Antarctic Research Vessel Orientation Guide and Pre-deployment Information

MAR-GDE-0001
Version 4

September 2016

Risk Factor: 1

Note Chief Scientists and Principal Investigators (PIs) - Please forward this information on to all deploying team members, and encourage them to read it thoroughly.

This document applies to the following locations:

ARL ☐	CHC ☐	DEN ☐	LMG ☒	McM ☐	NBP ☒	PAL ☐	PTH ☐	PUQ ☐	SP ☐

Prepared by the Antarctic Support Contractor
for the
National Science Foundation Division of Polar Programs

Version History

Version #	Date	Section (if applicable)	Author/Editor	Change Details
1	22 Aug 2012	all	D. Hancock	Contents of legacy document placed in ASC template. No legacy document number applied.
2	01 Oct 2014	All	B. Fabling	Combined MAR-GDE-0001 and MAR-GDE-0003 into one document. Geared material to an audience of new grantees and ASC Staff.
3	September 2015	All	B. Fabling J. Baird	Updated with changes on ship, noted ship differences, additional photos, the new Chilean customs form and RVOC Safey Manual link. Added new cover to document
4	September 2016		B. Fabling	Added Prat Pier access card; Lithium battery and power strip safety; and to report all ocean discharges to the MPC

The document library holds the most recent versions of all documents.

Approved by:

Brad W. Fabling

Marine Area Assistant Manager

9/27/2016

Date

Note All photographs found in this document were retrieved from the *LMG's* common drive, or taken by the Author/Editor.

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1. Introduction

The following information has been assembled to address specific requirements and nuances of living and working on the United States Antarctic Program (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 the Antarctic Support Contract (ASC) staff. Please take a few minutes to read this important information as well as the other deployment documents received.

The USAP research vessels are operated under charter to the ASC for the National Science Foundation (NSF). The ships provide support to USAP in various regions of the Antarctic and the Southern Ocean. Primary functions include supporting oceanographic research activities in the open ocean and in ice, as well as supporting land-based station and field programs.

ASC manages the ship through the means of a time charter with the owner, Edison Chouest Offshore, Inc. (ECO). ECO provides for the safe operation and maintenance of the ship, and assists in the efforts of the scientific program on board.

Figure 1: The **Nathaniel B. Palmer** (and friend)

2. Purpose

The United States Antarctic Program (USAP) and Edison Chouest Offshore (ECO) are committed to providing the safest possible environment for the ships' crews, Antarctic Support Contract (ASC) staff, and grantees. Working at sea is inherently dangerous. This is especially true for those who are unfamiliar with the peculiarities of ships and ship-board life. While the goal is to provide the most useful seagoing platform possible for conducting scientific research, safety requirements is an overriding priority. Every person deploying to a research vessel must be aware of a number of specific safety issues. This guide covers shipboard safety, health and environment, and provides information to assist those preparing to deploy.

Figure 2: The **Laurence M. Gould**

3. Risk Factor

This document has been assigned a Risk Factor of 1.

This means that failure to act in accordance with the policies and procedures stated herein may result in the loss of life and/or limb. Non-compliance could also lead to material, financial, or operational loss; or constitute a violation of laws or regulations – contractual or corporate – and lead to litigation.

4. Applicability

The contents of this document apply to all personnel embarked on either the **ARSV Laurence M. Gould** or the **RVIB Nathaniel B. Palmer**. This would include all ASC staff and ship's crew, as well as embarked grantees. Knowledge of basic safety issues and procedures is assumed to be common among those who routinely work on the vessels. With this in mind, this document is written primarily for the benefit of grantees (and new ASC staff), who are likely to be unfamiliar with a ship environment and the unique environmental requirements of working in Antarctica.

5. Vessel Organization

There are three distinct groups involved in the daily operation of the vessel. They include the ship's crew (ECO); marine science support staff (ASC); and grantees (scientists). The Captain, the ASC Marine Projects Coordinator (MPC), and the Chief Scientist (also may be referred to as the "Principal Investigator") are responsible for coordinating shipboard activities during the cruise. The safety of the vessel and crew are of primary importance. Additional concerns include fulfilling the Research Support Plan (RSP) for the cruise, allocating wire and station time, keeping the ship on schedule, and organizing the daily schedule for watch keepers.

The best way to guarantee success for your project is to use the proper chain of command. While discussion and planning at all levels is encouraged, the Captain, MPC, and Chief Scientist are ultimately responsible and should are to be consulted.

5.1. The Ship's Captain and Crew

The Captain is required to:

- Exercise all efforts to protect the lives and safety of the crew and all other persons on board.
- Maintain the seaworthiness of the vessel.

In fulfilling these duties, the Captain is responsible for complying with the laws of navigation and numerous other statutes. A failure to comply can make him or her personally liable and may result in license suspension. Therefore, the Captain or his or her designee must be informed of all work being conducted on the weather decks especially when working over the side of the ship.

The Captain directly supervises three departments. These are the deck, engineering, and steward's departments. A "chief" heads each department. The ship's crew is available, at any time, to assist the scientific party as required.

The Chief Mate (also known as the First Mate) is the best point of contact if you have questions about the ship's safety and your personal safety gear.

5.2. ASC Staff

Table 1: ASC Staff Positions

ASC Position Title	Position Description
Marine Project Coordinator (MPC)	The **Marine Project Coordinator** is the senior ASC person on board and the liaison between cruise grantees, the ASC 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, logistics, etc.
Marine Laboratory Technician (MLT)	The **Marine Laboratory Technician** is responsible for vessel lab operations and will assist cruise grantees with lab instrument set up, hazardous waste disposal, and sample packaging. The MLT is responsible for ensuring that proper safety procedures are followed at all times (personal protective equipment, hazardous material handling, etc.).
Marine Technician (MT)	The **Marine Technicians** 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.
Electronics Technician (ET) and Marine Computer and Instrument Specialists (MCIS)	The **Electronics Technicians** and **MCIS's** 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 instrumentation.
Network Administrators and Systems Analysts (NBP only)	**Network Administrators** 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

ASC Position Title	Position Description
	set. The SA's act as a back-up for the network admin if necessary.
Emergency Medical Technicians (EMT)	ASC 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.

5.3. Chief Scientist and Grantees

The Chief Scientist provides leadership for all grantees on the ship. In this role this individual is responsible for coordinating and implementing the USAP research on the vessel and in the cruise operational area. He/she is also responsible for the professional and personal conduct of embarked science personnel. The Chief Scientist provides appropriate guidance and proactive leadership to ensure the safety of the scientific team while on board. A robust working relationship with the MPC and the ship's Captain promotes a safe working environment.

6. Safety and Security Information and Guidelines

6.1. Emergency Phone Number

If any type of emergency is detected, notify the Bridge or the nearest crewmember at once. The following number should be committed to memory.

- **Bridge phone number: 200**

The following numbers can be distributed to your loved ones at home for contact purposes in emergency situations. These numbers include voicemail capabilities.

- ***NBP: 1-808-659-5076***
- ***LMG: 1-808-659-5074***

6.2. Emergency Instructions

6.2.1. Station Bill

All embarked personnel should familiarize themselves with the ships' **Station Bill**. This is a poster sized document that explains what to do (and where to go) in the unlikely event there is a "man overboard," or a need to "abandon ship". There is at least one Station Bill posted on every deck, but the one on the main deck is perhaps the easiest for the newcomer to locate. It can be found in the passageway, just aft of the mess decks. Don't hesitate to ask questions if anything found there is less than clear.

6.2.2. Immersion Suits and Life Jackets

When responding to any alarm, proceed in an orderly and safe manner to your cabin to retrieve your immersion suit and life jacket. Placing additional exposure protection (hat, gloves, etc.) in the immersion suit bag for the duration of the cruise is a good idea. The life jackets and immersion suits are found above the closets in each room. Once your survival gear is retrieved from your cabin, proceed to the appropriate muster station.

In the event of an actual emergency, you may be unable to reach your cabin. In such cases, life jackets and immersion suits can be found in labeled cabinets in the labs. If you can't find any in your particular work area, ask a member of the ECO crew where the suits and float coats are located. If your personal safety gear becomes lost or damaged, notify the bridge immediately for a replacement. Inspect both your life jacket and immersion suit during the first safety and orientation meeting. If any of it is damaged, tell the Chief Mate immediately.

6.3. Ship Signals

For all emergency signals report immediately to your muster station (see Table 2). A roll call will be taken. Bring your immersion suit, life jacket, hat, gloves, and a warm jacket.

6.3.1. Fire, Emergency, and Security

The standard emergency signal on board is one prolonged blast on the ship's whistle and General Alarm, lasting for ten seconds or more.

6.3.2. Abandon Ship

This signal is seven short blasts followed by one prolonged blast on the ship's whistle and General Alarm.

6.3.3. Man Overboard

This signal is three prolonged blasts on the ship's whistle and General Alarm.

6.3.4. All Clear

An all clear signal of three short blasts on the ship's whistle and General Alarm will be sounded when it is safe to be dismissed from an emergency or muster station.

6.4. Muster Stations

When an alarm is heard immediately proceed to your muster station quickly and safely with your life jacket and immersion suit. Respond immediately! Specific locations of these stations are stated in Table 2.

Table 2: Muster Stations

Muster Stations		
Locations	***LMG***	***NBP***
Primary Muster Station	01 level Conference Room	03 level Conference Room
Secondary Muster Station	03 Boat Deck (topside)	02 Helo Deck or Hanger

6.4.1. Escape Routes

During your first day on board, you should familiarize yourself with the various access routes to the primary and secondary muster stations, the safety equipment, fire alarm pull devices, and the nearest exits from your work areas and cabins. If you become lost during an emergency or drill, look for the green egress arrows (which point toward exits), **EXIT** signs (which indicate that you emerge onto a weather deck), and lifeboat signs (that lead up to the lifeboat deck). See Figure 3 for examples of such signs. Get in the habit of making a mental note of which level you are on, what else is on that level, and which level other important compartments and features can be found.

Figure 3: Egress Arrow, EXIT Sign (to weather deck), and Life Boat Arrow

Each compartment has an Emergency Escape Route diagram, as exemplified in Figure 4. Familiarize yourself with these diagrams, especially those in cabins and work spaces.

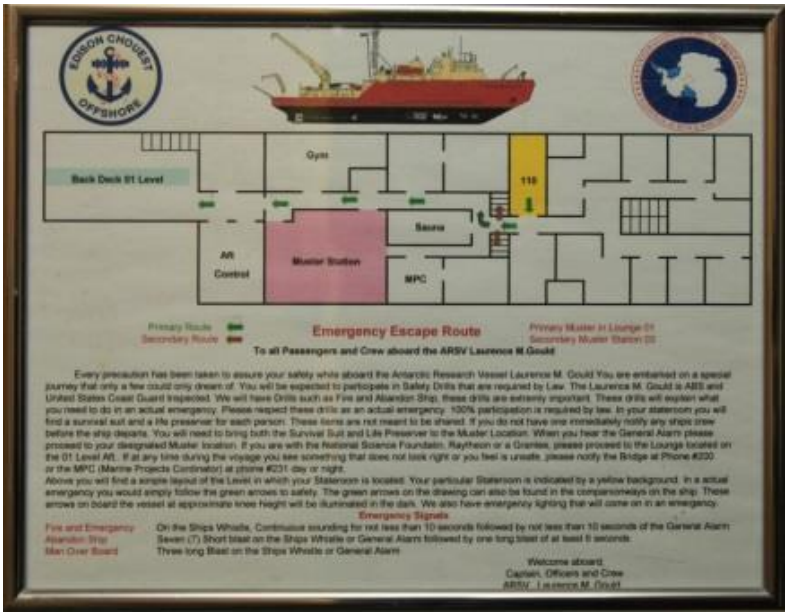

Figure 4: Example Emergency Escape Route Diagram

6.5. Man Overboard

If someone falls overboard, throw a life-ring into the water toward the person, shout "**Man Overboard**" and specify "**Starboard**" or "**Port**." Notify the Bridge at once (phone ext. 200). Also, if you hear someone hail "**Man Overboard**," notify the Bridge at once. Keep the person in sight at all times.

6.6. Fire

If you detect or suspect fire, notify the Bridge immediately before attempting to extinguish it. There are fire alarm pull stations and fire extinguishers throughout the ship. Become familiar with the emergency firefighting equipment locations found on the ship's firefighting plan on each deck.

CAUTION When drying gloves, or any other cold weather gear, **do not hang them on or around the space heaters or in the sauna**. The prevention of fires is of the utmost importance. Good housekeeping and equipment maintenance **MUST** be practiced to minimize risk of fires.

6.7. Life Rafts and Boats

There are two rigid lifeboats on board, one on the portside and one on the starboard side. If the Captain orders an "**Abandon Ship**" you will be directed from your muster station to one of these lifeboats. Each lifeboat on the **NBP** is capable of carrying all personnel aboard the vessel. The **LMG's** lifeboats can accommodate 44 persons. Therefore, depending on a particular cruise's crew size, both lifeboats may be required on the **LMG** in the event of an emergency.

Figure 5: Lifeboat, and Lifeboat Station Signage

In addition both vessels have three life rafts on the port side and three on the starboard side. These rafts can be launched manually or will deploy automatically by hydrostatic release when the ship reaches 12 to 15 feet below the sea surface.

6.8. General Safety Guidelines

The following set of guidelines will do much to ensure that everyone aboard remains safe.

- Let someone know where you will be at all times. The disappearance of someone for several hours can be cause for alarm. Do not go out on deck alone at night or in rough weather. These conditions make it almost impossible to find someone who has fallen over the side.
- Take care when climbing or descending ladders and stairwells, and always use the handrail. In addition to being steeper than regular stairs, the stairwells are frequently wet and icy; making slips and falls more likely. This is especially true when the ship is rolling.
- Wear sensible clothing. Wear shoes with non-skid soles, especially on outside decks. Closed toe shoes are required in all public spaces. Sandals or flip-flops of any kind are not allowed outside of your cabin. All personnel must wear safety-toe (steel or composite-toed) shoes when on the back deck. Loose or floppy clothing, long hair, and jewelry can become caught in machinery and result in injury or death.
- Wear a hat, sunglasses and sun block if you are working outside. Ultraviolet radiation levels are much higher in Antarctica and at sea than elsewhere.
- Beware of watertight doors. These doors may swing from the ship's motion and can cause injury. Keep hands and fingers clear. Be sure to secure all watertight doors with at least two levers ("dogs").
- Do not place any pressurized containers such as aerosol cans in the general trash. These items can only be safely disposed of in the laundry room trash bin labeled for these cans.
- Do not bring surge protectors used ashore onto the ship. Request assistance from the ETs or MCISs once aboard the ship if you need additional outlets or surge protection for your equipment.
- Any questions of safety are to be directed to the Chief Mate or MPC.

6.8.1. Safety on Deck

Working on a moving platform is inherently dangerous. Sharp focus and attention to detail are required if a safe working environment is to be maintained. The following rules must be followed when working on deck or in a Zodiac boat.

- Every individual is required to wear a float coat, float suit, or work vest when working on the aft main deck, when leaning over the protective railings or bulwarks regardless of the deck, in a Zodiac, on the ice, and when being transferred from the vessel by personnel basket.

WARNING: Be aware that wires and lines can part under tension. Do not stand under or near a line or wire while it is under strain. Never stand in the bight of a line.

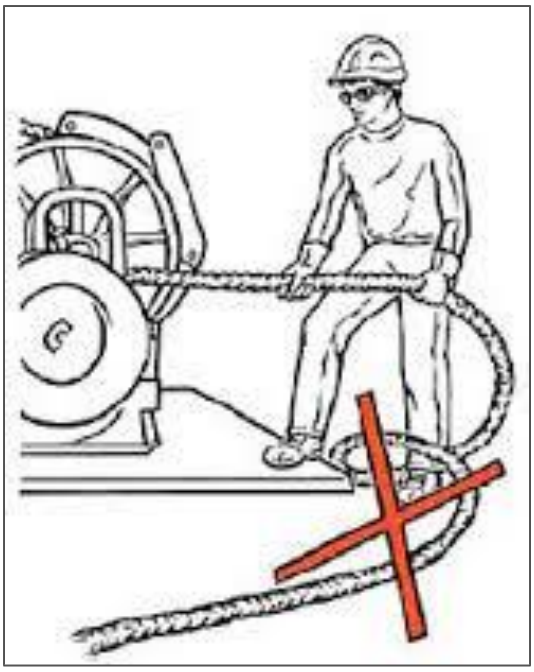

Figure 6: Never stand in the bite of a line!

- When working on the back deck steel-toed boots and a hard hat must be worn at all times.
- During certain science operations (e.g., sediment coring and towing), the Back and 01 Decks are off limits. This remains the case until immediately after deployment of, and until the core or towed equipment is at the surface and ready to be brought on board. Ask the MPC for details regarding deck access during over-the-side operations.
- Safety harnesses with lines secured to the ship are required if working in the yellow areas of the back deck when the gates are open.
- Follow the direction of the winch operator or boat driver. They are responsible for your safety.
- Always notify the bridge before deploying any gear and again when the operation is complete.

Note Non-essential personnel are asked to stay clear of deck operations.

6.8.2. Cargo Operations

Each person participating in a material transfer operation **must** obey the following rules:

- Wear a hard hat and steel-toed shoes whenever a crane is in use.
- Be aware of the potential sail affect if what is being lifted has a large area perpendicular to horizontal. It may tend to shift when the wind gusts.
- Watch the crane block and the load.
- Keep clear of the load and be able to move out of the way if necessary.
- **Do not** work under suspended loads.

- **Be alert!**
- **Remember: Everyone on board has stop work authority!**

6.8.3. Helicopter Operations

WARNING: **No smoking is permitted in the helo hanger, on the helo deck, or in the fuel storage area.**

- During helicopter operations where the aircraft is landing, taking off, or engaging in handling cargo over the ship, all non-essential personnel are to remain inside the ship and/or away from the landing site.
- On the NBP, when approaching the Helo Deck to board an aircraft, follow the direction of the Helo Deck guard and the pilot.
- Always board an aircraft from the front where the pilot can see you. Stay low to the ground and be aware of jet blasts and tail rotor hazards.

Note During aircraft operations, the NBP's Helo Deck and aft ladder to the main deck are strictly off limits.

6.8.4. Boat and Shore Parties

Each Zodiac boat driver and field team leader must carry a hand-held radio. The field team leader will check with the Bridge on channel **05 (LMG)** or **06 (NBP)** or alternate 68 before leaving the ship and hourly until returning. Check with the Mate on watch before departing to determine the proper frequency to use. All boat and shore parties must be recovered before nightfall.

6.8.5. Lithium Batteries

Lithium batteries pose a unique fire hazard to operations onboard the vessel and as part of shipments off the vessel. Lithium batteries must be reported to MPC and MLT when in use and prior to any shipments. They will instruct where the batteries will be stored onboard ship and coordinate fire response with the ECO crew. Shipments must declare lithium batteries as part of the shipping documentation. Refer to the "Lithium Battery Safety" guide found at:

http://www.usap.gov/vesselScienceAndOperations/

6.9. Pier Security and Safety

In order to access Prat Pier you will be issued a pier access card by a DAMCO (the ASC port agent) representative. This pass is only good for the dates you are in port.

Figure 7: Prat Pier Access Card

You must stay within pedestrian walkways between the front gate and the ship unless you are wearing additional personal protective equipment.

6.9.1. Chilean Customs Form

Those deploying to the **LMG** or **NBP** will usually embark in the town of Punta Arenas, Chile. Upon clearing customs in your point of entry (usually Santiago), your passport will be stamped and you will be given a customs form (see below).

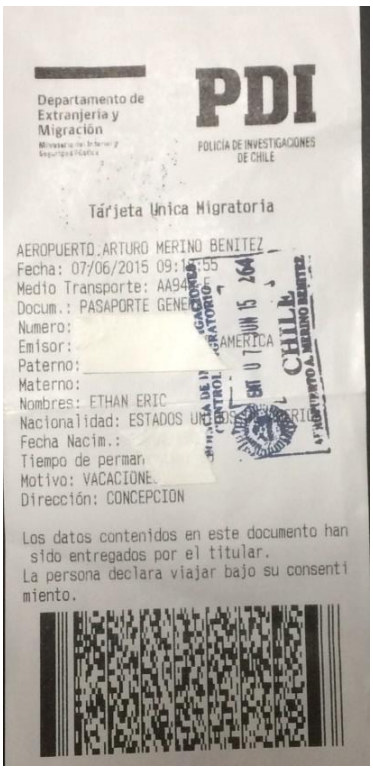

Figure 8: Chilean Customs Form

Do not throw the custom's form away! You will need to give your passport and the form to the MPC when you board the vessel. The MPC will use them to clear you through customs out of Punta Arenas en route Antarctica. The ship's departure may actually be delayed if even one of these forms is missing.

6.10. Medical Services

The vessels operate in the most remote areas in the world in terms of evacuation support. Medical attention can be days or even weeks away. Be careful at all times, and report any medical problems to the EMT for prompt attention.

If you witness or are having a medical emergency, dial 200 from any phone to reach the Bridge. The mate on watch will notify the ASC Emergency Medical Technician (EMT) or proper individual that has access to the ship's medical supplies.

Table 3: Vessel Medical Personnel

LMG	***NBP***
Certified ASC EMT always available.	Certified ASC EMT always available.
Minimally equipped hospital on 02 deck	Equipped hospital on 02 deck
Medications available	Medications available
24-hour access to **University of Texas Medical Branch (UTMB)** and USAP station doctors.	24-hour access to **University of Texas Medical Branch (UTMB)** and USAP station doctors.

6.10.1. Medical Condition Notice

If you are required to take prescribed medication, you are strongly encouraged to inform the EMT about the medication, and why you are using it. Before leaving the dock, ensure that you have an adequate supply based on length of your deployment. It is better to err on the side of having too much rather than not enough.

All prescription drugs are to be kept in an up-to-date container on which the medication, issuing physician and pharmacy are identified. Any medical information that may be useful during a medical emergency should also be reported to the EMT. Persons who have or anticipate specific medical conditions should advise the EMT of them before the ship sails.

6.10.2. Seasickness

Seasickness may come upon anyone at any time. If seasick, rest on your bunk, but do not stay down for prolonged periods of time. Get out for fresh air if possible. It is important to eat and drink plenty of fluids. Unsalted crackers, bread, and other plain starches are recommended.

Each person is required to bring their own seasickness medication. There are medications for seasickness available from the ship's dispensary in an emergency, but the supply is limited. If you anticipate becoming seasick, start taking the medication six hours before the ship sails.

6.11. Lab Safety and Health

The following information will also be discussed in a lab orientation meeting that is held onboard at the beginning of any given cruise. If you have any questions after reading this and attending the orientation, please talk to the Marine Lab Technician (MLT) or MPC.

Due to the heavy and diverse use of the vessel's laboratory facilities, there are certain health and safety considerations that must be monitored. These considerations are outlined below and are meant to provide guidelines for grantees. Adherence to these guidelines will promote a laboratory environment that is both safe and productive.

6.11.1. General Lab Waste

All laboratory contaminated waste generated onboard the vessel is collected in drums and sent to the United States for disposal. For this reason, it is important to separate trash carefully. There are three types of waste collection containers, "Burnables," "Laboratory Debris" and "Laboratory Glass."

6.11.1.1. Burnables

Anything that is NON-CONTAMINATED trash should go into the regular trash cans around the ship. Some are marked as "Burnables" bin. This waste will be burned in the ship's incinerator.

6.11.1.2. Laboratory Debris.

Any dry, CONTAMINATED waste should be disposed of in the Lab debris bin. The MLT or MPC collect this waste from the labs daily for packaging in 55-gallon drums that will be shipped to the United States for disposal.

6.11.1.3. Laboratory Glass.

Any empty or broken glass from the labs should be deposited in the Lab "Glass" bin. All empty reagent bottles MUST be rinsed out prior to disposal into the Lab Glass bin. Do not pour any rinse water down a drain. It must be disposed of into the appropriate liquid hazardous waste container. If one is not provided, ask the MLT.

REMEMBER Pressurized containers such as aerosol cans must be disposed of in the laundry room trash bins labeled for these containers.

6.11.2. Handling Chemicals

The science party is responsible for completing all waste paperwork, and coordinating with the MLT or MPC to ensure that chemicals are properly packaged for disposal.

It is a violation of the Antarctic Conservation Act (ACA) to dump any kind of hazardous chemicals into Antarctic waters. This means that absolutely no regulated chemicals are to be poured down the laboratory sinks. All such waste must be documented, packaged, and sent to the U.S. for disposal.

Consult the MLT or MPC prior to generating any regulated chemical waste. If you have ANY questions as to what is and what is not a regulated waste, please ask.

6.11.3. Lab Safety Equipment

Familiarize yourself with the location of all the safety equipment in the labs. Take note of where the emergency showers, eye wash stations, first aid kits, and spill control centers are located. Additionally, it is important you know where the life jackets and exposure suits are located. If you need any additional safety equipment (e.g. lab coats, safety goggles), please contact the MLT or the MPC.

6.11.4. Material Data Sheet (MDS) [Previously known as MSDS)

An MDS contains useful information regarding safe handling and clean up of particular chemicals. The MDS for each chemical used during a cruise is onboard the vessel. Please ask the MLT or MPC if you need to reference them. Any science party members using hazardous materials must ensure that appropriate spill control items are always at hand when the hazardous material is being used. Any chemicals brought aboard by Grantees must have MSD shipped with them. A copy of the MSD must be provided to the MLT and placed in the ship's MSD Log located on the Bridge.

6.11.5. Radioisotopes

Each user of radioisotopes must attend a mandatory radioisotope orientation. If you are going to be using radioisotopes on the cruise, please talk with the MLT about when the orientation will be held.

Radioisotope use is restricted to those who have prior approval from the National Science Foundation. Radioisotope Vans and outside decks are the only spaces where these experiments may be conducted. The radioisotope vans are strictly off limits to all but designated and approved users.

6.11.6. Laboratory Access

Because of the close proximity of the laboratory areas to the remainder of the vessel facilities, it is inevitable that non-research personnel will be passing through laboratories and near experiments. The Chief Scientist, with the cooperation of the MPC, has the right to limit access to areas that have sensitive equipment. The MPC will help in notifying vessel personnel of the restricted areas.

6.12. RVOC Safety Training Manual

For an indepth review of shipboard safety please access the Research Vessel Operations Committee (RVOC) Safety Training Manual, Chapter 1.

https://www.unols.org/document/rvoc-safety-training-manual-chapter-1-research-party-supplement

This document is published by the University-National Oceanographic Laboratory System (UNOLS) organization. It focuses on Grantee safety on all UNOLS research vessels.

7. Life On Board

7.1. Zero-Tolerance Policy

Unauthorized introduction, possession, or use of alcoholic beverages, illegal drugs, drug-related paraphernalia, firearms, explosives, weapons, or any other contraband is strictly prohibited on the vessel.

7.2. Ship Operations

You are welcome on the Bridge at all times except during maneuvers, when there is a pilot on board or the Captain closes the bridge. When Bridge access is restricted, signs will be posted and/or a red light outside the bridge door will be illuminated.

Figure 9: LMG Bridge Placards

The Engine Room can be a dangerous place for even the most experienced personnel. All visits are to be arranged in advance, and are best coordinated through the Chief Engineer.

Figure 10: Example of "Restricted Bridge Access" Placard

7.3. Hotel Services and Facilities

There is a wide range of facilities available that will make your stay on the vessel more comfortable. These include a sauna (and a hot tub on the LMG), exercise/weight room, and a TV/Movie Lounge. These areas are shared by all. Your help in keeping them clean and comfortable is required for the well-being for all onboard.

7.3.1. General Guidelines

- Do Not discard cigarette butts, paper towels, sanitary napkins, etc., into the toilet/wastewater system.
- If you flush your toilet once, and it doesn't drain, stop and call the Bridge (it may back up if you continue to try to flush).
- Be sure your bathroom door is securely latched when leaving your room. If it is not, the door may swing and latch open, blocking your cabin door from opening.

7.3.2. Laundry Facilities

General use laundry equipment is provided on the **LMG's** Main Deck and on the 01 and 03 decks of the **NBP**. Soap and bleach are provided. Please do not do laundry when the weather is rough because the machines will shut themselves off, spill water, or fail to drain. Usually the ship's crew will close the laundry when the seas become too rough to operate the machines safely.

7.3.3. Linens

The MPC will assign you a stateroom when you move on board. A bag of clean linens should be in your stateroom. This includes sheets, towels, a pillowcase, and a comforter. If clean linens are not already in your stateroom, ask the MPC or check the gym or laundry facilities. Please wash your own linens during a cruise.

7.3.4. Movie Viewing

The main lounges have digital video recorders that allow for the viewing of a wide variety of movies and television programs. Movies on DVD may also be

borrowed for viewing elsewhere. Please return them as soon as you have watched them. Please be aware of the TV and radio volume in your cabin so as not to disturb your neighbors.

DVDs are available and can be checked out from the MPC. All DVDs must be returned to the MPC before the borrower is disembarked.

7.3.5. Communications

7.3.5.1. Internet Cafe

Each vessel has a separate wireless network in a few locations on each ship that provides limited internet access. A bandwidth limit is imposed by the NSF, and when the daily quota is exceeded, access is terminated. Quotas reset at midnight GMT. Each vessel's website has more detailed information, including tips on how to conserve bandwidth.

Note The e-mail communications policy is subject to change. For the entire email policy, ask the MPC or the Network Administrators.

7.3.5.2. Phone

Iridium network satellite phones are available on both vessels.

Personal calls can be made free of charge, but we would ask that calls be limited to 15 minutes and that phone users be mindful of others.

On the **LMG**, the Iridium phone can be accessed from the lounge, the gym (both on 01 level), or the Environment Room (main deck). On the **NBP**, it is located in the Electronics' Lab.

7.3.6. Meal Service

The ship's Mess is open 24 hours a day, and coffee and snack foods are always available. Hot meals are served daily on the following schedule:

- 0730 - 0830 Breakfast
- 1130 - 1230 Lunch
- 1730 - 1830 Dinner
- 1930 - 2030 Late Dinner (NBP only)
- 2330 - 0030 Midnight Rations

Boxed meals may be requested for field parties by notifying the MPC the night before. Such meals will be organized by the MPC as needed for science operations. Also, meals can be held for persons whose work prevents them from eating at the regular hours.

Please refrain from wearing dirty work clothes in the Mess. Shirts without sleeves and sandals are not permitted.

7.3.7. Cabin Trash Service

On the **LMG**, trashcans for the dumping of cabin trash are located in the 02 level public head, the 01 lounge and public head, and in the main deck laundry.

CAUTION Aerosol cans will explode in the incinerator. Separate trashcans are available in the laundry facilities for disposing of aerosol cans. Ensure these receptacles are used rather using the regular trash when disposing aerosol cans.

7.3.8. Smoking Areas

Smoking is allowed on the **LMG** on the 01 deck, just outside the aft hatch and on the bridge wing. On the **NBP**, smoking areas include the area just outside of the bridge aft door, and forward of the waterfall winch on the 01 deck.

7.4. Social Issues

For those who are unfamiliar with going to sea it is fair to make some comment about life on board. Social conditions are very different from those on land. Close quarters demand the utmost consideration of others.

Everything that you can do to avoid infringing on the personal areas of your shipmates will be appreciated. Remember as well that the ship functions on a 24-hour schedule and people may be trying to sleep at any time.

It is your right and obligation to report any incident of harassment, sexual or otherwise to the Captain, the MPC or the Chief Scientist. Harassment, sexual or otherwise, is unlawful. It is an assault upon an individual's right and dignity. It is clearly unacceptable and inconsistent with standards of the NSF, ASC, and Edison Chouest Offshore.

8. Environmental Concerns

The "law of the land" that governs environmental concerns in Antarctica is the Antarctic Treaty. An appendix to the Treaty, "The Agreed Measures for the Conservation of Antarctic Fauna and Flora" addresses the protection of the environment and conservation of wildlife.

In addition, the Antarctic Conservation Act (ACA) of 1978 is designed to protect and preserve the ecosystems, flora, and fauna of the continent and to implement the above "Agreed Measures." The ACA sets forth regulations for U.S. citizens and residents visiting Antarctic.

For more information, ask the MPC for a copy of the ACA, which is available onboard both USAP vessels.

In Antarctica, the ACA makes it unlawful, unless authorized by regulation or permit issued under this act, to:

- Take native animals or birds
- Collect any special native plants
- Introduce species
- Enter certain special areas
- Discharge or dispose of any pollutants

To "take" means to remove, harass, molest, harm, pursue, hunt, shoot, wound, kill, trap, capture, restrain, or tag any native mammal or bird, or to attempt to engage in such conduct.

Any item that goes overboard into the ocean must be reported to the MPC. This includes all scientific gear and equipment (e.g. moorings). Additionally anything lost accidentally (e.g. hard hats, gloves) must be reported. The MPC submits a summary report of all discharges at the end of each USAP cruise.

8.1. Flora and Fauna Protection

8.1.1. Flora

All plants found in Antarctica are designated native plants. "Native plant" means any member of any species of plant at any stage in its life cycle, including seeds. No specimens of any plant may be taken without a permit issued by the National Science Foundation.

USAP participants should take every precaution to avoid stepping on or damaging fragile mosses and lichens. Regeneration is extremely slow and any damage lasts for decades.

8.1.2. Fauna

Within the Treaty Area it is prohibited to kill, wound, capture, or molest any native mammal or bird, or attempt such an act, except in accordance with a permit. Guidelines for USAP personnel are shown below.

- Maintain a distance of at least 15-20 feet from penguins, nesting birds, and crawling species (or true) seals, and 50 feet from fur seals. Most of the Antarctic species exhibit a lack of fear which allows a person to approach closely; however, please remember that the austral summer is time for courting, mating, nesting, and rearing young. If you approach the animals or birds too closely, you may startle and disturb them sufficiently that they will abandon the nesting site, leaving eggs or chicks vulnerable to predators.
- Remember that wild animals, especially seals, are extremely sensitive to movement and a person's height above the ground in relation to their size. Approach wildlife slowly when preparing to take photographs. It is important to remember that your photography is not over when the shutter clicks – make your retreat in the same way you approach. The key point to remember is not to cause the animals any distress or alter their natural behavior.
- Be alert while you are ashore. Watch your step in order not to stumble upon an aggressive fur seal or a nesting bird that is unaware of your presence. One must pay attention to the behavior of flying birds as well as those on the ground. For example, when a Tern or Skua becomes excited or agitated and starts "dive bombing," it is a good indication that you are walking too close to its nest, though you may not have spotted it.

- Don't get between a marine animal and its path to the water or between a parent and its young. Never surround a single animal or a group of animals, and always leave them enough room to retreat. Animals always have the right of way.
- Be aware of the periphery of a rookery or seal colony and remain outside of it. Follow the instructions given by your group's leader.
- Do not touch the wildlife. The bond between parent and young can be disrupted and the survival of the young jeopardized.
- Never harass wildlife for the sake of photography.
- Keep all noise to a minimum in order not to stress the animals.
- Both accidental and deliberate disturbance of seals or whales may constitute harassment under the ACA.

Some species of Antarctic animals are specially protected. Special protection is accorded to Fur and Ross Seals. The taking of these species is only allowed under a special permit issued by the NSF.

It is also illegal to introduce any mammal, bird or other animal not indigenous to Antarctica, except in accordance with a permit. All reasonable precautions must be taken to prevent the accidental introduction of parasites and disease into the Treaty Area.

Additionally, the Marine Mammal Protection Act of 1972 prohibits U.S. citizens from taking or importing marine mammals, or parts of marine animals, into the United States.

Do not remove anything, even rocks or shells, from Antarctica. This includes historical evidence of humanity's presence, (e.g., whale bones from early whaling expeditions).

8.2. Waste Disposal

Every effort should be made to remove all solid and human waste from all visited areas.

8.3. Antarctic Specially Protected Areas

Antarctic Specially Protected Areas (ASPAs) include areas of outstanding scientific interest that are being preserved in order to protect their unique natural ecological system. Entry to these areas is allowed by permit only.

ASPAs also include areas where ongoing scientific investigations are being conducted. Certain sites do not require a permit for entry, but entrants must comply with management plans. Other sites require a permit for entry. As with other Specially Protected Areas, please be aware of those that may be in your area. If in doubt, please stay out.

The MPC is mandated to enforce ACA rules, and will have information regarding ASPAs and permitting. The MPC is required to record each individual who accesses an ASPA on a cruise. An end of cruise report is submitted to ASC Environmental Section. Annually Environmental consolidates this information and submits a report to NSF.

8.4. Penalties

Under the Antarctic Conservation Act violators are subject to civil penalties, including a fine up to $25,000 and one year in imprisonment for each violation. The complete text of the Antarctic Conservation Act of 1978 can be found in the MPC's office. The ship's crew and the support staff will ensure that the Antarctic Conservation Act is followed.

9. References

9.1. Ship Technical Information

The ARSV Laurence M. Gould - Principle Features and Technical Information, and RVIB Nathaniel B. Palmer - Principle Features and Technical Information each contain detailed deck layouts that can aid those struggling to learn the maze of compartments and passageways on their ship. These can be downloaded at:

http://www.usap.gov/usapgov/vesselScienceAndOperations/index.cfm?m=4

9.2. USAP Documents

Related documents can be found on the USAP website: http://www.usap.gov/

10. Records

No records are generated as per this document, though ECO may generate records of safety and security briefings.

11. Glossary

Refer also to the list of approved terms posted to the Intranet:

http://denverhq.usap.gov/EmpResources/sctnGlossary.cfm

ACA
: Antarctic Conservation Act

ARSV
: Antarctic Research Support Vessel

ASC
: Antarctic Support Contract

ASPA
: Antarctic Specially Protected Area

Bight of a Line
: Loop in a rope or cable that could cause personal injury when pulled taut

Chief Mate
: ECO crew member who manages the Deck Department onboard the ship; also referred to as the First Mate

Dogs
: Levers on Water Tight Doors used to tightly seal the door closed

ECO

Edison Chouest Offshore

EMT

Emergency Medical Technician

GMT

Greenwich Mean Time

Grantees

Scientists conducting research; includes the Chief Scientist and his/her team

LMG

Laurence M. Gould

MPC

Marine Projects Coordinator

MLT

Marine Lab Technician

MDS

Material Data Sheet

NBP

Nathaniel B. Palmer

NSF

National Science Foundation

PI

Principal Investigator; often also the Chief Scientist aboard the ship

RVIB

Research Vessel/Ice Breaker

RVOC

Research Vessel Operations Committee

RSP

Research Support Plan

SIP

Science Information Plan

Skua

A bird that is indigenous to the Antarctic.

UNOLS

University-National Oceanographic Laboratory System

USAP

United States Antarctic Program

UTMB

University of Texas, Medical Branch