

## UNOLS Standard Accommodations Van

Version 1

September 2012 **Revision A (October 28<sup>th</sup>, 2012)**

**Owner:** R/V Hugh R Sharp (University of Delaware). The details described are for the 2012 Request for Quotation (RFQ) and suit the Owner's particular needs.

### **General:**

This document is intended to be used as the specification for the outfitting of "Accommodations" vans used aboard research vessels in the UNOLS (or academic) research fleet. This specification is intended to comply with:

- 46 CFR, Chapter 1, Sub Chapter F, J, and U, parts 188 thru 193, and Q.
- DNV 2.7-1 "Offshore Containers", and DNV 2.7-2 "Offshore Service Containers"
- International Convention for Safe Containers (CSC)

It is to be used in conjunction with the UNOLS General Construction Specification. This document may also be used as guidance for institutions or scientists who wish to construct their own vans. Specific details given in this document may be omitted for economy or if the van is intended for a particular purpose.

**Material:** Steel

### **Securing and Lifting Hardware:**

The van shall be fitted with fork-lift pockets at the bottom, as on a standard 20-foot ISO shipping container: The slots are approximately 14" wide, 4-1/2" high, and spaced 81" apart (center to center).

The van shall be fitted with DNV Approved Pad Eyes, and be supplied with a DNV Certified, matched 5-legged wire rope sling set.

**Power:** 120/208V, Three phase

### **Electrical:**

All wiring shall be in accordance with "Subchapter J" of 46 CFR (Parts 110-113), "Shipboard Wiring Requirements", IEEE Standard 45-1998, "IEEE Recommended Practice for Electric Installations on Shipboard" and applicable SOLAS requirements (Chapter II-1, Part D, SOLAS Consolidated Edition, 1997)

Shipboard wiring methods shall be used for all cables. Cables should be recessed in the walls. All fixtures, boxes, and devices must be corrosion resistant and intended for marine/commercial use. Major equipment, such as the HVAC unit or water heater, should be on separate circuits.

Several “spare” circuits shall be provided in the distribution panel. All electrical components must be located at least 18” above the deck of the van.

#### Distribution Panel (3-phase van)

The interior distribution in the 3-phase van will be 208/115 VAC with the neutral grounded to the van structure at the main circuit breaker. This service is generally found in shore-based commercial and light industrial buildings, again, allowing readily available equipment (e.g. HVAC units) to be installed in the van and will allow the van to be connected to shore-side services when not on the ship. The van shall include a step-down/isolation transformer of a suitable rating to isolate and convert the ship’s 460V side to the 208/115 V for the interior.

The primary side of the transformer(s) will be ungrounded. The secondary (240 or 208/115V) side(s) of the transformer(s) shall have a grounded neutral. All structural metal parts of the van, all electrical panels and enclosures, any metal plumbing lines, the HVAC unit, and the uni-strut, will be bonded together and to the electrical system neutral.

The van shall be fitted with the male end (“inlet”) of the power plugs specified for ship and shore power. The inlets shall be located in the recessed corner of the van as shown in the General Arrangement Drawings. 50-foot power cables shall be provided. The cable shall be 3 or 4 conductor as required (2 or 3 current carrying plus a ground 0 SOWA or equivalent rubber covered cable), sized to match the electrical service, and fitted with a female connector to mate with the van inlet. The other end of the cable shall be left un-terminated so that the vessel operating institution can match the cable to the existing ship’s power feed plug.

- The van shall be fitted with 2 (2), 4-foot, white, fluorescent light fixtures, and two (2), 4-foot, red fluorescent light fixtures secured to the ceiling. The red and white lights shall be on separate switches. A total of eight (8), 20 Amp receptacles shall be placed on the long sides of the van (4 per room), at 48” above the deck. All receptacles are to be on separate GFI circuit breakers, or alternatively, GFI receptacles may be used in all locations.
- The van shall be fitted with 2 Phone Jacks, and 2 Network (Cat 5e), located at the folding desks, and wired to a common communications junction box for wiring to ships systems.

#### **Arrangement:**

This van shall use the “Stand Alone” arrangement. The Van will have two rooms, to separate male and female quarters. The Van will have a common Head/wash place, details provided in following sections.

#### **HVAC and Insulation:**

HVAC to meet the following requirements:

- Sized to maintain interior temperature at 72° Fahrenheit with an ambient high temperature of 104° Fahrenheit, and low temperature of 32° Fahrenheit. Calculations must be provided for approval to demonstrate appropriate sizing.
- Allow for adequate ventilation for (4) personnel, as per Ashrae standards
- Meet A-60 Requirements, including fire dampers and controls as required

**Doors and Escape Hatch Location:**

- 1) The aft personnel door shall be located on end “A”, have a 32” clear opening, and be right handed. Door is to have 12 x 12 IWG Window. Door to be A-60 certified, complete with DNV Certificate.
- 2) The second personnel door shall be located on end “F”, have a 32” clear opening, and be left handed.
- 3) Exterior Doors to have IWG Windows. Doors to be A-60 certified, complete with DNV Certificate.
- 4) **Escape hatches in the ceiling of each living space to be provided. Hatches to be A-60 Certified, complete with DNV Certificate. Interior Ladders must be provided to each hatch.**

**Bulkheads/Overhead Sheathing:**

The interior bulkheads and ceiling of the van shall be finished in a smooth, nonabsorbent material, resistant to wear, impact, and staining. The material must be easily cleaned with soap and water. The linings and coatings must meet A-60 requirements for flammability. The color chosen should be neutral and light in color (off-white or beige). All joints and seams shall be properly trimmed. A bulkhead is to be provided to separate male and female accommodations. Bulkheads to have interior doors, with locking provisions.

**Decking:**

The deck of the van shall be covered with a suitable, industrial-grade material. The deck covering shall be such that it will provide a non-slip walking surface when wet. A 4” vinyl (or other suitable material) baseboard shall be installed. The seam between the baseboard and the deck shall be properly caulked.

**Heads/Washplace:**

A single Head and Shower must be provided, as well as wash basin, preferably one wash basin per male and one per female quarters. Heads/wash place to have locking doors complete with indicators for “occupied” and “vacant”. Heads and Wash place to have hot and cold running water. Ventilation Exhaust Fan to be provided, and must meet A-60 requirements.

**Outfitting:**

The Van shall be outfitted with bunks, lockers, and storage drawers as per USCG Standards, as outlined in 46 CFR, and must meet the minimum personnel space allotment provided in the standard. The following list of items must be included:

- (4) Bunks, with pillows, mattresses, blankets, bunk lights, privacy curtains
- (4) Lockers, free standing
- (4) Bunk Drawers, complete with pad lock hasp
- (4) Flashlights, with holders, water proof
- (4) Coat Hooks for wet weather gear
- (4) Bunk Lights, USCG Approved
- (2) Bunk Ladders, for accessing upper bunks
- (2) Desks, folding
- (2) Wash Basins, with Hot & Cold Water
- (2) Medicine Cabinets with Vanity Mirror
- (1) Toiletries Cabinet

**Miscellaneous Outfitting Items:**

The van shall be fitted with the following items:

- 1) Two (2), Marine-grade emergency lights which activate when ship's power is interrupted. They shall be tied into the van lighting circuit. It shall be fitted with a manual on/off switch to prevent discharge of the battery when disconnected from power. One per room.
- 2) Two (2), Smoke detectors, one per room
- 3) Two (2), CO2 Detectors, one per room.
- 4) Two (2), 10# Fire extinguishers, Type BC, one per room.
- 5) One (1) Four Legged Lifting Sling, DNV Certified

**Exterior coatings:**

- Surface preparation is commercial abrasive blast to SSPC-SP6
- International Paints marine rated epoxy primer, Interseal 670HS
- International Paints marine rated top coat, Interthane 870
- Roof to be painted with anti-slip coating, outer band of opposing color as per DNV specifications

**Placards and Labeling:**

The van and/or internal equipment shall be fitted with the following placards because of the van's intended purpose. These are in addition to the Placards and Labeling given in the General Specification.

Personnel Doors: "Accommodations Van" (2" high black letters, exterior side of door)

Emergency Light: "To prevent discharge of battery, turn off switch when van disconnected from power for extended period" (Red engraved placard with white letters)

Builder's Plate

National Science Foundation Logo

USCG Inspection Plate:

DNV Certification & Inspection Plate

CSC Plate & Identification Lettering

**Quality Control, Certification, and Documentation:**

- Quality Control test plan to be submitted for approval prior to manufacture, and must be performed as follows:
  - Material tests performed by a DNV approved independent testing agency to ensure materials meet DNV specifications
  - Weld tests performed by a DNV approved independent testing agency, including visual, magnetic particle, and ultra-sonic testing as per DNV 2.7-1
  - Production tests to be performed for dimensional accuracy and workmanship
  - Production Lift Tests to be performed as per DNV 2.7-1, witnessed by DNV inspector(s)
  - Electrical testing to ensure continuity and function
  - Coatings tested for adhesion and mil thickness at each stage
  - Documentation survey(s) with DNV inspectors to ensure all components, and traceability meets DNV requirements prior to release of shipment
  - Documentation to include all items listed in section 6.1 of the specification
  - All QC documentation to be submitted in DNV As-Built Dossier, and to be stamped by a DNV inspector
  - USCG Marine Safety Inspection Required, nameplate stamped
  - International Convention for Safe Containers (CSC) Certificate and CSC Plate Affixed to Van