

NATIONAL SCIENCE FOUNDATION SHIP INSPECTION PROGRAM

**2023 RVOC Meeting
Duluth, MN**



Naval Architecture
Marine Engineering
Marine Surveying
Salvage Engineering

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:

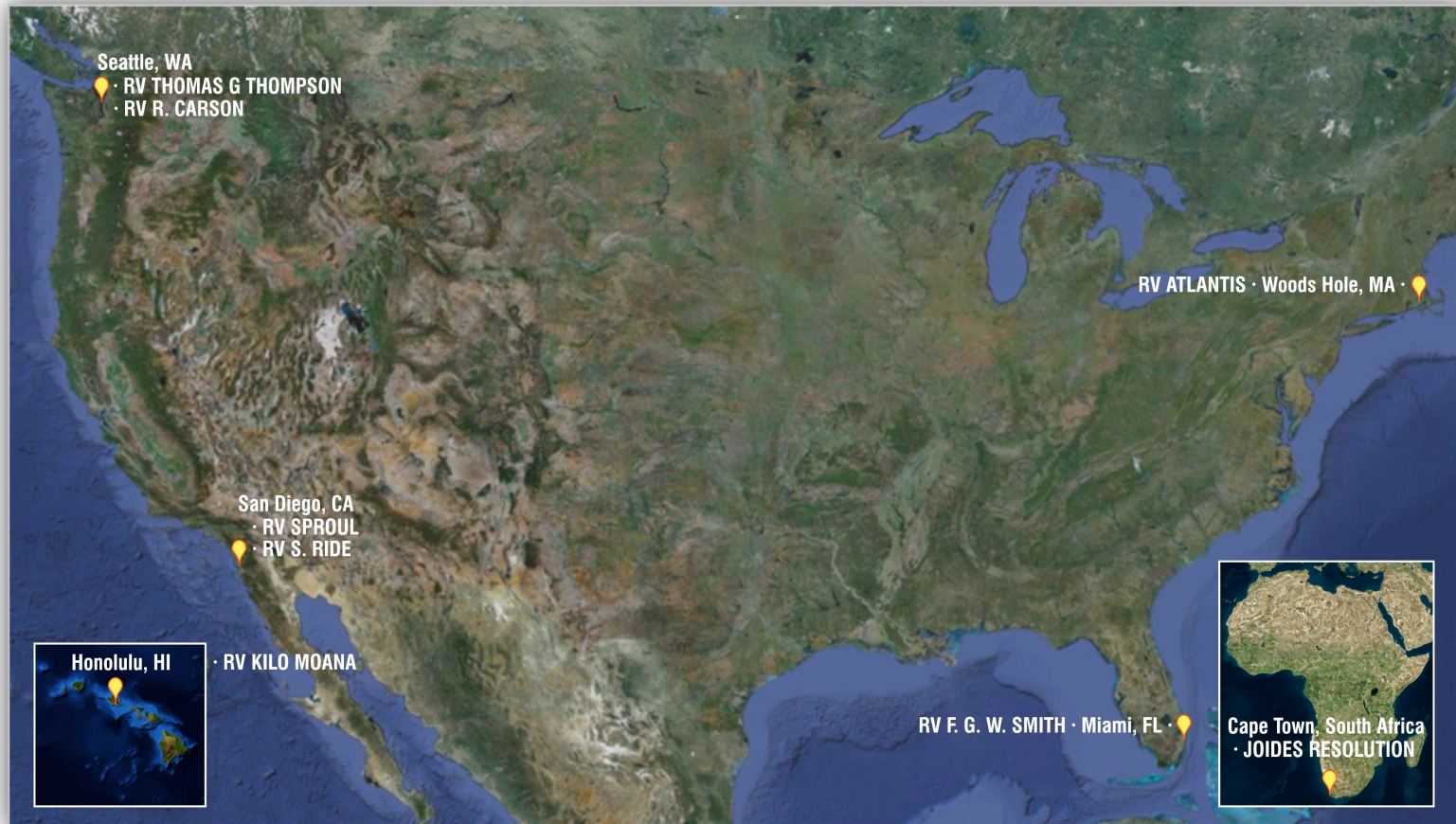
- The vessels are compliant with the University-National Oceanographic Laboratory System (UNOLS) *Research Vessel Safety Standards* (RVSS) and applicable regulatory requirements;
- The vessels are being properly maintained as a capital asset when compared with other similar vessels within the Academic 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.



Naval Architecture
Marine Engineering
Marine Surveying
Salvage Engineering

Recently Completed



Upcoming Inspections



Overview

- Group purchase ideas:
 - Fifi outfit
 - SCBA
 - Smoke generator
 - PLBs
- Appendix A & B
 - OHS Manuals

Firefighting SCBA

NFPA 1981 updates

- Two distinct actions required to remove the regulator: In order to disconnect the regulator from the facepiece, there must be two distinct actions taken by the user (i.e. press AND pull)
- Facepiece regulator connection strength test: Regulator connection requirements now require 56.2 pounds for pull testing
- Pneumatic data logging for SCBA specific events: The SCBA is required to record breathing rate and cylinder pressure which are to be timestamped
- Interoperability requirements between different SCBA manufacturers'



Firefighting



Marine Safety Information Bulletin

Commandant
U.S. Coast Guard
Office of Design and Engineering Standards (CG-ENG)
2703 Martin Luther King Jr Ave SE, STOP 7501
Washington, DC 20593-7501

MSIB Number: 06-22
Date: October 18, 2022
Contact: Yunyong (Pock) Utiskul
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FM-200 Fire Extinguishing Agent Phasedown

This MSIB informs the Coast Guard Officers in Charge, Marine Inspection (OCMI) and the maritime industry that FM-200 (also known as HFC-227ea or heptafluoropropane), a fire extinguishing agent, is being phased down in production as part of the recent Environmental Protection Agency (EPA) rule¹ to reduce the production of greenhouse gases leading to global warming. FM-200 is used in fire extinguishing systems for machinery spaces and cargo spaces on uninspected vessels, commercial vessels, and public vessels. This rule does not prohibit the use of FM-200 to extinguish fire and vessel operators should not hesitate to use their existing fire extinguishing systems in case of a fire.

FM-200 is one of the hydrofluorocarbons (HFCs) being regulated by the EPA under the American Innovation and Manufacturing (AIM) Act. The EPA rule requires that the net U.S. production of HFCs be reduced to 15% of the baseline levels in a stepwise manner over the course of 15 years (2022-2036)². The overall reduction in

Firefighting



	U. S. Department of Homeland Security
	United States Coast Guard
Certificate of Approval	
Coast Guard Approval Number: 162.029/257/0	Expires: 23 October 2027
FIXED FIRE EXTINGUISHING SYSTEM	
Fireaway Inc 5852 Baker Road Minnetonka MN 55345	
Stat-X Models: 30T, 60MT, 100T, 250T, 250MT, 500T, 1000MT aerosol generators; with associated brass mechanical and thermal actuators (158F - 254F), and control unit as a pre-engineered fire extinguishing system.	
Fire suppression system is designed to protect against Class A, Band C fires, in both normally unoccupied and normally occupied spaces. Maximum protected gross volume for an unoccupied space is 321 cu. ft (9.1 cu. m) and a maximum height of 8ft (2.5m) for a single thermal unit; or a maximum volume of 2568cu. ft (73 cu. m) with a maximum height of 16 ft (4.9m) for a series of mechanical units in either normally occupied or unoccupied spaces; see approved manual for details. M model generators are mechanical-manual, T model are thermal automatic.	

First condensed aerosol fire suppression agent to be U.S. Coast Guard approved

Drills: Smoke Machine



Personal Locator Beacon

Pairing Global and Local Rescue

The Worldwide Cospas Sarsat satellite system includes 3 different constellations to ensure your 406 MHz distress signal immediately reaches the global network of Search and Rescue forces with your location accurate to within 100 meters. With multiple levels of integrated signaling technology including 406 MHz and GNSS (GPS, Galileo, Glonass) positioning, the PLB also transmits a 121.5 MHz homing signal which guides Search and Rescue services to the beacon's current location when they arrive on the scene, as the beacon may have drifted from the originally transmitted position. The addition of AIS Man Overboard Beacon transmissions means the ResQLink AIS simultaneously alerts all vessels equipped with AIS transponders within the VHF radio range of the PLB's distress position. This greatly increases both the likelihood and speed of rescue since nearby vessels receive the AIS MOB alerts. Immediately upon deployment of the beacon an AIS Safety Message or AIS MOB Alarm with the beacon's MMSI and location is presented on any AIS screen within range. This makes it easy for nearby vessels to home in on the beacon since it is an active AIS target on their screens.

Smartphone Connectivity utilizing Near Field Communication (NFC)

The integration of NFC technology provides users with the ability to conveniently access beacon data from their mobile phone. The simple act of placing a phone near the beacon automatically opens the ACR Product App and provides access to a wealth of usage data including current battery life, number of self-tests completed, number of GNSS tests completed, and if applicable, the amount of time the beacon has been activated

Return Link Service (RLS)

RLS functionality works by sending a signal back through the Galileo satellite network to confirm to the beacon user that their distress message has been received and their location has been detected by the Coast Guard.



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.

RVSS Appendix B OHS Manual



OHS Operator's Manual for R/V Sally Ride CTD-11V OHS

Revision 12/21/2022

Prepared for Scripps Institution of Oceanography
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By

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This document has been prepared to satisfy the requirements set forth in Appendix B of the
UNOLS Research Vessel Safety Standard (RVSS) 11th Edition.

OHS Operator's Manual

R/V Sally Ride CTD-11V OHS
Revision 12/21/2022



Purpose

This document contains all items required by UNOLS RVSS Appendix B, 11th edition section
B.5.3: "OHS OPERATOR'S MANUALS".

Contents

- Section 0: Operational summary and capabilities.¹
- Section 1: A detailed description of the OHS layout.
- Section 2: OHS test procedures.
- Section 3: Procedural safety requirements.
- Section 4: Operator training procedures.
- Section 5: Reference to individual component manuals or data sheets.
- Section 6: Routine maintenance procedures.

¹ The material in section 0 is not required by UNOLS RVSS, 11th edition.

OHS Operator's Manual

R/V Sally Ride CTD-11V OHS
Revision 12/21/2022



Section 0:

Operational Summary and Capability

The CTD-11V OHS onboard R/V Sally Ride is designed for towing and station-keeping
operations.

The tension member used with this OHS:

Tension Member	Lowest FS	Safe Working Tension (SWT)	Nominal Breaking Load (NBL)	Typical Test Breaking Load (TBL)
.322" dia. cable	2.0	5,000 lbf	10,000 lbf	12,500 lbf

The capabilities of the OHS components:

Component	Design Line Tension (DLT)		Safe Working Tension (SWT)	
	Towing	Station Keeping	Towing	Station Keeping
Markey CAST-6-125 Winch ²	12,000 lbf	12,000 lbf	12,000 lbf	12,000 lbf
Smith Berger Model 222 Guide Sheave ³	16,000 lbf	16,000 lbf	16,000 lbf	16,000 lbf
Allied CTD-11V handling apparatus ^{4,5}	16,000 lbf (in a 30° cone)	16,000 lbf (in a 30° cone)	11,100 lbf (in a 30° cone)	11,100 lbf (in a 30° cone)

The overall capabilities of this OHS:

Safe Working Tension (SWT)	
Towing	Station Keeping
5,000 lbf	5,000 lbf

² See page 72 of reference 5b.

³ See page 16 of reference 5d.

⁴ See page 1-4 of reference 5a.

⁵ See sheet 1 of reference 5e.

Questions?



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