SHIP INSPECTION PROGRAM
National Science Foundation

RVOC Meeting

Virginia Institute of Marine Science

April 19-21, 2016

Purpose

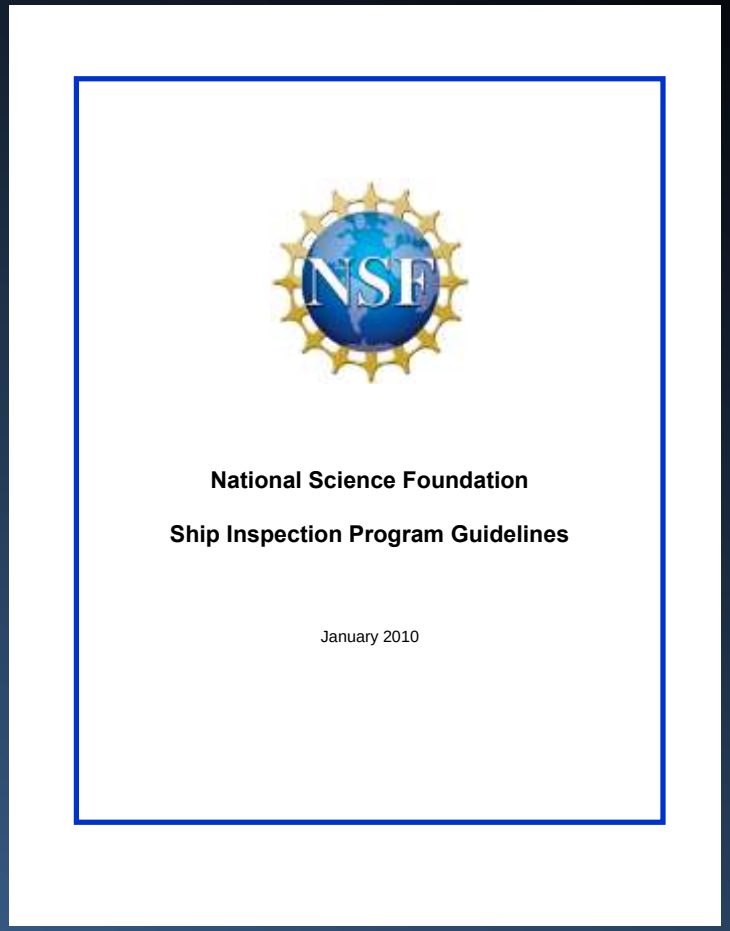
- To assure that the capabilities of the research vessel and technical support meet accepted scientific community standards and expectations;
- To assure the seaworthiness and safety of research vessels supported by NSF meet or exceed the standards set forth by the UNOLS Research Vessel Safety Standards (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;
- To ensure NSF-owned ships, as capital assets, are being adequately maintained;
- To ensure NSF-funded science is scheduled on properly outfitted and maintained vessels;
- Provide independent support/rationale for making requests to MOSA (Ship Operations) and the Oceanographic Instrumentation and Shipboard Scientific Support Equipment programs.

Guidelines

- Update to Ship Inspection Guideline planned For 2016

- Pre-Inspection Documents
  - MCDs and
  - Recent shipyard reports

- Information tracking and reporting
  - Recommendations
  - Vessel Condition Summaries
  - Waivers
  - PCARs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Ship Inspection Program Guidelines

January 2010

Timelines

Pre Inspection

- 6-12 months — Schedule Inspection
- 3 months — Formal Request for Documentation
- 10 days — Receipt of Pre-Inspection Documentation

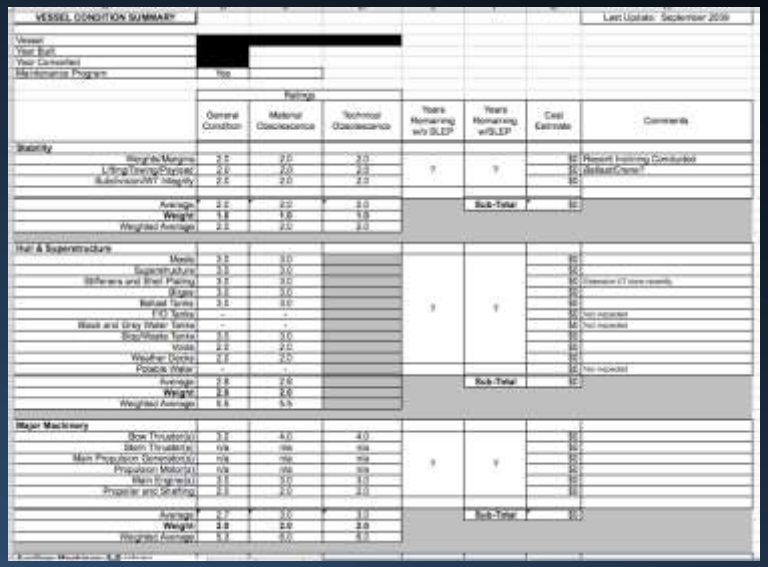
Post Inspection

- 1 week — Summary Report sent to Operator
- 4 weeks — Full Report sent to Operator
- 6 weeks — Agency response to Operator – Follow up call
- 18 weeks+ — Operator response to Agency
  Information to Operator/RVOC/Safety Committee

Feedback to Operators

- Inspections generate two tracking reports
  - Summary of Recommendations
  - Vessel Condition Summaries

- Goal:
  - Track Recs and VCS stats over multiple years -- by ship and for fleet



VESSEL CONDITION SUMMARY

Last Update: September 2009

Vessel
Year Built
Year Converted
Maintenance Program: Nav

	Ratings: General Condition	Material Obsolescence	Technical Obsolescence	Years Remaining w/o SLEP	Years Remaining w/SLEP	Cost Estimate	Comments
Stability							
Weights Margins	2.0	2.0	2.0			$0	Recent Inclining Conducted
Lifting Fittings/Equipment	2.0	2.0	2.0	7	7	$0	Ballast Curves?
Subdivision/WT Integrity	2.0	2.0	2.0			$0	
Average	2.0	2.0	2.0		Sub-Total	$0	
Weight	1.0	1.0	1.0				
Weighted Average	2.0	2.0	2.0				
Hull & Superstructure							
Masts	3.0	3.0				$0	
Superstructure	3.0	3.0				$0	
Stiffeners and Shell Plating	3.0	3.0				$0	Extension CT done recently
Bulges	3.0	3.0				$0	
Ballast Tanks	3.0	3.0		7	7	$0	
FOO Tanks	-	-				$0	Not inspected
Black and Grey Water Tanks	-	-				$0	Not inspected
Bilge/Waste Tanks	3.0	3.0				$0	
Moses	2.0	2.0				$0	
Weather Decks	2.0	2.0				$0	
Potable Water	-	-				$0	Not inspected
Average	2.8	2.8			Sub-Total	$0	
Weight	2.0	2.0					
Weighted Average	5.6	5.6					
Major Machinery							
Bow Thruster(s)	3.0	4.0	4.0			$0	
Stern Thruster(s)	n/a	n/a	n/a			$0	
Main Propulsion Generator(s)	n/a	n/a	n/a	7	7	$0	
Propulsion Motor(s)	n/a	n/a	n/a			$0	
Main Engine(s)	3.0	3.0	3.0			$0	
Propeller and Shafting	2.0	2.0	2.0			$0	
Average	2.7	3.0	3.0		Sub-Total	$0	
Weight	2.0	2.0	2.0				
Weighted Average	5.3	6.0	6.0				

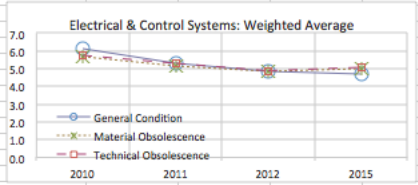
	ACTION ITEM	PARA		REFERENCE	ST
35	Install an automatic fresh water wire cable wash system for the trawl wire that can be operated during haul back.	12.	1		
36	Continue with plans to establish written certification for the winch operators.	12.	2	RVSS Appendix A	
37	Continue with upgrades to meet the new RVSS Appendix A requirements.	12.	2	RVSS Appendix A	
38	Update the ship condition form to reflect a Stern A-Frame SWL value consistent with the labeled value on the frame.	12.	4		
39	Review the analysis of the design capacity of the Stern A-Frame prior to using 0.680 cable on the frame.	12.	4	RVSS 8.6 RVSS 8.3 46CFR189.35-9	
40	Update the ship condition form to reflect a Hydro Boom SWL value consistent with the labeled value on the boom.	12.	4		
41	Review the analysis of the design capacity of the Hydro Boom and record the appropriate design capacity (or ultimate design load) in the ship condition form.	12.	4	RVSS 8.6 RVSS 8.3 46CFR189.35-9	
42	Upgrade lighting to brighten darker areas in the Main Lab.	14.	1	Guidelines for Laboratory Design	
43	Post a list of science related chemicals in the Main Lab and the location of the respective MSDS sheets.	14.	1	RVSS 9.0	
44	Continue with the initiative to replace science UPSs in the Main Lab.	14.	1		
45	Install a chemically resistant tray in the Wet Lab fume hood.	14.	1	RVSS 9.4	
46	Install a closing capability for the Wet Lab fume hood discharge external to the compartment.	14.	1		
47	Upgrade lighting to brighten darker areas in the Wet Lab.	14.	1	Guidelines for Laboratory Design	
48	Post a list of science related chemicals in the Wet Lab and the location of the respective MSDS sheets.	14.	1	RVSS 9.0	
49	Install an emergency shower in the Wet Lab.	14.	1	46 CFR 194.15-11	
50	Adjust or repair the door to the weather deck to allow for exiting the Wet Lab.	14.	1		
51	Continue with initiatives to upgrade lighting to brighten darker areas in the 01 Lab.	14.	1	Guidelines for Laboratory Design	
52	Establish a system of logging the deck socket SWL tests conducted and initiate logging.	14.	4	46 CFR 189.35-13	
53	Repair the stern light wiring on the small boat.	14.	14		

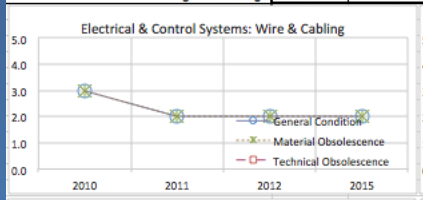
Vessel Condition Summary Tracking

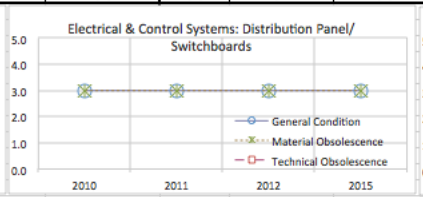
VESSEL CONDITION SUMMARY

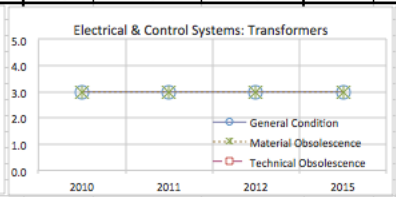
Vessel	[redacted]
Year Built	
Year Converted	
Maintenance Program	

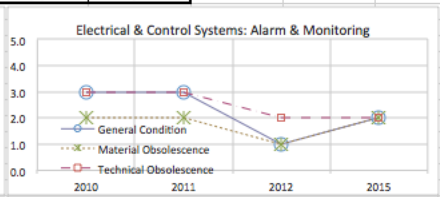
	2010 Ratings			2011 Ratings			2012 Ratings			2015 Ratings		
	Last Update: 05/15/2010			Last Update: 03/10/2011			Last Update: 08/01/2012			Last Update: 05/21/2015		
	General Condition	Material Obsolescence	Technical Obsolescence	General Condition	Material Obsolescence	Technical Obsolescence	General Condition	Material Obsolescence	Technical Obsolescence	General Condition	Material Obsolescence	Technical Obsolescence
Electrical and Control Systems												
Wire and Cabling	3.0	3.0		2.0	2.0		2.0	2.0		2.0	2.0	
Distribution Panel/Switchboards	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Transformers	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Alarm and Monitoring	3.0	2.0	3.0	3.0	2.0	3.0	1.0	1.0	2.0	2.0	2.0	2.0
Dynamic Positioning	5.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Navigation Systems	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
Internal Communications	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	3.0	3.0	4.0
Fire Detection	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lighting	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ship Service Generators	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0
Emergency Generators	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
Pwr Management/Prplsn Control System	3.0	4.0	4.0	2.0	3.0	3.0	1.0	1.0	1.0	2.0	2.0	2.0
Command/Control												
Average	3.1	2.8	2.9	2.7	2.6	2.7	2.4	2.4	2.4	2.3	2.5	2.6
Weight	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
Weighted Average	6.2	5.7	5.8	5.3	5.2	5.3	4.8	4.8	4.9	4.7	5.0	5.1

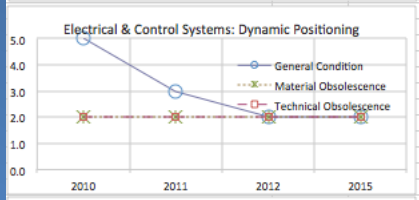


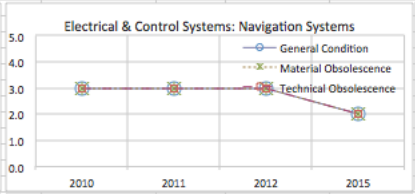


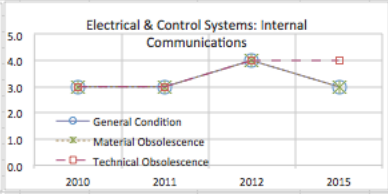


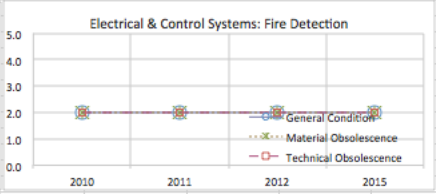


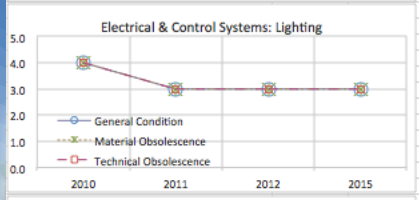


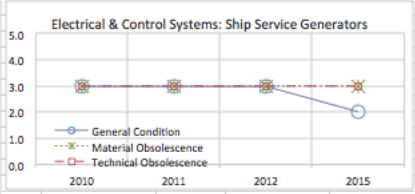


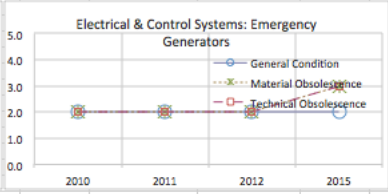


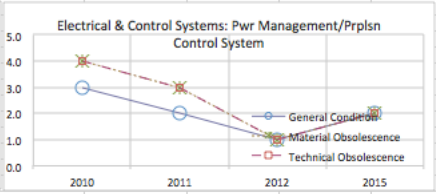


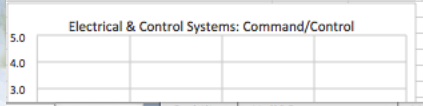












Stability | Hull&Superstructure | Major Machinery | AuxMach&Syst | **Elect&Control** | DeckEquip | SciSupportFacilities | SciLoadHandling | Accommodations | Summary Sheet | Ratings

Recommendation Tracking

1) Track number of recommendations by SCF Topic and Reference

- Vessel Profile
- Documentation and Stability
- Safety
- Personnel
- Habitability
- Hull
- Main Propulsion
- Electrical
- Auxiliary Systems
- Communications & Navigation
- Deck Machinery (Non Science)
- Scientific Load Handling
- Scientific Outfitting
- Science Facility

	ACTION ITEM	PARA		REFERENCE	ST
35	Install an automatic fresh water wire cable wash system for the trawl wire that can be operated during haul back.	12.	1		
36	Continue with plans to establish written certification for the winch operators.	12.	2	RVSS Appendix A	
37	Continue with upgrades to meet the new RVSS Appendix A requirements.	12.	2	RVSS Appendix A	
38	Update the ship condition form to reflect a Stern A-Frame SWL value consistent with the labele value on the frame.	12.	4		
39	Review the analysis of the design capacity of the Stern A-Frame prior to using 0.680 cable on the frame.	12.	4	RVSS 8.6 RVSS 8.3 46CFR189.35-9	
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42	Upgrade lighting to brighten darker areas in the Main Lab.	14.	1	Guidelines for Laboratory Design	
43	Post a list of science related chemicals in the Main Lab and the location of the respective MSD sheets.	14.	1	RVSS 9.0	
44	Continue with the initiative to replace science UPSs in the Main Lab.	14.	1		
45	Install a chemically resistant tray in the Wet Lab fume hood.	14.	1	RVSS 9.4	
46	Install a closing capability for the Wet Lab fume hood discharge external to the compartment.	14.	1		
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52	Establish a system of logging the deck socket SWL tests conducted and initiate logging.	14.	4	46 CFR 189.35-13	
53	Repair the stern light wiring on the small boat.	14.	14		

2) Keyword tracking (Lithium battery, Lighting, Maintenance, RVSS Appendix A, CFR, etc)

- Recurring problems over multiple years
- Similar issues across fleet

Inspection Schedule

2016	
Jan	Walton Smith
Feb	Savannah
Mar	Sikuliaq
Apr	Neil Armstrong
May	*Palmer (PLR)*
Jun	Endeavor
Aug	Oceanus
Sep	Blue Heron
Oct?	Sally Ride
Dec?	Atlantic Explorer
TBD	*Healy (PLR)*