NATIONAL SCIENCE FOUNDATION
SHIP INSPECTION PROGRAM

2018 RVOC MEETING
NSF Ship Inspection Program: Purpose

The Ship Inspection Program constitutes both a “condition” and “assistance” survey to ensure overall safety and operational effectiveness in support of oceanographic research. The program objectives are to ensure that:

- The vessels are compliant with the University-National Oceanographic Laboratory System (UNOLS) Research Vessel Safety Standards (RVSS) and applicable regulatory requirements;
- The vessels are being properly maintained as a capital asset when compared with other similar vessels within the Academic Research Fleet based on a standardized NSF evaluation system;
- The vessels are capable of effectively conducting NSF-sponsored research cruises. In particular, that the scientific equipment and systems are both fully operational and state-of-the-art with those being utilized within the scientific community and industry; and
- The vessel operators are able to effectively pursue a continuous maintenance and improvement program.

The inspections also provide NSF with current information and documentation that assists in developing funding objectives for maintaining the vessels and the scientific equipment in a high degree of operational readiness to meet oceanographic research objectives.
Recently Completed
Upcoming Inspections
New Policies, Best Practices & Areas for Improvement:

- Lithium Battery policies and procedures
- Appendix A areas for improvement
- New Appendix B Overboard Handling Systems
- Use of Environmentally Acceptable Lubricants and Fluids. VGP Annual Report must identify the complete brand names of EALs used. The vessel should also maintain a copy of certificates and technical data sheets for each EAL. Applies to wire rope.
- Effective safety briefs
Best Practices: Lithium Batteries

Policy should account for:

- Maintenance/handling of the system and emergency procedures in case of failure.
- Fire detection and suppression capability.
- Climate control of the battery compartment and ventilation arrangement.
- Structural fire protection surrounding the batteries.
- Battery module design and functionality of the monitoring system.
- Capability of the battery management system to regulate charging and discharging.
Appendix A:  
Most Common Findings

• Extenuating Circumstances Plan (SOP). *Operators shall develop a procedure on how, and under what circumstances, the vessel will safely continue operations in the event the operating requirements are not met.*

• Procedures to test audible, visual and automatic recording of tension alarms;

• Procedures to maintain the tension monitoring system within 3% tolerance limits;

• Formal operator training and certification renewed annually so that each operator receives training on the winch, the overboarding apparatus, and the tension monitoring system;

• Visible and physical danger areas on the aft deck and overboarding areas to secure the areas during operation.
Overboard Handling Systems:
New and improved Appendix B

The BIG picture:

The Overboard Handling System (OHS) should be designed to withstand and operate in excess of the breaking strength of the strongest section of tension member to be used in any condition of loading with an appropriate factor of safety.

- Understand the design limits of load bearing structures, winches, wires, cranes and frames;
- Ensure appropriate operational procedures are in place to mitigate risk;
- Ensure the load handling systems are inspected and tested on a regular basis.
Best Practices: Environmentally Acceptable Lubricants [EAL]

• All vessels (not only new vessels) must use environmentally acceptable lubricants (EALs) in all oil-to-sea interfaces, unless technically not feasible.

• EPA defines EALs as lubricants that are “biodegradable” and “minimally-toxic” and are “not bioaccumulative”.

• The vessel’s Annual Report must identify the complete brand names of EALs used. The vessel should also maintain a copy of certificates and technical data sheets for each EAL.

• EALs are only mandated for use in specific oil-to-sea interfaces. Vessels are not required to change to an EAL for above deck equipment, but EPA strongly encourages the use.

Oil-to-Sea Interfaces include:
• Controllable pitch propeller
• Thrusters
• Stern tubes
• Thruster bearings
• Stabilizers
• Rudder bearings (excluding head bearing)
• Azimuth thrusters
• Wire rope
• Mechanical equipment subject to immersion (including dredges and grabs)
Best Practices: Safety Orientation
It’s more than just a preunderway briefing

• Welcome aboard handout
  • ATLANTIS
• Reinforce in the Cruise Planning Manual, ship’s web site, in labs and in staterooms
• Ship-specific safety information
  • Use ship photos, PowerPoint or videos
  • ATLANTIC EXPLORER, SALLY RIDE, PELICAN
• Safety Brief
  • Pre underway is best
  • Provide information prior to cruise
  • Keep it Real! One of the biggest criticisms of safety briefs is that it can sometimes feel a abstract or unrealistic. One of the best ways to combat that impression is to incorporate real life examples
  • If your brief sounds complacent, your audience’s attitude towards safety will be complacent too
Safety:
Don’t let complacency ruin your cruise
Congratulations!
Bilge, Grub & MOB Winners
Questions?

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- Naval Architecture
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