

Chapter 3

Basic Field-Party Preparation

3.1 McMurdo-Based Groups

For those researchers, and other USAP participants, leaving from McMurdo to work in field camps, the following chapter provides general guidelines for deployment preparation. The McMurdo Section: 3.1 is set-up in a typical daily schedule, however your actual schedule will vary depending on previous experience and the number of people in your group.

3.1 a Day 1

Arrival in McMurdo:

After your plane lands in Antarctica, a shuttle will transport you from the airfield to the McMurdo Station Chalet, which is the administrative building for the National Science Foundation (NSF) and for the NSF support contractor. Chalet personnel will give you an orientation briefing, assign housing, and arrange a date for your science meeting.

3.1 b Days 2, 3, & 4

Science Meeting:

Each science group will have a meeting the day after arriving in McMurdo. Representatives from the NSF and from various support areas will meet with your

group to discuss logistical support for the season. During the science meeting, you'll receive information on the status of your cargo and equipment. You'll also discuss your objectives for the season and meet the McMurdo personnel who will help support your research project.

Field Communications and Radios:

- Establish a Field-Party Communications Plan at the Field Operation Communications Center (FOCC)(radio call sign “Mac Ops”), which is located on the second floor of Building 165. This communication plan establishes your radio call sign, your radio-frequency assignments, and your daily health and safety check-in schedule.
- Pick up your field radios and attend radio training and a demonstration at the Field Party Shop, located in building 159. ALL FIELD PARTY MEMBERS are highly encouraged to attend the radio training, which takes approximately one hour to complete.

Vehicle Maintenance Facility (VMF):

Antarctic Driver’s License For Light Vehicles:

A short presentation will be conducted by VMF personnel at the Crary Lab on the operation and maintenance of vans and pickups. This briefing is mandatory if you intend to drive a pickup or van while in McMurdo. (You must also have a valid driver’s license from your home state.) At the conclusion of the briefing, you will be issued an Antarctic Driver’s License for light vehicles.

**Mechanical Equipment Center (MEC) --
Maintenance Training and Antarctic Driver's
License:**

- A half-day field maintenance training should be completed before your equipment shakedown. Schedule this field maintenance training with the MEC Supervisor or Lead Snowmobile Mechanic.
- Antarctic Driver's Licenses for tracked vehicles are obtained from the MEC. Once again, you must have a valid driver's license from your home state to be issued a tracked vehicle license. You must also attend a mandatory briefing and pass a test drive of the tracked vehicle(s) you intend to operate, whether Spryte, Tucker, Pisten Bully or snowmobile.

Berg Field Center (BFC) Equipment:

- The BFC issues equipment and food to field parties. This is also where you obtain field supplies for environmental protection. If you will be working in the Dry Valleys, this is where you will get personal urine bottles and containers for handling human waste and gray water. You are required to wash out urine bottles before returning them to the BFC. Spill kits are available, as well as absorbents for glycol/water (gray) and fuel (blue). The BFC also has containment units for mechanical equipment and fuel transfers, and containers and labels for the return of waste from the field.

- Each science team that requests a substantial amount of field equipment from the BFC will be issued a “cage space.” Locked cages are on the ground floor of both the BFC and USAP Cargo buildings and must be shared either concurrently or consecutively with different groups. Cage space is limited, so remember, when you go into the field someone else may use the space you were working in.
- Your cage location and lock combination will be given to you at the science meeting. Field equipment allocated to you as outlined in your Research Support Plan (RSP) will be pre-staged in your cage. Assign one person from your group to check over your issued field equipment inventory to ensure that it is complete. Notify the BFC if there are any discrepancies. Select one person to be your BFC point-of-contact. He/she will be the only person from your group to make changes, return, or exchange your issued field equipment.
- If you requested rock boxes (via your SIP) for sample retrograde, BFC personnel will tell you where you can pick them up. Prior to field camp put-in, you will need to stencil your name and university address on top of the boxes and put banding around the circumference of each box. (**Note:** Banding and stenciling materials are available at USAP Cargo.) You can use the empty rock boxes for camp put-in by filling them with food and equipment.

Food:

- Food is issued to USAP field parties who are working and living at remote locations. Use the Food Room “planning sheet” (given out during the science meeting) to select food for your group. The Food Room staff will help you to determine quantities needed, but it is important that the entire field party review the list and make requests on this form.
- The Food Room staff will help plan food amounts for both put-in and resupply. New groups should rely on the Food Room staff’s experience and use the resupply system. It is difficult to keep foods frozen in the Dry Valleys. Some groups have initially taken an entire season’s supply of food into the field, where much of it spoiled. Please let the Food Room staff help you in this planning process.
- When planning food for the season, we suggest you use regular food stock to cover the length of time you expect to be in the field. Take an emergency back-up of 2 to 4 weeks’ dehydrated food (depending on how remote the location) in case the pull-out flight is delayed because of weather or some other problem.
- After your group has selected food for the field, designate one person to be in charge of organizing the food for camp put-in. It will take a minimum of one entire day to gather, package, and weigh the (boxes of) food for your group.

Alcohol:

- If you plan on taking more than two bottles of liquor into the field with you, you must fill out an alcohol request form at least 72 hours prior to your flight. This allows time for your order to be pulled, as well as time for you to pick it up and put it into the cargo system if you are flying on an LC-130. The forms, as well as a price list will be given to you at your science meeting. You will have to pay in cash (no checks) at the time you turn in the form. You **may** have one opportunity during the field season to do a liquor resupply order, but this depends on your field location. If you plan to do a liquor resupply, you must arrange for payment prior to going out into the field.

Attend Environmental Briefings:

- All USAP participants who will be going to the Dry Valleys are required to attend the Dry Valleys Environmental Code of Conduct orientation at FSTP. It will be scheduled as part of your required Field Safety Training. Those going to the Dry Valleys should also obtain a copy of the *Dry Valleys Code of Conduct*. Project specific information will be provided at your Science In-Brief.
- All USAP participants are required to attend a waste management briefing shortly after arriving on station. Information about the briefing times will be provided at your initial station orientation. For more information on waste handling, see Chapter 15.

Attend Outdoor Safety Orientation:

If you plan on doing any hiking, skiing or other recreational travel while you are in McMurdo, you will need to attend a safety orientation. This orientation is comprised of a half-hour video, followed by a question-and-answer session and updates on the status of various recreational routes. These are usually held twice a week at the Crary Lab. Watch the scroll for exact times.

3.1 c Day 5

Begin load planning and packing for put-in. Any items that you will not need prior to deploying can be packaged and turned into the cargo system. Do not pack the items you will need for your shakedown. If you are flying by Helicopter, see Chapter 6.1 for more information. If you are flying by LC-130, see Chapter 7, section 7.2, and if by Twin Otter, see section 7.3.

3.1 d Days 6, 7, & 8

All Field Safety Training courses, including the Helicopter Course, must be completed prior to field deployment. All new personnel in the USAP, regardless of their skill level and experience, must attend an overnight two-day field-safety course. Deep-field groups must also do an equipment shakedown. Returning personnel can opt for a proficiency test in lieu of the overnight training course. See Chapter 5 for detailed Field Safety Training information.

3.1 e Days 9 & 10

Finish all of your packing. All Hazardous items must be

turned into USAP cargo at least 48 hours prior to your flight. If you are flying on an LC-130, your cargo must be packed and in the system at this time.

3.1f Day 11

Put-in day! (Mother Nature and aircraft operations permitting, of course!)



Figure 3-1: Zodiac offloading supplies from side of Polar Duke Research Vessel. (photo by Tim Cully)

3.2 Peninsula-Based Groups

This section provides general guidelines for basic field-party deployment preparation after arrival at Palmer Station and for research-vessel-supported field groups in the Peninsula area.

Personnel working at vessel supported field locations in the Peninsula area must plan time in Punta Arenas, Chile, to go through and repackage equipment and supplies. Keep in mind that all equipment and supplies should be packaged into small enough waterproof bundles for easy transport from Zodiac to shore. Small-sized bundles, which are easily handled by individuals, are necessary to safely move supplies to shore. On occasion, pack ice and rough seas may make put-in difficult or hazardous, so plan extra time to off load supplies.

Some scientists doing research in the Peninsula work from remote field camps, such as Copacabana camp on King George Island, and Cape Sherriff on Livingston Island. These remote camps are all unique yet share many similarities. The facilities used and type of research being done may vary from camp to camp, but many important issues remain common to all camps. For example, safety, communications, problems dealing with delays at put-in, supply offloading and human waste management are all issues that must be addressed prior to deployment. See Chapter 8: “Boating Safety” and Chapter 17: “Sea-Ice Safety” for additional information.

3.2 a Field Communications

If you require the use of an HF radio for work in the Peninsula area, the radio equipment will be sent to Punta Arenas where you will pick it up. In most cases you will be provided with a PRC-1099.

Vessel-supported field groups must test HF radios prior to field deployment. Be sure to check both your primary and backup radios. If you have a problem with the radios, the vessel Electronics Technician can assist you



*Figure 3-2: Punta Arenas warehouse.
(photo by Tim Cully)*

or make any repairs.

After arriving at your field site and before the research vessel can leave, establish communications with Palmer Station. Field parties are required to make contact with Palmer Station on a daily basis. You will need to set up a mutually convenient time (Mean Greenwich Time) for the daily call with the Palmer comms tech. The primary frequency for the daily check-in is 4125 kHz.

Be aware that during the daily call the comms tech may ask you to switch to another frequency to pass information. This is done to keep the primary channel open in the event of another emergency call. If direct communication with Palmer is poor you may have to relay through another station. Parties have used the research vessel “Laurence M. Gould” (if in the area), the Polish Base, Arctowski or the British Base, at Rothera for this purpose. Operations Manuals are issued with the HF radios.

See Chapter 9: “Field Radios” for more detailed information about field radios.

3.2b Field-Safety Training

Field parties working from Palmer Station must complete the Boating and Islands Survival Courses before going off-station to conduct field research. Vessel-supported field parties must complete the Islands Survival Course prior to deployment to the field site. See Chapter 5 for detailed Field Safety Training information.

3.2c Field Equipment

All field equipment is stored in the Punta Arenas contractor warehouse (see figure 3-2). The field equipment items identified on your SIP will be staged in the warehouse. Upon arrival at Punta Arenas, assign one person from your group to check over your issued field equipment to ensure that it is in good working order. Notify the Contractor Representative in Punta Arenas if there are any discrepancies.

Vessel-supported field parties must repack their gear into bundles that can easily be handled during the transfer from ship to shore by Zodiac, often in rough conditions.

3.2d Food for Field Parties

Personnel working at Palmer Station may request field issue food from the galley. In addition, you may request box lunches from the galley staff when working off-station for the day.

Vessel-supported field groups who are living and working at remote locations will be sent a food planning sheet. Contractor staff in the states will work with these groups prior to the field season to adjust quantities, etc. Perishable food items will be purchased in Chile by the Contractor Representative.

When planning food for the season, we suggest you use regular food items to cover the length of time you expect to be in the field. Take an emergency back-up of 2 to 4 weeks' dehydrated food (depending on how

remote the location) in case the pull-out vessel is delayed due to weather or some other problem. After your arrival in Punta Arenas, designate one person to be in charge of organizing the food for put-in. Keep in mind that food will have to be off loaded from a Zodiac by hand, often in rough conditions.

3.2 e Mechanical Equipment

For Palmer Station based groups, any mechanical equipment requested on your SIP can be obtained by contacting the Laboratory Supervisor on station.

For vessel-supported field groups, mechanical equipment requested on your SIP will be sent to Punta Arenas and staged in the contractor warehouse. Check all equipment and spare parts to ensure they are complete and in good working order prior to deployment to the field. If you discover a problem with the equipment, the Contractor Representative will assist you in getting the problem fixed.

3.2 f Field-Camp Liquor Rations

Personnel working at Palmer Station may purchase liquor and soda on station. Field parties deploying to other field sites by vessel may purchase liquor and soda in Punta Arenas prior to boarding the ship. USAP participants are responsible for purchasing their own liquor and soda, so make sure to bring sufficient funds to pay for this expense. You may request help from the Contractor Representative to assist with your liquor and soda purchase for the field season. No resupply for these items will be available.

3.2g Safety

Safety is an important issue at field camps. The safety equipment recommended below can be requested in your SIP. Your safety takes precedence over all else. It is recommended that at least one member of the camp be certified in first aid, preferably at the Wilderness First Responder level. Should someone become seriously ill or injured, it could take up to a week to get that victim to a medical facility. A well-stocked field camp medical kit is also necessary.

Another serious safety issue is fire. Structures in the Antarctic burn rapidly because of the extremely dry climate. Even in areas where precipitation is common, fire is still a potentially serious hazard. Losing your shelter in a remote setting can be a life threatening situation. Therefore, it is important to set up a survival cache at least 200 to 300 meters up-wind from the camp. The cache should contain enough tents, sleeping bags, pads, stoves, lanterns, fuel, utensils, HF radio, first-aid kit, extra clothing, dehydrated food, and water for each person in the field party. Depending on the remoteness of the camp, you should have enough of these supplies to last 2 to 4 weeks. Also, make sure that your camp is equipped with a sufficient number of ABC- type dry chemical fire extinguishers. A fire extinguisher should be placed at each exit, in the food preparation area, and near the generator.

If you use a kerosene heater, never leave it on while sleeping! Only use the heaters when someone is present in the hut. Be sure the hut is adequately ventilated to handle the carbon monoxide emitted from the heater. If

any member of your party complains of excessive sleepiness, dizziness, headache, or confusion while the heaters are running, suspect carbon monoxide poisoning (CMP). Refer to Chapter 24 for more information on CMP.

When hiking away from camp, you must travel in groups of at least two and always carry a handheld radio with an extra battery. If one of you becomes injured, the other can assist with first aid or go for help depending on the situation. In the case where your camp is located near a glacier, never attempt to cross it unless you have the proper training and equipment. A crevasse fall can end a perfectly good career.

3.2h Safe Water Handling

No matter how you obtain water in the field, it can become contaminated if not handled safely. Coliform bacteria have been detected in field camp water. Although coliform bacteria may not be harmful, their presence indicates that pathogenic bacteria, which may cause serious illness, may also be present. You can minimize or eliminate the risk of contamination by following these safe-water-handling guidelines:

- Protect your drinking water source from exhaust or microbial contamination.
- Designate certain pieces of equipment (gloves, shovels, containers, ice axes) specifically for collecting snow or ice for drinking water and use them for no other purpose. Or, sterilize general use equipment with chlorine or boiling prior to snow and ice collection.

- Maintain the capacity to disinfect water in the field; use filters or iodine kits.
- Clean and disinfect your drinking water storage containers regularly with dilute chlorine.
- Use chlorine to sterilize any water you produce in the field. 2-3 mLs of chlorine solution (household bleach-5.25%) will sterilize the water in a 10-gallon carboy or preway pot.
- Use bleach to sterilize dishwater.
- Designate a hand-washing area in your camp.

3.2i Human Waste Management

The NSF policy requires that there be no discharge of human waste to ice free areas or freshwater systems either directly onto the land or into any pits, trenches, or similar devices. All human waste will be disposed of in such a way that it is either discharged directly into the sea or containerized for retrograde. See Chapter 15.