 50 Belgian block - 100	See 4.5.11		See 4.5.12
20-25 10-12-1/2 10-12-1/2 Belgian block - 8-10	See 4.5.11		See 4.5.12
50 each	50 each		50 each
8	8		10
Yes	Yes		Yes
8 inches	14 inches		14 inches
50 pounds per ton of weight	50 pounds per ton of weight		50 pounds per ton of weight
Dry, level concrete	Dry, level concrete		Dry, level concrete
Maximum gross loading	Maximum gross loading		Maximum gross loading

TABLE VIII. Tests (Cont'd)

	TYPE I		
	CLASS 1	CLASS 2	CLASS 3
	A-B-C		
Brake tests:		Yes (4.5.7.1)	Yes (4.5.13)
Number of sudden stops		25	
From speed of (mph)		5	
Wheel/axle hop:			Same as type I, class 1
Number of observations during brake tests			
Axle overload (instrumented during roadability and brake tests)			Same as type I, class 1
Spring overload (windup) (instrumented during roadability and brake tests)			
Slope performance:			Yes (4.5.14)
Side slopes operate	8°	8°	-
Longitudinal slopes operate	20°	20°	-
Ground contact pressure (maximum) (Measured in sled configuration)			
Weight distribution - Group A:			
Front wheels	N/A	N/A	N/A
Rear of main wheels	85 +5 -0	85 +5 -0	100
Lunette eye	15 +0 -5	15 +0 -5	N/A
Weight distribution - Group B:			
Front wheels	Equal distribution	Equal distribution	Same as type 1, class 1
Rear or main wheels	±5 percent on each wheel	±5 percent on each wheel	
Weight distribution - Group C:			
Front wheels	35 ±5 percent	35 ±5 percent	Equal distribution
Rear wheels	65 ±5 percent	65 ±5 percent	±5% on each wheel
Weight distribution - Group D:	See equipment specification	See equipment specification	N/A

TABLE VIII. Tests (Cont'd)

TYPE II	TYPE III AND TYPE IV		TYPE V
A-C-D	A-C-D	A-C	A-C-D
Yes 4.5.7.1, 4.5.7.2, 4.5.8 Additional for group B only. Emergency breakaway (4.5.9) Spd 20	Yes 4.5.7.1, 4.5.7.2, 4.5.8	Additional for group D only. Emergency breakaway (4.5.9)	Yes. Jennerstown Brake tests U. S. Army Test & Evaluation Command Materiel Test Procedure 2-2-608
25	50		
20	20		
	5 with vehicle fully loaded 5 with vehicle empty. No evidence of axle or wheel hop allowed		
	See special tests (4.5.3 and 4.5.4)		See 4.5.2, 4.5.3, 4.5.4
	See special tests (4.5.3 and 4.5.4)		See 4.5.5 and 4.5.6
8°	Up to 11.5°		11.5°
20°	Up and down 20° Type IV only. Gross loaded weight 3 psi (maximum) ground contact area		20°
N/A 85 +5 -0	N/A 85 +5 -0		See equipment specification
15 +0 -5	15 +0 -5		
Equal distribution	Equal distribution		See equipment specification
±5 percent on each wheel	±5 percent on each wheel		
35 ±5 percent 65 ±5 percent	35 ±5 percent 65 ±5 percent		See equipment specification
See equipment specification	See equipment specification		See equipment specification

4.5.5 Fording ability. Equipment designed for fording shall be operated through a salt water solution with a specific gravity of 1.03 (see 3.4.1.1) deep enough to submerge its running gear. The equipment shall remain in the water for 15 minutes. There shall be no failure or impending failure of any part of the vehicle.

4.5.6 Flexibility. Equipment containing bogies shall be subjected to this test. An 8-inch block shall be placed under any wheel, or under any combination of two or more wheels, with the equipment loaded at rated cross-country payload and wheels cramped at any angle. There shall be no failure, interference, or permanent distortion as a result of this test.

4.5.7 Braking. On items of equipment provided with brakes, the following tests shall apply, as applicable.

4.5.7.1 Parking brake. The parking brake shall be applied and the vehicle with rated cross-country load applied shall be subjected to a towing force sufficient to move the vehicle. The wheels containing the parking brakes shall skid and not roll.

4.5.7.2 Service brakes. With the vehicle loaded to gross vehicle weight, the service brakes of the vehicle shall operate smoothly and apply uniform braking action during the braking tests. For type II mobility, the line pressure shall be established to provide a deceleration rate of 15 fps at a speed of 20 mph. Ten successive stops shall be made at 1-minute intervals with 12 seconds allowed for application time. The brakes shall be allowed to cool for 5 minutes and the above tests repeated. All stops shall comply with Motor Carrier Safety Regulation 393.52 stopping distance requirements with no evidence of excessive lining wear and brake drum wear, no brake chatter, grabbing, overheating, or squeal. Tests shall be conducted at an ambient temperature between 65° and 85°F. SAE recommended dynamometer brake tests may be substituted for the above tests. For type III mobility, the brakes shall be subjected to and successfully pass the SAE J667 dynamometer brake test code.

4.5.8 Sudden stops. The vehicle shall be driven or coupled to a prime mover and towed over a clean, dry, smooth, level concrete or macadam surface. Using a time distance recorder, the vehicle shall be brought to a complete stop from the speed and within the distance specified after brake application.

4.5.9 Emergency breakaway (group D only). The vehicle shall be towed at a speed of 20 mph on a clean, dry, smooth and level, concrete surface free of loose material. A minimum of three breakaways shall be simulated while being towed at this speed by suddenly disconnecting both airbrake hoses from the tractor or similar means. The emergency braking system shall function in accordance with current Motor Carrier Safety Regulations.

4.5.10 Ramp test. A physical test or design layout shall be made to determine the ability of the equipment to negotiate 20° inclines. The equipment shall be moved up to, over, and down a ramp inclined 20° to the horizontal. The bottom and top of the ramp shall end in horizontal landings which form a sharply defined 20° angle with the ramp. The length of the ramp, measured along the slope, shall be not less than 1.2 times the wheelbase of the vehicle being tested.

4.5.11 Roadability tests for type III and type IV mobility:

Surface	Average Speed (MPH)	Maximum Speed (MPH)	Distance (Miles)
Hard surface highways (Perryman straightaway course)	40	50	600
Gravel roads (Munson gravel road course)	8	15	100
Cross-country (Perryman truck cross-country course) (Secondary road "A")	8	15	100
Cross-country (Perryman gun mount course) (Secondary road "B")	8	15	100
Belgian block (Munson belgian block course)	8	15	100

The trailer shall be checked for misalignment, malfunction, and damage throughout the test. (See 6.2.2.1 through 6.2.2.4 for definitions of highway, gravel road, cross-country, and belgian block and 6.2.2.5 for definition of test courses.)

4.5.12 Roadability tests for type V mobility:

Surface/Test Course	Maximum Speed (MPH)	Average Speed (MPH)	Distance (Miles)
Highways - paved roads (Perryman straightaway)	60	50	600

Surface/Test Course	Maximum Speed (MPH)	Average Speed (MPH)	Distance (Miles)
Gravel roads (Munson gravel road course)	20	10	100
Cross-country (unimproved) (Perryman cross-country (truck) (Secondary road "A")	20	10	100
Cross-country (Perryman gun mount) (Secondary road "B")	20	10	100
Belgian block (Munson belgian block)	20	10	100
Coarse washboard (6-inch waves; 72 inches apart)	5 laps		
Radial washboard 2- to 4-inch waves	5 laps		
Two-inch washboard	5 laps		

4.5.13 Shipboard equipment brake test. With the equipment fully loaded, the brakes shall hold the fully loaded equipment motionless on a 15° slope at any axis relative to the equipment. The brakes shall bring the fully loaded equipment to a full stop on a dry, level, brushed finish concrete surface within the distance required by the equipment specification.

4.5.14 Shipboard equipment slope performance test. The fully loaded equipment, with booms, arms or extensions in a lowered position, shall be tested as follows:

a. Place the fully loaded unit on a tilt-table platform with the longitudinal axis parallel to the edge of the tilt-platform

b. Slowly raise one edge of the platform until it makes an angle of 15° to the horizontal. Observe results and lower the platform to the horizontal

c. Turn the equipment 15° about its vertical axis and repeat step b

d. Repeat step c until 24 observations at 15° increments have been made

There shall be no evidence of upsetting, brakes not holding, equipment sliding on the platform, or load sliding relative to equipment.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, packing, and marking. The equipment shall be prepared for delivery as specified in the equipment specification.

6. NOTES

6.1 Intended use. This specification covers the mobility required for the standard running gear and related components used in the design of military vehicles used for ground support of aircraft and missiles, in order to insure the equipment will be available at the point of use on time and in working condition (see 6.2.1).

6.2 Definitions

6.2.1 Mobility types and classes

6.2.1.1 Type I mobility on improved level surfaces. Equipment having type I mobility is nonself-propelled equipment that is used on relatively smooth concrete or asphalt hangar floors. This mobility type is subdivided as follows:

6.2.1.1.1 Type I, class 1 (manually-propelled equipment). Equipment having type I, class 1 mobility is equipment that is not designed for towing; that is used in or near hangars, repair shops, or assembly buildings; and must be transported by another vehicle when points of use are separated by a considerable distance, unpaved surfaces, or snow-covered areas.

6.2.1.1.2 Type I, class 2 (equipment towed at slow speeds). Equipment having type I, class 2 mobility is equipment that is used on paved surfaces, is normally towed by a powered vehicle on its own wheels from one point of use to another, but cannot be moved off improved surfaces or over snow-covered terrain on its own wheels.

6.2.1.1.3 Type I, class 3 (manually-propelled shipboard equipment). Equipment having type I, class 3 mobility is equipment that is not designed for towing; that is used for shipboard application; and is manually-propelled.

6.2.1.2 Type II (mobility over partially improved terrain). Equipment having type II mobility is equipment that is frequently moved about an entire airfield, and also over unpaved roads to revetments and dispersal areas.

6.2.1.3 Type III (mobility over highways and improved cross-country terrain). Equipment having type III mobility is equipment that is frequently moved over highways and must be completely roadable and capable of negotiating cross-country terrain.

6.2.1.4 Type IV (mobility over snow and ice). Equipment having type IV mobility is equipment that is used at snow and ice-covered airfields and adjacent areas, in addition to operating under the other conditions of type III or II mobility specified.

6.2.1.5 Type V. Equipment having type V mobility is equipment that is towed over highways and unimproved cross-country terrain.

6.2.1.6 Examples of types and classes. Examples of equipment meeting various types and classes of mobility are as follows:

a. Type I, class 1 mobility - Hangar and shop equipment such as rectifier sets, small welding sets, vacuum cleaners, jacks, and lubricators

b. Type I, class 2 mobility - Equipment such as hoists, loading ramps and stairs, engine buildup trailers, and bomblift trailers

c. Type I, class 3 mobility - Equipment such as liquid oxygen and nitrogen servicing carts, rectifiers, lubricators, small hoists, and test stands

d. Type II mobility - Equipment such as hydraulic test stands, engine and airframe component transportation trailers, air compressors, utility trailers, ground power plants, and nonroadable missile carriages

e. Type III mobility - Support equipment of such size or other characteristics that it is more adapted to highway towing on its own wheels for long-distance movement than to transportation via another vehicle or is required to be moved frequently within forward combat zones, such as mobile field repair shops, gas generating plants, large electric generating equipment, missile launchers, and trailers and semitrailers used to transport equipment having type I or II mobility

f. Type IV mobility - Equipment such as cold-weather heating units, engine or airframe cover transportation trailers, and mobile control towers which, in addition to its other mobility requirements, must withstand towing or sledding over snow and ice

g. Type V mobility - Unimproved cross-country terrain found outside the airbase and rough terrain found in forward airbases in combat zones.

6.2.2 Roads

6.2.2.1 Highway. A highway is a road of smooth concrete or macadam usually designed to provide maximum traction between the surface and rubber tires.

6.2.2.2 Gravel road. A gravel road is a level or rolling gravel trail.

6.2.2.3 Belgian-block course. A Belgian-block course consists of a very rough, wavy, hard surface unaffected by changes in climatic conditions. The standard is found at Aberdeen Proving Grounds, Maryland.

6.2.2.4 Cross-country terrain. Cross-country terrain consists of unimproved open fields, broken ground, loose sand or gravel road encountered by tactical vehicles supporting an army in the field.

6.2.2.5 Test courses. Road types specified in 6.2.2.1 through 6.2.2.4 refer to those provided on the Aberdeen Proving Ground Test Course, Aberdeen, Maryland The above roads are descriptive in nature and apply to a test course considered standard. Alternate test courses, such as those located at the U.S. Army Yuma Proving Ground or approved contractor facilities, may be utilized. Approval of an alternate test course must be obtained from the Department of the Army, the Navy, or the Air Force (see 6.5).

6.3 Three-wheel running gear. Three-wheel running gear should not be used on equipment subject to movement over two-track roads or two-piece ramps. Three-wheel running gear should be restricted to use on large hoists, tripod jacks, and sound suppressors.

6.3.1 Group B items should not include group A two-wheel mobility with a landing wheel which is used for manual maneuvering, if the group A two-wheel item is normally towed using only the two wheels.

6.4 Items for equipment specification. The following items should be noted in the preparation of equipment specifications for a specific equipment item:

a. Type, group, and class of mobility (see table I)

b. If lubrication fittings are not required (see 3.3.5)

c. If other than specified performance products are required (see 3.3.6)

d. Reduced or increased approach and departure angles (see 3.3.9)

e. If other steering is required on group C items (see 3.5.1.1)

f. If other towbar is required on group C items (see 3.5.1.1)

g. Weight distribution of semitrailers (group D) (see 3.5.1.2)

h. Any special braking requirements for group D (see 3.5.1.2)

i. Thickness of upper fifth wheel plate if other than 3/8 inch (see 3.5.1.2.1.1.1)

j. When a pickup plate is required on group D items (see 3.5.1.2.1.1.1.1)

k. When a safety latch is required (see 3.5.1.2.1.3)

l. If bogie is required (see 3.5.1.2.2.2)

m. Sizes and types of casters required (see 3.8)

n. When a bumper is required (see 3.7)

o. When fenders are required (see 3.9)

p. Military tactical vehicles require 24V dc power supply for lighting devices (see 3.11.1)

q. When lighting receptacles are to be mounted on the rear of the equipment (see 3.11.5)

r. When mudflaps are required (see 3.12)

s. If red and amber reflectors are not required (see 3.14)

t. When safety chains are not required (see 3.15)

u. Provisions for use of solid-rubber tires on type II mobility (see 3.16.3)

v. Dual tire inflation pressure ratings (see 3.16.5)

w. If parking brakes are not required (see table III)

x. When service brakes are required for type I, class 1 mobility (see tables III and VIII).

6.5 Point of contact. For Air Force, the point of contact is the Aeronautical Systems Division, Attn: ASD/ENCMM, Wright-Patterson Air Force Base, Ohio 45433.

6.6 International standardization agreement. Certain provisions of 3.17.2 of this specification are the subject of international standardization agreement ABC Standard 11/8. When amendment, revision, or cancellation of this specification is proposed which affects or violates the international agreement concerned, the preparing activity will take appropriate reconciliation action through international standardization channels including departmental standardization offices, if required.

6.7 Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:
Air Force - 11
Army - AT
Navy - AS

Reviewers:
Air Force - 82, 84
Army - AT
Navy - AS

Preparing activity:
Air Force - 11

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