UNOLS Appendix B Workshop Minutes
February 7-8, 2012
Scripps Institution of Oceanography
San Diego, CA

*****These Minutes can be read as a .pdf HERE*

Executive Summary

With support from the National Science Foundation, a workshop was held on February 7-8, 2012 on the UNOLS Research Safety Standards, Appendix B. The UNOLS Overboard Handling Systems Design Standards: Criteria for the Design and Operation of Overboard Handling Systems. The workshop, hosted by Scripps Institution of Oceanography, and facilitated by the UNOLS office, provided an opportunity for the UNOLS community to meet and openly discuss the Appendix B safety standards and to develop implementation plans. Under the guidance of the RVOC Safety Committee Chair, Dan Oliver/UAF, the workshop format was a day and a half meeting with breakout sessions. Several excellent outcomes of the workshop included a sharing of experiences and documentation already completed. The UNOLS office has posted supporting documentation from various operators and will continue to disseminate this information across the fleet.

Appendices – Meeting Presentations

I Agenda
II Participant List
III SIKULIAQ Aft Handling System Draft
IV GEOTRACES Example with Comments
V Atlantis Starboard Squirt Boom and Aft CTD Winch
VI Constable Towed Array
VII Test Memo

Meeting Summary Report

Introductions

Eric Buck/SIO provided opening remarks and a welcome to all participants.

Overview, Purpose, and History

Dan Oliver provided a review on the history of the development of Appendix B and the current status. Appendix B was promulgated on 12/13/2011 and the compliance date is 7/15/2014. While 46 CFR 189-35/Wet Weight Handling Gear only applies to inspected vessels, UNOLS has made a decision that this safety standard will apply to all UNOLS vessels as an appendix within the Research Vessel Safety Standards, (RVSS).

Testing

Appendix B states that testing must be done, but the document doesn't clearly specify how the testing should be done. This sections in the appendix needs to add in clear instructions. On verification testing, we need to pay special attention to material condition. For proof testing, it is not a test to destruction.
Testing needs to be done if there are any significant modifications and at a certain number of hours of use. Having a knowledgeable person to provide advice to the UNOLS fleet would be helpful and it has been suggested that the East and West Coast Winch Pool managers take on this role. Tests need to be engineered and some testing could be done in shipyards.

Deck Sockets require that the engineering be done up front, keep in a file. Individual deck sockets which are rated need to be clearly marked.

Recommendations on Maximum Capability Documents

- Maximum Capability Document- a standardized format would be good, especially for portable gear which moves from ship to ship.
- Recommend simplifying for our users, having a few examples to look at.
- Knowing what your limitations are.
- Having a template would be helpful and could save dollars.
- Another set of regulations requires time and effort for an already overcommitted staff.
- Add this to the cruise planning module
- Post existing MCD's as examples.

Breakout Groups- Concerns

- Testing Portable Systems- In an outport, this will be very difficult. Does it need to be tested to Maximum Permissible Tension,(MPT) or Maximum Anticipated Operating Tension, (MAOT) ?
- Quick Releases- Should they be tested?
- Deck Sockets- A percentage of deck sockets should be tested every 2 yrs.
- Increasing User Awareness- this can be done at pre-cruise planning meetings.
- Old Systems- We have A-frames on some older ships in which no documentation exists. Is it worth putting money into these systems.
- Measurable standard- Is Appendix B a measurable standard ?
- Testing Frequency- Perhaps we can try to get testing of equipment in synch with shipyard periods. Twice every 5 years, and not greater then 3 years.
- MCD's- who signs off on them?
- MCD's- Add a question to the STRS. Does your overboarding equipment have all required Maximum Capability Documents ?

Written Questions/Comments

During the Appendix B Workshop on February 7 & 8, 2012, we encouraged participants to submit written questions and comments. The Safety Committee then followed up and provided written responses to these questions. These are listed below.

1. 125% to 150% weight testing at sea would be very difficult and possibly dangerous in rough sea conditions. B.6.3 – delete the first paragraph of this section. The second paragraph adequately covers the need.

2. MCDs for science owned equipment should be submitted in pre-cruise planning. I believe UNOLS is developing a pre-cruise planning online form/database. The ship operator should not be held responsible for supplementing or filling the gaps in information that has not been submitted within an appropriate time frame. Add a sentence under objectives about it being critical that pre-cruise planning consider Appendix B. Similar wording to what is in the B5

3. Capstans. There is typically less information available in association with our capstans. How/when/what funding will be available to address preparation of MCDs for capstans? Not applicable because they are not in the wire path of overboarding systems.

4. Does Appendix B apply to vessels of opportunity such as FALKOR, ALEUTIA, etc.? No, but no need to make a statement to this in Appendix B.

5. Synthetics (spectra, amsteel blue) need determinations for use relative to Appendix A and B. Typical OOI anchor recovery systems are presently being designed using 5/8 inch amsteel blue for example. A section on synthetics for Appendix B is in development.

6. Manufacturer's recommendation for sheave size using 0.681 (fiber optic) cable is 48 inches at 14,000 lbs. Appendix A only requires a 27.2 inch sheave based on the 40d criteria. This difference should be addressed in Appendix A, at least for fiber optic cable. Have Rich Findley follow up on this. Do we need to make a change to Appendix A that specifically addresses fiber optic 0.681?

7. Can capstans of various sizes be added to the winch pools for portable use? Yes, but the need not identified and not applicable under Appendix B.

8. For standardization and to minimize costs, NSF should hire a consultant to assemble MCD's for the fleet with information provided by all the institutions. The institutions could then assemble their OHDDs and system MCDs thus maintaining their independence and final decision making with regards to how they want to operate their vessels. Doing that on a limited basis through the group purchase Duke is doing for non-inspected vessels.

9. Should provide a fleet wide MCD template. Intention is to provide a sample MCD in a future update to Appendix B. There are some example MCDs on the Appendix B documents page from the February 2012 workshop.

10. To simplify the Appendix B document the component MCD should be renamed to component capability document (CCD). Again, support a fleet wide template for the CCD. No, it is a system level MCD or component level MCD.

11. Is the OHDD necessary? It is required as currently promulgated in Appendix B. The necessity of having an OHDD for new systems (components) and for existing systems (components) is being discussed in an effort to simplify Appendix B.

12. It is good to test individual deck sockets, but loading on the ship is rarely that way. Testing should be done in groups such as 3 in a row? Testing shall remain one socket at a time.

13. A testing coach and/or team that operators could call would be a good idea. The winch pool managers will become the UNOLS POC for questions on Appendix A and B, including questions related to questions.

14. A simple software program for using MCDs on the ship would be a good idea. No practical because of too many unknowns between ships.

15. Each MCD should have a one-page summary that provides make, model, MPT, limits. Appendix B does not dictate a specific format, but best practice would be to have this information in summary on the first page of each MCD.

16. Appendix B states that if auto rendering is present on a winch then the 46 CFR sub chapter U requirement for 1.5 times the yield of the wire is not longer required. Is this accepted by the CFR? No for the inspected vessels and this is explicitly stated in Appendix B. The uninspected vessels may utilize the requirements of Appendix B in lieu of the CFR requirement.

17. The MCD should only contain worst case and best case loadings to keep it simple. Cases in between would adequately covered. That is all that is needed. It is up to the individual operator if they want to cover intermediate cases.

18. Evaluate of shackles etc where SWL is provided w/SF to yield. Compare MAOT to SWL. MAOT could be based on ABL of tension member w/appendix A safety factor applies. MAOT = ABL/1.5 then MAOT <SWL of equipment. Yes,

19. Make sure that the requirements of the render/recover and motion compensation are clearly specified as this has a great impact on the final design with regards to power needs, etc. Appendix B requirements are adequate for its purposes. This may be updated periodically as technology changes.

20. Our lift line is spectra and is used both as a wet weight handling member and for over-deck lifting. If we can prove through testing and analysis that our lift winches renders at 15kps we shouldn't need to adhere to the 1.5 X breaking load which would be 45 kip. This is true for uninspected vessels that comply with Appendix B. Inspected vessels must comply with 46 CFR sub-chapter U which would not allow this. The operators of inspected vessels may seek from the Coast Guard an exception to this under 189.35-11 for special circumstances.

21. The language of MPT does not translate very well to the realities of a moving LARS. It should be max permissible moment for a crane which controls static payload, max reach, and max sea state for any given setup. A moving LARS such as a crane is more complex than a static overboard component and would be expected to have a more complex MCD. Dynamic factors should be taken into account.

22. The design standard should be set to whatever the most dependable & repeatable, and tested weak link is. Including on the inspected vessels. This is definitely not always the cable. The cable is expected to be the limiting component unless the system falls under one of the exceptions in B.4

23. Ship operators should be required to provide sufficient access to the ship, whether at shipyard or a suitable facility to conduct testing in a safe manner, i.e. foreign ports with poor facilities. Tight mob/demo times. One of the purposes of pre-cruise planning is to resolve time requirements.

24. A database, or similar, should be available to share common information used in MCDs. i.e. drag coefficients, "preferred" shackles, etc. Eventual goal for UNOLS is to consolidate the MCD data from across the fleet into a data base of information available to all UNOLS member.

25. The OHDD document appears to be more geared towards specific deployment operations as opposed to characteristics of a specific piece of equipment. Recommend removing OHDD from MCD document. Doesn't appear applicable for an MCD. Under consideration.

26. The term MPT should be replaced. It implies this is the allowable tension load in the cable. The MCD is built around addressing what the maximum load of a component can handle. This is tied to the NBL of the cable to be used. Suggest something like maximum cable breaking strength. MPT is appropriate because cable tension is what the tension monitoring systems referred to in Appendix A gives you.

27. Suggest following ABS underwater vehicles systems and hyperbaric facilities specification for testing requirements and periodicity. Noted for future consideration.

28. Develop a testing plan and protocol for deck sockets. Appendix B is not ship or component specific, but lays out the broad requirements for a ship's overboard handling systems. The testing plan and protocol for deck socket testing is an operator

responsibility and obtaining another operator's testing plan would be a good way to get started. This type of information is what will eventually be available from UNOLS through their consolidated MCD data base.

29. Require charter gear to include an installation plan or drawing. Requirement for portable gear to have an MCD already exists in Appendix B. The details of how and where to install the portable gear on a ship is worked out between the operator and the PI bringing the portable gear.

30. Develop and require standard format for MCDs. Especially useful for charter gear that travels to different organizations. Appendix B will not dictate a required format, but example MCDs will be included in a future update in addition to the UNOLS MCD data base.

31. Limit the data required in the MCDs to that which is needed for the document. For example an MCD should address max allowable cable breaking load for a particular equipment configuration and not say the stress in a bolt at the breaking load is. This is already the case for system level MCDs. The component MCD would be specific to that piece of gear, but the system MCD would only need to indicate what the limiting component capability is.

32. Testing should include both functional testing (125%) swl) and proof load testing (200%) swl). The proof load testing results from manufacturing the equipment should be in the machinery history, but does not normally need to be duplicated. The testing plan need only address the bi-annual test to 125%. If in the future a major modification to the equipment is made that requires redoing the proof load testing that should be part of the modification spec.

33. Establish a standard for how mfgs provide/state equipment capabilities and capacities. This possibly could be done via the standardized MCDs. We you are ordering equipment it is suggested you include a sample MCD in your specification.

34. Appendix B is attempting to provide both design and operations guidance. From the design aspect I would recommend the Appendix B recommends an existing design standard as a baseline and then adds any unique requirements on top of the baseline. The design standard is 46 CFR sub-chapter U as the baseline. Exceptions are made for uninspected vessels through Appendix B. Inspected vessels may seek a exception through the waiver process in 189.35-11 for special cases.