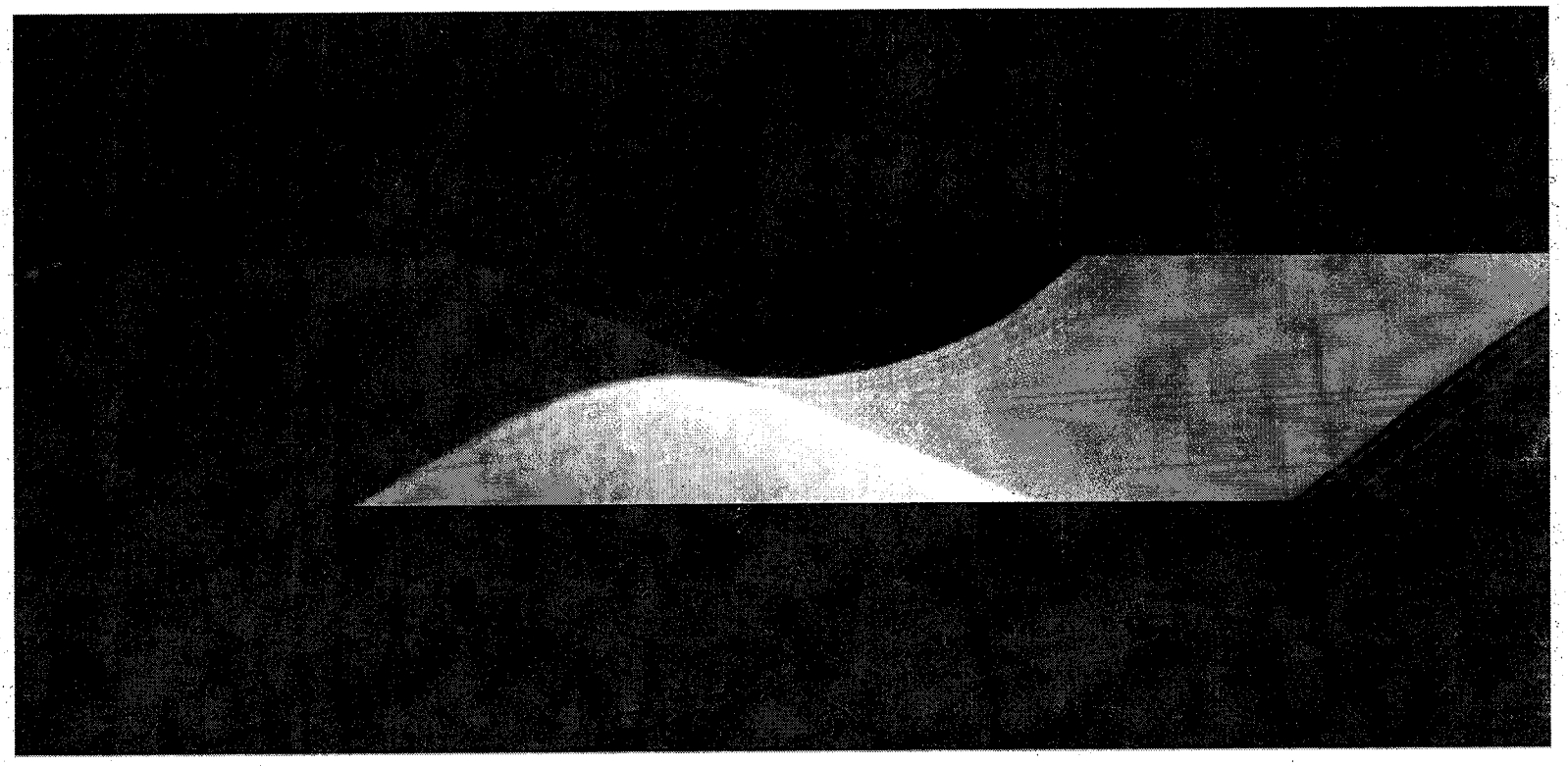
GSA Smarter Solutions



This document supersedes KKK-A-1822E, dated June 1, 2002

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Comments, information, and questions should be sent to:
Chief, Automotive Engineering & Commodity Management Branch (QMDAA)
Office of Motor Vehicle Management
General Services Administration
2200 Crystal Drive, Suite 1006
Arlington, VA 22202
Telephone: 703.605.2277

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GSA

GSA Federal Supply Service

29 January 2015

Federal Specification for the Star-of-Life Ambulance
KKK-A-1822F
Dated 1 August 2007
Change Notice 7

THIS CHANGE NOTICE IS CUMULATIVE, AND INCORPORATES ALL CHANGES INCLUDED IN CHANGE NOTICES 1-6. IT SUPERCEDES NON-CUMULATIVE CHANGE NOTICES 1-6, AND SHALL BE RETAINED UNTIL SUCH TIME AS THE STANDARD IS REVISED.

The following changes, which form a part of FED-STD KKK-A-1822F, dated 1 August 2008, are approved by the General Services Administration, for use by all agencies.

If you have technical questions regarding this change notice, please contact John McDonald at jmcdonald@gsa.gov

DANIEL BUCKINGHAM

Digitally signed by DANIEL BUCKINGHAM
DN: c=US, o=U.S. Government, ou=General Services Administration, cn=DANIEL BUCKINGHAM, 0.9.2342.19200300.100.1.1=47001000015722
Date: 2015.01.28 17:18:14 -05'00'

Daniel Buckingham
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2.2 OTHER PUBLICATIONS.

Delete AMD STANDARD 002 – BODY DOOR RETENTION COMPONENTS TEST
Add AMD STANDARD 026 - Ambulance Emergency Lighting System Configuration
Add AMD STANDARD Annex to AMD Standards

3.1 GENERAL VEHICULAR DESIGN, TYPES, AND CONFIGURATION.

Delete paragraph 3.1.3
Replace it with the following paragraph:

3.1.3 TYPE II AMBULANCE (10,000 and under GVWR).

Type II ambulance shall be a Van with Integral Cab-Body.

3.5.2 PAYLOAD CAPACITY.

Delete the existing paragraph and replace it with the following:

The ambulance shall not be operated in an overloaded condition. EMSPs should determine that the actual load, to be placed on the vehicle, does not exceed the total usable payload as manufactured. Any additional items attached to, or carried on the vehicle by the EMSP will reduce the combined weight of occupants and Cargo/Equipment that comprise the total usable payload. Additional weight added, resulting from specified options, will reduce the available payload per vehicle.

Occupant weight shall be accommodated at 175 lbs. for each designated patient and seating position.

The required minimum payload (patients, passengers and cargo/equipment) per vehicle without optional permanently mounted equipment shall be as follows:

1. Single rear wheeled, van ambulances (Type II)—1500 lbs.
2. Dual rear wheeled, modular ambulances (Type I or III)—1750 lbs.
3. Additional duty modular ambulances (Type I AD or III AD)—2,250 lbs.

Each ambulance's payload capacity, horizontal, lateral, and vertical CG shall be determined. Horizontal and vertical shall be determined by completing an NTEA UltraMod spreadsheet (available at www.ntea.com). A copy of the UltraMod spreadsheet and lateral calculation shall be included in the handbook of instructions. The following shall be shown on the calculations:

1. Completed vehicle at curb weight
2. 175 pounds at the lateral, horizontal and vertical center of each patient location and at the design H-Point of each designated seating position
3. The maximum remaining Cargo/Equipment capacity located at the lateral, horizontal and vertical dimensional center of the patient compartment that does not result in weights that exceed the vehicle's weight rating capacities.

The total usable Cargo/Equipment capacity value of Figure 2, item 10 shall be displayed on the certification and payload signage as shown in Figure 1. The label shall be located in a conspicuous location in the ambulance.

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FIGURE 1 – Certification & Payload Signage
The label shall be mounted on the body (module) interior in a conspicuous location.

- The label shown here is suggested format.
- Deviations in dimensions are acceptable.
- All text must be included.
- Exceptions, when taken, shall be documented in the handbook of instructions
- No text shall be added to this label

CERTIFIED "STAR OF LIFE" AMBULANCE
Date of
Manufacture_____
Mfg By
_____
Address
_____

City_____ _____State_____Zip _____

This ambulance conforms to Federal Specification KKK-A-1822 in effect on the date the ambulance was contracted for
Exceptions taken? No_____ Yes_____
If exceptions are taken, they must be listed in the handbook of instructions and identified by Section Number

Final Stage Ambulance Manufacturers ID
Number_____
VIN
_____

OEM Chassis Model, Year of Manufacture _____

Vehicle Type _____

NOTICE: THIS VEHICLE, AS MANUFACTURED, CONFORMS TO THE PAYLOAD REQUIREMENTS OF THE FEDERAL AMBULANCE SPECIFICATION KKK-A-1822. USERS SHALL NOT LOAD VEHICLES ABOVE THE GVWR, GAWRs OR EXCEED THE TOTAL USABLE PAYLOAD OR CAPACITY LISTED BELOW.

TOTAL USABLE CARGO/EQUIPMENT CAPACITY _____lbs.
(Total remaining weight capacity of equipment and cargo evenly distributed in interior and exterior compartments the user may add)

FIGURE 2 – Payload Calculation Form
The completed form shall be included in the handbook of instructions.

- The form shown here is suggested format.
- Deviations in dimensions are acceptable.
- All text must be included.
- No additions are permitted

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CUSTOMER USABLE PAYLOAD INFORMATION
Final Stage Ambulance Manufacturer's Name:
_____
OEM Chassis Year, Make, Model:
_____
1) Ambulance Model, Type, Prod. #:
_____
2) OEM GAWR – Front: _____ lbs
3) OEM GAWR – Rear: _____lbs
4) OEM GVWR: _____lbs
5) Minimum Payload Per KKK-A-1822: _____lbs
6) Curb Weight – AS BUILT – Front Axle: _____lbs
7) Curb Weight – AS BUILT – Rear Axle: _____lbs
8) Total Curb Weight – AS BUILT: _____lbs
9) Total Occupant Weight – 175 lbs. X number of designated seating positions: _____lbs
10) CUSTOMER USABLE Cargo/Equipment Capacity AS BUILT (From Ultamod):
_____lbs

3.6.3.1 POWER UNIT.

Delete paragraph 3.6.3.1
Replace it with the following paragraph:

The power unit shall meet or exceed the required vehicle performance specified at not more than the engine manufacturer's recommended operating engine speed. The OEM's diesel engine and power train shall be provided. When available from the OEM, an engine block heater shall be furnished.

3.6.4.3 AIR POLLUTION CONTROL.

Delete paragraph 3.6.4.3
Replace it with the following paragraph:

The vehicle and engine shall conform to 40 CFR Subchapter C-Part 86 - "Control of Emissions from New and In-use Highway Vehicles and Engines", as evidenced by an EPA certificate of compliance. Vehicles shall also comply with all pollution control requirements for the state of final destination. Certificates of compliance shall be made available upon request.

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3.7.1 ELECTRICAL SYSTEM.

Delete paragraph 3.7.1
Replace it with the following paragraph:

The ambulance electrical system shall be equipped with, but not limited to, the following:
1. Dual, OEM's batteries.
2. Generating, starting, lighting, visual and audible warning systems.
3. Specified electronics equipment and devices (including master consoles located in the cab and patient compartment).
4. Other specified accessory wiring.
5. All electrical system components and wiring shall be readily accessible through access panels.
6. All switches, indicators, and controls shall be located and installed in a manner that facilitates easy removal and servicing.
7. All exterior housings of lamps, switches, electronic devices, connectors, and fixtures shall be corrosion resistant and weatherproofed.
8. Electrical fixtures attached to the exterior sides of the ambulance below the 75" level shall be near flush mounted and not protrude more than 2", except for such items as lights and ventilators.
9. All electrical devices and equipment installed, including the electromagnetic coils of high current solenoids, and relays etc, which produce RFI, shall include filters, suppressers, or shielding to prevent electromagnetic radiation and the resultant interference to radios and other electronic equipment.
10. Vehicles shall be immune from interference caused by radio transmissions.

3.7.1.1 WARNING INDICATORS.

Delete the existing paragraph and replace it with the following

The electrical system shall incorporate a warning light panel located in the driver's compartment. It shall provide indicator lights for:

1. Any passenger or equipment external compartment door that is not closed
2. Cab entry doors that are not closed (when available from the OEM).
3. Extended devices (flood lights, etc).

The "Door/Equipment Open" indicator in the driver's compartment can be either an LED warning light with at least 0.2 sq. in. of lighted surface or an electronic text message visible in all ambient lighting conditions

Electronic displays that are visible in all ambient light, that projects narrative information may be used in lieu of discrete, colored, indicator/ warning lights provided the projected message is at least as visible as the basic required warning light.

3.7.2 WIRING INSTALLATION.

Add line item 16 as shown below:

16. Wiring shall not be secured to brake lines or fuel lines.

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3.7.6 LOW VOLTAGE ELECTRICAL SYSTEM.

Delete paragraph 3.7.6.
Replace it with the following paragraph:

The generating system shall be rated at 14 volts, at a minimum operating temperature of 200°F.

The ambulance shall, when available from the OEM, be equipped with standard or optional generating system designed for ambulance applications.

The generating system shall be capable of supplying the continuous electrical load, which consists of the following electrical equipment and systems:
1. Engine/transmission control system.
2. Headlights (low beam).
3. All FMVSS 108 lights.
4. Windshield wipers (low speed).
5. Cab air conditioning (at coldest setting with highest blower speed).
6. Radio in receiving mode (or equal load, if not equipped).
7. Patient module dome lighting (in the high intensity setting).
8. Patient module air conditioning (at coldest setting with highest blower speed).
9. Emergency warning lighting system (in the daytime "primary" mode).
10. 20 amp medical load or equal.

The throttle control device shall control the engine RPM necessary to maintain the heating and air conditioning systems, at full operating capacity, and to maintain the generating system's required output when the vehicle is stationary and the parking brake is set.

The 12-volt electrical system shall incorporate a voltmeter and low voltage warning device which is functionally connected as shown in Figure 3. The FSAM shall test each ambulance prior to delivery and provide, to the purchaser, a written certification indicating the amount of generating capacity remaining, at the regulated voltage after supplying the total electrical load as manufactured (including the purchaser options).

3.7.7.2 PORTABLE EQUIPMENT CHARGING CIRCUIT.

Delete paragraph 3.7.7.2.
Replace it with the following paragraph:

A circuit shall be furnished (Figure 5) for charging all portable battery powered devices, i.e. suction units, hand lights, defibrillators, portable radios, etc. This circuit shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either running or the Automatic Charger/Conditioner is connected to shore power. Circuit breaker protection shall be provided and shall have a minimum of 10 amp capacity. An additional tagged, identified lead shall be furnished in both the cab and module for connection of additional (future) portable equipment that requires recharging.

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3.7.12 ELECTROMAGNETIC RADIATION AND SUPPRESSION.

Delete paragraph 3.7.12.
Replace it with the following paragraph:

In addition to OEM chassis, all added electrically operated or electrical generating devices, including alternators, air conditioning, warning light systems, electromagnetic coils of high current solenoids and relays, and medical equipment, shall be electromagnetic radiation suppressed, filtered, or shielded to prevent interference to radios and telemetry equipment aboard the vehicle and the surrounding area and shall not exceed MIL-STD 461 limits per Ground, Navy in table V of the requirement matrix. Type certification for these devices is acceptable.

3.8.2.1 EMERGENCY LIGHTING SYSTEM CONFIGURATION.

Delete paragraph 3.8.2.1
Replace it with the following paragraph:

The ambulance standard emergency warning light system shall contain twelve fixed red lights, one fixed clear light and one fixed amber light. These lights shall function in a dual mode system as shown in Table 1 and meet the physical and photometric requirements. The upper body warning lights shall be mounted at the extreme upper corner areas of the ambulance body. The single clear light shall be centered between the two front facing, red, upper corner lights or in a dedicated housing mounted forward of the body on the cab roof. If due to limited body dimensions and physical size of the outboard forward facing lights, the lights may also be mounted in dedicated housings on the cab roof. Doors or other ancillary equipment shall not obstruct the standard warning lights. The amber light shall be symmetrically located between the two rear facing red lights. The red "grille" lights shall be located at least 30" above the ground and below the bottom edge of the windshield and be laterally separated by at least 18", measured from centerline to centerline of each lamp. The lateral facing intersection lights shall be mounted as close as possible to the front upper edge of each front fender and may be angled forward a maximum of 30°. All warning lights furnished shall be mounted to project their highest intensity beams on the horizontal plane.

Alternate approved lighting systems are NFPA 1901 compliant or SAE J2498 compliant.

3.8.3 FLOOD AND LOADING LIGHT (EXTERIOR).

Delete paragraph 3.8.3
Replace it with the following paragraph:

Flood and loading lights shall be not less than 75" above the ground and unobstructed by open doors. Floodlights shall be located on the sides, and a patient loading light shall be located on the rear of the ambulance. They shall be fastened to reinforced fixed body surfaces. Floodlight switches shall be located on the cab console and control each side independently. Loading light(s) shall automatically be activated when rear doors are opened.

3.9.2 CAB-BODY PROVISIONS.

Delete paragraph 3.9.2.
Replace it with the following paragraph:

An OEM commercial two door cab shall be furnished that is suitable for the subsequent mounting of various ambulance equipment and bodies.

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3.9.3 CAB COMPARTMENT DRIVER AND PASSENGER SEAT.

Delete paragraph 3.9.3.
Replace it with the following paragraph:

The driver's compartment shall be OEM two individual bucket-type seats (driver and passenger). Driver's seat shall have the OEM's full, unobstructed seat track travel range of longitudinal adjustment, and a minimum of 30 percent of the range of inclination, but not less than the angle furnished on the OEM's standard non-reclining high back seat.

3.9.6 BUMPERS AND STEPS.

Delete paragraph 3.9.6.
Replace it with the following paragraph:

OEM's standard chrome bumper shall be furnished in the front of the chassis. The rear of the ambulance shall be furnished with a sturdy, full-width, rear bumper, with step secured to the vehicle's chassis- frame. The bumper-step shall be designed to prevent the accumulation of mud, ice, or snow and made of anti-skid open grating metal. These steps shall not be located or exposed to the interior of the ambulance when the door(s) are closed. All necessary steps shall be at least the width of the door opening for which they are provided. The step's tread shall have a minimum depth of 5" and a maximum depth of 10". If the step protrudes more than 7" from the rear of the vehicle, a fold up step shall be furnished. The rear bumper and step shall be adequate to support a test weight of 500 lbs. The height of the rear step shall not exceed 22".

3.10.4 PATIENT COMPARTMENT INTERIOR DIMENSIONAL PARAMETERS.

Delete paragraph 3.10.4.
Replace it with the following paragraph:

The patient compartment shall provide a minimum of 325 cubic feet of space (275 cubic feet of space for a Type II), less volume for cabinets, while complying with the following:

a. The compartment configuration shall provide at least 25" of unobstructed space at the head of the primary patient, measured from the face of the backrest of the EMSP seat to the nearest edge of the cot. A minimum of 10" shall be provided, from the rear edge of the cot mattress to the rear loading doors, to permit clearance for traction or long board splints.

b. The compartment shall provide a minimum of 12" of clear aisle walkway between the edge of the primary patient cot and base of the nearest vertical feature measured along the floor. Each end of the walkway shall provide access to a means of egress.

c. The patient compartment shall provide at least 60" height, over the primary patient area, measured from floor to ceiling panels.

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3.10.5 BODY, GENERAL CONSTRUCTION.

Delete the existing paragraph and replace it with the following

For modular construction, the body shall be all welded aluminum or, other lightweight, inherently corrosion resistant materials of equal, or greater, strength. The exterior of the body shall be finished smooth with a symmetrical radius to corners and edges, and shall include doors and windows specified herein. Ambulance body, as a unit, shall be designed and built to provide impact and patient compartment penetration resistance and shall be of sufficient strength to support the entire weight of the fully loaded vehicle on its top or side, if overturned, without separation of joints or permanently deforming roof bow or reinforcements, body posts, doors, stringers, floor, inner linings, outer panels, rub-rails, and other reinforcements. Wood, or wood products, shall not be used for structural framing.

The roof structure, liner, and outer skin or cap shall be designed and constructed to prevent separation. Any absorbent material such as carpeting, fabric, or inside/outside plastic type carpeting, etc. that resists cleaning and decontamination shall not be used.

3.10.8 DOORS.

Delete the existing paragraph and replace it with the following

Two patient compartment door openings shall be provided. They shall not be on the same side of the vehicle.

Bottom steps at the entry/exit of doorways of the patient compartment shall be at least the width of the doorway internal frame opening.

3.10.8.1 Door 1

There shall be a door opening for loading a patient on a backboard.

a) For modular bodies the door(s) shall provide a minimum clear opening of 30" wide and of 46" high

b) For Type II vehicles the OEM's standard door opening shall be furnished.

3.10.8.2 Door 2

There shall be a door opening for loading a patient on a cot.

a) For modular bodies the door(s) shall provide a minimum clear opening of 44" wide and of 46" high

b) For Type II vehicles the OEM's standard door opening shall be furnished.

3.10.12 STEP WELL (SIDE DOOR).

Delete the existing paragraph and replace it with the following

When a side entry door is furnished, steps shall be provided in the door openings. Step well shall be the enclosed two-step type. Height of the bottom step shall not exceed 22". Step wells shall be lighted, and all step surfaces shall be constructed with anti-slip material.

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3.11.1.2 WASTE AND SHARPS DISPOSAL.

Delete the existing paragraph and replace it with the following:

The following shall be furnished: A trash receptacle compartment, with closure over opening, for general waste shall be furnished with a plastic/rubber trash can and disposable plastic liners, with 12 spare liners. The trash compartment shall be accessible to the EMSP seat. A sharps receptacle compartment/ storage or a commercially available container mounted in a convenient area shall be furnished for retention of a sharps container that is compliant with OSHA 1910.1030

3.12 OXYGEN, MAIN SUPPLY AND INSTALLATION.

Delete the existing paragraph and replace it with the following:

The ambulance shall have a piped medical oxygen system capable of storing and supplying a minimum of 3,000 liters of medical oxygen. The installed medical oxygen piping shall be leak tested to 80 PSI. After the successful completion of piping test, the system shall be completely assembled and the flow rate of the outlets tested with the system pressurized at normal working pressure. The system shall be capped then tagged with date and signature of person and firm performing the tests.

The main oxygen supply shall be from a compressed gas cylinder(s) that the consignee will provide and install at the time the vehicle is placed in service.

A cylinder changing wrench shall be furnished. The wrench shall be chained and clipped within the oxygen cylinder compartment.

The cylinder controls shall be accessible from the inside the vehicle. A device shall be visible from the EMSP's seat that indicates cylinder pressure. The use of remote high pressure lines and gauges are not allowed. The oxygen cylinder(s) shall be accessible for changing from the exterior of the body.

The purchaser shall specify the type of quick disconnect, to be used. The FSAM shall install all other components and accessories required for the piped oxygen system which shall include as a minimum:

- A pressure regulator
- Low pressure, electrically conductive, hose and fittings approved for medical oxygen
- Oxygen piping shall be concealed and not exposed to the elements, securely supported to prevent damage, and be readily accessible for inspection and replacement.
- Oxygen shall be piped to a self-sealing duplex oxygen outlet station for the primary patient with a minimum flow rate of 100 LPM at the outlet.
- Outlets shall be marked and identified and not interfere with the suction outlet

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3.12.1 OXYGEN PRESSURE REGULATOR.

Delete paragraph 3.12.1.
Replace it with the following paragraph:

The medical, oxygen pressure reducing, and regulating valve with inlet filter at the cylinder shall have line relief valve set at 200 psi maximum, and a gauge or digital monitor with a minimum range of 0 to 2,500 psi with the gauge or display scale graduated in not more than 100 PSI increments. The regulator shall be easy to connect and preset, with a locking adjustment, at 50 +/- 5 psi line pressure.

With the regulator set at 50 +/- 5 psi, a 100 LPM minimum flow rate shall be available at all oxygen outlets.

This regulator shall perform as required at an inlet pressure range from 150 psi to 2500 psi.

3.12.2 SUCTION ASPIRATOR, PRIMARY PATIENT.

Delete the existing paragraph and replace it with the following:

An electrically powered suction aspirator system shall be furnished. The vacuum control, vacuum indicator and collection bottle or bag shall be located so that the EMSP can properly operate the device from the EMSP seat. The electric type aspirator system shall be connected per Figure 3.

The suction pump shall be located in an area that is accessible and vibration insulated from the patient compartment.

1) The pump shall be vented to the vehicle's exterior.
2) A vacuum control and a shut-off valve, or combination thereof, shall be provided to adjust vacuum levels.
3) A vacuum indicator gauge graduated at least every 100 mm Hg and a minimum total range of 0 to 760 mm Hg, shall be provided.
4) The collection bottle or bag shall be non-breakable and transparent with a minimum 1,000 ml capacity.
5) The minimum inside diameter for the suction tubing connectors shall be at least 1/4 in. The end user shall provide any suctioning catheters desired.
6) The suction aspirator system shall provide a minimum of 30 LPM flow at the catheter tip.

3.13.4 VENTILATION CRITERIA.

Delete paragraph 3.13.4.
Replace it with the following paragraph:

Ventilation system(s) of the driver and patient compartments will provide a change of ambient air within both compartments with the vehicle stationary. Ventilation will be separately controlled within the cab and patient compartments. Fresh air intakes will be located towards the front of the vehicle and exhaust vents will be located on the upper rear of the vehicle. Exhaust vents may be located on the rear lower half of the module/body, provided the vent/device incorporates a reverse flow damper to prevent back draft and intrusion of vehicle engine exhaust, dust, dirt, or road spray. The patient compartment will be ventilated by the air delivery system of the environmental equipment (heater-air conditioner) or by separate system(s), such as power intake, exhaust ventilator(s).

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3.15.2 STANDARD MANDATORY MISCELLANEOUS EQUIPMENT.

Delete paragraph 3.15.2 Item 1.
Replace it with the following:

1. Fire extinguishers: Two, (ABC dry chemical or carbon dioxide) minimum 5 lb. unit, with a quick release bracket.

3.15.3 CONFIGURATION WORKSHEET.

Add the following text before, Reference Section 3.0 – REQUIREMENTS

The Department of Homeland Security is developing a guidebook focused on helping EMS provider organizations design and specify ambulance patient compartments, which will include design criteria and best practices based on human performance research, human factors engineering design standards, and EMS community requirements. This document is scheduled to be released in late 2014. Practitioners should consider this document when designing ambulances in conjunction with standards.

Until the publication is finalized, the following guidelines can be considered when completing the Configuration Worksheet:

Seats and restraints should be designed to allow all EMSPs to reach common and critical equipment with at least one hand at a maximum functional reach from a seated and restrained position. This includes a 5th female EMSP with a maximum functional reach of 43.2 inches as measured from the junction of the seat pan and seat back to the thumb tip of the arm fully extended parallel to the floor while leaning at a maximum 45° degree angle.

Seats and restraints should be designed to allow all EMSPs to reach patients with at least one hand at a maximum functional reach from a seated and restrained position. This includes a 5th female EMSP with a maximum functional reach of 43.2 inches as measured from the junction of the seat pan and seat back to the thumb tip of the arm fully extended parallel to the floor while leaning at a maximum 45° degree angle. (see figure 6)

Exterior and interior access handrails should be constructed of or covered with a slip-resistant noncorrosive material that can be sanitized and cleaned.
Restraint systems should be as follows:

1. The restraint system's unfastening mechanism should require only one motion or click with only one hand to operate
2. The restraint system's fastening mechanism should require minimal steps to operate
3. The restraint system should be adjustable to prevent pressure on the throat or other sensitive areas.
4. Fully exposable for sanitation and cleaning

Surface materials and their colors used in the patient compartment should allow EMSPs to distinguish clean from soiled surfaces.
Handholds that minimize striking hazards should be installed over each walking path down the length of the patient compartment.

Delete Line Item 38. Replace it with the following:

38. If different than 3.10.4, state the required increase to the patient compartment interior dimension(s):_____

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3.15.4.26 CODE "K01" ALS CONFIGURATION

Delete paragraph 3.15.4.26 in its entirety.

3.16.4 REFLECTIVE EMBLEMS AND MARKINGS

Delete paragraph 3.16.4 A
Replace it with the following:

A. RESERVED

4.2.1 QUALITY CONFORMANCE INSPECTION.

Delete the existing paragraph and replace it with the following:

Quality conformance inspection applies to all ambulance(s) offered for acceptance under the contract.
Quality conformance inspection shall consist of:
1. Workmanship inspection
2. Operational checks
3. Examination of the ambulance handbook
4. Verification of successful completion of AMD tests 001 & 003-026 and the annex.

4.3.3 CRITERIA OF CERTIFICATIONS.

Delete paragraph 4.3.3.
Replace it with the following paragraph:

The initial testing and inspections required for certification shall be performed by:

1. A Nationally recognized testing laboratory, recognized by OSHA under Appendix A to 29 CFR 1910.7

Or

2. An ISO/IEC 17025 accredited laboratory by an accreditation body that is recognized by the National Cooperation for Laboratory Accreditation (NACLA) or is a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA). The scope of accreditation shall include AMD tests 001 and 003-026 and the annex.

The individual certifications will remain valid for 5 years as long as the type of ambulance tested remains in production. Design changes during the 5 year certification period must be tested at the time of production release.

Certifications that appear on the ambulance need not be re-submitted (i.e.; DOT, EPA, etc.). Certification(s) will be acceptable in lieu of actual verification test during inspections providing supporting verifying data complying with 4.3.3 is on file for examination.

Certification from OEM and individual equipment manufacturers are acceptable providing they are not part of a system(s) or altered and in accordance with 4.3.4.

Type certifications of individual components and equipment products are acceptable.

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Each ambulance constructed shall be tested by the FSAM to demonstrate compliance with AMD STDs 5, 9, 10, 15, 21, 25 & 26 and the annex. This is in addition to the initial type testing certification required.

4.4.1 TEST CRITERIA.

Delete the existing paragraph and replace it with the following:

The ambulance shall be prepared for operation in accordance with OEM's recommendations, and AMD Standards 001 & 003-026 and the annex. The ambulance shall successfully complete all parts of the quality conformance inspection.

5.2.5 GOVERNMENT/PURCHASER RESPONSIBILITY.

Add the following text:

41 CFR 102-34 requires the display of official U.S. Government license plates on the front and rear of all Government motor vehicles unless otherwise exempt, regardless of state motor vehicle requirements

6.2.1.1 DOMESTIC USE

Delete paragraph 6.2.1.1
Replace it with the following paragraph:

When vehicles are used within the fifty States of the United States, the District of Columbia, Puerto Rico, American Samoa, Guam, The Republic of Palau, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands , and the Virgin Islands, the warranty shall include the furnishing, without cost to the Government (FOB FSAMs nearest dealer or branch to vehicle's location or station), of new parts and assemblies to replace any that failed or malfunctioned within the warranty period. In addition, when the Government elects to have the work performed at the FSAM's plant, branch, dealership, or with the FSAM's approval to:

1. Have the vehicle corrected by a government garage facility
2. Have the vehicle corrected by a commercial garage facility

The cost of the labor involved in the replacement of the failed or malfunctioned parts or assemblies shall be borne by the FSAM.

6.2.1.2 FOREIGN USE.

Delete paragraph 6.2.1.2
Replace it with the following paragraph:

When vehicles are used outside the fifty States of the United States, the District of Columbia, Puerto Rico, American Samoa, Guam, The Republic of Palau, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands, and the Virgin Islands, the warranty shall include the furnishing of new parts or assemblies to replace any returned to the FSAM by the Government which failed or malfunctioned within the warranty period. The replacement parts or assemblies shall be delivered by the FSAM to the port of embarkation in the United States designated by the Government. The FSAM shall not be required to bear the cost of the labor involved in correcting defects in vehicles operated in foreign countries.

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6.4 CERTIFICATE OF ORIGIN OR BILL OF SALE.

Delete the existing paragraph and replace it with the following:

The manufacturer's Certificate of Origin or Bill of Sale for each vehicle procured shall be provided to the purchasing agency. The front of the document shall show the applicable RPN number shown on the Motor Vehicle Delivery Order. Non-OEM re-sellers must re-assign the document to the purchasing agency listed in the Consignee Mailing Address shown on the Motor Vehicle Delivery Order. The document shall be forwarded to the Consignee Mailing Address shown on the Motor Vehicle Delivery Order prior to shipment. Vehicle title/registration and safety/emission tests are the responsibility of the requisitioning agency.

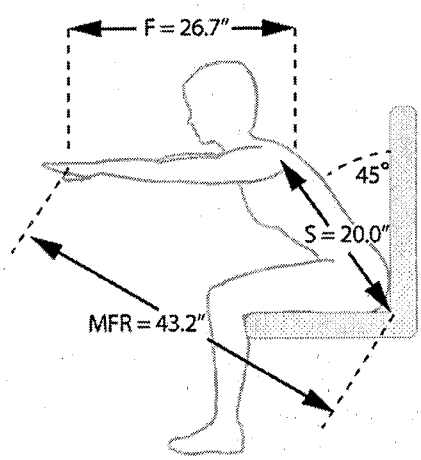
Add FIGURE 6

Maximum Functional Reach Maximum functional reach is measured from the center point of the junction of the seat pan and seat back to the thumb tip where the arm is fully extended parallel to the floor and the torso is leaning forward at a 45° angle. Maximum functional reach is calculated using the following formula, where F = functional reach and S = seat to shoulder sitting height.

$$Maximum\ functional\ reach\ (MFR) = \sqrt{F^2 + \frac{2FS}{\sqrt{2}} + S^2}$$

As an example using anthropometric data from MIL-STD-1472G, the maximum functional reach for a 5th percentile female, illustrated below is calculated using the seat (bottom of buttocks) to shoulder torso length (20.0 inches [508 mm]) leaned forward at a 45° degree angle and a functional reach as measured from the shoulder blade to thumbtip (26.7 inches [677 mm]) for a maximum functional reach of 43.2 inches (1097 mm).

$$MFR = \sqrt{26.7^2 + \frac{2(26.7)(20)}{1.41} + 20^2} = 43.2\ inches$$



Maximum Functional Reach for a 5th Percentile Female

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