

UNOLS Operators/Technician Input

UNOLS Berthing Van- As of 15 January 2013

Bill Byam/UDEL

I know this project has been in the works for a very long time. Some of the problems I see as related to a regional ship.

1. The science party assigned to the berthing van will feel second class to those in regular cabins.
2. The location on the aft deck on the Sharp is not ideal, even with our vestibule.
3. The heads on the ship are a good distance from the van location.
4. If a head shower is built in it will require plumbing to the black and grey water system.
5. It will limit the ability to carry science vans to 1 van.
6. The aft door will open to the weather deck.

Part Two- From the crew of the R/V Hugh Sharp

Some of the crew have more positive responses.
More room for extra crew.
Keep science and crew separated.
Already have black and gray water connections.
More room in existing berthing for shift separation.
Science close to lab area.
Please ad these comments from the crew.

David Fisichella/WHOI

I think it is relatively straightforward to design a new accommodation van and ships to physically accept them. My concern is the potential impact of increasing the science compliment in vessels that's not design for it. The trend in recent years has been to increase cruise efficiency by encouraging collaborative field programs. This typically results in a number of "Chief" scientists on a cruise, with many of them trying to perform conflicting work. This situation puts a tremendous stress on both the crew and science support technicians. Any increasing berthing has the potential to aggravate this problem. While I see a tremendous benefit in having the ability to expand accommodations, I feel we have to be careful about letting the berthing van become the norm rather than the exception when science plans cruise staffing.

Tom Glennon/URI

Looks good but we aren't able to provide a "sheltered location" so we don't feel this would be a great fit for Endeavor. The one time we had more than 18 scientists we turned the 01 lab into a bunk room.

Dale Chayes/LDEO

I think that the overall plan would be easier for many folks to understand if the layout drawing had had a top view (floor plan)

The specification doc calls for 120/208VAC power on the first page. Further on it specifies a step-down isolation transformer from (the much more common) 460VAC. I think the first page should specify what the connections to/from the van.

I didn't see any mention of annunciators for the ship's alarm system.

Seems like there should a provision to connect the van's fire (smoke) detectors to the ship's alarm panel

In this era, seems like the van should come with a shelf w/ power for a wireless access point to be provided by the ship (to match the ship's existing infrastructure.)

Seems like overkill for every van to come with its own lifting slings.

Steve Hartz/Univ. of Alaska

Just a few comments. As the berthing van is intended to be use on the Sikuliaq you may wish to broaden the operational range to include subzero temperatures. This should include adequate insulation. Electric sub floor radiant heating should be considered throughout the van. Auxiliary electrical power should be provided for supplementary electric heat and/or ducting to allow van to be heated via ship based heating source. I would also recommend that all plumping be insulated and be provided with heat trace. It should be easy to winterize the van when not used to support berthing. Van should be provided with winterizing instructions. I would also recommend small electric heaters and a dehumidifier to prevent condensation and mold during downtime storage of the van. All hosing and electrical connections that mate to the ship should be specified for sub zero operations.

Fred Jones/OSU

Seems to me there was some discussion about electrical power for the van. Having been involved, with Matt Hawkins, in the design of the early van pool vans, 240 V, single phase (what your house is wired with) is fairly unusual on most ships and often available only in limited places and capacities (often they'll have a transformer for the ship's clothes dryers). Like wise, 208/120 3 phase is generally only on smaller vessels. Assuming you want more than lights, i.e., a heat pump, hot water heater, etc.) I suggest going with something similar to what we have on the existing lab vans which allow for 208 or 480 using a transformer.

Fred Jones- Part 2

As the old, retired guy who was, years ago, involved with Matt in the early UNOLS pool lab van designs I'll toss in a few historical comments:

I looked into connections for the general alarm, intercom, and fire detection. The problem was the lack of commonality among the ships. For example, Wecoma had 110 Vac general alarm bells but Oceanus, a sister ship, has 24 Vdc. Likewise, there's probably almost as many different intercom and fire detection systems as there are ships. Fire detection systems tend to have a "supervisory" circuit that looks for a fixed resistance when there is no alarm condition to verify that the circuit is intact and then alarms on a contact closure/opening. Hooking a different device up is likely to trigger a supervisory alarm among other potential problems. Each "zone" in a fire detection system generally has the sensors in series so the ship would possibly need an additional zone for the van. In addition, each ship that uses a van would need to have suitable connection points for these systems. A partial solution has been for each user to put a portable communication device in the van. In the case of Wecoma this intercom device provided both phone and general announcing functions. I agree with Dan on the need, and the NSF inspection folks will as well, but the implementation is not trivial and require communication with the likely users. Internet and entertainment should be straightforward.

Marc Willis/OSU

There has to be provision for connecting a berthing van to the ship's communications, alarm, PA/GA and network systems. Smoke detectors and stand-alone systems only work when people are in the van - not when it is unoccupied. I'm not sure how this gets accomplished with the variety of systems on our ships, but at least a proper watertight cable pass (MCT) should be included so that these systems can be rigged into the van.

- Placement of the doors on the ends may be problematic on some ships.

- One important issue is the question of securing the container properly for berthing vs. cargo. I don't know what the requirements (if any) are, but I know this is a concern in the oil patch where

berthing containers are commonly used. Some investigation of this is warranted. If these are DNV-"classed," maybe DNV will have some advice.

I would echo Dave F's concern about overburdening the ships with additional personnel. Our ships have been designed for a particular number of people for a specified mission duration. Adding people to the science party on a ship not designed for them adds a burden to the mess, common space, and (especially) labs. In my opinion, it doesn't make a lot of sense to add people to a science party if they have nowhere to work.

Zoltan Kelety/ SIO

You wrote below:

"The R/V Sikuliaq, **new Ocean Class Research Vessels**, and eventually the Regional Class Research Vessels will all be properly designed to accommodate berthing vans."

With respect to OCEAN Class, there are no requirements in the specifications for berthing vans. For sure there is nothing in the plans that would allow for a van with toilet facilities. We have two public heads on the main deck, but no public shower facilities.

At present we would be able to support a van with Potable Water service only, which could include a shower. Electrical and communications services are provided at the van location.

Dan Oliver/ Univ. of Alaska

Thanks for the reminder. I had looked at this earlier and do have a few comments:

- The 32 degree lower operating temperature will limit the van's use. Ideally it would be the same as SIKULIAQ at -25 degrees outside temperature, but for a van that may not be possible. But I would suggest that the minimum outside temp requirement should be at least 20 degrees with 0 degrees desired.
- There should be some verbiage in the spec about there being an easy way to drain the van of any water in toilets, water lines, and drains. Important for layup of the van to prevent it being damaged by cold when in storage.
- Connections to the ship are not well defined. The spec talks about the electrical and alludes to connection box for phone/data. All connections should be in the same location where the recessed area is by the fwd facing door and address electrical, comms, water, drains, and tie to ship's alarm system if not already provided via the comms link. Similarly, a connection to the ship's entertainment system (if not already provided through the comms link) should be added.

- The van has smoke detectors and CO2 detectors; they should either be wired to connect into the ship's alarm system, or alternatively the van should have an exterior flashing alarm light and horn that would go off.
- Doesn't specify a difference between grey water and black water drains which I recommend be separate.
- Doesn't specify gravity drain toilet or vacuum flush toilet. I suspect most UNOLS ships have vacuum toilets, if it comes with a gravity drain toilet will it be compatible? Alternatively it could be designed with a holding tank, but probably not a good route to go down.
- The aft facing door should have some means of having a heavy weather plate bolted over it. I've seen the aft facing doors on a number of lab vans get caved in by taking water onto the fantail in heavy seas.
- Probably not possible given the size limitation, but it is too bad the after stateroom opens up aft. A problem in heavy seas for people living in the van to get in and out - suspect they will be smart enough to go through the head and through the fwd stateroom. But given that normal access will be aft, there should be some provision for an exterior light at the end and alongside the van (maybe motion sensed?) so that someone accessing it at night has some light to go by. Additionally, if there could be a provision for either attaching an external hand rail (or life line) to the exterior of the van so the people accessing the after door have something to hold onto when walking around the van in heavy seas.
- This states the obvious, but there probably should be a placard on the aft facing door that cautions the person to look out the portlight before opening the door to access if sea conditions are safe to exit.

Mark Smith/ DUKE

HVAC unit mounting for transport of container

We experienced a number of repairs on COLD vans due damage during transportation that have often required a 3rd party person. Costly!

HVAC simplified design. We had a COLD van that was WAY over engineered. Please treat this in a professionally polite manner, I do not want to offend. Redundant on redundant can become a mess.

Manuals and system diagrams for shipboard engineer's to troubleshoot components contained within the lab van as well as a suite of standard spares.