

A stylized map of the Americas is shown in a dark blue gradient. A yellow triangle marker is placed on the coast of South America, near the southern tip. A dashed white line extends from this triangle upwards and to the right, ending with an arrowhead. The text 'CARGO OPERATIONS' is positioned in the upper right area of the map.

CARGO OPERATIONS

Field teams preparing to set up camps on the Peninsula will be transported by USAP support vessel either via Palmer Station or directly to their camp. Once at the site, team members and cargo are transferred via small inflatable boat, RHIB, landing craft or on rare occasions by helicopter.

During the planning stages, all cargo movement is determined, including how much, when and how it will be transported both southbound and northbound. If changes to northbound cargo or sample shipments occur during the field season, the PI or camp manager should contact the ASC science project implementer, who will make a formal change request.

Cargo Requirements

Weight and Dimensions

Cargo is transferred from the USAP support vessel to the small watercraft via crane and cargo net. In general, all cargo must fit within a four-foot by six-foot space in the net and not be stacked higher than 1.25 meters (~four feet). Loads must be balanced. Poles, picks and long or sharp objects are handed down separately. Larger equipment must be discussed in advance with the implementer and vessel support staff and crew. The vessel crew ensure cargo loads are the appropriate weight and size.

Cargo must be weighed before field deployment, with the weight written on duct tape and attached to the package or equipment. Individual items must not exceed 50 pounds, with 30 pounds being ideal.

It is difficult to transport cargo through waist-deep water, especially in a surf zone or on a beach that could be rocky and icy. Packing cargo so it is smaller, lighter and more easily handled creates more packages but makes loading and unloading at the shore safer and smoother.

Waterproofing

Depending on the field site and sea conditions, the trip from vessel to field site can be wet. All sensitive cargo must be

wrapped in heavy plastic trash bags or packed in watertight packages (e.g., dry bags, five-gallon buckets with sealed lids, sealed and taped waterproof tubs). Plastic bags are slippery when wet and can easily be dropped into the sea. Take extra care when handling bagged items.

Labeling

All cargo requiring special handling must be clearly marked (e.g., "liquid," "fragile," "do not freeze"). For safety reasons, hazardous cargo must be clearly marked as such with its special-handling requirements noted. All items must have the weight clearly noted on the packaging.

Cargo labels must include a general description and camp location (e.g., kitchen, personal, science equipment, power supplies). This facilitates efficient cargo sorting at camp, especially when handled by volunteers from the ship who may not know how the cargo was packed.

Hazardous Cargo on Vessels

All hazardous cargo must be loaded separately and stored in designated areas aboard the USAP support vessel while en route to the field camp. Hazardous chemicals are stored in the appropriate hazardous materials locker, and documentation is provided to the ship's crew.

Liquid fuel containers (e.g., drums, jerricans) must have the type of fuel written on them in permanent marker. A hazardous-cargo shipping label must also be affixed to the container. Fuel containers and fuel drums are stored in designated areas only. These areas must be confirmed by the chief mate or ship's crew on the USAP support vessel. Depending on the number of containers and on-vessel space limitations, the captain may authorize other storage areas.

Propane tanks and other pressurized containers must be in good condition and free of rust or damage. The vessel captain has the authority to deny loading for any pressurized container deemed unsafe for transport.

When field parties return hazardous cargo from the field, it must be properly packaged and labeled. Preserving the packaging, labels and paperwork generated for the cargo's field deployment makes it easier to prepare it for return shipping or entry into the USAP logistics stream.

Shipping to the U.S.

Retrograde Cargo

Cargo slated for return to the U.S. is called retrograde cargo. This includes samples and grantee-owned equipment. The persons generating retrograde cargo must be the ones who pack it, and a unique shipping number must be assigned to each package or item. Each item or container shipped from a vessel must be entered into the Maximo database, assigned a shipping number (SN) and accompanied by a USAP Proforma/Invoice (TL-FRM-0005), a line-by-line inventory of contents that is available on the USAP Master List. All proformas must be approved by the Transportation & Logistics (T&L) department before shipping northbound. Any hazardous items, including all types of batteries, must be declared along with an attached safety data sheet (SDS) in English and an SDS in Spanish. For this reason, it is imperative to keep accurate records of cargo and begin the process as early as possible.

All Peninsula field gear returning to Punta Arenas from a USAP support vessel or Palmer Station must be entered into Maximo using cargo code "879 (Pen Field)" as part of the SN. For items shipped from Palmer Station, a shipment notification must be sent to Palmer logistics personnel at Palmer.Logistic@usap.gov, who assign an SN from Maximo. A proforma is required for each retrograde item, regardless of its origin.

More About Science Samples

Science samples enter the cargo stream in the same manner as retrograde cargo, but more specific paperwork is required for each box/shipment. Vessel-based or field camp grantees can get assistance from the Palmer Station lab manager, science project implementer, T&L, or Palmer logistics staff.

Palmer logistics personnel help Palmer Station grantees determine how best to package samples. Each sample shipment is assigned a unique SN. T&L requires a strict naming convention for samples. The Palmer Station lab manager or Palmer logistics staff can help locate this information.

Science samples require extensive documentation, and some of the information can be obtained before deployment. Take great care in organizing the documentation. Shipping samples from Antarctica, particularly from the Peninsula, can be complicated and require up to 13 individual forms.

The RSP published before the field season outlines all the approved sample and cargo shipments. This document is the agreement between the PI, USAP and NSF. Discuss samples and cargo again before leaving the dock to ensure you have the necessary supplies on hand. Additionally, field camp and vessel-based researchers, as well as Palmer Station researchers, should speak with Palmer logistics personnel or the ASC implementer.

Be aware that any proposed changes to the sample shipment plan must be approved by T&L and NSF program director. Contact the ASC science implementer to start the process.

Dry ice and temperature-sensitive sample cargo materials should be requested two weeks in advance of the port call. All science sample paperwork must be submitted to logistics personnel at least 72 hours before arrival to Punta Arenas.

The following materials are available to help with this process, as are the Palmer Station lab manager or Palmer logistics personnel:

- MLT Sample Preparation Manual (STPS-MAN-0006)
- Sample Packing Checklist – Peninsula (TL-FRM-0113)
- Packing and Shipping Instructions (TL-MAN-0002)
- Peninsula Logistics Manual (TL-MAN-0004)
- Shipping Retrograde Cargo (TL-MAN-0010)

- 49 C.F.R. regulations on packing and transporting dangerous goods (aka Hazardous Materials Regulations)
- International Air Transportation Association (IATA) Dangerous Goods Regulations
- International Maritime Dangerous Goods (IMDG) Code

Grantee Tasks in Punta Arenas

Upon return from a field camp, researchers must pack “keep frozen” and “keep chilled” samples the first day the ship is in port. Researchers must also assist in unpacking and cleaning all field camp gear. This may take one to three full days, and teams should plan accordingly.

Any known issues with the gear should be noted at this time. This is extremely important and helpful for other groups. There is no blame or penalty for gear that is wrecked or broken under normal circumstances. The knowledge that something needs to be repaired or replaced ensures the safety of the next group.