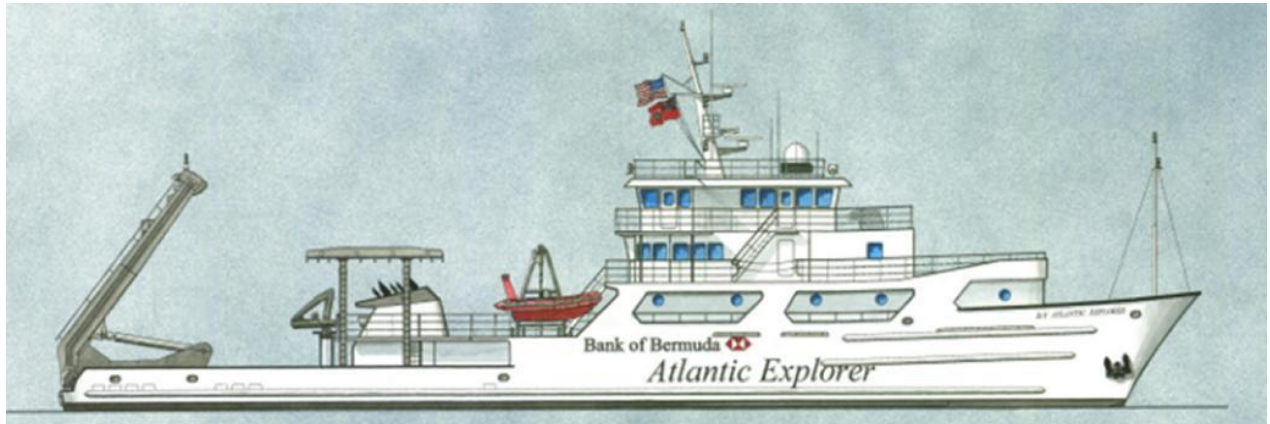


R/V ATLANTIC EXPLORER



Cruise Manual

Edition: 08 September 2008

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R/V ATLANTIC EXPLORER is owned and operated by the Bermuda Institute of Ocean Sciences, Inc. in compliance with U.S. Coast Guard, UNOLS and American Bureau of Shipping (ABS) regulations as an uninspected oceanographic research vessel. The Bermuda Institute of Ocean Sciences, Inc. (BIOS) was originally established in Bermuda in 1903 as the Bermuda Biological Station for Research, Inc. and is a U.S. non-profit research and educational institution. BIOS's mission is threefold: to conduct research of the highest quality from the special perspective of a mid-ocean island, to educate future scientists, and to provide well-equipped facilities and responsive staff support for resident scientific staff, visiting scientists, faculty and students from all around the world. In support of BIOS's mission, the *ATLANTIC EXPLORER* is set up and operated as a general purpose oceanographic research vessel.

Ready access from Bermuda to the deep ocean makes *ATLANTIC EXPLORER* ideal for short and extended cruises, for repetitive sampling and time series at the same station, and for all projects requiring analytical and other sophisticated shore facilities. Bermuda is 2 hours flying time from the U.S. east coast, and is served by daily flights from most U.S. gateway cities.

ATLANTIC EXPLORER is equipped with navigational, laboratory and mechanical facilities to support biological, geological, chemical and physical oceanographic research. Deploying and recovering deep ocean instrumentation moorings, conducting CTD casts, chemical sampling, and gear testing are among the number of operations within the ship's capabilities.

Requests for ship time may originate from scientists located at any university or institution. Ship costs for National Science Foundation ("NSF") supported research projects are provided by NSF directly to BIOS as part of the annual NSF fleet support grants. Investigators seeking support from agencies other than NSF should include ship costs in their budgets to those agencies. Partially funded researchers may apply for a grant-in-aid from BIOS towards some of their "in house" costs.

BIOS is a participating member of the University National Oceanographic Laboratory System (UNOLS).

This manual provides information and Instructions for potential ship users and embarked personnel on the *ATLANTIC EXPLORER*. It contains data on equipment, available instrumentation, technical support and procedures for arranging and conducting cruises, which will assist ship users in planning their cruise. Additional Information regarding the ship's general arrangement, operational capabilities, policies, procedures, and personal safety are also included.

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For additional information write or call:

*The Marine Superintendent
Bermuda Institute of Ocean Sciences, Inc.
17 Biological Lane, Ferry Reach
St. George's, GE 01, Bermuda
Phone: (441) 297-1880 Ext. 208 and Fax: (441) 297-1839
USA Phone: (202) 558-6956
E-Mail: ship.admin@bios.edu*

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SHIP SPECIFICATIONS

Built	1982		
Last Conversion	2006		
Length Overall	171' 0"		
Beam	38' 0"		
Draft	11' 6"		
Gross Tonnage	299 (GRT) 861 (ITC)	Net Tonnage:	203 (NRT) 258 (ITC)
Full Load Displacement	790 Tons (Light Ship) 1281 Tons (Full Load)		
Cruising Speed	10 knots	Max Speed:	11 knots
Cruising Range	5,500 nautical miles		
Endurance	28 days (4 hrs hove to for science for every 6 hrs underway)		
Weather limitations	Station-keeping (CTD casts) Sea state 5 (30 kts wind)		
Personnel Capacity	Crew Berths	12	
	Scientific Berths	22	
	<u>Total Berths</u>	<u>34</u>	
Laboratory	Main Lab	325 sq ft	
	Aft Lab	250 sq ft	
	Forward Lab	230 sq ft	
	CTD Garage	190 sq ft	
	(Complete enclosure for CTD rosette)		
	Radiation Lab (portable)	6'10" x 11'8" - 75 sq ft	

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Main Engines	16V-149 Detroit Diesels, 2 ea. - 1880 SHP (total)
Gears	Twin Disc 540 - Ratio 6:1
Propellers	Bronze, 4 blade, 74" x 66" diameter
Bow Thruster	3406-T Caterpillar Diesel, 450HP, 360° directional, 10,000 lbs thrust
Fuel (usable)	56,000 gals #2 diesel fuel
Electrical Power	3 ea. 8V-71 Detroit Diesel, 255 HP, 190 KW, 3PH, 120/208/480VAC
Ship Service	120/208 and 480 VAC
Scientific Service	120/208 and 480 VAC
Emergency Power	Turbo 4-71 Detroit Diesel, 99KW
Electro-hydraulic	60 GPM @ 3,000 PSI
Diesel-hydraulic	60 GPM @ 3,000 PSI
Compressed Air	(ship systems) 2 x Quincy 150 PSI/325 CFM (Science) 1 x 40 CFM
Potable Water	39,000 gallons
Potable Water Maker	Sea Recovery, 1200 GPD
Accommodations A/C	Chilled Water and Air Cooled with zone thermostats
Refrigeration/Freezer	Walk-in Fridge/Freezer 2 x Domestic, 1 x Scientific

<i>Navigation and Communications Equipment</i>	Title:	Prepared By: R. Harelstad	Revision No: 0	Section: 040
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NAVIGATION AND SHIP COMMUNICATIONS

GPS	2 x Furuno GP90 1 x Northstar 951X DGPS 1 x Northstar 952X WAAS
AIS	1 x Furuno FA100
Navigation Software	Nobletec Visual Navigation Suite (electronic charting system)
Auto-pilot	Sperry 8T
Radars	FAR2127 X-Band ARPA Furuno FR8050D
Depth Sounders	Interphase Twinscope Forward Scanning Sonar Simrad ES-60
Direction Finder	Simrad/Taiyo TD-L 1620 (VHF frequencies)
Gyro-compasses	Sperry MK37 (2 ea)
SSB Radio	SEA 330
VHF Radios	Standard Horizon Intrepid+ Standard Horizon Intrepid Standard Horizon Quest Standard Horizon Eclipse+
INMARSAT	Sailor 500 BGAN Trimble Galaxy Sentinel C NERA Fleet 33
Onboard Ship Communication System	Hose-McCann Sound Powered Phones Nortel Phone System (telephones and talk-back speakers) Standard Horizon Loudhailer
Cellular Phone	1 x Bridge Nokia
Iridium Phone	Sailor
Navtex Receiver	Furuno NX300

CCTV: Panasonic CCTV camera system with three PTZ deck view cameras. Video display is available on all networked PC's. Frame grabs of the live video are recorded on a DVR and are overwritten as needed. Recordings are maintained for 24 hours only.

<i>Deck Equipment</i>	Title:	Prepared By: R. Harelstad	Revision No: 0	Section: 050
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- 1.0 **Working Deck Area** Main Deck 1550 sq.ft.
 01 Deck 440 sq.ft.
 02 deck 340 sq. ft.
- 2.0 **Bolt-downs** 320 x 1" various positions (mostly 2' & 4' centers)
- 3.0 **Bulwarks** 3' height, removable sections at side A-frame, stern A-frame
- 4.0 **Stern A-Frame** Size 40' h x 22' w
 Outreach 18 Feet
 Capacity 18 tons
 Type Hydraulic
- 5.0 **Starboard A-Frame** Size 19' h x 10' w
 Outreach 9 Feet
 Capacity 7.5 tons
 Type Hydraulic
- 6.0 **Crane** Model HIAB Sea Crane 250-5
 Type Articulating with Extensions
 Max. Hydraulic Outreach 48' (capacity - 3,000 lbs)
 Min. Load Radius 6.5' (capacity - 11,000 lbs)
 For use at sea Yes
- 7.0 **Winches:**
- 7.1 **Hydrographic -** Model: MARKEY DUSH 4
 Type: Hydraulic Drive, Single Drum
 Brake: Hydraulic & Manual (band-type)
 Sheave: 1/4"
 Control: At Winch
 Wire: 10,000 M 1/4" Hydro Wire

<i>Scientific Instrumentation and Equipment</i>	Title:	Prepared By: R. Harelstad	Revision No: 0	Section: 070
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1.0 CTD

1.1 Seabird Electronics SBE 9/11+ Max Depth is 6800m for all CTD sensors except Chelsea Fluorometer, Wetlabs Transmissometer and Altimeter which are all 6000m. Aluminum frame holds 24 12 liter water samplers.

1.2 Sensors include Seabird SBE 9/11+, Dual pumped Temperature, conductivity and Dissolved Oxygen. Chelsea Aquatracka III Fluorometer, Wetlabs SeaStar 25cm/660nm Transmissometer, Benthos PSA9000 Altimeter. All data logged with Seabird Software.

1.3 Water Samplers - 24x12 liter Ocean Test Equipment (OTE) Niskin Water samplers and 4x10 liter OTE Go-Flo's.

2.0 Rosette

2.1 Seabird SBE 32, 24 position with spare.

3.0 Water Samplers

3.1 36x12 liter Ocean Test Equipment Niskin sampling bottles; 8x12 liter Go Flo bottles with 1000 meters Spectra Line

4.0 Underway Seawater

4.1 Includes March impeller pump, Flow meter, Sea Analysis System, Sea Bird SBE21 Thermo-salinograph with remote temperature sensor and Turner 10-AU-005 fluorometer.

5.0 Environmental

5.1 RM Young meteorological package including: Barometer, Relative Humidity, Air Temperature, Precipitation and Dual Anemometers.

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6.0 Data Acquisition

6.1 Logged with NOAA SCS, user configurable System; workstations in labs and on bridge.

7.0 ADCP

7.1 RDI Ocean Surveyor 75kHz narrow band. Ashtech ADU5 HPR sensor.

8.0 Q-Water system

8.1 Millipore ELIX-5 R/O unit feeding Millipore A10 100 liters/day capacity.

9.0 Fathometer

9.1 Knudsen 320B/R 12KHz and Knudsen Chirp 3260 3.5KHz. Pinger tracking capable.

10.0 Nets

10.1 Plankton nets, assorted sizes (3)

10.2 Close-open-close plankton net system

11.0 Radio-isotope Van

11.1 Equipped with Fume hood, refrigerator and sink with fresh water.

12.0 Computers

12.1 IBM Comptable. MS Windows Server 2003 and XP operating environments. Underway Data displays in labs.

<i>Scientific Instrumentation and Equipment</i>	Title:	Prepared By:	Revision No:	Section:
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13.0 Email

- 13.1 Computers are available for sending and receiving email while at sea. Addresses are assigned at the beginning of the cruise. If sending and receiving of attachments is necessary please contact the Marine Technical Services department prior to your cruise for details. ship.tech@bios.edu

14.0 Data Transfer

- 14.1 Data transfer to/from the ship is available. Please contact the MTS department for details.

15.0 Miscellaneous

- 15.1 Navigation Software is made available for science use on the forward lab PC. Weather charts are downloaded by the Master during the cruise and are made available on the share folder within the email system. See Marine Technical Services for details or special requests.

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1.0 Ship Internal Communications

1.1 A Nortel telephone system provides communication throughout the vessel. Instructions and a directory of numbers are posted by each phone. Call back speakers are provided in some areas (e.g. science staterooms) for calling the Bridge. There are two outside lines available while connected to shore telephone lines at the BIOS dock. Check with the crew for additional instructions if required.

2.0 Marine Radio

2.1 Routine messages to and from the vessel are done by email or voice call on either the Iridium satellite phone or Inmarsat system. Communications between ships and shore control stations are usually made on the VHF radio. ATLANTIC EXPLORER continuously monitors calling and distress frequencies on VHF (Channel 16) and HF (2182 KHz Single Sideband). Emergency calls can be forwarded through Bermuda Radio if needed. Their phone number is (441) 297-1010.

2.2 The ship's call sign is WDC9417.

3.0 Satellite Communications

3.1 Voice: Iridium Satellite Phone System. The number is available from the Marine Operations office. Outgoing calls must be charged to the users account number. A user card with PIN number is available for purchase from the Captain. Get permission from the Officer on Watch before making any calls. The only phone available is located at the Bridge Communications Desk.

3.2 Data: INMARSAT Fleet 33 and Fleet Broadband are available for email and data transfer. Contact MTS department for details prior to your cruise.
ship.tech@bios.edu

3.3 Personal Email: Email is available on a limited basis. At the beginning of your cruise the Marine Tech will assign usernames and passwords for accounting. You will be billed for the amount of data transmitted and received. For this reason, please keep messages short; don't use the reply function and don't send or receive attachments. Charges for email are based on the number of bytes sent or received.

<i>Shore Support and Facilities</i>	Title:	Prepared By: R. Harelstad	Revision No: 0	Section: 100
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SHORE SUPPORT & FACILITIES

1.0 Facilities

- 1.1 Shore support facilities for the *ATLANTIC EXPLORER* include a dock, inside and outside storage, and offices. The facility has a fork truck, and commercial crane services are available.

2.0 Loading/Off-Loading

- 2.1 The *ATLANTIC EXPLORER* will normally be loaded on the day before departure and off-loaded on the day of return and the day after. When it is necessary to set up equipment prior to the day of departure, check with Marine Technical Services (ship.tech@bios.edu) in advance to coordinate operations with the deck department.

3.0 Weight Handling Equipment

- 3.1 The ship's crane is normally available for loading. Limitations on weight lifting are listed under "Cranes" in this manual. Extra heavy loads may require commercial shore crane services. The Marine Superintendent will assist in making such arrangements.

4.0 Shipping to BIOS

4.1 Please ship supplies and equipment well in advance of your cruise!

- 4.2 All shipments of scientific equipment and supplies for your cruise must be addressed to BIOS *exactly* as shown below in order to facilitate a smooth and efficient customs clearance procedure:

- 4.3 Bermuda Institute of Ocean Sciences, Inc.
Master, *R/V ATLANTIC EXPLORER*
17 Biological Lane, Ferry Reach
St. George's GE 01
Bermuda
Attention: (your name/ cruise number or ID).

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- 4.4 The Bermuda Government collects no customs duty for any incoming scientific gear consigned to the ship. In order that no customs duty is charged, place your name at the **bottom** of the address with your cruise number or ID as shown above. Attach a packing list of all equipment and supplies, together with value of same, with your shipment. If your shipment consists of more than one box or container, mark each with the shipping address and number them (1 of 4), (2 of 4), etc. Your Freight Forwarder or shipping department should be able to help you with this.
- 4.5 The Packing List is used as an "invoice" when clearing items through Customs; without this, goods cannot be released from the warehouse. Freight will be picked up from the airport or docks and will be held at BIOS to await your arrival. A trucking and storage charge will be made for this service and billed to your grant. Please make arrangements with BIOS for payment of these charges.
- 4.6 Notification of shipment should be made as early as possible so that arrivals can be anticipated for receipt and storage.
- 4.7 Email your shipping information and any questions to: jane.burrows@bios.edu and cc: ship.tech@bios.edu
- 5.0 **Telephone Communications with BIOS**
- 5.1 A directory of BIOS staff and faculty can be found at the BIOS website: http://www.bios.edu/people_facility/staff_directory.html
- 5.2 The Bermuda Phone number for Marine Operations is: 441-297-1880 ext 233 or ext 208. Fax: 441-297-1839. Marine Superintendent cell phone: 441-335-2720.
- 5.3 From the U.S. you may contact the Marine Operations Office using our Vonage phone number: 202-558-6956, or the Marine Technical Services office: 202-558-6954.
- 6.0 **Email**
- 6.1 Marine Operations - Marine Superintendent, Port Captain, Marine Operations Coordinator: ship.admin@bios.edu

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6.2 Marine Technical Services - Marine Technical Services Manager, Marine Techs:
ship.tech@bios.edu

7.0 Mail

7.1 Name
Department
Bermuda Institute of Ocean Sciences, Inc.
17 Biological Lane, Ferry Reach
St. George's GE 01
Bermuda

7.2 Note: Mail to Bermuda can be slow. If you need to get something to us quickly, we recommend using FedEx.

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1.0 Cruise Scheduling

- 1.1 The process of requesting and scheduling ship time on the *ATLANTIC EXPLORER* is started by submitting a University National Oceanographic Laboratory (UNOLS) Ship Time Request Form.
- 1.2 Go to: <http://www.gso.uri.edu/unols/ship/mainmenu.html>
- 1.3 Normally, February of the preceding year is the deadline for submitting ship requests for research planned in the following year. NSF decisions are usually made by early summer. At that time, a principal investigator's (PI) ship time will be reported as funded on the *ATLANTIC EXPLORER*'s draft ship schedule for the following year. As the scheduling process moves into late summer and fall it is important that the PI and Marine Superintendent maintain a dialog about finalizing exact dates of cruises.

2.0 Departure and Arrival Restrictions

- 2.1 There are certain operational restrictions for our transit of Bermuda Pilot waters. All transits must occur during day light hours. We are also restricted to a small time period around high water during which we may safely navigate the Ferry Reach channel to or from BIOS. Your exact departure and arrival times will be discussed during pre-cruise planning with the Marine Superintendent.
- 2.2 If high water occurs after 1200 hrs local Bermuda time on days of departure, or before 1200 hrs on days of arrival, it may be possible to depart/arrive from St. George's Harbor to facilitate the cruise schedule. This option is very dependent upon dock space availability and operational logistics.
- 2.3 Since this is not always possible, we recommend that you include departure and arrival days in your planning, by requesting enough Operational Days to allow for these restrictions.

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1.0 Financing

- 1.1 The cost for using the *ATLANTIC EXPLORER* will be charged on an "Operational Day" basis. NSF defines an "Operational Day" as any part of a calendar day spent away from its home port in support of a given scientific cruise. The cost for an "Operational Day" is renegotiated annually. For financial planning purposes, that cost can be established with the Marine Superintendent.
- 1.2 Ship operations costs are funded in two ways. 1) The cost for PI's which have NSF funded ship days will be included in Ship Operation Support Grants directly to BIOS. 2) PI's without NSF funding should include ship operations costs in the budget of their particular research project.

2.0 Lab/Shore Facility Fees

- 2.1 A daily facility fee will be charged for visitors during non-ship use days spent at BIOS. Refer to the BIOS schedule of fees in Appendix Section 900 for rates. Contact Jane Burrows, Manager Housing and Reservations:
jane.burrows@bios.edu

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1.0 Pre-Cruise Planning

- 1.1 The Chief Scientist of each cruise is responsible for coordinating all planning and reporting of his/her particular cruise. Various forms are used to submit pre-cruise planning information to the Marine Operations Department and are described here.
- 1.2 Once the Chief Scientist's cruise on the *ATLANTIC EXPLORER* has been established and is scheduled, it is desirable to start immediately planning the cruise in more detail. The Pre-Cruise Planning Form spells out the dates of the cruise, the general purpose, the number of scientific personnel and equipment requests. Experience has shown that the sooner specific details are given to BIOS's Marine Operations Department, the better are the chances of a successful cruise.
- 1.3 The Chief Scientist should make his/her initial contact with the Marine Superintendent as soon as possible to clearly define the specifics, objectives and needs of the mission. Please use both of these email addresses for all cruise planning communications: ship.admin@bios.edu (Marine Superintendent) and ship.tech@bios.edu (Manager, Marine Technical Services). This will set in motion the preliminary guidelines and schedules for preparation of the ship, its equipment, supplies and special needs.
- 1.4 Contact between the Chief Scientist and the Marine Operations Department should be maintained throughout the preparation stages of the cruise. This team work keeps shore support and crew abreast of changes or deviations from the original plan. Good logistics planning is required for potential problem areas concerning deck handling equipment, storage, weights or scientific gear, work space requirements, electronic interfacing, scientific power supply needs, hazardous materials, small boat operations, etc. Good communications are essential for a successful cruise.
- 1.5 The Pre-Cruise Plan establishes the Chief Scientist's requirements for the ship, its personnel and equipment, in relation to the scientific work to be performed.
- 1.6 The Pre-Cruise Plan is prepared by the Chief Scientist with a final copy forwarded to the BIOS Marine Operations Department (ship.admin@bios.edu and ship.tech@bios.edu) **at least 2 months in advance of the cruise departure date**. Some cruises require significantly more advanced planning and may necessitate conferences and visits to the ship.

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2.0 Shore Side Accommodations

2.1 You will need to make arrangements for accommodations ashore if you plan to arrive before your day of departure or stay beyond the day of arrival. Accommodations at BIOS should be requested and booked well in advance. At least 6 months is recommended.

2.2 Contact Jane Burrows, Housing and Reservations Manager with requests for accommodations: jane.burrows@bios.edu

3.0 Personal Information and Liability Waiver Form for Cruise Participants

3.1 This form must be completed for each member of the scientific party prior to the ship's departure. The ship **will not** sail until these forms have been received by the Marine Department. This form in Appendix Section 504 can be downloaded from the ship's web site.

4.0 Medical Care

4.1 The *ATLANTIC EXPLORER* has limited medical supplies and capabilities. Medical supplies consist of a MedAire "Ocean Pac" which contains the items required for routine emergencies.

4.2 All injuries and illness **must** be reported to the Master immediately.

4.3 The ship uses Medical Advisory Systems/Medaire ("MAS") to provide professional medical consultation over the ship's satellite phone system for emergencies. This service is available 24 hours a day.

4.4 A Medical History and Information form is located in Appendix Section 540. It is recommended you complete this form and give it to the Master upon boarding. You may place it in a sealed envelope to be used only in case of emergency. If a medical emergency occurs at sea, the information on the form could prove to be vital in your treatment and care.

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- 4.5 Any medical condition that might compromise your safety, the safety of the ship, or interrupt the progress of a cruise must be noted on the Personal Information and Liability Waiver Form.
- 5.0 **Insurance**
- 5.1 If you are not a BIOS full time employee, you must provide your own health and accident insurance. When you sign the Liability Waiver, you certify that you have your own Medical and Accident Insurance.
- 6.0 Reserved
- 7.0 **Marine Technical Support**
- 7.1 A Marine Technician will be provided to supervise the operation of "shared-use" equipment at sea. The Marine Technician is also responsible for maintaining all on board electronics and computer systems. The Marine Technician will be provided a bunk in the scientific allotment for each cruise.
- 7.2 Non-NSF users must pay a daily charge for the Marine Technician.
- 8.0 **Hazardous Materials**
- 8.1 The Chief Scientist is responsible for providing information about all chemicals and hazardous material to the Marine Superintendent and to the Manager, Marine Technical Services.
- 8.2 Material Safety Data Sheets (MSDS's) must be provided for all chemicals, reagents, hazardous materials, etc.
- 8.3 Plans to use any explosives, special chemicals, flammables, toxic solutions or radioactive materials must be approved by Marine Operations two months prior to the cruise.
- 8.4 A listing of the types of hazardous materials to be used on the cruise must be included on a separate sheet with the Pre-Cruise Planning Form. A description of radioisotope experiments in sufficient detail to permit review by the BIOS Radiation Safety Officer will also be required.

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8.5 The Chief Scientist is responsible for providing any spill clean-up equipment and supplies that might be needed

9.0 Shared Use Equipment

9.1 See Appendix Section 600 for a list of available Share Use Equipment.

9.2 If it is anticipated that "shared-use" equipment is necessary on the cruise, a listing of this should be included with the Pre-Cruise Plan for evaluation and scheduling of this equipment.

9.3 At least 2 months prior notice should be given to in order to schedule the equipment for the cruise and allow enough time to have it properly prepared.

9.4 NSF-funded users are provided the use of this equipment at no charge, except for expendable supplies.

9.5 Non-NSF users must pay use and preparation charges for this equipment in addition to expendable supplies

10.0 Radioactive Materials

10.1 All radioactive material work areas and storage facilities will be surveyed for contamination by the principle investigator or his/her designee prior to the termination of the cruise. Wipes will be given to the Master or his designee to be forwarded to the BIOS Radiation Safety Officer for evaluation. These wipes will be clearly identified as to where they were taken on board ship.

10.2 Each investigator using radio-nuclides will submit a final written report as to the disposition of all radio-nuclides brought on board ship, including experimental loss during the cruise. This report must be given to the Master at the termination of the cruise. A copy of this report will be sent to the BIOS Radiation Safety Officer.

10.2 Any possible human uptake or significant release to the ship's environment of radioactive material or toxic chemicals shall be reported to the Master. Any significant radioactive spills shall be cleaned up immediately.

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11.0 Passport / VISA Requirements

11.1 All persons flying to/from Bermuda - including U.S. citizens and Bermudians - must present a passport. Machine-readable passports are preferred; however, Americans, Bermudians and Canadians with valid passports that are not machine-readable may continue to use those passports until they expire. For visa info, check with Bermuda Department of Immigration at www.immigration.gov.bm. Since most flights to/from Bermuda are through the US, US regulations must be followed. <http://travel.state.gov/>. These rules are subject to change, please verify information prior to traveling.

11.2 Any person joining the ship regardless of port of embarkation must have a valid passport and visa, if required.

12.0 Transportation Worker Identification Card (TWIC)

12.1 Required for all crew and recommended for scientists and technicians.

12.2 TWIC allows unescorted passage through and access to the secured areas of ship and shore facilities (U.S.) that have active security plans implemented.

12.3 See UNOLS TWIC information at:
http://www.unols.org/info/UNOLS_TWIC_INFO_051408.pdf

12.4 BIOS is not a secured facility, but *ATLANTIC EXPLORER* is. Secured areas of *ATLANTIC EXPLORER* include the wheelhouse, all storage spaces, Marine Tech Office, Captain's Office, all crew quarters, mechanical rooms and all spaces below the main deck. Without a TWIC you must have an escort to enter these spaces. Normally the only one of these spaces scientists require access to is the wheelhouse. Since it is always manned by the ship's crew at sea, they are your escort. **For scientists conducting cruises on *ATLANTIC EXPLORER* to and from Bermuda, a TWIC will not be needed.**

12.5 Without a TWIC, you will be required to be escorted at all times, at secured shore facilities like the shipyard in Norfolk. Unauthorized entry to secured spaces is a violation of U.S. Federal Statutes.

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13.0 Research Permits

13.1 Marine Science Research Authorizations are not required for work in Bermuda's EEZ when conducted from the *ATLANTIC EXPLORER*.

13.2 Marine Science Research Authorizations must be arranged well in advance of your cruise if you plan to conduct research in the EEZ of any other country. See: <http://www.state.gov/g/oes/ocns/rvc/> and <http://www.unols.org/publications/index.html#foreign>

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1.0 Cruise Plan

- 1.1 Once the Pre-Cruise Plan has been approved by the Marine Superintendent, a Cruise Plan is prepared by the Chief Scientist. Refer to the Appendix, Sec 520, for an example of the Cruise Plan. The Cruise Plan is the daily schedule of operations for your cruise with positions of science stations, description of work at each station, any work to be done underway between stations, etc. It must also show the Cruise Number or identification of your cruise, and list of all science personnel.
- 1.2 The Cruise Plan becomes the order to the ship's Master to proceed on specified dates and times to specific geographic locations to accomplish the work requested. The Master will follow your plan unless there is any question about the safety of the proposed operation.
- 1.3 The Cruise Plan, once received on board, is posted in the lab, main passageway and in the wheelhouse. Any changes to the posted plan must be discussed and approved by the Master and these changes made to the posted plans. This is very important because it prevents misunderstandings, promotes safe operations and prevents lost time. **The Master and Watch Officers follow the plan posted in the wheelhouse. If you need to change your plan, be sure it gets changed on the posted plan in the wheelhouse!**

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1.0 Post - Cruise Report

- 2.0 The Chief Scientist should complete a UNOLS Research Vessel Cruise Assessment Form as soon as possible after the completion of their cruise. This can be done on-line: <http://gsosun1.gso.uri.edu/cgi-bin/pcget.cgi>
- 2.1 The UNOLS Cruise Assessment Form is easy to complete. Describe the degree of success achieved in accomplishing the cruise's scientific objectives; any problems encountered which affected the research program, and any safety concerns. Document the performance of the vessel, officers, crew, technicians and shipboard equipment and instrumentation. UNOLS maintains a record of these forms and is able to note and evaluate each vessel's pattern of performance.
- 3.0 Constructive criticism is encouraged to help improve the quality of services provided to scientists using the *ATLANTIC EXPLORER*.
- 3.1 Any issue deemed inappropriate to record on the Cruise Assessment form should be communicated separately to the Marine Superintendent.

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1.0 Purpose

1.1 The primary purpose for operating a research vessel is to provide a safe platform at sea on which scientific personnel can accomplish oceanographic research. It should provide adequate machinery and working spaces, storage, navigational functions and living quarters. To this extent, it is the desire of the operating institution and the crew of the ship that scientific objectives are met safely and with the maximum possibility of success. In order to achieve these goals, certain "laws of the sea" and acknowledged rules and regulations are necessary, particularly, where they involve the safety of the ship, crew and science party.

2.0 Master

2.1 The Master of *ATLANTIC EXPLORER* has full and final legal authority for the safety of the ship, all scientific operations and all members of the crew and science party, on board and in all foreign ports. **The Master's authority is absolute.**

3.0 Watch Officer

3.1 When the Master is not on watch, his authority is exercised by the deck officer on watch. Any differences that cannot be remedied by the watch officer should be referred to the Master.

4.0 Chief Scientist

4.1 One Chief Scientist is designated for each cruise and will be responsible for the activities of the entire compliment of science personnel, even though some may not be affiliated with his or her own project(s). These responsibilities will include:

- Conduct of all scientists
- Activities of all scientists
- Storage of scientific equipment
- Cleanliness of lab and science accommodation areas

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- Provide a "Plan of the Day" to the Master and Marine Technician
 - Designate scientific watch leaders to facilitate communication between crew and scientific part
 - Complete a Post-Cruise Assessment on-line through the UNOLS website
- 4.2 The Chief Scientist must be aware of the capabilities and limitations of the ship and crew, and keep informed of conditions which might affect the scientific mission. Conversely, the ship's officers need to be informed of maneuvers required, so that they can plan and execute them according to the scientists' needs. As in all joint endeavors, maximum benefit will be derived from good communications and teamwork.
- 4.3 The ship and crew are there solely to assist in carrying out the scientific mission. The Master and crew will make every effort to carry out the desires and requirements of the Chief Scientist unless it is unsafe or illegal.
- 4.4 The Chief Scientist is responsible for providing enough trained and experienced personnel for all on deck or over-the-side operations that may be required in addition to the on watch Engineer, two AB's and Marine Technician. The ship's crew is there to operate the ship's equipment, not do your science work.
- 4.5 Chief Scientists, as required by UNOLS, must certify or provide proof of having received Sexual Harassment training from their home institution.
- 5.0 **Marine Technical Services**
- 5.1 Pre-Cruise the Marine Technicians will assist in the following:
- Stowage of all scientific gear.
 - Assignment of lab and berthing spaces.
 - Setting up laboratories and equipment giving special attention to safe and effective use at sea.
 - Instructing or updating scientific personnel in proper and safe use of equipment and to see that established safety and other appropriate ship procedures are observed.
- 5.2 While at sea:
- Assure that facility provided science gear is operating properly.

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- Liaise between ship's crew and scientific personnel, especially with regard to over the side operations and planning of daily objectives.
- Assist with scientific operations.
- Monitor and maintain all shared use, underway and data acquisition systems.

5.3 Post Cruise:

- Maintain adequate inventory of spare parts and supplies of shipboard scientific equipment and instrumentation.
- Take appropriate measures to repair, service and calibrate shared-use scientific gear.
- Coordinate necessary off-loading and shipping activities.

5.4 Other support activities:

- Learn cruise objectives and what equipment will be required.
- Inform users of ship layout, capabilities, and availability of shared-use equipment.
- Coordinate logistics.
- Advise users regarding non-covered costs or fees as appropriate.
- Perform routine maintenance procedures.
- Co-ordinate non-routine and specialized maintenance and calibration tasks requiring services of others.
- Assure proper storage of shared-use gear when not in service.
- Maintain appropriate property control and utilization records.
- Accept, prepare and control project-specific gear for staging prior to cruises and coordinate loading and unloading of scientific equipment.
- Prepare shared-use equipment and project specific gear for shipment to and from ports of call.
- Monitor scientific hardware and software developments and take appropriate steps to provide modern and effective common-use science capability.

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5.5 Support activities **NOT** provided by Marine Technical Services

- Upkeep and operation of specific scientific equipment and instrumentation that is under development or maintained for individual research projects.
- Routine Scientific watch standing.

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1.0 UNOLS Research Vessel Safety Standards

1.1 Cruise participants are encouraged to read this safety information (linked below) before their cruise. It explains safety standards and procedures used and followed throughout the UNOLS fleet.

1.2 http://www.unols.org/publications/manuals/safe_man.html

2.0 Fire/Emergency Procedures

2.1 The alarm for this is at least 10 seconds of continuous sounding of the ship's alarm bells and whistle.

2.2 In response you should put on your life jacket (located in your stateroom locker) and proceed immediately to the 02 Deck Muster Area and await instructions. It is best to wear a jacket, long pants, hat and shoes. If you are unable to get to your stateroom safely proceed to the Muster Area and get a life jacket (PFD) from one of the deck lockers on the port side of the 02 deck.

2.3 The end of an Emergency Drill will be indicated by three short blasts of the whistle and bells. Replace your life jacket where you found it.

3.0 Abandon Ship

3.1 The alarm for this is seven short blasts and one long blast on whistle and general alarm bells.

3.2 In response you should put on your life jacket and proceed immediately to the 02 Deck Muster Area. Survival Suits are stowed there in deck lockers. If an actual sinking is eminent, immediately remove the life jacket and get into the survival suit. The survival suit is buoyant and will replace the need for a life jacket. Await further instructions and be prepared to assist in the launching of the Life Rafts. Once the life rafts have been inflated and secured alongside, begin boarding through the opening in the raft canopy. Follow the orders of the ship's officer designated as raft commander.

3.3 The end of an Abandon Ship Drill will be indicated by three short blasts of whistle and alarm bell. Return your exposure suit to a member of crew and replace your life jacket where you found it.

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4.0 Man Overboard

- 4.1 In the event of a man overboard call out "MAN OVERBOARD" as loudly and often as possible. Indicate the side of the ship from which the victim fell, and make sure someone relays the message to the bridge. The alarm "Man Overboard" will be given over the PA system throughout the vessel and may be accompanied by three long blasts on the general alarm and ship's whistle (International Code "O" for overboard). Throw a life ring immediately - preferably one with an attached strobe light or smoke canister (daytime). **Keep the victim in sight as long as possible, point towards them and don't take your eyes off of them.** All persons not on deck should go immediately to the 02 Deck and take lookout positions. If the "man overboard" was not witnessed, it is critical to determine when the person was last seen in order for the ship to begin search and recovery operations at the position where the person most likely was lost.

5.0 Fires

- 5.1 Fire on board ship is always serious and much more difficult to bring under control than fire on shore. It is, however, a hazard that is most easily prevented by the use of common sense and adequate precautions. Notify the Bridge immediately if you discover a fire, no matter how small.
- 5.2 The major cause of fire on board ships is smoking around flammable or volatile materials, smoking in bed, and not properly extinguishing cigarettes. On *ATLANTIC EXPLORER* smoking is only permitted on the lee side (down wind) of weather decks well away from flammable or combustible material. **(SMOKING IS NOT PERMITTED INSIDE)**
- 5.3 The location of all fire-fighting equipment such as fire extinguishers, hydrants, etc. should be noted and an effort made to keep these facilities clear at all times and not blocked with gear or clothing.
- 5.4 Know how to operate and use the fire extinguishers in the lab areas and near your stateroom. Ask the crew for instructions and information if you have any doubts.

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6.0 Flammable/Volatile Materials

- 6.1 Consult the Master of the vessel when flammable materials are brought on board; there are procedures to follow regarding the proper storage of these materials.
- 6.2 All explosives, special chemicals or flammable material such as laboratory solvents, alcohol, gasoline, or acids should be properly contained, "stoppered", and stored away from flames, sparks or heat. Dispose of flammable wastes properly and frequently. Instructions should be obtained from the Watch Officer before transferring volatile liquids.
- 6.3 Transfer of petroleum products in or out of any tanks on board shall take place with a deck officer and an engineer in attendance, with both signing the ship's log after the description of the transfer.

7.0 Radioactive & Hazardous Materials

- 7.1 The following guidelines, along with common sense, should ensure the safe use and storage of these materials. The Master must be made aware at all times of any hazardous materials brought on board. The Master of the vessel may terminate any operations using radioactive or hazardous chemical materials if those operations are deemed to be conducted in an unsafe manner, and will then direct and take the appropriate measures to clean up and secure these materials.
- 7.2 The Chief Scientist should be prepared to discuss the Science Party's procedures for the safe handling, usage and storage of these materials and the subsequent waste materials before departure of the cruise. This should be accomplished through liaison with Marine Technical Services.
- 7.3 All isotope use is confined to the radiation van and designated areas on the main deck. All such operations involving radioactive materials shall be done in a safe and appropriate manner, consistent with accepted best practices for laboratory procedures. No eating, drinking, or smoking will be permitted in such areas. No food or drink for human consumption will be stored in any area where radioactive material or toxic chemicals are stored or used. Appropriate protective clothing should be worn.
- 7.4 The radiation van should be requested in the Cruise Plan.

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- 7.5 Toxic solutions should be stored carefully and away from ventilator openings that could carry fumes into other compartments. The use of such materials should be under controlled conditions with properly installed fume vents and blowers to exhaust unwanted fumes directly out of the ship. There is a fume hood in the main lab for this purpose. Antidotes should be provided for poisonous chemicals and buffering compounds for acids.
- 7.6 Set up the work area in such a manner that any accidental spill will result in the material being confined to a small, easily cleaned area, i.e., an absorbent paper sheet in a tray can be used under such work. If a spill occurs, it can be thrown away with the rest of the contaminated solid waste material.
- 7.7 The Chief Scientist is responsible for the proper disposition of radioactive solid wastes ashore. Do not leave these wastes for the crew or shore support personnel to deal with unless you have made prior arrangements.
- 7.8 All solid wastes containing radioactive substances are to be stored in separate labeled containers for proper disposal ashore.
- 7.9 Report all spills or accidents to the Master.
- 8.0 Diving Operations**
- 8.1 Diving operations are not normally supported on *ATLANTIC EXPLORER*.
- 8.2 If there is a requirement for diving operations, the BIOS Dive Safety Officer must be consulted and approve all dive plans. All diving operations shall follow American Academy of Underwater Scientists (AAUS), BIOS and UNOLS Research Vessel Safety Standards. The Principal Investigator will forward all diving forms and verification of diving credentials to the BIOS Dive Officer 2 months prior to the cruise.
- 9.0 Personal Safety**
- 9.1 We highly recommend that all members of the Science Party become familiar with the **RVOC Safety Training Manual, Chapter 1:**
http://www.unols.org/publications/manuals/safe_man.html All UNOLS vessels follow these uniform safety procedures.

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- 9.2 All ship's users will be briefed on the location of all life rings, life jackets, immersion suits, life rafts and work vests. Personal Protection Equipment (PPE) is required in certain areas of the main and 02 decks during science operations. Personal Protection Equipment includes hard hats, work vests, safety glasses, gloves, protective outer wear and safety shoes or boots depending upon the nature of the work being conducted. Work vests should be worn when working where lifelines and bulwarks have been removed to permit the deployment of scientific equipment. Hard hats are required during any operations involving overhead crane or "A" frame work. The use of safety shoes and boots is recommended when handling heavy equipment. **Shower clogs, flip flops, sandals and bare feet are not permitted on deck.**
- 9.3 Stand clear of all wires, ropes and blocks which are under stress or are moving, and do not get caught between a swinging object and a stationary part of the ship. Do not stand in the danger zone beneath wires, blocks or suspended weights. Be mindful of all activities going on when walking out on deck. **Stay alert!**
- 9.4 Be especially careful when entering doorways. Keep fingers away from knife edges of steel water-tight doors. Fingers have been lost when a ship takes a sudden roll and pinches them between a swinging door and its frame. All doors and hatches should be secured either open on their hooks or completely closed and dogged shut. Doors should not be allowed to swing free with the roll of the ship.
- 9.5 Each individual should check their own safety gear before use and immediately inform a crew member if any items are not serviceable. **Be sure to read the Station Bill for emergency instructions.**
- 9.6 At night, notify the wheelhouse before going on deck alone, even if it is for a short while.
- 10.0 **General Information**
- 10.1 Before putting anything over the side, obtain permission from the Deck Officer. To avoid confusing the winch operator, only one person should direct the hoisting or lowering of a load. Use standard hand signals.
- 10.2 See **DRAWING OF HAND SIGNALS** in Appendix Section 800.

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- 10.3 Permission of the Watch Officer **MUST** be obtained each time before going or working above the Bridge (03) deck. The ship's motion makes working aloft hazardous, and radio/navigation equipment emitting RF and microwave energy is dangerous to human health. The ship can provide safety belts and fall protection gear, which should be used whenever possible. Do not climb the mast unless you have a specific job to do and **obtain prior authorization from the officer on watch.**
- 10.4 If you need tools ask the Bosun or Watch Officer. Return all tools immediately after use. Consult the ship's crew if you wish to use a piece of equipment with which you are not familiar.
- 10.5 Protect the ship from damage when handling gear. Try not to scar decks, paint and woodwork.

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1.0 Arrival/Departure of Scientific Personnel at BIOS

- 1.1 Scientists needing time at the dock to prepare for a cruise or demobilize at the end of a cruise should make arrangements for room and board with Jane Burrows, Housing and Reservations Manager. jane.burrows@bios.edu
- 1.2 The scientific party will normally board the vessel on the day of departure from port and depart from the vessel soon after arrival back in port. Persons on two or more consecutive cruises (or legs) may berth on board. Meals are not served in port under normal circumstances.
- 1.3 In unusual circumstances it may be possible to board the night before departure or night after arrival, but this must be arranged well in advance with the Marine Superintendent and the Housing and Reservations Manager. This might be possible if it can be shown that no BIOS or local Hotel space is available.

2.0 Meals

- 2.1 Meals are served buffet style. A reasonable choice of food is provided. Take all you want, but eat all you take. To be considerate of others, come to meals as neat and clean as possible. Shirts and shoes are required in the mess room.
- 2.2 Meal hours are posted in the mess room but can be altered within reason subject to the scientific party's requirements and notification.
- 2.3 When you have completed your meal, dishes and utensils should be cleared from the tables to make room for someone else.
- 2.4 Those with special food problems such as allergies or dietary restrictions should consult with the Marine Superintendent well in advance of the cruise; there is a limited capability to cope with special cases. If required, the Chief Scientist should complete the Special Needs section of the Pre-Cruise Planning form and the individual should also provide this information on their Personal Information and Waiver Form.

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3.0 In Between Meals-Snacks

3.1 Sandwich making materials, snacks, and leftovers are available. Use only what is provided. All plates, cutlery, cups etc. are to be washed when used outside normal meal times. Please clean up any mess you make.

4.0 Scientific Quarters

4.1 Berthing is assigned after consultation with the Chief Scientist. Any special berthing requests must be made at least a day before departure

5.0 Showers and Marine Toilets

5.1 While the AE makes an adequate supply of fresh water for most needs, conservation of water is necessary. Use of "navy" type showers, i.e. rinse-soap-rinse, turning water off between times, is proper on board ship.

5.2 Leaky faucets, shower heads or toilets should be reported to the Watch Officer immediately. Please wipe around sink and shower after use.

5.3 The ship's sanitary system cannot accommodate foreign objects such as sanitary napkins or paper towels. Use of proper disposal containers is mandatory; i.e. wastebaskets, etc.

6.0 Linen

6.1 Clean towels and bedding are distributed by the Ship's Galley Personnel only. Science linen is a different color to crew linen. At the termination of a cruise, used bunk sheets and towels should be placed in a used pillow case and delivered to the laundry area just aft of the galley.

7.0 Clothing/Foul Weather Gear

7.1 It is recommended that you bring enough **appropriate** clothing for your needs to cover the duration of the cruise. Foul weather gear should also be included as the vessel does not provide these items. Rubber boots or shoes with rubber soles should also be used, especially on wet decks. No open-toed shoes will be allowed on outside decks.

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8.0 First Aid

- 8.1 First Aid supplies and common medical remedies like aspirin, acetaminophen, cough syrup, etc. are available. These are under the control of the Master.
- 8.2 Injuries or medical emergencies must be immediately reported to the Master.
- 8.2 NSF has contracted with Medical Advisory Services/ MedAire (MAS) to provide immediate medical advice via SSB radio, satellite phone or email. MAS is staffed, 24 hours a day, by medical response teams consisting of physicians, physicians' associates and communications coordinators. Its' primary focus is to provide prompt professional medical consultation to those in the isolated marine environment.
- 9.0 **MAL-DE-MER!! (Sea Sickness).** Persons should take advantage of the various drugs available to combat it. Staying on deck is preferable to going below, and a small, easily digested meal prior to departure is an advantage. Bring your own remedies (pills, patches) as these are not supplied.

10.0 Prohibited Items

- 10.1 *ATLANTIC EXPLORER* has a policy of "Zero Tolerance" towards illegal drugs and alcohol.
- 10.2 BIOS is committed to maintaining a drug free work place and a safe and healthy work environment for all employees. This policy applies to the *ATLANTIC EXPLORER* and its users as well. All employees or personnel embarked are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of drugs or controlled substances on board ship or in other BIOS work places. The possession or use of all illegal drugs and substances is strictly prohibited on board ship. It is a violation of Bermuda and US law. Since the *ATLANTIC EXPLORER* is U.S. registered and a designated oceanographic research vessel, it must comply with the regulations of the US Government. Discovery of even trace amounts of illegal drugs by US or Bermuda Officials could result in the vessel being impounded and some or all persons on board being arrested. Because of the serious consequences of even minor drug violations the following procedures shall be enforced:

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- 10.3 The Master shall exert every effort to prevent illegal drugs or substances from being brought on board ship. Unannounced and thorough searches of the ship, including staterooms and personal effects, will be made when deemed necessary and the results of these inspections entered into the ship's official log book, as required by US, Bermudian and International laws.
- 10.4 Any illegal drugs or substances discovered by the Master, or other ship's officer, will be confiscated and placed in the Master's safe keeping. Complete details concerning the amount and type of drugs, how, when, and where they were discovered, together with the offender's name, will be entered in the ship's log. Upon arrival in port, the offender(s) and drugs will be turned over to the appropriate authorities.
- 10.5 It is worth noting that all officers and crew members are subject to random drug testing in accordance with existing laws. Anyone who fails to submit to a test, or who takes action to invalidate the results of a test, may be discharged.
- 10.6 The use of drugs and/or alcohol *does* affect the way you perform. A functionally impaired individual is dangerous.
- 11.0 **Restricted Areas**
- 11.1 The following areas have restricted access and should only be entered with the knowledge and approval of the appropriate crew member.
- Any area above the 02 Deck including the Bridge and Mast Deck.
 - When entering or leaving port and when deploying, working and recovering scientific instrumentation, the bridge is an area of intense activity. Access to this area by scientific personnel should be coordinated with the Watch Officer.
 - Captain's Office and Technical Services Office.
 - Bosun's Locker and all food storage areas, including the pantry and the walk-in cooler.
 - Any area below the main deck including the Engine Room. No admission to any of the spaces below the main deck is allowed without the permission of the Chief Engineer or Master, and an escort is required.
 - Any space marked "Restricted Access".

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12.0 Cleanliness

- 12.1 The need to keep an orderly "house" and maintain cleanliness is obvious. Common sense and a consideration for fellow shipmates will provide for a more constructive cruise and more pleasant surroundings.
- 12.2 Scientific equipment not in immediate use should be stowed and secured in its proper place. The Chief Scientist will assign members of the scientific party to monitor the cleanliness of the labs and deck and take appropriate action.
- 12.3 Debris should be picked up immediately and placed in proper containers. Clothing and personal gear should be kept in the bunk area.
- 12.4 Common courtesy requires members of the ship's party to pick up after themselves. Stow all personal gear; keep shoes and rain gear off the bunks.

13.0 Post Cruise Cleanup

- 13.1 Before departing the ship and in order to provide clean living quarters and laboratory facilities for the next scientific party, it is necessary for each occupant to clean their bunk and lab areas.
- 13.2 Bunks should be stripped of linen and blankets folded and placed at the foot of the bunk. Sinks, mirrors, and bulkheads should be wiped down with any spots or stains removed.
- 13.3 Remove all instruments and equipment from the laboratories except that which is required on the next cruise. Pick up debris, sweep the floors and empty trash cans. The crew will provide cleaning equipment.

14.0 Interpersonal Relations

- 14.1 Confined spaces, isolation, and intimate living conditions present a social environment on board a research vessel that is considerably different from that on shore. The close quarters demand utmost consideration of others at all times. Privacy is greatly reduced and, as a result, interactions can become intense.

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- 14.2 Instances, which under normal circumstances could be annoying, can take on exaggerated proportions in a shipboard environment. Individuals should be alert to this sensitivity. Personal habits and mannerisms could be annoying to others who, by virtue of the circumstances, must maintain a close association both in a working and off-work environment.
- 14.3 Be considerate of others. At all times, off watch personnel may be sleeping. Avoid excessive noise, loud music or letting the doors slam.
- 15.0 **Sexual, Racial, and Other Unlawful Harassment Policy**
- 15.1 BIOS is committed to providing a work environment that is free from discrimination and unlawful harassment of any kind. Actions, words, jokes, gestures, or comments based on an individual's sex, race, ethnicity, age, religion, disability, marital status, nationality, or any other legally protected characteristic will not be tolerated.
- 15.2 Sexual harassment is a form of misconduct that is demeaning to another person and undermines the integrity of the employment relationship. It is the policy and practice of BIOS to strictly prohibit any conduct which constitutes sexual harassment (both overt and subtle) and to discipline anyone guilty of engaging in such conduct. Sexual harassment may include unsolicited, offensive behavior such as sexual advances, requests for sexual favors and any other verbal or physical conduct of a sexual nature (including, but not limited to, sexually explicit language, jokes, gestures, suggestive or insulting sounds, written and/or electronic communications, etc.) when:
- The person must submit to the offensive conduct as an explicit or implicit condition of employment.
 - The person rejects advances and risks losing a job, promotion, privileges, or benefits; whereas the person who submits gains favors and advantages.
 - The person's job performance is interfered with as a result of offensive behavior or the work atmosphere becomes hostile or intimidating.
- 15.3 If anyone feels they are being harassed or that someone else may be, should immediately report this conduct to the Master or Marine Superintendent. Anyone engaging in sexual or other unlawful harassment will be subject to disciplinary action, up to and including termination of employment or prohibition from participating in any future research cruises.

<i>Living and Working Aboard</i>	Title:	Prepared By:	Revision No:	Section:
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- 15.4 Crew members receive sexual harassment awareness training as part of their International Maritime Organization (IMO) Standards of Training, Certification and Watchkeeping (STCW) certification.
- 15.5 UNOLS Research Vessel Safety Standards require all Chief Scientists to have participated in harassment awareness training.
- 16.0 **General Information**
- 16.1 Do not use stateroom bedding, furniture, life jackets on deck for sunbathing or uses other than for what they were intended.
- 16.2 Do not sleep in the Lounge.
- 16.3 Do not bring food into the Lounge.
- 16.4 Do not bring food into the Labs.
- 16.5 Follow posted instructions for disposal of garbage. **It is a violation of International Marine Law to dispose of plastics at sea.** No garbage or trash is to be thrown overboard unless permission is received from the Watch Officer and records are made in the Garbage Disposal Log.

<i>Appendices</i>	Title:	Prepared By:	Revision No:	Sections:
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Section 500 Forms

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- 502 PRE-CRUISE PLANNING FORM
- 503 CRUISE PLAN
- 504 PERSONAL INFORMATION AND LIABILITY WAIVER
- 505 MEDICAL INFORMATION FORM
- 506
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- 508
- 509 POST CRUISE ASSESSMENT

Section 600 SHARED USE EQUIPMENT**Section 700 ATLANTIC EXPLORER General Arrangement Drawings****Section 800 REFERENCES**

- 810 HAND SIGNALS for Weight Handling Equipment
- 820 Marine Science Research Authorizations

Section 900 BIOS FEE SCHEDULE

<i>UNOLS Ship Time Request & Scheduling System</i>	Prepared By: R. Harelstad	Revision No: 0	Section: 501
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Go to the following UNOLS website for instructions on how to log into and use the UNOLS Ship Time Request & Scheduling System:

http://unolsweb.cms.udel.edu/strs/Public/diu_login.aspx

Once you have submitted a Ship Time Request (STR) we receive an email from UNOLS indicating this and put you in our Proposed Schedule as a cruise awaiting funding from NSF.

When your work is funded, complete the Pre-Cruise Planning Form and submit it to the Marine Operations Department using both the following email addresses:

ship.admin@bios.edu and ship.tech@bios.edu



R/V ATLANTIC EXPLORER PRE-CRUISE PLANNING FORM

Instructions: *Please complete this form and email to: ship.admin@bios.edu and ship.tech@bios.edu*

Name:

Chief Scientist Principle Investigator (Ancillary User)

Address:

Phone#:

Email:

Scientific Title, Purpose and Description of Project:

PROJECT REQUIREMENTS:

Number of ship days: _____

Number of dock days before cruise: _____

Number of dock days after cruise: _____

Requested Cruise Dates: _____

Acceptable Alternatives: _____

Area of Operations:

Describe Requirements for Cruise Mobilization and Demobilization (Number of days; Dockside testing of equipment? Will you need a fork truck or dockside crane, etc.):

Diving: Yes No

Shipboard Equipment and Instruments Required:

XBT: Yes No

Any Special Electrical Requirements?

Raw Sea Water Hook up? Yes No

Supporting Personnel Required From Ship (Technicians/Deck Hands):

Underway and/or Station Requirements (Attach Sampling Plan if Available):

SURFACE DEPLOYED EQUIPMENT (FLOATING ARRAYS):

Do you intend to deploy surface floating equipment? Yes No

Note: All floating arrays deployed from *ATLANTIC EXPLORER* must be fitted with a radio beacon and a strobe light.

ACOUSTICS:

Do you plan to use undersea sonic emitters, dragged devices or explosive charges?

Yes No

If yes the BIOS Marine Superintendent is required to forward such information to the commander, naval oceanographic command at least two weeks prior to any such operation.

UNOLS Ship Time Request (STR) Status:

Funded? _____ Not Funded? _____

Sponsoring Agency? _____

Grant or Contract Number: _____

Current Year Funding \$ _____

Financial Information:

Method of Payment for Cruise Expenses: Purchase Order Credit Card Other

Method of Payment Additional Details:

HAZARDOUS MATERIALS AND CHEMICALS:

Do you plan to have equipment or materials on board which are flammable, explosive, toxic or radioactive? List below all hazardous materials, chemicals and radio active material that will be used on the cruise: (Note: Material Safety Data Sheets must be provided for each item brought on board. Also, you must provide chemical spill clean-up supplies adequate to respond to your worst case possible spill.)

<u>No.</u>	<u>Item</u>	<u>Qty on Board</u>	<u>Location</u>
------------	-------------	---------------------	-----------------

Cruise Plan Personnel List

Please list below every member of your science party. Be sure to note the status of each person: Chief Scientist, Observer, Technician, Graduate Student or Scientist, etc. If BIOS should be aware of any special dietary needs for an individual, attach a copy of the "Special Needs Form". Each person must also complete the Personal Information and Waiver Form.

<u>No.</u>	<u>Full Name</u>	<u>Status on Cruise</u>	<u>Institution</u>
1)			
2)			
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			
11)			
12)			
13)			
14)			
15)			
16)			
17)			
18)			
19)			
20)			

Special Needs Request:

Name of Chief Scientist/ Cruise: _____

Instructions: For each category, list name(s) and information

SPECIAL DIETARY NEEDS

The ATLANTIC EXPLORER Galley provides 3 delicious, nutritious main meals daily while at sea. Our cook can accommodate any special dietary requirements if given advance notice.

Food Intolerances/Allergic reactions (Provide names and details)

Religious Restrictions (Provide names and details)

Vegetarian (Vegan) (Provide names and details)

Any additional information:

<i>Example of Cruise Plan</i>	Prepared By:	Revision No:	Section:
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Here is an example of what is required in your Cruise Plan. Note that the cruise is uniquely identified so it can't be confused with any other cruise. It includes the following important information:

- Cruise identification
- Dates of Cruise
- Name of Chief Scientist
- Cruise Objectives and Activities
- Lab Space and Equipment Assignments
- List of all science personnel with their status and institutional affiliation
- List of all science stations with Lat/Long coordinates
- Proposed Daily Schedule

Your cruise plan is important. Days before your departure the crew relies on it to prepare the ship. The galley must know how many people they will be feeding; bunks in staterooms must be prepared; all science equipment requirements must be confirmed; Station waypoints are programmed into the chart plotting system and the overall plan checked by the Master and Marine Techs to be sure your work can be completed safely and successfully. Once your cruise begins, it is important to keep your plan edited and updated on a daily basis. Remember - The posted plan in the wheelhouse is the one that is followed by the Watch Officer and Marine Technicians. After the cruise, the Marine Operations Office uses the plan to prepare the NSF Ship Utilization Report.

EXAMPLE OF CRUISE PLAN

Cruise schedule BATS 236 – Leg 2

(25th to 29th June 2008 - R/V Atlantic Explorer)

Cruise Objectives/Activities:

BATS : CTD, Sediment Traps,

Kadko (Stephens): in-situ 7Be pumping

Buesseler (Valdes,McDonnell, Owens, Marinov) : NBST, VPR, RESPIRE, in-situ pumps

Lab Space & Equipment Assignments:

BATS : Main, Fumehood, Isotope ; moorings main deck; lines on TSE & Rowe winch

<i>Example of Cruise Plan</i>	Title:	Prepared By:	Revision No:	Section:
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Science Personnel

Rod Johnson (CS)
Jonathan Whitefield
Brad Issler
Amanda Burke
Mark Stephens
Stephanie Owens
Irina Marinov
Jim Valdes
Andrew McDonnell
James Caison (MT)
Ron Zimmer (MT)

Institute (project)

BIOS(BATS)
BIOS (BATS)
BIOS (Lomas, NBST)
BIOS (Lomas, NBST)
RSMAS
WHOI
WHOI
WHOI
WHOI
WHOI
BIOS
BIOS

Station	Latitude	Longitude
Sediment Trap Deploy	31° 35.00' N	64°10.00' W
BATS	31° 40.00' N	64°10.00' W
Hydrostation 'S'	32° 10.00' N	64° 30.00' W
1	31° 47.91'N	64° 44.67'W
3	32° 09.51'N	64° 00.61'W
13	31° 32.10'N	63° 35.70'W
11	31° 10.50'N	64° 19.46'W

Day 5: Wednesday 25th June
(Local Time)

- 1300 Depart BIOS for PITS deployment site (31 35n, 64 10W)
1900 Arrive PITS deployment commence deployment of TRAP arrays
1) 150m RESPIRE/CLAP
2) BATS sediment TRAPS (350m)
3) BATS/Neuer TRAPS (350m)
4) 4 NBST Arrays

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<i>Example of Cruise Plan</i>	R. Harelstad	0	503
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Day 6: Thursday 26th June

0200 Depart for BATS
 0230 Kadko pump #1 – BATS
 1130 Depart for RESPIR Array(s)
 1230 Commence diel VPR casts
 VPR diel #1
 1630 VPR diel #2
 1730 In-situ pumps (Owens)
 2030 VPR diel #3
 2130 Recover Neuer Trap array

Day 7: Friday 27th June

0030 VPR diel #4
 0100 CTD (3000m , Buesseler U/Th)
 0430 VPR diel
 0530 Depart for spatial station for Kadko pump
 0900 Kadko Pump #2
 1800 Depart for Hydrostation ‘S’

Day 8: Saturday 28th June

0300 Arrive at Hydrostation S
 Kadko Pump #3
 1200 Depart for sediment TRAP arrays
 1800 Proceed with Recoveries

- 1) BATS TRAP array
- 2) 150m RESPIRE/CLAP
- 3) NBST's

Day 9: Sunday 29th June

0200 Depart for North spatial station
 0500 Kadko Pump #4
 1400 Depart for Pilot Station
 1730 Pilot Station
 1830 BIOS, unload ancillary groups.



R/V ATLANTIC EXPLORER Shipboard Scientific Personnel

(AE_cm sec 504)

Cruise Number _____

Voyage start date _____ Chief Scientist _____

Title & Full Name _____ Sex: M F Phone (Bus.) _____
(AS IT APPEARS ON PASSPORT)

Affiliation (Inst./Employer) _____ e-mail _____

Position on Cruise _____ Student? Please check: Grad UnderGrad

Business Address _____

Place of Birth _____ Date of Birth _____

Citizen of _____ Soc. Sec. No. _____ Passport No. _____ Passport Exp. Date _____

Person to Notify in Case of Emergency _____ Relationship _____

Their Address _____ Phone _____

Complete the following if it applies. PLEASE FILL OUT ACCURATELY

Is your work on this voyage part of the _____ primary project, _____ an ancillary project, or _____ other?

Full Title of Science Project: _____

Sponsoring Agency (NSF, ONR, etc.) _____

Grant/Contract Number _____ Discipline (Biology, etc.) _____

Principal Investigator _____ Current yr. Funding \$ _____

Method of Payment for Cruise Expenses – P.I. _____ Purchase Order _____ Credit Card _____ Other _____

Payment Method Details _____

Medical Information: The undersigned acknowledges that he/she has no physical defects or ailments which would prevent the performance of duties at sea for extended periods of time. If medication is required, adequate provision will be made prior to boarding the vessel for a supply of prescription drugs.

Not Applicable _____ Prescription Drugs (type) _____

Food Allergies / Dietary Restrictions _____

Insurance Coverage: Persons on board vessels operated by the Bermuda Institute of Ocean Sciences (BIOS), Inc. who are not employees or students of the Institution are considered SHIPBOARD GUEST INVESTIGATORS and are expected to make arrangements for all forms of insurance coverage while participating in research cruises. BIOS assumes no responsibility for non-employees; each must agree to hold BIOS harmless of all liability arising from participation in any voyage on a BIOS vessel.

Alcohol Policy: No alcoholic beverages of any type will be permitted on BIOS vessels. All personnel, including scientific staff from other institutions and visitors, are affected by this regulation and must abide by it.

Drug Policy: BIOS is a Zero Tolerance organization. The possession or use of any controlled substance will not be tolerated. Members of the embarked scientific party are subject to drug and alcohol testing under 46 CFR for reasonable cause and in the event of a “Serious Marine Incident” at the discretion of the Master. In accordance with U.S. and Bermuda Customs, Laws and procedures, the Master can routinely search the ship, including staterooms, prior to returning to port from a cruise. This search may include personal effects.

Radioactive Materials Policy: No radio isotopes will be permitted aboard ship without express approval from BIOS Radiation Safety Officer.

Hazardous Material Policy: Scientists must provide ship with Material Safety Data Sheets (MSDS) for ALL Hazardous Materials.

Signature _____ Date _____

Return this form to: Marine Operations, Bermuda Institute of Ocean Sciences (BIOS), Inc. Ferry Reach, St. George’s GE01, Bermuda
Two weeks **BEFORE THE CRUISE BEGINS.** FAX number (441) 297-1839 or email: ship.admin@bios.edu.

<i>Medical Form Instructions</i>	Title:	Prepared By: R. Harelstad	Revision No: 0	Section: 505
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MAS Medical Profile (International Travel) Form Instructions

UNOLS vessels typically operate far from the availability and level of medical help people usually take for granted ashore. Individual crew members and scientists must therefore take personal responsibility for their health and safety as much as possible during their time on board. While we make every effort to provide a safe ship and work environment, it must be recognized that work at sea is inherently dangerous. If you become sick or injured at sea it is often critical that your medical history and information is complete, up-to-date and available to the medical personnel and caregivers assisting you.

Research vessels seldom carry a doctor and crew members have minimal first aid training and expertise. For this reason, UNOLS contracts with Medical Advisory Systems (MAS), a division of MedAire, Inc., an organization that provides 24/7 access to medical doctors specializing in ship and aircraft medical emergencies through the INMARSAT system or via Sat Phone. The ship carries an inventory of medical supplies recommended by MAS so that MAS doctors can provide directions to the care givers on board for managing the particular emergency.

Filling out and submitting this form is voluntary. However, this information is intended to allow the MAS doctors to provide quick response to any medical emergency you may experience. It is intended for your protection.

Due to privacy provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), no copy will be reviewed at BIOS. It is recommended but not required that you give a copy to the captain at the beginning of your cruise or on an annual basis if you make frequent cruises. If you wish to bring a copy aboard in your personal possession that is your choice.



Medical Profile (International Travel)

CREWMEMBER IDENTIFICATION:

Name: _____ Passport #: _____ Country: _____
Date of Birth: _____ Social Security #: _____
Vessel Name: _____
UNOLS Organization: _____ Phone: _____
Fax: _____ E-Mail: _____
Address: _____
Contact Person: _____

MEDICAL INFORMATION:

Current Medications: _____
Allergies – Medications/food/other: _____
Current Medical Problems: _____
Medical History (Major Operations & Procedures – include dates): _____

Blood Type / Rh positive or negative: _____

Personal Physician Information:

Name: _____
Phone: _____ Fax: _____

Dentist Information:

Name: _____
Phone: _____ Fax: _____

EMERGENCY NOTIFICATION PURPOSES - EMERGENCY CONTACT (only contacted after UNOLS):

Name: _____ Relationship: _____
Phone: _____ Alternate Phone: _____

IMMUNIZATION RECORDS:

Immunizations marked with an asterisk (*) are required to meet minimum international travel standards. Please provide the most recent date for any of the following immunizations that you have had. One or more of these immunizations may be recommended for people traveling to "high risk" areas of the world.

IMMUNIZATIONS

**PRIMARY CHILDHOOD
 IMMUNIZATIONS**

Diphtheria-Tetanus-Pertussis (DPT)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Polio	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Mumps-Measles-Rubella (MMR)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

**PRIMARY ADULT
 IMMUNIZATIONS**

	Date Received	SECONDARY IMMUNIZATIONS	Date Received
*Diphtheria/Tetanus (dT)		Typhoid (if recommended) Choose 1	
*Polio		Oral Typhoid	
*Measles		Typhim Vi (injection)	
*Hepatitis A (after age 18)		Wyeth Typhoid (injection)	
First in Series		Yellow Fever	
Second in Series or Booster		Meningococcal	
Hepatitis B (after age 18 if no previous immunization)		Japanese Encephalitis	
First in Series		Rabies	
Second in Series		Pre-exposure	
Third in Series or Booster		Post- exposure- if had pre-exposure immunization	
Varicella		Post-exposure – if did not have any immunization	
TB Skin Test		Cholera	
Influenza (Flu)		Malaria Prophylaxis	
Pneumococcal		Other:	
Rubella		Other:	

To the best of my knowledge, the above Medical History Information is accurate and complete. I authorize release of this information to Medical Advisory Systems.

In the event of a medical incident, I authorize Medical Advisory Systems to release the information set forth in this form to such health care providers as it may deem necessary; and I direct Medical Advisory Systems to notify the persons listed under "For Emergency Notification Purposes" of the occurrence and nature of the incident, recommended medical treatment, and from whom further information may be obtained. Medical Advisory Systems may, in its sole discretion, request assistance for me from an international assistance provider or refer my care directly to a physician and/or hospital and/or other medical provider. Medical Advisory Systems may require that any health care provider set forth in the previous sentence furnish reports on my status to Medical Advisory Systems or the international assistance provider.

By completing and returning this form, I agree to the above two statements.

 Signature

 Date

Please return to the address below:

Medical Advisory Systems, A Service of MedAire
 80 East Rio Salado Parkway, Suite 610, Tempe, Arizona 85281
 Maritime Services Phone: (480) 333-3700 Maritime Services Fax: (480) 333-3821
 Medical Emergency Phone: (480) 333-3876 E-mail: followup@mas1.com

<i>Post Cruise Assessment</i>	Prepared By:	Revision No:	Section:
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UNOLS Post-Cruise Assessment Report Form

Please complete a post cruise assessment as soon as possible after the completion of your cruise.

The on-line form is easy to use and is found at: <http://gsosun1.gso.uri.edu/cgi-bin/pcget.cgi>

This assessment of the research cruise you just participated in is part of a program to evaluate how well vessels and personnel of the academic research fleet are supporting the scientific objectives of the research community, and to identify areas that may need better support or guidance to improve the success of future projects.

Information provided in this form will be used by:

- Operating Institutions, Ship's Crew, and Technical Support Personnel
 - To make improvements to equipment and procedures on their vessels.
- UNOLS Office
 - To track the overall performance of the academic research fleet.
- Funding Agencies
 - To assess areas that require more attention.
- Yourself
 - To make constructive suggestions for improvement that will benefit future research projects for yourself and your colleagues and to let ship operators know what they are doing well.

Please complete the following form. When finished, clicking "submit" at the bottom of this form will generate an email, which will be sent to:

- UNOLS office
- Marine Operations Office of the ship you were embarked on,
- PI for the project (email entered in box 11a),
- Facilities Program Managers at the Federal Funding Agencies, and
- You will also receive a copy of the completed evaluation by email.

Data entered on this form is not saved on the server once the mails are submitted. If you need to create a draft version(s) of your comments, we recommend creating a text file, and pasting into the text boxes on this form.

The research vessels operators, federal funding agencies and UNOLS expect and very much appreciate your honest feedback. Thank you for participating in our quality improvement program. To learn more about this program go to:

http://www.unols.org/issues/quality/Quality_of_Service.html.

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<i>Shared Use Equipment</i>	Approved By:	Edited:	Page:
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1.0 CTD

1.1 Seabird Electronics SBE 9/11+; Max Depth is 6800m for all CTD sensors except Chelsea Fluorometer, Wetlabs Transmissometer and Altimeter which are all 6000m. Aluminum frame holds 24 12 liter water samplers.

1.2 Sensors include Seabird SBE 9/11+, Dual pumped Temperature, Conductivity and Dissolved Oxygen. Chelsea Aquatracka III Fluorometer. Wetlabs SeaStar 25cm/660nm Transmissometer. Benthos PSA9000 Altimeter. All data logged with Seabird Software.

2.0 Rosette

2.1 Seabird SBE 32, 24 position rosette with spare.

3.0 Water Samplers

3.1 36x12 liter Ocean Test Equipment Niskin sampling bottles

3.2 8x12 liter Go Flo bottles with 1000 meters Spectra Line.

4.0 Seawater Intake Package

4.1 Includes March impeller pump, Sea-Bird and Analysis SBE21 Thermo-salinograph with remote temperature sensor, Turner 10-AU-005 fluorometer; flow-meter

5.0 Meteorological

5.1 RM Young meteorological package including: Barometer, Relative Humidity, Air Temperature, Precipitation and Dual Anemometers.

6.0 Data Acquisition System

6.1 All data points logged with NOAA SCS. User configurable workstations available throughout the ship for the display of data.

7.0 Watermaker

7.1 Millipore Alpha-Q Reagent Grade Water System.

8.0 Fathometer

8.1 Knudsen 320 B/R Echosounder with 12 KHz and 100KHz Transducers and Pinger tracking ability.

9.0 Nets

9.1 Plankton nets, assorted sizes (3)

9.2 Close-open-close plankton net system.

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10.0 Radio-isotope Van

10.1 This includes an Envirco 100-Plus laminar flow station with HEPA filter fume hood, refrigerator, and a sink with fresh water.

11.0 Computers

11.1 IBM Compatible-Pentium class, with networking available throughout ship.

12.0 ADCP

12.1 RDI Ocean Surveyor 75kHz narrow band. Ashtech ADU5 HPR sensor.

13.0 Miscellaneous

13.1 Radio Direction Finder - Freq range 110-170 mHz

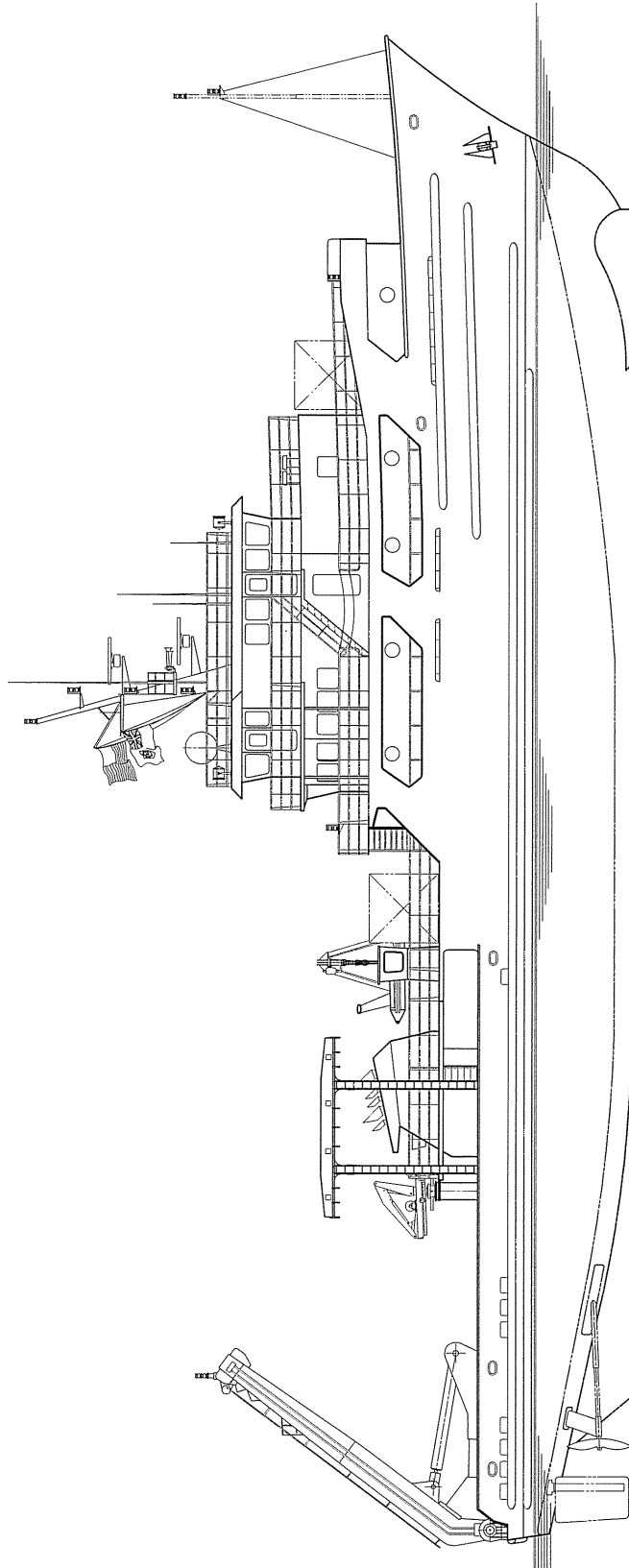
13.2 Laminar Flow Module

13.3 Fume Hood

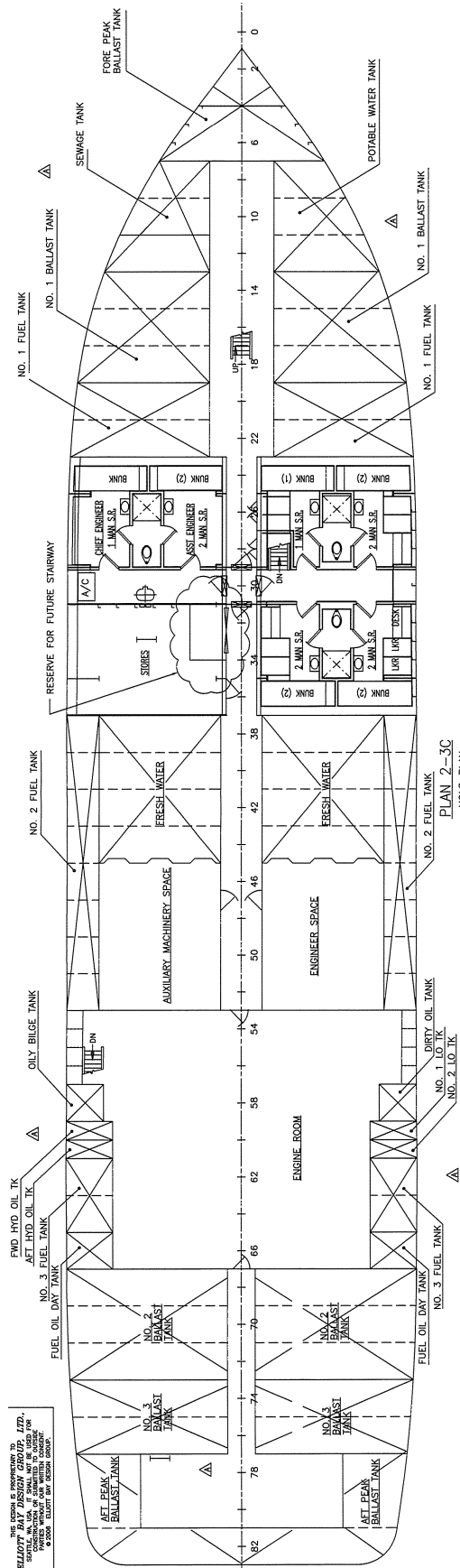
13.4 Navigation Software is made available for science use on the forward lab PC.

13.5 Weather charts are downloaded by the Master during the cruise and are made available on the share folder within the email system. See the Marine Technical Services for details or special requests.

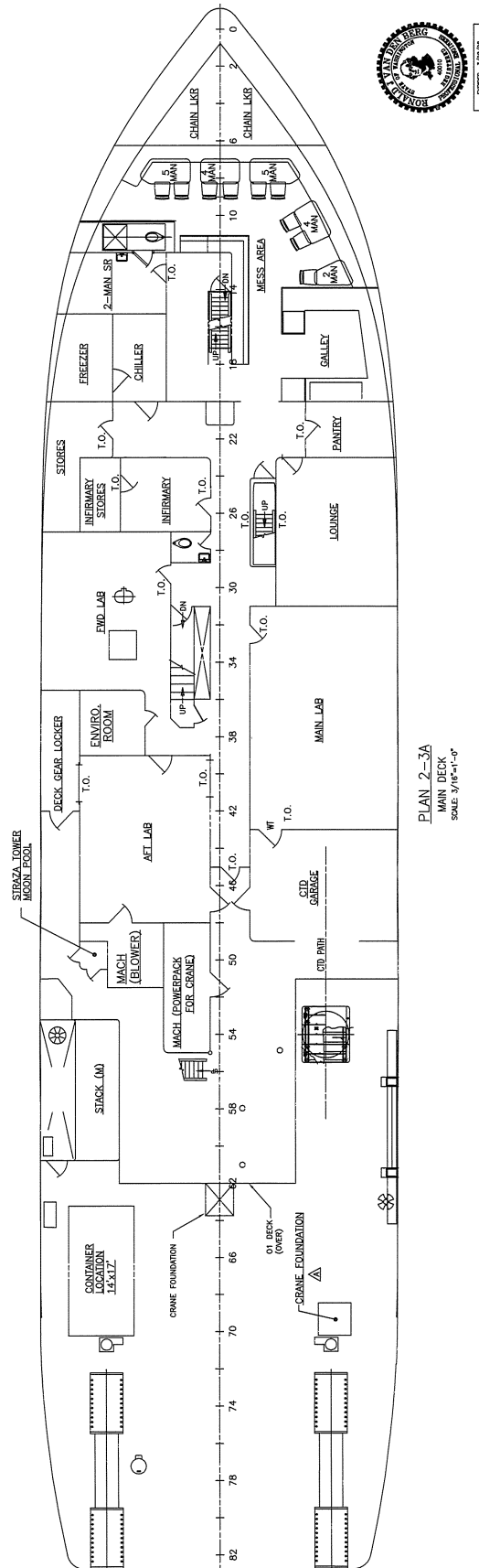
Outboard Profile:



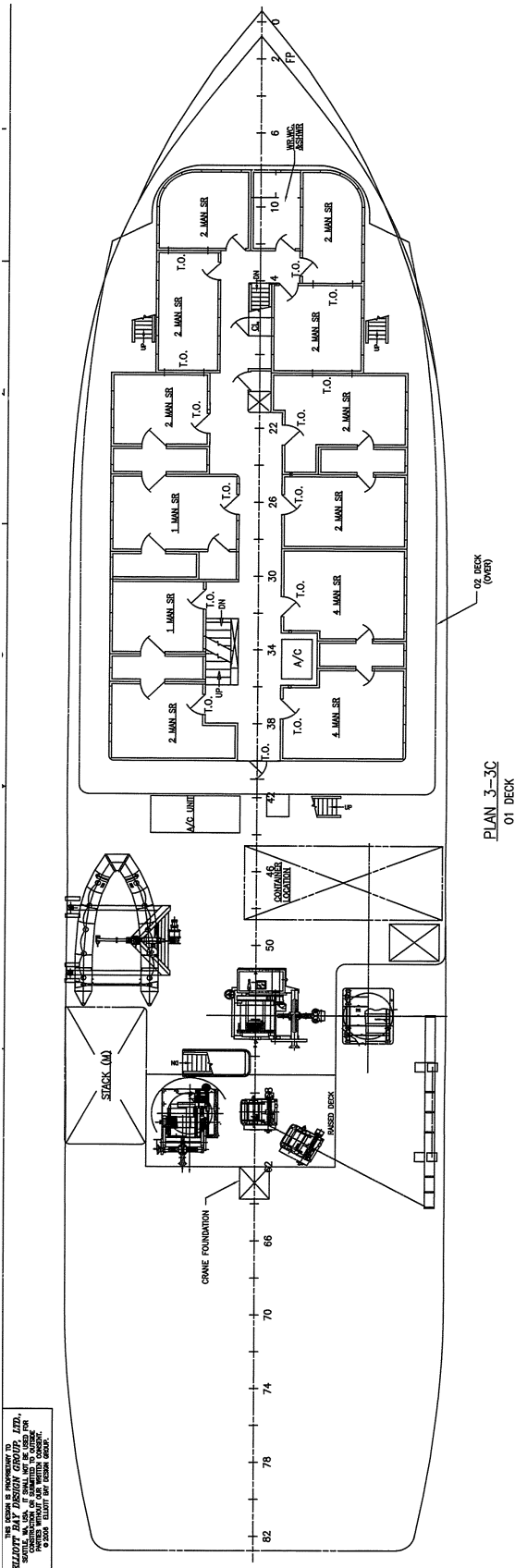
Lower Deck:



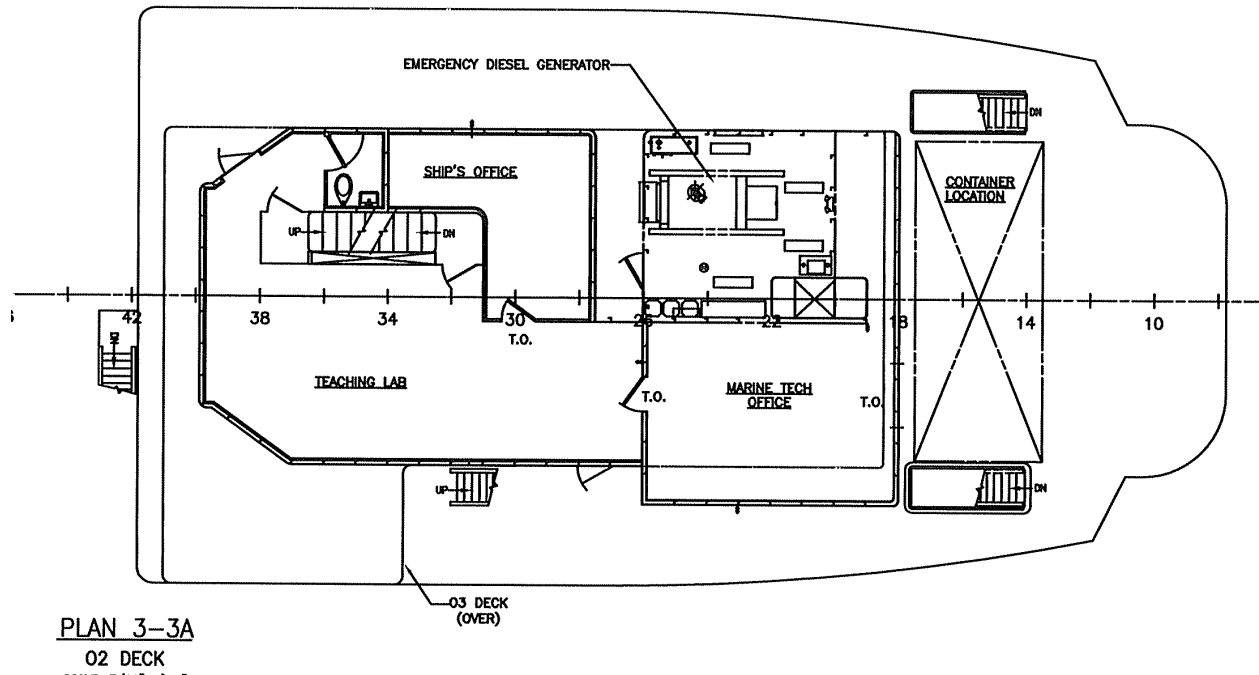
Main Deck:



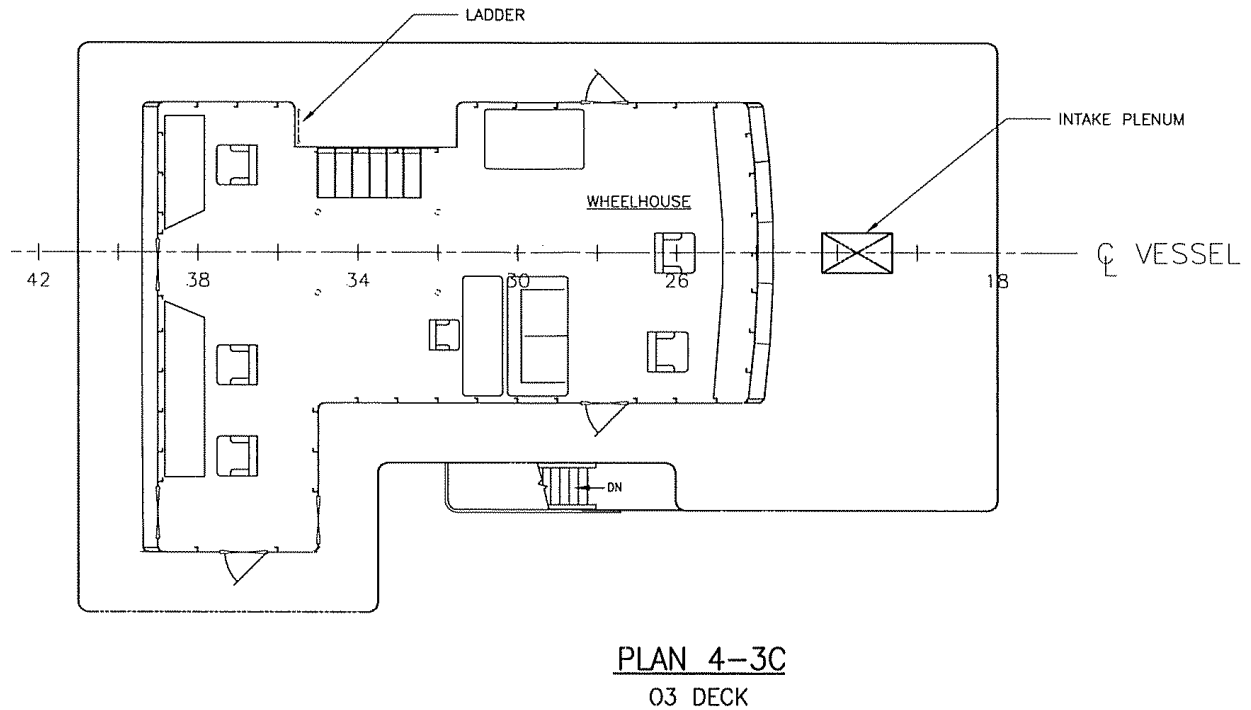
01 Deck:



02 Deck:



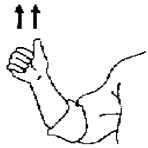






Wheelhouse:



<i>Hand Signals</i>	Title:	Prepared By: R. Harelstad	Revision No: 0	Section: 810
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Weight Handling Equipment

	HOIST LOAD	With forearm vertical and forefinger pointing upward, move hand in a horizontal circle.
	LOWER LOAD	With arm extended and palm downward, wave hand down and up.
	BOOM UP	With arm extended, fingers clenched, and thumb pointing upward, move hand up and down.
	BOOM DOWN	With arm extended, fingers clenched, and thumb pointing downward, move hand down and up.
	SLEW BOOM	With arm extended, point forefinger in direction of travel.
	STOP	With arm extended and palm downward, hold position rigidly.
	EMERGENCY STOP	With arm extended and palm downward, move hand rapidly to right and left.

Weight handling equipment includes installed fixtures such as cranes, frames, booms and davits, as well as portable chain falls, come-alongs, slings, and tackles.

General safety precautions for weight handling equipment:

- Stay clear of moving equipment such as cranes, frames, booms, and davits.
- Do not exceed the maximum capacity of the system in any of its operating configurations.
- Do not overextend the operating radius.
- Do not raise a load higher than necessary to clear obstructions.
- Always use steadying lines to prevent excessive swinging.
- Ensure crews are qualified on the system they are operating.
- Use standard hand signals and ensure that all riggers and operators are familiar with the hand signals.
- Never leave a suspended load unattended.
- Inspect the system components prior to and immediately after a lift that nears the rated capacity of the system.
- Stay out from under suspended loads.
- Wear adequate foot protection.
- Wear hard hats to protect from injury.
- Be conscious of the vessel's stability (see Chapter 11).

<i>Marine Science Research Authorizations</i>	Prepared By:	Revision No:	Section:
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Note: Research Clearances are not required for research conducted from the *ATLANTIC EXPLORER* while in Bermuda waters. This information is provided for any users that may be planning cruises within the EEZ of any other nation.

From the following link: <http://www.state.gov/g/oes/ocns/rvc/>

Marine Science Research Authorizations

(Revised September 1, 2006)

Overview

The United Nations Convention on the Law of the Sea (UNCLOS) provides that States' have jurisdiction over marine scientific research (MSR) within the 200 nautical-mile area known as the Exclusive Economic Zone (EEZ) and the territorial sea. Although the U.S. does not exercise full jurisdiction over MSR within its EEZ, the U.S. recognizes all other nations' right to regulate such activities within their EEZs and territorial seas in a manner consistent with UNCLOS.

The Department of State facilitates the transmission of MSR applications to the appropriate authorities as required by UNCLOS articles 248 to 250. The Department of State assists both the U.S. research community seeking access to foreign territorial seas and EEZs and the foreign research community seeking access to U.S. waters.

For further information on marine research application procedures and forms, see:

[Authorization to Conduct MSR in Foreign EEZ\(s\)](#)

[Authorization to Conduct MSR in U.S. EEZ](#)

Related Instruments

- [Law of the Sea](#) - see Article 19(2)(j) Innocent Passage; Article 56(1)(b)(ii) EEZ; Article 87(1)(f) High Seas; Part XI Deep Seabed, Article 143; Part XIII Marine Science Research, Articles 238-265; Part XV Dispute Resolution, Articles 287 & 297.
- [Endangered Species Act](#) - the basis for U.S. conservation of species that are endangered or threatened with extinction throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend.
- [Magnuson-Stevens Fishery Conservation and Management Act](#) - the basis for U.S. management of fisheries within the EEZ.

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- [Marine Mammal Protection Act](#) - the basis for U.S. management of marine mammals in the EEZ.
- [Outer Continental Shelf Lands Act](#) - the basis for U.S. management of MSR on the Continental Shelf.

Related Links

- [Maritime Administration](#) - Bureau in the [U.S. Department of Transportation](#) that administers clearances for U.S. Merchant Marine Training ships.
- [Minerals Management Service](#) - Bureau in the [U.S. Department of the Interior](#) that manages the nation's natural gas, oil and other mineral resources on the [outer continental shelf](#) (OCS).
- [National Oceanic and Atmospheric Administration](#) - Agency in the [U.S. Department of Commerce](#) that conducts MSR.
- [National Science Foundation, Ocean Sciences](#) - funds basic research and education to further understanding of all aspects of the global oceans and their interactions with the earth and the atmosphere.
- [Office of Naval Research](#) - sponsors science and technology in support of the U.S. Navy and Marine Corps. Founded in 1946, ONR today funds work at more than 450 universities, laboratories, and other organizations.
- [University-National Oceanographic Laboratory System](#) - an organization of 64 academic institutions and National Laboratories involved in oceanographic research and joined for the purpose of coordinating oceanographic ships' schedules and research facilities.

OES Contact

Liz Tirpak / Roberta Barnes
 U.S. Department of State
 OES/OA, Room 2758
 2201 C Street, NW
 Washington, DC 20520
 Tel: 202-647-0238/0240
 Fax: 202-647-1106
tirpakej@state.gov / barnesrm@state.gov



BIOS

BERMUDA
INSTITUTE
OF OCEAN
SCIENCES

Founded in 1903 as the Bermuda Biological Station

2008
Fee Schedule and Guidelines
(Effective January 1, 2008)

Prices are quoted in U.S. Dollars

Address: Bermuda Institute of Ocean Sciences
17 Biological Lane
St. George's GE01
Bermuda

Web Site: www.bios.edu

Telephone: 441-297-1880
Fax: 441-297-8143
Email: reservations@bios.edu

Office hours: 9:00 am to 5:00 pm Atlantic Time
Monday through Friday (except Bermuda holidays) Atlantic Time is Eastern Time plus 1 hour
Daylight Time is observed on U.S. schedule

CONFIRMATION:

Please make reservations well in advance, as BIOS may not be able to guarantee the availability of facilities on short notice.

Prices are subject to change without notice.

Before Arrival

Shipping

When shipping equipment and/or chemicals to BIOS, consign all materials to:

Bermuda Institute of Ocean Sciences
17 Biological Lane
St. George's GE01
Bermuda
Attention: (your name here)

Do not place your name at the top of the address or a Bermuda Government wharfage fee will have to be paid.

Please send an itemized list of all equipment and supplies, including their values to BIOS. It will be used as the invoice for Customs clearance. Without an invoice, goods cannot be released from the warehouse. Freight will be picked up from the airport or dock. **A \$58 Customs clearing fee and an \$88 pick-up & delivery charge (per hour) will be applied for this service.**

Add 20% (maximum \$200.00) to all purchases made through BIOS to cover our cost of placing and handling the order. Your institution's purchase order or a valid credit card must be supplied before the order can be placed.

On Arrival

- 1) Immediately register at reception in Hanson Hall upon arrival.
- 2) If you arrive outside regular office hours, collect your "welcome envelope" from the arrivals box attached to the Reception counter.
- 3) Confirm lab, truck or boat bookings with the Receptionist.

Before Departure

At least one day before leaving BIOS, please contact Receptionist regarding the settlement of your bill. Payment may only be made in US/BDA cash, personal check, Visa or MasterCard.

Outbound freight shipping: Advise the Receptionist of the number of boxes to be returned to your home institution and the airport to which they should be sent. Please collect an outgoing freight form from Receptionist and ensure all relevant information is completed and freight is well packaged and clearly addressed. **An \$88 per hour drop off charge will be applied for this service.**

Important Information

Chemicals & Lab Supplies

A very limited supply of chemicals and lab supplies is available at BIOS. Please communicate your requirements prior to arrival. Use of any chemicals must be coordinated with the Lab Operations Department. [link]

Chemical Waste

Visitors are personally responsible for the disposal of their toxic chemicals. Visitors must take waste material back to their home institution for disposal. Please see the Lab Operations Department for further information. [link]

Radioactive Material

All potential users of radioisotopes must obtain permission from the BIOS Radiation Safety Officer before bringing radioactive material to Bermuda. See the Research Application form for details. [link]

Insurance

BIOS does not carry specific insurance to cover individual needs, therefore we strongly suggest that you provide your own insurance for health, accident, theft, equipment damage or loss. We require that all group leaders carry liability insurance, with BIOS as a named insured on the policy. All ship and other boat users are required to sign waivers prior to boarding.

SCUBA

BIOS is a member of the American Academy of Underwater Sciences (AAUS). AAUS accreditation and/or proof of certification, 12 logged dives within the previous 12 months, and current medical are required. Regulation and waiver forms must be completed. BIOS provides only tanks, weights and belts. Contact the Dive Safety Officer for further information.

Passport / VISA Requirements

All persons flying to/from Bermuda – including **U.S. citizens and Bermudians** – **must present a passport**. Machine-readable passports are preferred; however, Americans, Bermudians and Canadians with valid passports that are not machine-readable may continue to use those passports until they expire. For visa info, check with Bermuda Department of Immigration at www.immigration.gov.bm. Since most flights to/from Bermuda are through the US, US regulations must be followed. <http://travel.state.gov/>. These rules are subject to change, please verify information prior to traveling

Fees for Individuals Accommodations

Units with Kitchen	Apt	Cottage
1 Bedroom	\$190 /night	\$225 /night
2 Bedroom	\$235 /night	\$255 /night
3 Bedroom	\$278 /night	\$292 /night

Rooms with Private Bath

Single	\$ 118 /night
Double/Twin	\$ 162 /night
Triple	\$ 201 /night

Rooms with Shared Bath

Single	\$ 78 /night
Twin	\$ 112 /night
Triple	\$ 147 /night

Stays of 30 consecutive nights or more will be discounted 10%.

Room fees include use of library, computers, wireless Internet (where available), and some lab equipment. Please use our facilities with care and considerations for others. All visitors are encouraged to bring their laptops with them to take advantage of our wireless Internet in reception, Wright Hall and library.

Meals

Breakfast	\$ 9.80	
Lunch	\$ 16.50	or \$49.50 /day
Dinner	\$ 23.30	

Fees for Groups

Educational Groups (minimum 7):

April thru October: \$118.00/pers/night

November thru March: \$105/person/night (reduced to \$100/person/night with a minimum stay of 6 nights)

Fees include accommodation, 3 meals/day and use of lecture, lab & equipment and library. We request one group leader per 6 students. One group leader will be admitted free for every 10 fee-paying participants.

STAFF LECTURES/FIELD TRIP ORGANIZATION:

\$135 per lecture or lab, \$163 per half day field assistance. Please note that some field trips may require staff assistance. First-time groups may receive planning help from the Education Office and a lecture from a BIOS staff member at no charge.

NONSUICH ISLAND PRESERVATION FEE

A group visit fee of \$55 is charged and the proceeds are used for the preservation of the island's habitat.

Marine and Truck Services

Boats

Henry M. Stommel or equivalent (with operator):

2 hour minimum	\$ 125 /hour
Overtime rate (see Note below)	\$ 145 /hour
Half-day rate, 8am-12noon	\$ 400 /half-day
Half-day rate, 1pm-5pm	\$ 400 /half-day
Half-day - overtime (see Note below)	\$ 465 /half-day
Dive Master Assistance	\$ 84 /hour
	\$ 250 /half day

ROV

(Includes the assistance of an intern)

Half-day rate, 8am-12noon	\$350 /half-day
Half-day rate, 1pm-5pm	\$ 350 /half-day

The reduced half-day rate only applies to trips which begin and end within the hours shown.

Scuba Tanks

Includes use of tank, \$ 10 per fill
Weight belt and weights.

Truck

Truck with driver (**30 people max**)
1 hour minimum \$ 78 /hour
Overtime rate (see Note below) \$101 /hour
Half-day rate, 8am-12noon \$234 /half-day
Half-day rate, 1pm-5pm \$234 /half-day
Half-day – over time (see Note below) \$280 /half-day

Truck is not available on Sundays or public holidays, unless by special request, for which there is a \$35 surcharge. Advance request must be made for this, as it requires a special permit from the local authorities.

Note: Overtime rates apply to weekdays before 8 AM, between 12 noon and 1 PM, and after 5 PM, weekends and public holidays. Long-term charter rates are negotiable.

Pick-up & delivery charge \$88/hr
Small truck, w/out driver (1 hr min.) \$58/hr
Customs clearing charge \$58

Other Services**Storage**

Ambient: \$0.68 /ft³/mo; Air Conditioned: \$1.31 /ft³/mo
Refrigerated or Hazardous: \$1.90 /ft³/mo;

Freezer or -80: please inquire

Lab/Office Rental \$80-\$190/day

Rate varies according to the type of lab/office. This includes use of equipment requested on application form. Discounts apply for terms of a week or more.

Computing Services

IT Support: \$85/hr (1/2 hour minimum)

General Facilities

Facilities Fee \$28.50/person/day

Allows non-residents the use of facilities and services.

Library and Computers

Our library is open 24 hours a day; special scientific publications related to Bermuda are available for sale from Education. Limited computing facilities are available in the library. Wireless networking is available in reception, Wright Hall and the library.

Gift Shop

The Gift shop is open Monday to Friday, 10am-4pm. Special arrangements may be made to open for a group outside these regular hours.

Other Information**Deposits**

Reservations will be confirmed only after booking deposit is received:

Groups: \$200 /person (4 months in advance)

Final payment is due 1 month in advance.

Individuals: 2 nights stay-credit card guarantee at booking

Cancellation Charges

Groups may cancel at least 4 months and individuals at least a month prior to arrival to avoid forfeiture of deposit. Cancellations for boat or truck must be made at least 24 hours in advance or a charge will be assessed.

Immigration Assistance

Assistance processing scientific/education personnel through immigration is available at \$80.00 per hour plus any government fees charged.

Conferences and Workshops

Contact our Conference Coordinator in Reservations for all information pertaining to conferences and workshops.

Grants-in-Aid for Visiting Scientists

Small grants are available to help defray in-house costs such as lab rental, facilities fees, truck, boat and scuba tank rental, accommodations, etc. Please contact the Grants-in-Aid Officer.

A 25% surcharge will be added to all prices for non-resident users (except for meals, facilities fee and tanks).

Purchases through BIOS will be loaded with a 20% (maximum \$200.00) add-on and must be accompanied with an authorized P.O. or valid credit card.