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# **THINGS YOU NEED TO KNOW DEPLOYING TO THE USAP RESEARCH VESSELS**

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# Introduction

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The following information has been assembled to address specific requirements and nuances of living and working on the USAP research vessels, the RVIB NATHANIEL B. PALMER (NBP) and the ARSV LAURENCE M. GOULD (LMG). The information below is in addition to the science support and logistics related general information (e.g., the USAP Participant Guide, Science Information Plan (SIP), Research Support Plan (RSP), travel information, medical information, etc.) provided by RPSC. Please take a few minutes to read this important information as well as the other deployment documents received.

**Note**

Principal Investigators (PIs) please forward this information on to all your deploying team members.

## Shipboard Safety and Security

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The Ship's Master has the final authority for all safety-related matters posing any danger to the ship and/or anyone aboard it. Additionally, if the Marine Project Coordinator (MPC) or the Chief Scientist finds that an unsafe condition exists, he or she has the authority to stop any related shipboard science until the situation is corrected. This would include, for example, issues of industrial, marine or laboratory safety.

## Shipboard & Port Security

### Emergency Contact Information

The vessel MPC can be reached at the following phone numbers. If there is no answer, you may leave a message.

NBP: 1-808-659-5076

LMG: 1-808-659-5074

### Pier Security

Pratt Pier in Punta Arenas, Chile requires a magnetic ID card for entry into the pier area. This ID card is valid only until the ship departs port. The port agent will supply each scientist with an ID card for the pre-cruise port call at the initial "Meet and Greet" in the

Punta Arenas Airport. At the end of the port call, the MPC will collect the cards from disembarking scientists. The port agent will collect the cards from disembarking passengers. Those who lose their cards will incur a US\$19 fee.

To enter the Lyttelton pier area, you must show a valid picture ID. After checking in, pier security will escort personnel to the vessel.

## Shipboard Security

The USAP vessels must comply with U.S. Homeland Security Department regulations. Everyone embarking the vessel must provide picture ID to the guard on duty at the gangway guard shack. The ID can be a driver’s license, student ID, passport, etc. There are no exceptions to this policy. Upon check-in, each scientist will receive a vessel security badge. This badge is to be worn in plain view at all times while onboard the vessel. The badge is to be turned in to the guard shack each time an individual leaves the vessel.

In addition to the sign-in procedure, the oncoming luggage is subject to screening by the Captain or Chief Mate. The extent of the screening is dependent on the Marine Security (MARSEC) Level. The MARSEC Level directly correlates to the Homeland Security Advisory System (HSAS) Threat condition as outlined below.

| HSAS Condition | MARSEC Level | Threat Level                                     |
|----------------|--------------|--|
| Green          | 1            | Low - Low risk of Terrorist Attacks              |
| Blue           | 2            | Guarded – General Risk of Terrorist Attack       |
| Yellow         | 3            | Elevated – Significant Risk of Terrorist Attacks |
| Orange         | 4            | High – High Risk of Terrorist Attack             |
| Red            | 5            | Severe – Severe Risk of Terrorist Attack         |

## Medical Care and Costs While in Port

While in port, any non-emergency health or injury needs will be handled by local health care providers. Contact the MPC to arrange for any needed medical services.

In addition, all USAP scientists, including ECO and RPSC employees, subcontractors, and cruise scientists are responsible for any and all medical bills incurred while traveling or in port. This usually means paying the bill at the time services are rendered and seeking reimbursement from the insurance carrier at home. The port agent will not pay any medical bills. Medical emergencies or extenuating circumstances will be handled on a case-by-case basis.

# General Information

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## Who’s Who

### Edison Chouest Offshore Staff

Edison Chouest Offshore (ECO) owns and operates both USAP research vessels. ECO is under contract to RPSC as per the formal charter agreement specific to each vessel. The Captain and crew (engineers, mates, and deck hands) are employees of ECO and attend to maintenance and provision of all propulsion, navigation and hotel services on board.

### RPSC Onboard Staff

The RPSC staff on board consists of the Marine Projects Coordinator (MPC), the Marine Technicians (MTs), Marine Science Technicians (MSTs), and Electronics Technicians/Marine Computer Instrument Specialists (ET/MCIS). On the NBP, network administrators and systems analysts from the RPSC Vessel IT department also sail each cruise. Vessel IT staff sail occasionally on the LMG, as needed.

| <b>Position</b>  | <b>Position Description</b>   |
|--|---|
| <b>Marine Projects Coordinator (MPC)</b>   | The <b>Marine Project Coordinator</b> is the senior RPSC person on board and the liaison between cruise scientists, the RPSC staff, the ECO Captain, and the port agent. He/she coordinates the support effort among the various parties involved. The MPC is the first contact for issues related to on-board operations, cruise plans, etc.               |
| <b>Marine Science Technician (MST)</b>   | The <b>Marine Science Technician</b> is responsible for vessel lab operations and will assist cruise scientists with lab instrument set up, hazardous waste disposal, and sample packaging. The MST is responsible for ensuring that proper safety procedures are followed at all times (personal protective equipment, hazardous material handling, etc.). |
| <b>Marine Technician (MT)</b>  | The <b>Marine Technicians</b> are responsible for deck safety and the safe rigging and deployment of all over-the-side operations. A well-equipped workshop is available for equipment repair, troubleshooting, and limited construction.   |
| <b>Electronics Technician (ET) or Marine Computer and Instrument Specialists</b> | The <b>Electronics Technician or MCIS</b> are responsible for all electronic scientific equipment and some ship’s operational systems. They help with equipment set up and troubleshoot the electronics of all scientific   |

**(MCIS)** instrumentation.

**Network Administrators and Systems Analysts**

**Network Admins** are responsible for maintaining the ship's network and handle satellite data transfers. They assist cruise scientists with setup and networking of personal computers and they troubleshoot equipment software setup.

The **systems analysts** (SA) are also available for general data processing and programming needs, primarily on cruises where the multibeam will be a primary data set. The SA's act as a back-up for the network admin if necessary.

**Emergency Medical Technicians (EMT)**

RPSC sails a minimum of one EMT on each cruise. While in port, non-emergency care is the responsibility of each individual and can be coordinated with the MPC and the agent. Once the cruise is underway the EMT is the primary medical care provider onboard. All personnel should consult with the EMT for any health or injury-related matters.

## Science Party Access to the Ship

### Pre-cruise

Cruise scientists are permitted to move aboard the vessel no earlier than the day prior to sailing. However, starting on the first full day after the vessel arrives in port, all cruise scientists will be allowed onboard to begin pre-cruise preparations such as setting up equipment in the labs. The noon meal may be taken aboard the ship the day pre-cruise preparations begin. However, plans should be made for both morning and evening meals off the ship as only the noon meal is provided to scientists prior to their formally embarking the vessel.

### Post-cruise

At the end of the cruise, scientists may stay on board the night after the ship arrives in port. After this time, they will be formally disembarked, which means that sleeping quarters, meals and network access, including email will no longer be available. Special arrangements can be made with the MPC if the disembarked scientists need to work on board to complete packing of gear and samples.

## Clothing Issue

All cruise scientists will receive standard Extreme Cold Weather (ECW) clothing issue prior to departing port. Scientists may bring along any personal gear they wish to use to supplement the USAP-issued clothing. A Mustang suit or float coat, provided onboard the ship, are required while working on the main deck of the vessel. Safety footgear, such as steel-toed boots, are recommended but are not provided.

At the end of the cruise all ECW gear issued will be collected by RPSC staff and returned to the issuing location.

## Radioisotope Use

### Radioisotope Use Pre-approval

All Radioisotope users must be pre-approved via USAP standards. More information on general USAP radioisotope use can be found in POLAR ICE. All radioisotope use on the vessel is absolutely restricted to the radioisotope laboratory vans (rad vans). Prior to using radioisotopes on the vessels, all users are required to attend an on-site radioisotope user orientation, given by the Marine Science Technician (MST) on the vessel.

### Post-cruise Shipment of Stock Radioisotopes

The USAP cargo system will not ship stock radioisotopes from the vessel to the scientist's home institution. However, if the scientist would like to ship radioisotopes back to their institution, they can make arrangements. Prior to shipment, written approval from the PI's home institution Radioisotope Safety Officer is required.

## Radioisotope Vessel Safety Procedures

### Scientist Responsibility

#### **Documentation:**

The scientists are responsible for documenting their radioisotope use in their copy of the RADTRAK database and in their radioisotope usage logbook.

#### **After each use:**

Swipe testing must be completed by the scientists each time they use radioisotopes. Swipe testing may be confined to the work area and does not need to include the entire van.

#### **Once a week:**

Weekly swipes will cover high use areas including door handles (both inside and outside), phones, waste carboys, floors and refrigerator handles. Results must be filed in the group's Rad Usage Notebook, which is kept in the rad lab van.

#### **Note**

The MST can conduct a swipe test at any time. If contamination is found, the scientist, not the MST, is responsible for cleaning it up. If contamination is found during post-cruise swipe tests, your departure may be delayed until the rad vans are cleaned and all paperwork is completed.

## **MST Responsibility**

Daily check: The MST monitors the progress of the group's RADTRAK copy on a daily basis.

Cruise start/end: The MST will carry out a very thorough swipe test of the entire lab (counter tops, carboys, door handles, refrigerators, centrifuges, ovens, water baths, pipettes etc.) at the beginning and end of the cruise to assure the van is clean. All equipment used from Lab stores must be swiped and cleaned before it can be returned to ship stock.

Once a week: Review of scientist's weekly swipe tests.

## **Vessel Electrical Service**

The vessel is equipped with standard 110v/60Hz AC receptacles. In addition, 208V and 480V 60Hz power is also available in certain locations. Voltage/frequency converters are not provided. All cruise scientists should bring any adapters necessary.

## **LMG – Palmer Station Operations**

The LMG serves as both a USAP research vessel and a Palmer Station re-supply vessel. This means that Palmer Station logistical needs must be considered when planning a cruise, and berthing vans may be required to accommodate personnel transiting to the station. As in vessel operations, there may be hurdles to overcome with critical Palmer Station cargo and personnel (late or missing cargo, late passengers, etc). If problems arise, the MPC, Chief Scientist, RPSC Logistics, Palmer Station Operations Manager, and the Captain will decide how best to remedy the situation.

Before and during a Palmer Station port call, both the chief scientist's and captain's input will be expected and solicited, but the MPC is the one responsible for communicating vessel plans to the station manager. The station manager will then pass this information along to staff on station and to the station science leader. While this avoids the confusion of multiple people speaking back and forth and making decisions without the awareness of others, it does not preclude the free communication between ship and station of anyone at any time.

**Note**

While at Palmer Station, the station's rules and safety procedures are to be followed. A briefing for all vessel personnel visiting the station will be given by the station manager prior to personnel going ashore.

## Underway Science Programs

There are several permanently installed and funded underway science systems on board the vessels that will be used during the cruise. All data collected from these systems will be included in the *End of Cruise Data Report* provided to the Chief Scientist. RPSC personnel monitor these systems as part of their normal duties. These are funded NSF-OPP projects and the equipment may not be relocated without the consent of the PI.

### Acoustic Doppler Current Profiler (ADCP)

The ADCP is a hull-mounted system that has been in place for several years on the NBP. The transducers operate at acoustic frequencies of 38 and 150 kHz. Dr. Eric Firing, University of Hawaii, is the PI responsible for data quality and data archiving obtained on the NBP while Dr. Teresa Chereskin, Scripps Institute of Oceanography, is responsible for the LMG data.

### pCO<sub>2</sub> System

A system measuring the concentration of dissolved CO<sub>2</sub> in surface seawater is installed in the Hydro Lab on the NBP and in the LMG's Wet Lab. It draws water from the uncontaminated seawater system and requires several cylinders of compressed gas, and a small amount of maintenance by an RPSC technician on board. PIs responsible for data collection are Taro Takahashi, LDEO, and Colm Sweeney, NOAA.

### Gravity Meter – NBP only

The gravimeter occupies a small room in the Aft Dry Lab and is part of the NSF equipment pool. As part of the normal upkeep of the gravimeter, a gravity tie will be performed prior to and after the cruise. No individual PI is responsible for data collection.

## End of Science Operations

A meeting will be held between the Chief Scientist, MPC, and the Captain before the ship sails to discuss when science operations will end for the cruise. It is critical to the follow-on cruise, and ship operations in general, that port be reached on the morning of

the day the ship is due to arrive. In the past, not adhering to this policy has adversely affected the setup for subsequent science projects.

## Science Party End-of-Cruise Closeout

1. Cruise scientists shall return all equipment and/or instruments borrowed from the USAP/RPSC. Scientists shall also inform the MPC or MST of any missing, damaged or non-functional equipment or instruments.
2. The Chief Scientist and PIs shall ensure that all wastes are packaged and labeled according to USAP procedures. The MST will assist as needed.
3. All cruise scientists shall clean their lab spaces prior to departing the vessel. This includes the proper disposition of all regular and hazardous wastes, swiping of spaces where radioisotopes were used (if applicable) as well as thoroughly cleaning the floor and counter tops and bringing burnable trash to the incinerator. The MST shall check out each lab with the PI prior to the PI's departure.
4. All science cargo shall be properly documented, labeled and stowed (if applicable) at least four days prior to the vessel arriving in port.
5. All cruise scientists shall collect and return all ECW gear as directed by the MPC.

While it is most desirable to have a consensus among the Captain, MPC, and Chief Scientist, should that not be possible, the MPC's decision will be final, as per contract and as directed by the National Science Foundation (NSF). The MPC is the most familiar with vessel operational requirements beyond the cruise at hand, and the decision will take into account estimates of transit times as provided by the Captain and science objectives as provided by the Chief Scientist.

## Permits

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It is the responsibility of the PI to obtain any necessary permits prior to deployment to Antarctica. More information on permit requirements is available in POLAR ICE. If unplanned samples are collected opportunistically during the cruise, cruise scientists must inquire with the MPC about the possibility of getting new permits or amending existing permits. PLEASE NOTE: Samples will not be permitted to leave the ship until all necessary permits are obtained.

## Cargo

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### Southbound Cargo

USAP Packing and Shipping Instructions are available at [www.usap.gov/logistics/](http://www.usap.gov/logistics/).

## Shipping Chemicals

If you are shipping chemicals, please make sure they are packed according to International Air Transportation Authority (IATA) regulations, and that all necessary documentation, such as the material safety data sheets (MSDSs) and cooling requirements, are included. Each reagent, all components and their concentration and quantity need to be clearly stated on the packing list. Do not pack chemicals with other cargo, even if they are considered non-hazardous, as such shipments will be pulled apart and re-packed by RPSC logistics personnel at Port Hueneme, CA (PTH), or may not be forwarded at all. Other shipments MAY be re-packed in PTH as appropriate or necessary for transportation.

## Hand-carrying Items

Please note that American Airlines allows two pieces of checked luggage that weigh no more than 50 pounds each. If you are planning on having excess baggage, please notify your POC. You can request excess baggage tags when you send in your TRW (on a separate form). Note that each piece of excess baggage cannot weigh more than 70 pounds on international flights.

## Wooden Crates

The USDA-Aphis (Animal and Plant Health Inspection Service) adheres to international regulations on wood packing materials (WPM). If you have any items that will be shipped in wooden crates, please check the USDA website to verify packaging compliance with international regulations:

[http://www.aphis.usda.gov/import\\_export/plants/plant\\_imports/wood\\_packaging\\_materials.shtml](http://www.aphis.usda.gov/import_export/plants/plant_imports/wood_packaging_materials.shtml)

## Post-cruise Cargo

Unless otherwise specified, all cargo will be returned to the United States through the USAP cargo system. The USAP will cover the costs of shipping the cargo from the port to Port Hueneme, California. The scientists are responsible for the cost of shipping their cargo from Port Hueneme to their home institution.

If samples or other cargo are to be sent to a destination outside of the U.S., the POC must be contacted as soon as possible since these shipping arrangements should be made prior to the cruise. Please note that cruise scientists are responsible for arranging payment for any shipments going to destinations outside of the U.S., as well as ensuring that the necessary permits are obtained to import the cargo into the country of final destination.

At the end of the cruise, scientists will enter all off-going cargo into the Marine Operations Cargo Application (MOCA) database. Once the cargo is properly entered into MOCA, the MPC can easily produce manifests and print labels. All off-going cargo must be entered into MOCA no later than four days before arriving in port. This lead-time is important as it allows for the processing of the cargo through the proper channels prior to the ship arriving in port. This will, in turn, allow the cargo to be sent out

promptly. Any delay in getting the requested information to the MPC may cause a delay in the scientist's post-cruise departure.

## Sample Shipment

Include the following information with each sample box:

- Any and all applicable permits.
- Importation/Trans-shipment permit/letter. Samples traveling through New Zealand will need MAF permits. Samples traveling through Chile will need a letter written on the scientist's institutional letterhead explaining that the samples are strictly for scientific research. For more information on this, contact the RPSC POC.
- Homeland Security importation letter. Under new Homeland Security regulations, a letter on the scientist's institutional letterhead describing sample information and final destination is needed to import samples into the U.S. For more information on this, contact the RPSC POC.
- A second contact name and number (entered into MOCA).
- Detailed shipping information.

## Frozen Samples

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) regulations limit each person (NOT each package) to 2 kg of dry ice on commercial aircraft. This means frozen hand-carry samples are very limited in the amount of dry ice allowed per package. Therefore, it is recommended that frozen samples be sent via the cargo system. Samples sent via the cargo system can be packed with dry ice (up to 50 lbs).

When the samples arrive in Port Hueneme, California (the port of entry into the United States for all USAP cargo), the dry ice will be checked and replenished if necessary. The addressee will also be contacted before the samples are forwarded to their final destination. **It is of primary importance that there is someone to receive the samples at the home institution.**

## Keep Chilled Samples

The temperature of "Keep Chilled/Do Not Freeze" samples is very difficult to regulate through the USAP cargo system due to limitations in blue ice or combinations of blue ice with dry ice. Blue ice tends to thaw to room temperature if left for any time while dry ice can easily freeze the sample. Although "Keep Chilled/Do Not Freeze" samples have been sent successfully through the USAP cargo system, RPSC can not and will not guarantee the temperature integrity of "Keep chilled/Do not freeze" samples. If "Keep chilled/Do not freeze" sample shipment is required, RPSC recommends hand-carrying the samples.

## Sample Packaging

To ensure safe transport and sample integrity, RPSC provides pre-fabricated cardboard inner boxes (ID 8"x10"x6") for sample packing. These boxes are fabricated to fit directly into the out packaging (freeze-safe) while allowing room for a sufficient amount of ice. It is the scientist's responsibility to pack and label each of these boxes accurately. Properly labeling the inner boxes will expedite the sample packing process and also leave no room for question as to which sample goes with which TCN. When samples to be shipped via the USAP cargo system are handed over to the MST at the end of the cruise, the scientist will be asked to sign a *Chain of Custody* form, which allows RPSC to track the condition of the samples throughout transport and ensures proper handling.

# Computers and Communications

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## Ship's Network

Each vessel has a local network to enable the movement of data among the ship's systems and individual workstations. UNIX, Windows and Macintosh workstations are available for public use. Each scientist will receive a network account that grants access to e-mail, applications and shared drives across all supported platforms. All laboratory spaces and most cabins have network drops available.

## E-mail and Data Transfers

All data and email transfer from the vessel use the INMARSAT communications system high-speed satellite data channel. The vessel does not maintain an active Internet connection. Outbound e-mail is collected on the ship's mail server and transmitted to RPSC HQ in Denver; from there it is forwarded on to its final destination. Email bound for the vessels is stored on a server at RPSC headquarters in Denver. E-mail is exchanged with Denver three times per day.

All scientists will be provided with an individual e-mail account as part of their network account. The address will be of the form *firstname.lastname.guest@nbp.usap.gov* or *firstname.lastname.guest@img.usap.gov*, depending on the vessel. E-mail and network access will be made available 24 hours before departure and will end no later than 24 hours after arrival in port following the cruise so that workstation and network maintenance can begin.

While the vessel e-mail system is quite robust and implements several safeguards against lost mail, the nature of shipboard satellite communication means that losses can still occur. Scientists should request written confirmation of receipt from their correspondent for any vital e-mail; "Return Receipts" are not always reliable and should not be used aboard the NBP.

USAP scientists and support staff on USAP research vessels may use the vessel email systems for both program and private email reception and transmission, subject to general email policies for the USAP as described in the *Enterprise Rules of Behavior*.

Each user is allowed a quota of 25KB (25600 bytes) per user per day (including incoming as well as outgoing email traffic) calculated and accumulated for the duration of the cruise and expendable when and how the user sees fit. A user's email allotment for a cruise will be based upon the cruise length (plus four days for port call time) multiplied by the 25KB daily quota. For example, a 42 day cruise at 25KB/day would produce an allotment of 1150 KB or 1.12 MB ((42+4 days) \* 25KB/day).

This quota is exclusive of specific Science Information Package (SIP) requirements. The SIP process contains dialogue for scientist requests for additional data/document transfers. If additional email or data transfers are required, arrangements must be made with the POC prior to the cruise.

Users who exceed their email quota by more than \$10 will have to pay for the amount in excess of \$10. Payment for this excess usage shall be made in cash or check to the MPC at the end of each cruise. The PI for each scientist will be ultimately responsible for ensuring that payment is made for each scientist that accumulates a balance due. Payment can be made using cash, check or traveler's checks.

In addition, a per message size limit of 100KB outbound and 75KB inbound is in place. This will prevent extremely large messages from being sent to or from the ship and help prevent a user's quota from being consumed by a large inbound spam message. Larger messages can be sent out via approved accounts such as the MPC or network admin accounts.

The 100KB limit will allow high-resolution images to be sent, while still protecting users from consuming their allotment too quickly. Keep in mind that these size limits are subject to review and can easily be adjusted as needed. For a legitimate and approved request, the limit can be adjusted for a single email transmission, the duration of a cruise and by individual user account.

## Software Availability and Installation

Public Windows XP and Macintosh workstations are preloaded with Microsoft Office and several other commonly used applications. This includes ArcGIS 8.3, GMT, Matlab, Adobe Photoshop, Illustrator, Acrobat Reader and other applications are available. Information about any additional software for installation on public workstations should be provided to the RPSC cruise POC. Any software must be approved by the Network Administrator and the installation media scanned for viruses before installation on USAP systems.

## Scientist-owned Computers

Personal computers may be brought onboard the vessel and configured for connection to the vessel network by the RPSC staff, provided they are capable of TCP/IP networking over 10base-T Ethernet and run anti-virus software with current virus definitions. All personal computers shall be screened prior to connecting to the vessel network.

Every attempt will be made to provide network access and printing services on personal computers, if requested, but there may be situations where outdated hardware, software and missing drivers make support of a computer impossible. All mission-critical equipment (equipment needed to support science-related cruise objectives) brought to the vessel must have current hardware and software, the original installation media, and a full system backup must be included.

Windows XP is the RPSC standard operating system on the vessels for PC/Intel platforms and provides the most seamless integration with our network. However, MacOS X, V10.3, Windows 95B, Windows 98SE, Windows ME, and Windows NT with Service Pack 6A (with minor limitations on how it interacts with our network) have all been tested and will work. Users bringing Windows NT, 2000, XP and Mac OS X systems must remember to get the administrator password from their home institution's network administrator or it will be impossible to support these machines.

In general, software, hardware and removable media will not be provided unless specifically requested and approved in advance of the cruise.

## Public Computers

Computers available for public use on both vessels include Macintosh and Windows XP systems. The NBP also has Unix computers available for public use.

Numbers and locations vary from vessel to vessel. The E-Lab on both vessels has several public computers running both Macintosh and Windows Operating Systems. The LMG also has public use Windows XP computers in the 02 Lounge; the NBP's 03 Conference has several Windows XP computers for public use.

The public workstations on the vessel are permanently mounted to prevent damage during vessel operations. Scientists may not move these workstations or any peripherals attached to them (monitors, Zip drives, etc.) unless the move is approved by the MPC.

## Voice Communications

Personal, non-cruise related voice calls can be made via the public-use IRIDIUM satellite phone. This phone is located in the E-lab on the NBP and unfortunately is only a portable handset on the LMG. Pre-approved or emergency science voice communications can be conducted on other business lines (either IRIDIUM or INMARSAT).

While the LMG is at Palmer station, the wireless network connection there also provides VoIP phone service through the USAP network. A public use VoIP phone is located in the Microscope Lab. A calling card is required when calling numbers outside the Denver, Colorado metro area.

# Underway Data and Cruise Data Distribution

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While at sea, the vessel's Data Acquisition System (DAS) continuously collects data from a suite of on-board instruments. Two processed data sets are produced each day during the cruise, MGD77 and JGOFS. These processed data are made available on a public drive soon after processing is completed. The raw data is posted to a public drive just after 0:00 GMT of the day on which it was collected. Several options exist for the real-time display of acquired data. This can be arranged through the MPC onboard.

All general underway data (thermosalinograph, fluorometer, transmissometer, and meteorological data) collected on the vessel will be public data after the cruise and available to anyone who requests it. Neither the funded science groups onboard nor RPSC have exclusive access rights to these data,

Data acquisition will cease when the vessel enters another country's EEZ or at least 24 hours before the end of a cruise so that all the acquired data for the cruise can be archived and documented in preparation for writing to DVD or tape for distribution. Up to three dataset copies will be provided by RPSC at the request of the chief scientist. Additional datasets may be provided by coordinating with the POC during the planning process (prior to the cruise).

## Note

Turnover for the next cruise begins immediately upon arrival in port. Any requests for data distributions after that time are at the discretion of the Network Administrator and MPC.

RPSC will send a copy of the complete dataset to the Marine Geology Data Management System (mgDMS) at Lamont Doherty Earth Observatory. MgDMS will hold the data as proprietary for two years. After this period, mgDMS will contact the PI to ask if their data can be released. If the PI declines, mgDMS will note that they contacted the PI and that he/she was not willing to release the data. NSF will be informed of the PI's decision. MgDMS will never release the data without permission from either the PI or the NSF. For Antarctic mgDMS data, go to <http://www.marine-geo.org/antarctic/> and click *Data Link*.