



Naval Architects & Salvage Engineers

**NATIONAL SCIENCE FOUNDATION
SHIP INSPECTION PROGRAM**



2013 RVTEC MEETING

Purpose

The major purposes of the NSF Ship Inspection Program are:

- 1) To assure that the capabilities of the research vessel and technical support meet accepted scientific community standards and expectations;
- 2) To assure the seaworthiness and safety of research vessels supported by NSF meet or exceed the standards set forth by the *UNOLS Research Vessel Safety Standards (RVSS)*, and applicable requirements of the International Maritime Organization, American Bureau of Shipping (ABS), the Code of Federal Regulations (CFR), and the U.S. Coast Guard;
- 3) To ensure NSF-owned ships as capital assets, are being adequately maintained;
- 4) To ensure NSF-funded science is scheduled on properly outfitted and maintained vessels.



Naval Architects & Salvage Engineers

Appendix A

Assist

Summary for

Each Wire or

Cable

Suggestion: Please contact info@alirel.com

Assisting compliance with RVSS

Appendix A: Common Finding

Maintaining Accuracy

	Select Applicable Column FS			
Requirement or Attribute	FS of 5.0 or higher	FS from 2.5 to 4.99	FS from 2.0 to 2.49	FS from 1.5 to 1.99
Tension Monitoring				
Tension measuring system maintained with 4% accuracy		Applies		
Tension measuring system maintained with 3% accuracy			Applies	Applies

Written Procedure and Logs

Assisting compliance with RVSS

Appendix A: Common Finding

Older Levelwinds Limit FS to 5.0

Requirement or Attribute	Select Applicable Column FS			
	FS of 5.0 or higher	FS from 2.5 to 4.99	FS from 2.0 to 2.49	FS from 1.5 to 1.99
Sheaves and Fairlead Rollers				
Sheaves & Rollers: As large as practical	Applies			
Sheaves & Rollers: D/d ratio meet 40:1 or 400d1 whichever is greater		Applies	Applies	Applies
Sheaves: Grooves as close to d as possible and no more than 1.5d		Applies		
Sheaves: Grooves per Ref A 1.1 (Groove size relative to nominal diameter of wire rope: 3/16" to 1/4" 3% to 6%; over 1/4" 2.5% to 5%)			Applies	Applies

Assisting compliance with RVSS

Appendix A: Common Finding

Log maximum load for each cast

Requirement or Attribute	Select Applicable Column FS			
	FS of 5.0 or higher	FS from 2.5 to 4.99	FS from 2.0 to 2.49	FS from 1.5 to 1.99
Logbooks: UNOLS wire identifier: Cable Inventory/History and Running Use				
Maximum load for each cast by calculation or monitoring.	Applies	Applies	Applies	Applies

Consider also logging payout per cast and payout at maximum load

Assisting compliance with RVSS Appendix A: Common Finding Log maximum load for each cast

Atlantic Explorer 2012

Drop #	Drop Date & Time	Maximum Tension Per Cast (Lbs)	Maximum Payout of Each Deployment (Meters)
0	5/5/12 13:45	2987	0
1	5/8/12 2:34	1859	1000
2	5/9/12 2:06	1568	2000
3	5/9/12 22:06	2368	4572
4	5/10/12 2:08	1364	1100
5	5/11/12 2:41	2050	4353
6	5/11/2012 5:14	1502.9	1811.5
7	5/11/2012 19:41	2312.3	4617
8	5/12/2012 3:07	2016.9	4200.3
9	5/12/2012 23:00	1604.7	2000
10	5/13/2012 13:15	2859.1	4614.8

Assisting Progress toward compliance with RVSS Appendix B System Level

Appendix B Assist Sheet for Overboard Handling Systems (updated 2_9_2013 JMS/wec)			
This assist sheet is to access progress toward compliance with RVSS Appendix B by the compliance date of 7/15/2014			
Page 1 System Level			
Overboard Handling System Operator's Manual	Reference	Y or N or NA	Comment
For each Overboard Handling System (OHS) Configuration	B.3.1		
System Title/Description		Y / N / NA	
System Illustration or photograph (more detail required in OHDD)		Y / N / NA	
List of Components with identifying Model & Serial #s		Y / N / NA	
System Overboard Handling System Data Document (OHDD)	B.7.3	Y / N / NA	
System Maximum Capability Document including system Maximum Permissible Tension (MPT)	B.0.6	Y / N / NA	
Operational Limit Document (Top Level Check of Assigned Breaking Load* (ABL) to System MPT).	Attachment A2	Y / N / NA	
OHS Testing procedures	Attachment A5	Y / N / NA	
OHS Test Logs	B.6	Y / N / NA	
OHS Training and Operator Qualification Requirements	Attachment A5	Y / N / NA	
OHS Inspection Procedures	B.2.16 & B.6	Y / N / NA	
OHS Operational and Safety Precautions	Attachment A5	Y / N / NA	
OHS Emergency procedures	B.3.7	Y / N / NA	
Flow Chart with path highlighted and annotated where applicable	Attachment A5	Y / N / NA	
<p>* Attachment A2 shows assigned breaking load (ABL) which is likely lower than NBL. Consider the greater of NBL or Tested Breaking Load (TBL).</p> <p>Suggestions: Please contact Ted@JMSnet.com</p>			

Assisting Progress toward compliance with RVSS Appendix B Component Level

Appendix B Assist Sheet for Overboard Handling Systems (updated 2_9_2013 JMS/wec)			
This assist sheet is to access progress toward compliance with RVSS Appendix B by the compliance date of 7/15/2014			
Page 2 Component & Sub-System Level			
For each Overboard Handling System (OHS) Component in the OHS System Configuration Component MCD Booklet for each component used including:	Reference	Y / N / NA	
Component Maximum Capability Document (MCD) including:	B.5	Y / N / NA	
(1) Component Maximum Permissible Tension (MPT)	B.5	Y / N / NA	
(2) Component proof or analysis of the MPT, or Manufacturer's Certification	B.3 & B.4	Y / N / NA	
(3) Applicable Geometry	B.05 & B.5 & B.06	Y / N / NA	
(4) Component OHDD	B.3.7	Y / N / NA	
Additional contents as applicable			
(5) Footprint and bolt pattern	B.5 Attachment A5	Y / N / NA	
(6) Attachment loadings	B.5 & B.6 Attachment A5	Y / N / NA	
(7) Ship system interface requirements such as electrical power, hydraulics, data transfer	Attachment A5	Y / N / NA	
(8) Testing procedures	B.6.1 Attachment A5	Y / N / NA	
(9) Test Logs	B.6 Attachment A5	Y / N / NA	
(10) Component weight	B.7.2 Attachment A5	Y / N / NA	
(11) Overall dimensions	Attachment A5	Y / N / NA	
(12) Equipment Operator's Manual	B.5 & B.10.1 Attachment A5	Y / N / NA	
(13) Training and operator qualification requirements	B.0.5 Attachment A5	Y / N / NA	
(14) Inspection procedures	B.6 Attachment A5	Y / N / NA	
(15) Preventative maintenance	B.0.5 Attachment A5	Y / N / NA	
(16) Operational and Safety precautions	B.6 Attachment A5	Y / N / NA	
(17) Emergency procedures	Attachment A5	Y / N / NA	
(18) For portable components additionally:	B.3.2 & B.6.3 Attachment A5		
Sub-component inventory list		Y / N / NA	
Delivery check-off list		Y / N / NA	
Installation instructions		Y / N / NA	
Suggestions: Please contact Ted@JMSnet.com			

Written Policy for Lithium Batteries

Lithium Battery UNOLS circular

Use

Storage

Disposal

**Emergency
Response**

Lithium batteries are used extensively in consumer electronics and within the oceanographic research community because of their energy density/size characteristics and recharge capability. They also have the potential to be extremely hazardous if used improperly resulting in fires, poisonous gases, and explosions. Recent information coming from the U.S. Navy, FAA, and manufacturers has indicated that the use of Class D fire extinguishers is not effective when combating a lithium battery fire. Depending on the type of lithium battery; lithium non-rechargeable or lithium-ion rechargeable batteries, water is also not effective. For lithium non-rechargeable batteries, water reacts explosively and can produce poisonous gases.

Because of the potential hazards combined with the extensive use of lithium batteries, every ship in the UNOLS fleet should develop procedures on how to handle lithium batteries. The procedures should cover usage, storage, disposal, and how to respond to emergencies. Additional information on the hazards and how to deal with lithium batteries may be found on the UNOLS website under www.unols.org/xxxxxx. The website includes information from the U.S. Navy on firefighting procedures, WHOI's "Lithium Battery Safety and Handling Guideline", and the British Natural Environment Research Council (NERC) guidance on the use of lithium batteries.

The next update to the RVSS will include an expanded discussion in chapter 9 on lithium batteries. In the interim, based on this UNOLS Safety Circular, it is a requirement that each operator shall establish written policy for lithium batteries. Beginning 1 August 2012 the NSF Ship Inspection Program will start to look at the policy as part of each inspection.

Questions? Suggestions?

Ted Colburn

JMS Naval Architects & Salvage Engineers

34 Water Street •Mystic, CT 06355

www.JMSnet.com

Ted@JMSnet.com

Or

Ted@BeechHillBison.com

[860 608 8052](tel:8606088052)



Naval Architects & Salvage Engineers