

TITANIC EXPEDITION 2004

Preliminary Cruise Instructions

NOAA Ship RONALD H. BROWN
RB-04-05

Cruise Itinerary: May 27, 2004 – Depart Boston, MA
June 12, 2004 – Arrive Boston, MA
17 Days at Sea

Chief Scientist: Dr. Robert D. Ballard
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Signatures:

(Chief Scientist)

(NOAA Marine Operations Center Director)

I. Cruise Overview

A. Summary of objectives

The Institute for Exploration (IFE), in collaboration with the NOAA Office of Ocean Exploration, the National Geographic Society, the Immersion Institute, and the Jason Foundation for Education will conduct a remotely operated vehicle (ROV) survey of the *Titanic* shipwreck site. The primary objective is to re-map the wreckage using state-of-the-art underwater high-definition video and high-resolution still cameras. The collected imagery will be used to assess the wreck's accelerated degradation since it was originally discovered nearly 19 years ago and to establish an archaeological baseline from which to gauge future activity at the site. A secondary objective is to investigate the microbiological activity associated with the formation and growth of microbial communities called "rusticles" that thrive on the sunken vessel. Lastly, using shipboard satellite telecommunication technology, parts of the expedition will be broadcast live as part of IFE's public outreach program, including a nationwide broadcast on the National Geographic Channel during the evening of June 7, 2004.

B. Operating area

The operating area for this expedition is in the North Atlantic Ocean, south of the Grand Banks of Newfoundland in about 3800 meters water depth. The center of the bow section of the shipwreck is located at approximately 49° 56' 49" W and 41° 43' 57" N. During most of the expedition, the NOAA Ship RONALD H. BROWN will be holding station near this position.

C. Participating institutions

Institute for Exploration (IFE)
 University of Rhode Island (URI)
 NOAA Office of Ocean Exploration (NOAA-OE)
 National Geographic Society (NGS)
 Partisan Pictures (PP)
 Jason Foundation for Education (JFE)
 National Park Service (NPS)
 Droycon Bioconcepts, Inc. (DBI)

D. Personnel

	<u>Name</u>	<u>Position</u>	<u>Affiliation</u>	<u>Gender</u>	<u>Nationality</u>
1.	Ballard, Robert	Chief Scientist	IFE/URI	M	USA

2.	McLean, Craig	Director	NOAA-OE	M	USA	
3.	Coleman, Dwight	Oceanographer	IFE	M	USA	
4.	Weirich, Jeremy	Archaeologist	NOAA-OE	M	USA	
5.	Manley, Justin	Engineer	NOAA-OE	M	USA	
6.	Martinez, Catalina	Oceanographer	NOAA-OE	F	USA	*
7.	Cullimore, Roy	Microbiologist	DBI	M	Canada	
8.	Murphy, Larry	Archaeologist	NPS	M	USA	
9.	Newman, Jim	Engineer	IFE	M	USA	*
10.	Gregory, Todd	Engineer	IFE	M	USA	*
11.	Croff, Katherine	Archaeologist	IFE	F	USA	
12.	Bunton, John	Engineer	IFE	M	USA	*
13.	DeRoche, Mark	Technician	IFE	M	USA	*
14.	Wright, Dave	Technician	IFE	M	USA	*
15.	Stamps, Scott	Engineer	IFE	M	USA	*
16.	Pinner, Webb	Engineer	URI	M	USA	*
17.	Phillips, Brennan	Engineer	URI	M	USA	
18.	Orvosh, Tom	Technician	URI	M	USA	*
19.	Lovalvo, Dave	Engineer	IFE	M	USA	*
20.	Schnall, Peter	Producer	PP	M	USA	
21.	Ver, Tina	Producer	PP	F	USA	
22.	Barry, Tracey	Producer	PP	F	USA	
23.	Risius, Jerry	Camera	PP	M	USA	
24.	Donohue, Tom	Film Editor	PP	M	USA	
25.	Seymann, Jeffrey	Sound	PP	M	USA	
26.	Schadler, Jay	Host	PP	M	USA	
27.	Fox, Bert	Photo Editor	NGS	M	USA	
28.	Sweeney, Mike	Writer	NGS	M	USA	
29.	Stanley, Ellen	Public Relations	NGS	F	USA	
30.	Shea, Patrick	Educator	JFE	M	USA	
31.	TBD	Grad. Student	URI	M	USA	
32.	TBD	Grad. Student	URI	M	USA	

* indicates this person is also onboard during the MIS2 expedition

E. Administrative

Point of Contact: Dr. Dwight F. Coleman
 Director of Research
 Institute for Exploration
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 Narragansett, RI 02882
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Other POC's:

Jim Newman (IFE)

Tel: 508-548-6665

E-mail: jnewman@whmsi.com

Catalina Martinez (NOAA-OE)

Tel: 301-713-9444 x177

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Jeremy Weirich (NOAA-OE)

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II. Operations

A. Data to be collected

This expedition is designed as a non-intrusive, remote survey of the *Titanic* wreck site, in which the wreck itself will not be touched and artifacts will not be removed. The primary data to be collected is digital video and still photographic imagery from the camera systems on the ROVs. Other data streams from the ROVs, such as vehicle attitude and sonar imagery, are recorded by networked computers in the control van. Navigational data for both the ship and ROVs will also be recorded. While in transit to and from the *Titanic* site, Seabeam multibeam bathymetric data will be collected, with the assistance of the ship's survey technician, and processed by NOAA-OE personnel. The NOAA OE Data Manager will be responsible for collecting and organizing metadata for all activities conducted during the expedition, and entering the data into the OE Expedition Information System (EIS).

B. Staging plan

Most of the equipment for this expedition will be loaded and installed onboard the NOAA Ship RONALD H. BROWN at the Woods Hole Oceanographic Institution during May 3 – 7, 2004, prior to the Mountains in the Sea II expedition (MIS2; cruise number RB-04-04). A detailed staging plan has been submitted separately by IFE's Chief Engineer, Jim Newman. Eleven members of the MIS2 scientific party will also be onboard for the *Titanic* expedition.

The assistance of both the survey technician and electrical technician is requested to facilitate our mobilization. The navigation computer inside the control van needs serial data provided by the ship's SCS, namely P-Code D-GPS position information in NMEA format. The ship's heading from the gyro and water depths from the ship's echo sounder are also needed as separate serial data streams. We also request the assistance of the electrical technician to help provide connections between the control van and the bridge and between the control van and the main lab for routing audio (intercom), video, and computer (VGA) signals.

All of the equipment needed specifically for the *Titanic* expedition will be loaded in Boston, MA during May 24 – 27, 2004. This will include mostly video production gear, computer equipment, and individual scientist's personal equipment. The production equipment will be installed inside one of the labs on the ship. Several cameras will be mounted in the control van, imaging van, and in one or two approved locations around the ship, probably looking toward the afterdeck and in one of the labs. These cameras will connect to the production equipment using coaxial cables that will be carefully routed throughout the labs and passageways.

C. Cruise plan

We wish to depart Boston as early as possible on May 27, 2004 to begin the transit toward the site. Immediately after arriving on site on May 30, 2004 following the 3+ day transit (950 nm at 300 nm/day transit speed) we will be prepared to launch *Argus* and *Hercules*. The plan is to keep the ROVs imaging and mapping the wreckage as much as possible during the following 11 days. Barring any problems or vehicle reconfigurations, we could theoretically stay diving 24 hours per day for the entire time. Once the vehicles are launched and begin their long decent to the seafloor, the ROV operations team will begin a 24 hour watch schedule, for example:

<u>Time</u>	<u>Herc Pilot</u>	<u>Argus Pilot</u>	<u>Navigator</u>	<u>Video</u>	<u>Data</u>
12-4	Todd Gregory	Mark DeRoche	Justin Manley	Brennan Phillips	Larry Murphy
4-8	Dave Lovalvo	Dave Wright	Dwight Coleman	John Bunton	Catalina Martinez
8-12	Tom Orvosh	Jim Newman	Jeremy Weirich	Webb Pinner	Katy Croff

We will adhere to the watch schedule for the duration of each dive. Prior to recovering the ROV for whatever reason, we may decide to collect a seafloor sample, a piece of rusticle, or one of Dr. Roy Cullimore's test platforms. These samples and/or platforms will then be carried to the surface by the ROV and recovered. Following recovery, repair, and/or reconfiguration, it is our plan to redeploy the ROV as soon as possible. If it is known that they will be out of the water for an extended period of time, we will conduct Seabeam surveys of the terrain surrounding the wreck site. This mode of operation will be sustained until the time of departure on June 9, 2004, at which point the vehicles will be recovered and secured. We wish to arrive in Boston during the afternoon of June 12, 2004.

The majority of the dives will be spent collecting high-definition video footage from different parts of the wreckage. The first day or two will be spent in reconnaissance mode, simply surveying the wreck visually and entering objects and the dimensions of the wreck into our navigation database. From this baseline data, any part of the wreck will then be more easily located. After the reconnaissance mode, we will then focus in more detail on selected parts of the wreck. In particular, there are several sites that have been examined year after year, so we will spend some time returning to those locations. We wish to document where most of the human-induced deterioration is suspected, including several known locations that have been visited by salvagers. We will examine as much of the wreck as possible each day, but focus on detail without moving around too much from section to section. Nearly all decisions about where to survey next will be made onboard according to the reconnaissance mapping and not planned ahead. Therefore, specific details are still undetermined.

During the late evening and early morning hours each night from May 27 – June 9, the ROVs will be used to collect still images for building photomosaics. A series of parallel tracklines will be laid out that span the portion of the wreck to be mapped. We will start in the bow section and work aft, at an altitude of about 5-10 m above the wreck and drive the ROV slowly along each trackline, collecting the digital still images automatically. An area about 40 m by 40 m can be mapped before *Argus* (and hence the ship) needs to be repositioned. This is based on *Argus* being positioned in the center of the survey region and the ROV effectively reaching 20 m to any side. Once the ship and *Argus* move to a new position, the next section can be mapped.

During June 3 – 9, live broadcasts will occur four times per day according to a predetermined schedule. This will be a single, produced, live video feed routed to a satellite and received by a number of shore-based sites. The

produced segments will include video feeds selected from any number of cameras, including the underwater cameras on the ROVs. From some of the downlink sites, the video streams will be redistributed over the Internet in real time, including high-bandwidth streams using Internet2. Students, teachers, and the general public will have the ability to view the streaming video and ask questions to the researchers onboard the ship. In addition, researchers can take part in the expedition 12 hours per day from selected shore-based sites. During the evening of June 7, a one-hour-long special will be broadcast nationwide on the National Geographic Channel. Most of the broadcast will be pre-produced, but the last 5 to 10 minutes will be live from the ship. It is essential that during these broadcasts, the shipboard satellite antenna points in the right direction, which is between SE and SW.

In addition to the unique scientific objectives of this cruise, the following ongoing operations will be conducted by ship's personnel in accordance with general instruction contained in the MOA OP ORDER:

- a. SEAS Data Collection and Transmission (MOA OP ORDER 1.2.1)
- b. Marine Mammal Reporting (MOA OP ORDER 1.2.2)
- c. Nautical Charting (MOA OP ORDER 1.2.6)
- d. Bathymetric Trackline (MOA OP ORDER 1.2.7)
- e. Sea Turtle Observation (SP-MOA-2-94)

D. Waypoints

Most of the time the NOAA Ship RONALD H. BROWN will be holding station, but a few waypoints are listed here for planning purposes. More will be added during the cruise for easier navigation around the wreck site.

Center of the stern section:	49° 56' 54" W, 41° 43' 35" N
Center of the debris field:	49° 56' 49" W, 41° 43' 32" N
Center of the bow section:	49° 56' 49" W, 41° 43' 57" N

E. Station operations

The initial launch site will be several hundred meters down current of *Titanic's* bow. It will take about two hours for the ROVs to reach the bottom. After arriving at the seafloor, the scanning sonars will be used to search for acoustic targets. Once the shipwreck is located, a range and bearing will be calculated and the navigator will instruct the bridge to move the ship accordingly, and the ROV will follow. Smaller sonar targets (debris) will be viewed by the ROV as *Argus* swings into position beneath the surface ship. While ROV operations are underway and everything is working fine, there will be no reason for recovery. If however a recovery is necessary, a new

launch site (station) may be selected for the next deployment. Based on the new mapping of the shipwreck, dive locations and surface ship positions will be noted in the navigation log. These stations will be relayed to the officers on the bridge for pre-dive planning.

F. Underway operations

The only underway operations, as previously mentioned, will be the collection of multibeam bathymetric data using the Seabeam system.

G. Applicable restrictions

ROV operations will require "live boat" operations using dynamic positioning to maintain control of the ROV umbilical during dive operations. Consideration of the effect of wind and seas on the operation is critical to the operation. ROV operations will occur on station and will require the BROWN to display Restricted Maneuverability lights/insignia as appropriate.

The Chief Scientist is authorized to alter the scientific portion of this cruise plan with the concurrence of the Commanding Officer, provided that the proposed changes will not: (1) jeopardize the safety of personnel or the ship; (2) exceed the time allotted for the cruise; (3) result in undue additional expense; or (4) change the general intent of the cruise.

H. Small boat operations

Small boat operations are weather dependent and at the Command's discretion. It is requested that at some time during the expedition, a small boat is deployed for the film crew to photograph the vessel and possibly a launch or recovery of the vehicles. Small boat operations are not normally required for ROV operations, but may be requested if recovery difficulty arises.

I. De-staging plan

During the transit from the *Titanic* site back to Boston, equipment will be broken-down and stored. We will be ready to offload the winch, vans, vehicles, and other equipment on June 13, 2004. That entire day will be dedicated to offloading. More details pertaining to the de-staging plan will be sent by Jim Newman.

III. Facilities

A. Equipment and capabilities provided by ship

(Many more details provided in Jim Newman's mobilization plan)

1. Seabeam or equivalent multibeam bathymetric mapping sonar
2. XBT for speed of sound calibration
3. Differential GPS navigation and serial data output, NMEA format
4. Heading and water depth instruments with serial data output
5. HIAB articulating crane for launching *Hercules* and *Little Herc*
6. A-frame for launching *Argus*
7. Power to the winch and 3 vans
8. Dynamic positioning system for vessel station-keeping to within 10 meters
9. INMARSAT satellite telephone service for voice and data (email)
10. Networked computer printers and plotter

B. Equipment and capabilities provided by scientists

1. Dynacon winch with 4200 m 0.68" steel-armored fiber optic cable
2. *Argus* optical tow sled
3. *Hercules* remotely operated vehicle
4. *Little Herc* remotely operated vehicle
5. Control van, imaging van, satellite van, tool van, shipping van
6. Satellite tracking antenna

IV. Communications

The NOAA Ship RONALD H. BROWN will communicate daily with the NOAA Marine Operations Center-Atlantic.

Inmarsat Mini-M: 011-874-761 831 360 (Voice)

Inmarsat B: 011-874-336 899 620 (Voice)

Inmarsat B: 011-874-336 899 621 (Fax)

The Chief Scientist, his designee, or the ROV Operations Manager may request the use of the ship's radio to communicate with other research or commercial vessels in the operating area.

The NOAA Ship RONALD H. BROWN is equipped with INMARSAT and cellular telephones. The Chief Scientist or other members of the science party

may need access to these systems with permission from the Commanding Officer on a cost-reimbursable basis. Payment may be made by direct payment via Credit Card during the cruise for INMARSAT calls.

An account on Lotus cc:Mail for each embarked personnel will be established by the shipboard electronics staff. The general format is:

Firstname.Lastname.atsea@rbnems.ronbrown.oma.noaa.gov

Due to the escalating volume of E-mail and its associated transmission costs, each member of the ship's complement (crew and scientist) will be authorized to send/receive up to 15 KB of data per day (\$1.50/day or \$45/month) at no cost. E-mail costs accrued in excess of this amount must be reimbursed by the individual. At or near the end of each leg, the Commanding Officer will provide the Chief Scientist with a detailed billing statement for all personnel in his party. Prior to their departure, the chief scientist will be responsible for obtaining reimbursement from any member of the party whose e-mail costs exceed the complimentary entitlement.

V. Disposition of Data and Reports

A. Data responsibilities

The Chief Scientist will be responsible for the disposition, feedback on data quality, and archiving of data and specimens collected on board the ship for the primary project. The Chief Scientist will also be responsible for the dissemination of copies of these data to participants in the cruise, to any other requesters, and to NESDIS in accordance with NDM 16-11 (ROSCOP within 3 months of cruise completion). The ship may assist in copying data and reports insofar as facilities allow.

The Chief Scientist will receive all original data gathered by the ship for the primary project, and this data transfer will be documented on NOAA Form 61-29 "Letter Transmitting Data". The Chief Scientist in turn will furnish the ship a complete inventory listing all data gathered by the scientific party detailing types and quantities of data.

OE requests copies of all acquired multibeam and other metadata on CD or DVD, as well as copies of ROV videotapes. Select ROV HD video will be copied to mini-DV and other video data will be copied to DVD or mini-DV format. Data release will be in accordance with the agreement with NGS, and is not intended to circumvent their documentary productions.

B. Pre- and post-cruise meetings

Meetings will be arranged and conducted at the discretion of the Chief Scientist. During transit to the site and periodically throughout the cruise science meetings will be held in the ship's lounge or the main science lab.

C. Ship operation evaluation report

A Ship Operations Evaluation Report will be completed by the Chief Scientist and forwarded to NC3.

D. Records and reports

The ship's officers will maintain the Marine Operations Abstract (MOA) during the cruise and will provide the Chief Scientist with a copy upon completion. The NOAA OE Data Manager will ensure that designated members of the science party complete a Dive Information Form for each ROV dive. Copies of these forms will be provided to the Chief Scientist at the end of the cruise. The Chief Scientist will complete the ship's Operations Evaluation Form and forward a copy to the Director, NOAA Marine Operations Center. The ship's Field Operations Officer will provide the Chief Scientist with this form.

The Chief Scientist is required to provide NOAA OE with a quick look report upon completion of the cruise (see appendix A), and a full cruise report within 90 days of the completion of the project.

VI. Hazardous Materials

A. Policy/compliance

The NOAA Ship RONALD H. BROWN will operate in full compliance with all environmental compliance requirements imposed by NOAA. All hazardous materials and substances needed to carry out the objectives of the embarked science mission, including ancillary tasks, are the direct responsibility of the embarked designated Chief Scientist, whether or not that Chief Scientist is using them directly. The Environmental Compliance Officer will work with the Chief Scientist to ensure that this management policy is properly executed, and that any problems are brought promptly to the attention of the Commanding Officer.

B. HAZMAT Locker

The ship's dedicated HAZMAT Locker contains two 45-gallon capacity flam cabinets and one 22-gallon capacity flam cabinet, plus some available storage on deck. All HAZMAT, except small amounts for ready use, must be stored in the HAZMAT Locker. If science party requirements exceed ship's storage capacity, excess HAZMAT must be stored in dedicated lockers meeting OSH/NFPA standards to be provided by the science party. Scientific groups requiring Hazmat storage should compute volume of storage required prior to the cruise and ensure adequacy onboard.

C. Spill Response

The scientific party, under supervision of the Chief Scientist, shall be prepared to respond fully to emergencies involving spills of any mission HAZMAT. This includes providing properly trained personnel for response, as well as the necessary neutralizing chemicals and clean-up materials. The ship's Environmental Compliance Officer will review the onboard inventory of MSDS's and will advise Chief Scientist if ship already has compounds listed in Appendices. Ship's personnel are not first responders and will act in a support role only in the event of a spill. The Chief Scientist shall provide a list of science party members that are properly trained to respond in the event of hazmat spills.

The Chief Scientist is directly responsible for the handling, both administrative and physical, of all scientific party hazardous wastes. No liquid wastes shall be introduced into the ship's drainage system. No solid waste material shall be placed in the ship's garbage.

D. Inventory

For this cruise, there are three items classified as hazardous materials:

1. Acetone (1 gallon)
2. Stove alcohol (1 gallon)
3. Hydraulic oil (2 - 55 gallon drums, one for waste, one clean)

E. Material safety data sheets (MSDS)

In accordance with NC Instruction 6280B, the Chief Scientist will provide an inventory of all hazardous material, including Material Safety Data Sheets (MSDS) and quantities, to the Commanding Officer at least two weeks prior to sailing. The inventory shall be updated at departure, accounting for the

amount of material being removed, as well as the amount consumed in science operations and the amount being removed in the form of waste. The Chief Scientist shall have copies of each MSDS available when the hazardous materials are loaded aboard. Hazardous material for which the MSDS is not provided will not be loaded aboard. Compressed gas storage cylinders (including those containing air) will also be included in the inventory with the date of the last hydrostatic certification.

VII. Miscellaneous

A. Scientific berthing

The Chief Scientist is responsible for assigning berthing for scientific party within the spaces designated as scientific berthing. The Chief Scientist is responsible for returning the scientific berthing spaces back over to the ship in the condition in which they were received; for stripping bedding and linen return; and for the return of any room keys which were issued.

The Chief Scientist is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the cruise and its conclusion prior to departing the ship.

In accordance with NC Instruction 5355.0, Controlled Substances Aboard NOAA Vessels dated 06 August 1985; all persons boarding NOAA vessels give implied consent to conform to all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time.

B. Medical forms and emergency contacts

The NOAA Health Services Questionnaire (NHSQ) must be approved by the medical office at the Marine Operations Center. Forms shall be completed in advance and submitted directly to the Regional Director of Health Services (RDHS) at least two weeks prior to sailing. They may be electronically transmitted to: Tonya.M.Miller@noaa.gov, faxed to: (757) 441-3760 or mailed to: Health Services, Marine Operations Center-Atlantic, 439 West York St. Norfolk, VA 23510-1114.

The lead time required will allow time to medically clear the individual and to request more information if needed. We ask that all personnel bring any prescription medication they may need and any over-the-counter medicine that is taken routinely (e.g. an aspirin per day, etc.). The ship maintains a

stock of medications aboard, but supplies are limited and chances to restock are few. Last minute changes to scientific parties will be communicated to the Regional Director of Health Services (RDHS) as soon as possible, Monday through Friday 0700-1600. After hours, and on weekends or holidays, contact the on-call medical officer at (757) 925-2739 or (757) 615-6619. All embarking personnel must still meet NOAA physical, mental, immunization and tuberculosis screening standards. The on-call officer will make whatever arrangements are possible, on a case-by-case basis directly with the person in question or the Chief Scientist. This does not include waiver of any NOAA medical standard. While every attempt will be made to approve emergency personnel changes, this cannot be guaranteed.

Prior to departure, the Chief Scientist will provide a listing of emergency contacts to the Executive Officer, BROWN for all members of the scientific party, with the following information: name, passport number and expiration, name of contact, address of contact, relationship to member, and contact telephone number. Protocol for entering and exiting port areas will vary. In US ports, you must have a government ID to enter. All others (visitors and scientists outside of the government) may (depending on port security) require an escort to and from the ship. All personnel, including crew, are still checked against lists supplied to port security. A passport is recommended for all personnel embarking aboard the BROWN. Chief Scientist shall ensure that all members of the scientific party have the required valid passports, visas and immunization certificates. The Chief Scientist is to gather participant passport numbers, expiration dates and travel arrival dates and provide them to the ship at least a week before the team arrives.

C. Shipboard safety

Safety of operations is of utmost importance. Scientists will attend all safety briefings as required by the vessel Command.

Wearing open-toed footwear of any kind outside of private berthing areas (i.e. to and from showers) is not permitted onboard this ship. This shipboard safety regulation is included in the Commanding Officer's Standing Orders, and will be enforced. All members of the scientific party should be aware of this regulation before embarking.

D. Emergency information

Due to the ship's long deployments, the Medical Officer assigned to the ship is a US Public Health Service Commissioned Corps nurse. The Medical

Officer is available at any hour of the day to provide emergency medical care as required. Regularly scheduled sick call will be held in the ship's hospital from 0800 - 1130 daily and patients will be seen on a first-come/first served basis; however, patients with acute conditions will take priority. Do not hesitate to contact the Medical Officer at any hour of the day to receive treatment for an injury or illness, no matter how slight it might appear.

The ship's hospital is equipped with a complete inventory of modern medical equipment and stocked with a wide range of medications and supplies. Several members of the ship's operating crew are certified Emergency Medical Technicians or are certified in CPR/first-aid and may assist the Medical Officer as required. Should additional medical expertise and advice be required, a medical advisory service can be contacted at any hour of the day. This service provides physicians specialized in emergency medical care who are immediately available to provide consultation, advice, and if necessary, medical evacuation coordination services.

In addition to routine and emergency medical care, the Medical Officer provides wellness services on an individual and confidential basis. Available services include:

- Blood pressure, diabetes, and general health assessment and monitoring.
- Weight management information and support.
- Substance abuse information and support.
- Smoking cessation information and support.
- Stress management and mental health information.
- General medical and wellness information and advice upon request

There are numerous first-aid kits distributed throughout the ship. Notify the Medical Officer if their use is required.

E. Wage marine working hours and rest periods

The Chief Scientist shall be cognizant of the reduced capability of the NOAA Ship RONALD H. BROWN operating crew to support 24-hour mission activities with a high tempo of deck operations at all hours. Wage marine employees are subject to negotiated work rules contained in the applicable collective bargaining agreement. Dayworkers' hours of duty are a continuous eight-hour period, beginning no earlier than 0600 and ending no later than 1800. It is not permissible to separate such an employee's workday into several short work periods with interspersed non-work periods. Dayworkers called out to work between the hours of 0000 and 0600 are entitled to a rest period of one hour for each such hour worked. Such rest periods begin at

0800 and will result in no dayworkers being available to support science operations until the rest period has been observed. All wage marine employees are supervised and assigned work only by the Commanding Officer or designee. The Chief Scientist and the Commanding Officer shall consult regularly to ensure that the shipboard resources available to support the embarked mission are utilized safely, efficiently and with due economy.

F. Drug and alcohol policy

In accordance with NMAO Drug and Alcohol Policy (NMAO #3, dated May 7, 1999), which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels, all persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time.

G. Shipping Information

All items to be shipped in advance for mobilization in Woods Hole 3-7 May should be sent to the following address. A list of shipped items should be sent via E-mail to Jon Alberts at the contact address below.

Master
R/V RON BROWN
C/O Woods Hole Oceanographic Shipping & Receiving Dept
266 Woods Hole Rd.
Woods Hole, MA 02543

CONTACT:
Jon C. Alberts
Marine Operations Coordinator
Woods Hole Oceanographic Institution
38 Water Street, Mail Stop #37
Woods Hole, MA 02543
phone: (508)289-2277, fax: (508)457-2185
jalberts@whoi.edu

Shipping information for the May 25th inport in Boston is not determined at this time.

H. Port agent services

Every cruise generates costs associated with preparations, logistical support, underway at sea operations, communications and demobilization. The Chief Scientist has financial responsibility for these costs and is advised to assure that provisions are made to properly assign charges to the projects participating on a cruise. The ship prefers you arrange direct payment to the agent for the portion of services you make use of, as opposed to after-the-fact reimbursement to the ship's accounts.

Appendix A



NOAA Office of Ocean Exploration Quick Look Report

Expedition Title: _____

Results (please check all disciplines in which this cruise collected data)	Details (please describe any novel discoveries in the discipline, answers such as “possible, awaiting data analysis” and “no apparent discoveries” are acceptable)
Bathymetric Mapping <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note total area mapped and technology employed, e.g. multibeam, side scan, etc.)
New Species Discovered <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note number, type, and significance, i.e. radically new vs. slight adaptation of known species)
Bio-prospecting <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note number, type, and potential use of new compounds discovered)
Habitat Range Extended <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note species discovered in new habitats and how far from previous range were they found)
Chemical Processes <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note new or unusual chemical properties such as methane seeps, hypersaline pools, vents, etc. observed)
Geologic Processes <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note new or unusual geologic processes that may impact scientific understanding of the region)
Physical Processes <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note new or unusual oceanographic processes that may impact scientific understanding of the region)
Sub/ROV/AUV Dives <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note name, type, and cumulative hours of bottom time for each platform / if available please provide average working time per dive for each platform / please note if new depth records were set)
New Technology <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note any new tools developed for or during this cruise, also identify first use of an existing technology in a new application)

Maritime Cultural Heritage <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note discoveries impacting knowledge of the past, i.e. number and type of shipwrecks)
Outreach <input type="checkbox"/> Yes <input type="checkbox"/> No	(please describe outreach channels, e.g. web, port call, etc., used in this project)
Students Involved <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note the number and level of students on the expedition)
Multidisciplinary <input type="checkbox"/> Yes <input type="checkbox"/> No	(please identify the formal disciplines represented in the science party)
Exploration of New Regions <input type="checkbox"/> Yes <input type="checkbox"/> No	(please note if the area of operations had been previously studied, if so please check no and approximate as slight, moderate or significant, the level of knowledge before the cruise)

Ocean Exploration Quick Look Report Required Elements

The Office of Ocean Exploration (OE) does not require a specific Quick Look Report format. Reports submitted under other requirements (e.g. Cruise Summary Report (CSR) or Fisheries-Oceanography Coordinated Investigations (FOCI)) are acceptable. In all cases Quick Look Reports submitted to OE should contain the following elements:

Project title (as listed in original proposal)

Principal Investigator and institution (as listed in original proposal)

Expedition title (working name of the cruise)

Expedition dates and itinerary

Chief Scientist and institution

Co-sponsors / partners / participating organizations

Vessel Identification (if applicable)

Embarked vehicles, sensors, and tools of significance

Geographic area of operations (identify common name such as North West Hawaiian Islands as well as boundary coordinates for the area)

Summary of Cruise Objectives

Summary of Cruise Operations (A good summary would identify as many of the following elements as possible for each “operation.” Table formats are ideal for this aspect of the report: data type collected / time / position / ID tag /operation type /dive tracklines / depth /comments)

Milestones Achieve (This section of the report should amplify the information provided in the official OE cover sheet summary of results)

Sample log entries

Summary of Digital Data Collected (Identify volume in MB/GB/TB etc. and type of data collected. Be as explicit as possible, e.g. identify high definition video as opposed to simply video.)

Summary of outreach and educational activities