

**A/M32U-21  
USMC MAINTENANCE TRAILER  
PERFORMANCE REQUIREMENTS**

**Naval Air Systems Command  
Naval Air Warfare Center, Aircraft Division  
Research and Engineering Group  
SE and ALRE Department  
GSE/PSE DEV & ISE DIV  
Aircraft & Armament Handling Branch, Code 4.8.6.9  
Lakehurst, NJ 08733**

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## 1. SCOPE

This Performance Specification is for the United States Marine Corps (USMC) A/M32U-21 Maintenance Trailer that will be compatible with the Medium Tactical Vehicle Replacement (MTVR). The A/M32U-21 will replace the current A/M32U-13 series Maintenance Trailers. The prime mission of the A/M32U-21 is to support the A/E32K-3 and A/M32K-11 Munitions Assembly Stand for weapons build up, the A/E37T-35A Common Rack and Launcher Test Set and A/N/GYQ-79 Common Munitions BIT Reprogramming Equipment as part of the ground support equipment for the USMC expeditionary airfields.

The A/M32U-21 Maintenance Trailer shall be designed utilizing the A/M32K-10 Rough Terrain Munitions Trailer as the primary trailer platform with the deck design and trailers' payload being the major differences between the A/M32U-21 and A/M32K-10 trailers. NAVAIR drawings 3847AS100 through 3847AS413 shall be used as a baseline configuration.

**The A/M32U-21 shall meet all requirements of NAWCADLKE-PS-4869-06-001, Rev C (A/M32K-10 USMC ROUGH TERRAIN MUNITIONS TRAILER PERFORMANCE SPECIFICATION) except as stated in this Performance Requirements document (NAWCADLKE-09-PR-4869-001).**

The A/M32U-21 Maintenance Trailer, hereinafter referred as the trailer, consists of the trailer platform and the items identified in sections 3.1.3 through 3.1.3.20.

## 2. APPLICABLE DOCUMENTS

See NAWCADLKE-PS-4869-06-001, Rev C, A/M32K-10 USMC ROUGH TERRAIN MUNITIONS TRAILER PERFORMANCE SPECIFICATION except as noted.

### 2.3 Other Government Documents, Drawings, And Publications

The following other Government documents, drawings, and publications of the exact revision shown form a part of this document to the extent specified herein.

MTMCTEA PAM 700-4	Vessel Characteristics for Ship Loading
TM 55-2200-001-12	General Rules Governing the Loading of Commodities on Open Top Cars, Association of American Railroads (AAR) , dated 2000
TOP 1-2-500	Transportability
TOP 2-2-608	Vehicle Braking, dated 710115
TOP 2-2-610	Gradeability and Side-Slop Performance
TOP 2-2-612	Fording
NA 11-140-25	Armament Weapons Support Equipment (AWSE) Configuration Manual, Organizational and Intermediate Maintenance Activities
NAVSEA OP5	Ammunition and Explosives Safety Ashore
SK3847AS001	Deck Arrangement Requirement
1541AS356	Tire Tread Design
2483567	Lock
3847AS100 thru 3847AS413	NAVAIR Drawing package for A/M32K-10 Munitions Trailer
3909AS999	Identification Plate, Support Equipment
5SE00363	Modification Plate, Support Equipment

### **3. REQUIREMENTS**

See NAWCADLKE-PS-4869-06-001, Rev C, A/M32K-10 USMC ROUGH TERRAIN MUNITIONS TRAILER PERFORMANCE SPECIFICATION except as noted.

#### **3.1.3 Cargo Transport**

The trailer shall be capable of transporting the following payload items:

- 1 ea. - MEP-803A Generator
- 1 ea. - MEP-813A Generator
- 1 ea. - P185WJDU Air Compressor
- 1 ea. - 100 Gallon Diesel refueling tank
- 1 ea. - Manual piston hand pump and hose
- 2 ea. - Fuel Cans
- 1 ea. - Fuel Can Spout
- 1 ea. - Fire Extinguisher
- 1 ea. - Ground rod puller
- 1 -2 ea. - Storage cabinets
- 2 ea. - Portable light assemblies
- 1 ea. - 75 ft Pneumatic hose
- 1 ea. - Hose reel
- 4 ea. - 20 ft Pneumatic hose
- 2 ea. - 50 ft Extension cord
- 1 ea. - 50 ft cable with MS3456W20-4P compatible connectors
- 1 ea. - Portable Interface Control Panel
- 6 ea. - Ramp over protectors

##### **3.1.3.1 Cargo Containment – General**

Not applicable.

##### **3.1.3.2 Stake Racks**

Not applicable.

##### **3.1.3.3 Cargo Tie-downs**

The payload item attachment method shall consist of Spindle, P/N 2483567, Bolt, MS35037, and Washer, MS35338-146, for generators, compressor, fuel tank, storage cabinets, etc. Four (4) ea per payload item. Bolt to deck method for smaller items (Ground rod puller, Fuel cans, Fire extinguisher, Hose reel, etc.). The trailers deck shall have payload item alignment indicators. "L" milled out notches painted yellow must be used for correct payload item placement on the trailer deck.

##### **3.1.3.5 Tie down Channels**

Not applicable.

##### **3.1.3.6 Transport Equipment and Loads**

Not applicable.

##### **3.1.3.7 Payload Item Operations**

The payload items indicated in section 3.1.3 shall be capable of being operated on or off the A/M32U-21 trailer.

### 3.1.3.8 Generator Modifications

The MEP-803 shall be configured for 120VAC, Single Phase and be modified to include a GFCI receptacle, 30 amp, NEMA L5-30 style. The “slave receptacle”, used for jump-start when battery is dead, shall be modified from the round type prongs to rectangular type as used by USMC/USN, P/N MS25018-1, NSN 5935-00-204-5726.

The MEP-813 shall be configured for 120VAC, Three Phase and be modified to include a MS3456W20-4P compatible connector. The “slave receptacle”, used for jump-start when battery is dead, shall be modified from the round type prongs to rectangular type as used by the USMC/USN, P/N MS25018-1, NSN 5935-00-204-5726.

### 3.1.3.9 Air Compressor Modifications

The P185WJDU air compressor shall be modified as required for compliance with the following:

- a. All enclosure openings shall be secured to eliminate environmental intrusion (i.e. rain, sand, dust, etc).
- b. The exhaust pipe shall be of a vertical type with a hinged and weighted flapper.
- c. The compressor shall be compatible with the mounting method indicated in 3.1.3.3.
- d. The compressor shall provided a single port manifold/ air supply for ICP interface.
- e. The compressor enclosure shall be repainted to meet NAWCADLKE-PS-4869-06-001. 3.2.12. requirements.
- f. The compressor shall have a low fuel shut off and indicator light; clogged air filter lights; cold start; and a label installed beneath the fuel gage to read: “REFUEL AT ¼ FULL” .

### 3.1.3.10 100 Gal Fuel Tank

The 100 gallon diesel fuel tank shall comply with all DOT regulations.

### 3.1.3.11 Manual Pump

The manual pump shall be a manual piston hand pump with a hose of adequate length for on trailer filling of payload items and fuel cans.

### 3.1.3.12 Fuel Cans

The fuel cans shall be in accordance with CID A-A-59592. The fuel cans shall be secured to the trailer with brackets in accordance with A52513-1. The fuel can spout shall be suitable for the cans selected.

### 3.1.3.13 Fire Extinguisher

The trailer shall be equipped with a fire extinguisher in accordance with AA393-A1C.

### 3.1.3.14 Grounding Rod Puller

The trailer shall be equipped with a grounding rod puller in accordance with 13226E7741.

### 3.1.3.15 Storage Cabinets

The trailer shall be equipped with storage cabinets adequate for storing cables, hoses, pumps, lights, hose protectors, etc that are deck mounted and movable by fork lift.

### 3.1.3.16 Portable Lights

The trailer shall be equipped with four (4) 500W flood lights capable of being mounted on two telescoping tripod stands. Lights shall be 110/120 V.

### 3.1.3.17 Hoses

All hoses shall be suited for their intended use and environment. Hoses over 20 ft. shall be retractable on a hand crank reel.

#### 3.1.3.17.1 Pneumatic Hoses

The trailer shall be equipped with one 75 ft pneumatic hose for A/E32K-3 and A/M32K-11 Munitions Assembly Stand support and four (4) 20 ft hoses for miscellaneous operations.

#### 3.1.3.17.2 Fuel Hoses

If feasible, the trailer shall have fuel hoses for direct fuel feed from 100 gal tank to Generator/Compressor to operate on trailer.

#### 3.1.3.17.3 Ramp Over Protectors

The trailer shall have drive over hose/cable protectors for electrical and pneumatic lines. Six (6) each at three foot lengths. Interlocking feature is optional.

### 3.1.3.18 Electrical Extension Cord

The trailer shall be equipped with two (2) 50 ft extension cords suitable for the operating environment for A/E32K-3 and A/M32K-11 Munitions Assembly Stand support and one 50 ft extension cord with MS3456W20-4P compatible connectors for A/E37T-35A and A/N/GYQ-79 support.

### 3.1.3.19 Interface Control Panel

The trailer shall have a portable Interface Control Panel (ICP) that will interface with the P185WJDU air compressor. The ICP shall have 4 air ports.

### 3.1.3.20 Cover and Support

The trailer shall have a cover and support structure to keep cover off payload items. The cover shall have hard spots to protect dials, gages, etc. All payload item's cabinets, doors, drawers, covers, etc. shall be accessible without obstruction from the support structure while mounted on trailer platform. The cover shall be a water/moisture wicking material.

### 3.1.4 Tandem Tow Capability

Not applicable.

### 3.1.7 Speed

The trailer, at maximum payload, with the MTRV at its designated payload, shall demonstrate the capability to maintain the speeds listed in Table 3-2 for terrain conditions and roughness (root mean square (RMS)) values. The defined speeds shall be sustained without slipping, upsetting, or damage to vehicular components.

**Table 3-2 Speed**

Road Surface	MTRV Payload Classification	Grade (%)	RMS (in)	Speed (MPH)
Primary Single	HGVW	0	NA	40

Secondary Single	HGVW	NA	0.7	25
Trail Single	CCGVW	NA	1.0	5
Cross-country Single	CCGVW	NA	2.0	5

### 3.1.11 Fork Lift Provisions

Not applicable.

### 3.1.12 Environmental Operations

The trailer shall be capable of successfully performing all operations in arctic, tropical, temperate, and desert climates and in geographical areas that include sand, swamp, tundra, grassland, forest, jungle, urban areas, snow and ice, mountain, and salt water. All trailers shall be capable of successfully performing all operations without failure or additional maintenance. Refer to Table 3-4 for environmental condition requirements.

**Table 3-4 Environmental Condition Requirements**

Environmental Condition	Requirement
Low Temperature	Operating: -20 degrees F Storage: -65 degrees F
High Temperature	Operating: +140 degrees F with solar load* Storage: +180 degrees F
Humidity	Relative Humidity 3% to 100%
Salt Fog	See ASTM B117 96 Hours
Blowing Rain	Rainfall Rate: 2 inches per hour Wind: 40 miles per hour
Blowing Dust	Dust Concentration: 0.3 +/- 0.2g/cuft Wind: 40 miles per hour
Blowing Sand	Sand Concentration: 0.06 +/- 0.015g/cuft Wind: 40 miles per hour
Ice/Freezing Rain	Water Delivery Rate: 25mm/hour Droplet Size: 1.0 mm to 1.5 mm

\* Solar load will apply to any trailer design that may be affected by solar loads.

#### 3.1.12.1 Wind

The trailer shall be stable and capable of successfully performing all operations without failure or additional maintenance during exposure to wind up to 40 mph from any direction. The trailer shall be stable without mooring and will perform normally under exposure to such winds while in its normal operating configuration and orientation. Exposure to such winds in any operating configuration will not cause damage or deterioration of the trailer or any component. When moored, and with all doors and covers closed and secure, the trailer and all components shall be capable of withstanding exposure to winds up to 70 mph without damage or degradation.

#### 3.1.12.2 Snow

The trailer in the storage/non-operational configuration shall be capable of withstanding a snow load of 40 lbs per square foot. The snow load shall be applied uniformly and simultaneously on all exposed surfaces.

### 3.1.15.1 Maintainability

Exceptions: MEP-803, MEP-813, and Compressor P185WJDU

### 3.1.16.2 Rail

NAWCADLKE-PS-4869-06-001, Rev C, 3.1.16.2 except the trailer shall not be stacked.

### 3.1.16.4 Maritime Pre-positioned Force (MPF) Storage

NAWCADLKE-PS-4869-06-001, Rev C, 3.1.16.4 except the trailer shall not be stacked.

### 3.1.16.5 Aircraft

NAWCADLKE-PS-4869-06-001, Rev C, 3.1.16.5 except the trailer shall not be stacked.

### 3.1.16.7 Lifting and Tie Down Provisions

The trailer at maximum payload shall meet lifting and tie-down provision requirements of MIL-STD-913 and MIL-STD-209, except the highest value calculated for any one tie-down provision shall be applied to all tie-down provisions. Lift provisions shall not use shackles and shall be integral, not removable, and allow lift at maximum payload by crane and externally by CH53 and at CW by MV-22. Structures that extend beyond the cargo bed frame and are not part of the frame structure or not permanently attached to the frame shall have provisions to prevent movement during the helo and crane lift operations. Stencil markings shall be applied to the vehicle at each lifting and tie-down point conforming to MIL-STD-209.

### 3.2.2 Weight

The Gross Vehicle Weight (GVW) of the trailer shall not exceed 19,500 lbs. The Curb Weight (CW) of the trailer shall not exceed 5,500 lbs.

### 3.2.5 Height

The height of the trailer deck shall not exceed 38 inches. With cover and structure support installed, the height shall not exceed 90 inches.

### 3.2.6.1 Power Distribution

The trailer shall have a power distribution that complies with NFPA No. 70, National Electric Code. Plugs, connectors and receptacles shall be hospital grade. Power distribution system shall be grounded. Receptacles shall be covered.

The trailer shall have three (3) power output receptacles that are 120 VAC, single phase, 20 amp with circuit breaker protection. The receptacles shall be located One (1) on each trailer side and one on the trailer's rear.

The trailer's input power shall be by (TBD) ft cable (TBD determined by final payload layout) from Terminal Box with NEMA L5-30 style plug for MEP-803 interface.

### 3.2.14.1 Hazardous Material

#### 3.2.14.1.1 Hazardous Materials

Hazardous materials shall be avoided at all times in the design, manufacture, testing, operation, maintenance, and disposal of the trailer. Where hazardous materials cannot be avoided, their use shall be justified by the contractor and approved by the government. A hazardous material is any material that due to its chemical, physical, or biological nature causes safety, public health, or environmental concerns. For the purpose of this contract, this includes but is not limited to the following materials:

- a. Materials regulated as a hazardous material 49 CFR 173.2, or

- b. Materials requiring a Material Safety Data Sheet (MSDS) per 29 CFR 1910.1200, or
- c. Materials that during end use, treatment, handling, packaging, storage, transportation, or disposal meet or has the potential to meet the definition of a Hazardous Waste as defined by 40 CFR 261 Subparts A, B, C, or D, or
- d. Materials regulated as an Ozone Depleting Substances (ODS) per 40 CFR 82 Subpart A, Appendices A and B, or
- e. Materials identified in the Clean Air Act as a Hazardous Air Pollutant per 40 CFR Part 63, or
- f. Materials regulated as an Extremely Hazardous Substance per 40 CFR 355, Appendices A and B, or
- g. Materials regulated as a toxic chemical or as a Persistent, Bio accumulative, Toxic (PBT) chemical under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) per 40 CFR Part 372, or
- h. Materials referred to in section 101(14) or Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) per 40 CFR 302.4, or
- i. Materials identified as a Volatile Organic Chemical (VOC) per 40 CFR Part 51.100(s).

### **3.2.14.1.2 Restricted Materials**

The following hazardous materials are prohibited in the delivered trailer and in the testing, operation and/or maintenance of the trailer: Asbestos, Class I ODS, Class II ODS and Polychlorinated Biphenyls (PCBs).

### **3.2.14.1.3 Targeted Materials**

The following hazardous materials will require NAVAIR approval for use in the delivered trailer and in the testing, operation and/or maintenance of the trailer: Arsenic & Arsenic Compounds , Benzene , Beryllium & Beryllium Compounds , Cadmium & Cadmium Compounds , Chloroform, Chromium & Chromium Compounds, Cyclotrimethylenetrinitramine (RDX), Cyanide Compounds, Ethylene Glycol, Formaldehyde, Glycol Ethers, Hydrazine, Hydrofluoric Acid, Isocyanates, Lead & Lead Compounds, Mercury & Mercury Compounds, Methyl Ethyl Ketone (MEK), Methyl Isobutyl Ketone (MIBK), Methylene Chloride, Methylene Dianiline (MDA), Naphthalene, Nickel & Nickel Compounds, Perchlorates, Perchloroethylene, Perfluorooctanoic Acid (PFOA), Phenol, Polybrominated Diphenyl Ethers (PBDEs), Radioactive Materials, Toluene, Trichloroethylene (TCE), and Xylene & Xylene Isomers. Approval will not be given unless the contractor can document that no technically feasible alternative is viable.

#### **3.2.14.1.3.1 Hexavalent Chromium**

Unless otherwise specified by the Contracting Officer, the Contractor shall not provide any deliverables under this contract, or use materials in performance of this contract, that contain hexavalent chromium in a concentration greater than 0.1 percent by weight in any homogeneous material.

#### **3.2.14.1.3.2 Metal Alloys**

Chromium and nickel as a constituent of metal alloys is exempted.

#### **3.2.14.1.3.3 Lead**

Lead as a constituent of lead solder is exempted.

#### **3.2.14.1.4 Protective Coatings**

Coatings shall contain no pigments in concentrations that will render the coating residues toxic during application or removal. The use of powder coatings is preferred. On components where powder coating is not employed, the unit will be finished and coated using an epoxy primer and a polyurethane topcoat. The primer will have a maximum Volatile Organic Compound (VOC) content of 420 grams/liter (3.5 pounds/gallon). The topcoat shall have a maximum VOC content of 340 grams/liter (2.8 pounds/gallon).

Note: The following information is provided for guidance only. Triglycidyl Isocyanurate (TGIC) polyester powder coating has been found to meet Navy requirements. Primer in accordance with MIL-P-53022 Type II and topcoat in accordance with MIL-C-85285 Type II has been found to meet the Navy primer and topcoat requirements.

### 3.2.14.1.5 Lithium Ion Batteries

All lithium batteries proposed for use on the trailer shall require approval in accordance with NAVSEA Instruction 9310.1B and Interim Guidance for Deployment of Lithium Battery Systems of 2 April 2009. Detailed instructions for the approval process including testing requirements are contained in TM S9310-AQ-SAF-010. In some cases, the testing requirements can be waived if particular conditions are met, per TM S9310-AQ-SAF-010. Documentation shall be submitted in accordance with trailer Statement of Work.

### 3.3.1 Electrical Test Box

Not Applicable.

### 3.4 Storage

On-board, unhindered storage shall be provided for the drawbar, cables, and hoses which should be readily accessible without activation or movement of ancillary systems. All storage shall be designed to prohibit damage from road/terrain shock and vibration to all contents and to the storage device itself. Storage shall be accessible from the ground to the maximum extent possible. Any enclosed compartments shall be rainproof, equipped with drain holes, and have a latching device lockable with a standard padlock per (CID) A-A-1927D, Type II, Fig. A. Below deck storage provisions are undesirable. Removable on deck storage provisions for lights, hoses, cables, etc is desired.

### 3.5 Safety

The trailer and furnished accessories, shall comply with all applicable Society of Automotive Engineers (SAE) safety standards and federal safety regulations, standards, and requirements for a vehicle of this class. The safety characteristics shall satisfy these requirements:

1. For exposed components and systems which are subject to high temperatures and high pressures, or which are electrically actuated or inherently hazardous, safeguarding and insulating features shall be provided.
2. The trailer deck surface shall be provided with nonskid coating in accordance with MIL-D-23003 or equivalent.
3. The trailer shall have static discharge provisions to diffuse static electricity buildup.
4. The trailer shall be marked with reflective tape in accordance with ASTM D4956, Type II, width 2 inches, class 1, color white. The tape shall be applied along the extreme perimeter of the trailer to reflect its general outline configuration.

## 4. QUALITY ASSURANCE PROVISIONS

See NAWCADLKE-PS-4869-06-001, Rev C, A/M32K-10 USMC ROUGH TERRAIN MUNITIONS TRAILER PERFORMANCE SPECIFICATION except as noted.

**Table 4-1 Requirements and Verification Cross Reference**

Requirement	Title	Method	Section 4 Para.	PVI	PQT	PT
3.1	Performance	NA	4.5			
3.1.1	MTVR Prime Mover Interface	D,I	4.5.1		X	
3.1.1.1	A/S32A-45 Interface	D,I	4.5.1.1		X	
3.1.2	Payload Capacity	A,C	4.5.2	X		
3.1.2.1	Proof Load	T	4.5.2.1	X		
3.1.2.2	Safety Factor	A	4.5.2.2	X		
3.1.3	Cargo Transport	I,T	4.5.3	X	X	
3.1.3.1 (N/A)	Cargo Containment – General	(N/A)	4.5.3.1 (N/A)			
3.1.3.2 (N/A)	Stake Racks	(N/A)	4.5.3.2 (N/A)			
3.1.3.3	Cargo Tie-downs	D,I	4.5.3.3	X	X	
3.1.3.5 (N/A)	Tie Down Channels	(N/A)	4.5.3.5 (N/A)			
3.1.3.6 (N/A)	Transport Equipment and Loads	(N/A)	4.5.3.6 (N/A)			
3.1.3.7	Payload Item Operation	D,I,T	4.5.3.7	X	X	
3.1.3.8	Generator Modification	D,I,T	4.5.3.8	X	X	
3.1.3.9	Air Compressor Modification	D,I,T	4.5.3.9	X	X	
3.1.3.10	100 gal Fuel Tank	C,D,I	4.5.3.10	X	X	
3.1.3.11	Manual Pump	D,I,T	4.5.3.11	X	X	
3.1.3.12	Fuel Cans	D,I	4.5.3.12	X	X	
3.1.3.13	Fire Extinguisher	D,I	4.5.3.13	X	X	
3.1.3.14	Grounding Rod Puller	D,I	4.5.3.14	X	X	
3.1.3.15	Storage Cabinets	D,I	4.5.3.15	X	X	
3.1.3.16	Portable Lights	D,I	4.5.3.16	X	X	
3.1.3.17	Hoses	D,I,T	4.5.3.17	X	X	
3.1.3.17.1	Pneumatic Hoses	D,I,T	4.5.3.17.1	X	X	
3.1.3.17.2	Fuel Hoses	D,I,T	4.5.3.17.2	X	X	
3.1.3.17.3	Ramp Over Protectors	D,I,T	4.5.3.17.3	X	X	
3.1.3.18	Extension Cords	D,I,T	4.5.3.18	X	X	
3.1.3.19	Interface Control Panel	D,I,T	4.5.3.19	X	X	
3.1.3.20	Cover & Support	D,I,T	4.5.3.20	X	X	
3.1.4 (N/A)	Tandem Tow Capability	(N/A)	4.5.4 (N/A)			
3.1.5	Grade Operation	T	4.5.5		X	
3.1.6	Side Slope Operation	T	4.5.6		X	
3.1.7	Speed	T	4.5.7		X	
3.1.8	Terrain Operation	T	4.5.8		X	
3.1.9	Fording	T	4.5.9		X	
3.1.10	Shock	T	4.5.10		X	
3.1.11 (N/A)	Fork Lift Provisions	(N/A)	4.5.11 (N/A)			
3.1.12	Environmental Operation	I,T	4.5.12	X		
3.1.12.1	Wind	A,T	5.5.12.1	X		

Requirement	Title	Method	Section 4 Para.	PVI	PQT	PT
3.1.12.2	Snow	A,T	5.5.12.2	X		
3.1.13	Mobility	T	4.5.13		X	
3.1.13.1	Handling	T	4.5.13.1		X	
3.1.13.2	Turning Radius	T	4.5.13.2		X	
3.1.13.3	Braking	C	4.5.13.3	X		
3.1.13.3.1	Service Brakes	T	4.5.13.3.1		X	X
3.1.13.3.2	Surge Brakes	T	4.5.13.3.2		X	
3.1.13.3.3	Parking Brakes	T	4.5.13.3.3		X	
3.1.13.3.4	Emergency Brakes	T	4.5.13.3.4		X	
3.1.13.4	Wheel Bearings	C,I	4.5.13.4	X		
3.1.13.5	Towing System	A,D,I	4.5.13.5	X		
3.1.13.5.1	Towing Force	D,T	4.5.13.5.1	X		
3.1.13.5.2	Drawbar	D,I,T	4.5.13.5.2	X		
3.1.13.5.3	Drawbar Positioning	D,I,T	4.5.13.5.3	X	X	
3.1.13.5.4	Drawbar Stowage	D,I	4.5.13.5.4	X		
3.1.13.6	Pintle Interface	C,D,I	4.5.13.6	X		
3.1.13.7	Lunette	C,I	4.5.13.7	X		
3.1.13.8	Safety Chains	D,I	4.5.13.8	X	X	
3.1.14	Stability	A,D,T	4.5.14	X	X	
3.1.15	Reliability & Maintainability	T	4.5.15		X	
3.1.15.1	Reliability	T	4.5.15.1		X	
3.1.15.2	Service Life	A	4.5.15.2	X		
3.1.15.3	Maintainability	D	4.5.15.3	X		
3.1.16	Transportability	T	4.5.16		X	
3.1.16.1	Highway	C,D	4.5.16.1	X	X	
3.1.16.2	Rail	C,D	4.5.16.2	X	X	
3.1.16.3	Marine	C,D	4.5.16.3	X	X	
3.1.16.4	Maritime Prepositioned Force (MPF) Storage	C,D	4.5.16.4	X	X	
3.1.16.5	Aircraft	C,D	4.5.16.5	X	X	
3.1.16.6	Helicopter Lift	C,D	4.5.16.6	X	X	
3.1.16.7	Lifting and Tiedown Provisions	C,D	4.5.16.7	X	X	
3.2	Physical Characteristics	NA	4.6			
3.2.1	Commonality	C	-----	X		
3.2.2	Weight	I	4.6.1	X		
3.2.3	Length	I	4.6.2	X		
3.2.4	Width	I	4.6.3	X		
3.2.5	Height	I	4.6.4	X		
3.2.6	Electrical System	C,I,T	4.6.5	X	X	X
3.2.6.1	Power Distribution	C,I,T	4.6.5.1	X	X	X
3.2.7	Wiring	C,I	4.6.6	X		
3.2.8	Lighting	C,I,T	4.6.7	X		
3.2.9	Blackout Lighting	C,I,T	4.6.8	X		
3.2.10	Wheels and Tires	C,I	4.6.9	X		
3.2.11	Air supply System	C,T	4.6.10	X	X	
3.2.12	Coating	A,C,I	4.6.11	X	X	X

Requirement	Title	Method	Section 4 Para.	PVI	PQT	PT
3.2.13	Wood Components/Treatment	C,I	4.6.12	X		
3.2.14	Materials	A,C,I	4.6.13	X		
3.2.14.1	Hazardous Material	C	4.6.13.1	X		
3.2.14.2	Ozone Depleting Substances	C	4.6.13.2	X		
3.2.14.3	Ozone Resistant Products	C	4.6.13.3	X		
3.2.15	Corrosion Prevention	C,I	4.6.14	X	X	
3.2.15.1	Water Collection and Entrapment	D,I	4.6.14.1	X		
3.2.15.2	Debris Collection	A,C,I	4.6.14.2	X	X	
3.2.15.3	Cleaning and Maintenance	D	4.6.14.3	X		
3.2.15.4	Dissimilar Metal Contact	C,I	4.6.14.4	X		
3.2.15.5	Fasteners and Hardware	C,I	4.6.14.5	X		
3.2.16	Welding	C	4.6.15	X		
3.2.17	Identification and Markings	I	4.6.16	X	X	X
3.3	Test, Measurement and Diagnostics Equipment	D,I,T	4.7	X	X	
3.3.1 (N/A)	Electrical Test Box	(N/A)	4.7.1 (N/A)			
3.3.2	Adjustment Fixture	D,I	4.7	X		
3.4	Storage	D,I	4.8	X	X	
3.5	Safety	I	4.9	X	X	
3.6	Human Factors Engineering	C,D	4.10	X	X	
3.7	Manpower	D,T	4.11	X	X	

### 4.5.3 Cargo Transport

The trailer will be tested to ensure that it is capable of transporting various payload items as required in section 3.1.3 of this specification.

#### 4.5.3.1 Cargo Containment – General

Not applicable.

#### 4.5.3.2 Stake Racks

Not applicable.

#### 4.5.3.3 Cargo Tie-downs

The contractor shall certify that the payload item tie-downs on the trailer meet the requirements specified in section 3.1.3.3 in this specification. The trailer will be tested to verify that it meets the specified requirements in section 3 of this specification.

#### 4.5.3.5 Tie down Channels

Not applicable.

#### 4.5.3.6 Transport Equipment and Loads

Not applicable.

#### 4.5.3.7 Payload Item Operations

The trailer and payload items shall be inspected/tested for proper fit and function conforming to the requirements of section 3.1.3.7.

#### 4.5.3.8 Generator Modifications

The trailer and generators shall be inspected/tested for proper fit and function conforming to the requirements of section 3.1.3.8.

#### 4.5.3.9 Air Compressor Modifications

The trailer and air compressor shall be inspected/tested for proper fit and function conforming to the requirements of section 3.1.3.9.

#### 4.5.3.10 100 Gal Fuel Tank

The trailer shall be inspected for proper fit and function of the fuel tank conforming to the requirements of section 3.1.3.10.

#### 4.5.3.11 Manual Pump

The trailer shall be inspected/tested for proper fit and function of the pump conforming to the requirements of section 3.1.3.11.

#### 4.5.3.12 Fuel Cans

The trailer and fuel cans shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.12.

#### 4.5.3.13 Fire Extinguisher

The trailer and fire extinguisher shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.13.

#### 4.5.3.14 Grounding Rod Puller

The trailer and grounding rod shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.14.

#### 4.5.3.15 Storage Cabinets

The trailer and storage cabinets shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.15.

#### 4.5.3.16 Portable Lights

The trailer and portable lights shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.16.

#### 4.5.3.17 Hoses

The trailer and hoses shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.17.

##### 4.5.3.17.1 Pneumatic Hoses

The trailer and hoses shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.17.1.

#### 4.5.3.17.2 Fuel Hoses

The trailer and hoses shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.17.2

#### 4.5.3.17.3 Ramp Over Protectors

The trailer and protectors shall be inspected/tested for proper fit and function conforming to the requirements of section 3.1.3.17.3.

#### 4.5.3.18. Electrical Extension Cord

The trailer and extension cords shall be inspected/tested for proper fit and function conforming to the requirements of section 3.1.3.18.

#### 4.5.3.19 Interface Control Panel

The trailer and ICP shall be inspected/tested for proper fit and function conforming to the requirements of section 3.1.3.19.

#### 4.5.3.20 Cover and Support

The trailer and cover with support structure shall be inspected for proper fit and function conforming to the requirements of section 3.1.3.20.

#### 4.5.4 Tandem Tow Capability

Not applicable.

#### 4.5.11 Fork Lift Provisions

Not applicable.

#### 4.5.12 Environmental Operations

The trailer will be tested to ensure successful performance all operations in arctic, tropical, temperate, and desert climates and in geographical areas that include sand, swamp, tundra, grassland, forest, jungle, urban areas, snow and ice, mountain, and salt water. One preproduction trailer shall be used for all environmental tests. All tests shall be conducted in accordance with the test procedures of MIL-STD-810 as noted below. Any evidence of degradation in performance or corrosion shall be considered a failure. A/M32K-10 Munitions Trailer components may be exempt from environmental testing.

**Table 4-2 Environmental Test methods, Procedures and parameters**

<b>Condition</b>	<b>Method</b>	<b>Procedure</b>	<b>Parameter(s)</b>
Low Temperature (storage)	502.4	I (Storage)	-65° F minimum
Low Temperature (operational)	502.4	II (Operational)	-20° F minimum
High Temperature (storage)	501.4	I (Storage)	+180° F maximum
High Temperature (operational)	505.4 Solar Radiation	I (Cycling Heating Effects)	+140° F
Humidity	507.4	NA	
Salt Fog	ASTM	117	96 hours
Rain	506.4	I (Rain and Blowing Rain)	

Condition	Method	Procedure	Parameter(s)
Sand & Dust	510.4	I (Blowing Dust) and II (Blowing Sand)	Air Velocity = 40 mph Air Velocity = 40 mph
Ice/Freezing Rain	521.2	I	Glaze Ice, 13 mm (thickness)

#### 4.5.12.1 Wind

Verification of 3.1.12.1 requirements by wind tunnel testing, while acceptable, is not required. The requirement for stability in operating limit wind velocities will be satisfied if the maximum overturning moment from wind force does not exceed 2/3 of the minimum gravity restoring moment for wind from any direction.

#### 4.5.12.2 Snow

The contractor shall demonstrate or show by analysis the trailer, in the storage/non-operational configuration, is capable if withstanding a 40 lb per square foot snow load.

#### 4.6.1 Weight

The trailer shall be inspected/tested to ensure that the Gross Vehicle Weight (GVW) of the trailer does not exceed 19,500 lbs. and the Curb Weight (CW) of the trailer does not exceed 5,500 lbs.

#### 4.6.2 Height

The trailer shall be inspected/tested to ensure that the height of the trailer deck shall not exceed 38 inches and that the trailer with cover and structure support installed does not exceed 90 inches.

#### 4.6.5.1 Power Distribution

The contractor will certify that the trailers power distribution system complies with NFPA No. 70, National Electric Code. The trailer shall be inspected/tested to ensure conformance with 3.2.6.1.

#### 4.6.13.1 Hazardous Material

To determine conformance to 3.2.14.1.1 through 3.2.14.1.5, the Contractor shall certify that hazardous materials have not been used or if unavoidable, explanation shall be provided.

#### 4.7.1 Electrical Test Box

Not Applicable.

### 5. PRESERVATION/PACKAGING

See NAWCADLKE-PS-4869-06-001, Rev C, A/M32K-10 USMC ROUGH TERRAIN MUNITIONS TRAILER PERFORMANCE SPECIFICATION.

### 6. DEFINITIONS

See NAWCADLKE-PS-4869-06-001, Rev C, A/M32K-10 USMC ROUGH TERRAIN MUNITIONS TRAILER PERFORMANCE SPECIFICATION.