Packing and Shipping Instructions
TL-MAN-0002

Version 12, September 2021

Last Reviewed: September 2021

Risk Factor: 1

This document applies to the following locations:

[ALX ☑] [CHC ☑] [DEN ☑] [FLD ☑] [LMG ☑] [MCM ☑] [NBP ☑] [PAL ☑] [PTH ☑] [PUQ ☑] [SPS ☑]

Prepared by the Antarctic Support Contractor for the National Science Foundation Office of Polar Programs
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Purpose
This manual contains instructions for packaging, marking, labeling, documenting, and shipping materials to all United States Antarctic Program (USAP) locations and research vessels. These instructions assist USAP participants in preparing and forwarding their supplies and equipment. Personal actions are the first of many in a long logistics pipeline. Improper documentation, inadequate packaging, labeling, or failure to meet the required delivery dates can all result in delay, which could jeopardize the accomplishment of planned work. Advanced planning is critical.

All shipping costs for processing and transport between the origin and Port Hueneme, CA, are borne by the principal investigator's (PI) grant. The USAP contractor pays for shipping costs between Antarctica and the Continental United States (CONUS). Exceeding the approved cargo weight allowances from the operational notice requires authorization from National Science Foundation (NSF).

The following are the typical methods for shipping to Antarctica, in order of most cost efficient:
- Resupply vessel from Port Hueneme, CA to New Zealand, McMurdo Station (VESSEL)
- Commercial Surface (COMSUR)
- Commercial Air (COMAIR)

Note Refer to USAP Transportation Costs and Planning Factors for additional planning information.

 Authorities and Mandates
The prime contract Management Manuals, Standard Operating Procedures, and Preventive Maintenance Manuals (NSFDACS 1219442, Deliverable F006) expects procedural manuals of this kind to support all facilities and operations throughout the USAP. This manual meets that requirement.

Risk Factor
This manual is assigned a risk factor of 1.

Preparation and shipment of materials to Antarctica is a complex process. Failure to meet the packing and shipping requirements described in this document could result in significant cargo delays or cargo damage. Failure to meet packing and shipping requirements could also lead to US or foreign regulatory violations that affect research and station operations or budgets.

While shippers are responsible for meeting shipping requirements, failure to provide logistic support would be a specific contract non-compliance. Therefore, the content of this manual is in the highest risk category.

Note Other resources address the risks associated with these procedures. Refer to the Port Hueneme Operations Manual (TL-MAN-0001).

Scope
This document applies to all USAP participants sending cargo to or from Antarctica.
Responsibilities

The Antarctic Support Contract (ASC) provides for all USAP cargo services as needed, which may include the following:

- Direct support on station
- Leased facilities as a transportation hub
- Subcontracted freight forwarders to the point of final destination

**USAP Cargo Supervisor**

The USAP cargo supervisor is responsible for annually reviewing and updating this procedure. The USAP cargo supervisor may delegate specific actions but is ultimately responsible for cargo operations and science cargo planning to support McMurdo Station. The USAP cargo supervisor must protect all temperature-sensitive science cargo (TSSC), including receipt and storage of TSSC, updating Maximo, and safeguard the transfer to the resupply vessel or transport aircraft, whether with USAP partners or other contractors.

**USAP Cargo Administrative Coordinator**

The USAP cargo administrative coordinator is responsible for administrative support for the USAP Cargo office at McMurdo Station.

**Port Hueneme Operations Manager**

The Port Hueneme operations manager is responsible for helping to define these procedures, following these procedures, providing input, and refining their practice. Activities at Port Hueneme Naval Base Ventura County (NBVC), while specific to that work center, must also meet the requirements explained here.

**Designated Transportation and Logistics (T&L) Staff**

Transportation and Logistics (T&L) staff members (designated by the T&L Manager) are responsible for coordinating cargo movement on marine resources and cargo to the vessel and ensuring that container placement on the resupply vessel is accurately recorded in the Maximo database.

**Marine Project Coordinator**

Within the Marine Area, the marine project coordinator (MPC) is responsible for following these procedures, both onboard and while supporting research vessel operations, whether in South America or CONUS (including Port Hueneme or anywhere else the MPC may be located).

**Marine Laboratory Technician**

Each science cruise has at least one designated marine laboratory technician (MLT) onboard, depending on the caseload and science planning for that cruise. The MLT is available to assist USAP participants and may be able to answer questions about cargo movement. The MLT is also responsible for stowing TSSC in retrograde from Palmer Station to port.
South Pole Station Logistics Supervisor

The South Pole logistics supervisor is responsible for these procedures at the South Pole Station and planning all South Pole's logistical support. All science cargo is coordinated in advance with the South Pole Logistics supervisor. The South Pole logistics supervisor is responsible for ensuring the procedures in this document are followed for the South Pole area.

Peninsula Logistics Manager

The peninsula logistics manager is responsible for reviewing these procedures for continuity of service. As the contract officer technical representative (COTR) for Damco, only the peninsula logistics manager can approve procedures or activities supported by the Damco contractor in Punta Arenas, Chile, which is the primary support for all peninsula-area activities. The peninsula logistics manager is responsible for ensuring these procedures are followed throughout the Peninsula area, Palmer Station, and the research vessels. The Peninsula Logistics manager is also responsible for completing the processes described in this document. As the point of contact (POC) for science sample shipments from Palmer Station and the peninsula area, the peninsula logistics manager oversees the retrograde movement of all TSSC. For further details, please refer to the Peninsula Logistics Manual (TL-MAN-0004) or Shipping Retrograde Cargo (TL-MAN-0010).

Damco

Continuing logistical support in South America is subcontracted through Damco Chile, which must meet the standards set in this procedure. Refer also to the Peninsula Logistics Manual (TL-MAN-0004) for more details on Peninsula operations.

USAP Participants

Everyone who sends cargo to or from Antarctica must follow the steps in this procedure.

Before Deployment

The operational notice for each science event outlines the support requirements approved by NSF for the project's duration. The annual requirements for shipping are specified in each support information package (SIP) for the science event. Make sure to review the operational notice before completing the SIP. While ASC technical events (T-Event) and NSF technical support events do not have operational notices, they must submit a SIP to outline their annual support requirements.

Equipment, supplies, and science samples are all shipped as cargo unless other arrangements are made in advance. Additionally, an ASC internal support information package (ISIP) is required to call out shipping requirements for ASC work centers (R-Event).

Port Hueneme, California

Port Hueneme Operations processes all USAP material going to or returning from Antarctica and enters all shipping information into Maximo.
Indirect Air Carrier

Federal Aviation Administration (FAA) regulations require the Port Hueneme operations manager to sign a Shipper’s Security Endorsement for all commercial air shipments. The endorsement certifies shipments do not contain unauthorized explosives, incendiaries, or other destructive substances or items. The unauthorized shipment of hazardous materials via air carriers subjects the shipper to personal liability of $50,000 and or up-to five years in jail. This penalty applies to the individual who certified the shipment for air transport along with the shipper’s employer.

CAUTION All cargo is subject to inspection before entering the USAP transportation system. Finding undeclared hazardous materials will delay or prevent shipment.

Each container, even those with locking devices, arriving at the Port Hueneme Operations facility, is subject to inspection. Cargo will not be forwarded if it cannot be inspected. Materials found to be unacceptable for commercial air transportation will be diverted to commercial surface carriers and will take longer to reach their destination. Similar restrictions apply to retrograde shipment from Antarctica.

Hazardous Materials

Participants are responsible for declaring all hazardous materials shipped to Antarctica. All shipments must comply with domestic and international regulations governing packing, marking, labeling, and documenting hazardous materials. Failure to identify hazardous material violates United States law and holds penalties up to $250,000 and 10 years in jail.

Participants must seek the services of professional shippers like Federal Express (FedEx), United Parcel Service (UPS), or Dalsey, Hillblom, and Lynn (DHL) when shipping hazardous cargo to Port Hueneme. Using a professional shipper reduces the risk of harm to transportation personnel. It also helps prevent delays or refusals by ensuring materials are packed, marked, labeled, and documented in accordance with domestic and international regulations.

The Hazardous Cargo supervisor in Denver, Colorado, supervises the shipment of hazardous materials through the USAP transportation system referenced in Intercontinental Shipment of Dangerous Goods (TL-MAN-0017). Please contact the hazardous cargo supervisor at (720) 568-2177 or at 1 (800) 688-8606, ext. 32035. Send questions concerning hazardous materials to USAP-Haz-Cargo-Questions@usap.gov.

Preparing Cargo for Shipment

This section provides information on restricted items, guidelines for packaging, marking, labeling, and documentation.

Proper packaging can help ensure a shipment arrives at its destination safely and on time. Containers must withstand contact with the sharp corners of other containers, crushing weights, and shocks sustained while in transit, in the warehouse, aboard ship, and at the stations. Use extra padding around the contents of the containers to cushion them against impact. Pack securely and fill any voids or extra space. It cannot be emphasized enough the need to pack for extremely rough handling and exposure to various weather conditions.
Vehicles, Machinery, and Parts via New Zealand

The transshipment of used vehicles, machinery, or parts through New Zealand is subject to strict biosecurity requirements. Anyone shipping such cargo through New Zealand must review and comply with the requirements detailed in the Import Health Standard: Vehicles, Machinery and Parts located here:

https://www.mpi.govt.nz/dmsdocument/30224/direct

Importing Technical Equipment to New Zealand

Participants traveling through New Zealand planning to hand-carry high-value technical equipment need to complete a New Zealand Customs Form NZCS 213.

Make special note of the following related to the New Zealand Customs Form:

- The form is non-transferable. New Zealand requires the individual whose name appears on form NZCS 213 to be the same person to clear the item through Customs.
  - If in possession of high-value technical equipment without form NZCS 213, the individual (not the USAP) may be charged with import duties, fines, or the material may be seized.
- The individual deploying with the equipment is not required to accompany its return, as long as the form accompanies the goods.
- Employees and contractors who carry equipment from ASC Denver also need a Hand-Carry Authorization Form (TL-FRM-0053) in addition to New Zealand Customs Form NZCS 213. These are also non-transferable.
  - Return the equipment with the Hand Receipt to ASC Denver.
  - If the equipment will stay in Antarctica, notify property management on station by email so that they can transfer the equipment to station inventory.
  - Route the Hand Receipt to Property Admin for attachment to property records.

Note

Laptop computers are generally exempt from this classification. Check with the ASC Travel department for information on individual deployments.

Packing Material

Avoid using materials that are not easily degradable. That includes most plastics, especially polystyrene cushioning materials (standard packing peanuts).

CAUTION

Polystyrene packing peanuts are banned under the Antarctic Conservation Act. Do not use polystyrene packing material.

Do not use polystyrene, polyurethane foam, or a silicone sponge. Suitable alternatives are bubble wrap, shredded paper, corrugated cardboard, burlap, and packing tissue. Paper products are more easily recycled and, therefore, are more suitable for shipping material to
Antarctica. Shipments can be delayed on entry to both New Zealand and Chile due to the condition of the packaging. Wooden packaging material (WPM), such as pallets, crates, and boxes, is often reused to return material to the United States, which has some strictest requirements.

**Wood Packing and Lumber Material, New Zealand**

The New Zealand government has strict controls and diligent inspections for importing any wood products. They require clearance for imported timber and forest products of any kind — sometimes with quarantine restrictions. A certificate must accompany all shipments of lumber from the manufacturer stating the extent and level of any treatment process.

The Ministry of Primary Industries (MPI) conducts inspections to prevent accidentally introducing insects or fungi that could damage New Zealand forests and the timber industry. These inspections include all wooden and plywood packing cases, including crates, pallets, wood packing blocks, and dunnage. All wood products must be free of bark and visible signs of insects, worms, or fungi.

Wood products that cannot be verified as being free of contaminants will be stopped at the port of entry and dealt with as directed by an MPI inspector. USAP participants and their shipping agents should ensure all packing material conforms to the following New Zealand regulations:

1. Wood packaging must comply with the import requirements.
2. MPI will risk profile the whole shipment and select a subset for inspection.
3. Any untreated or uncertified wood packaging found will be refused entry, treated as required, or destroyed — regardless of whether pests are found.
4. A notice of non-compliance will be issued for any untreated or uncertified wood packaging.
5. Information from these non-compliances will feedback into the risk profiling system — meaning that importers who develop a history of non-compliance will be selected for inspection more frequently, further delaying cargo.

For more information on the standard, please refer to the MPI website at the following Internet address:


**Wood Packing Material, Chile**

The government of Chile has strict controls on importing wood products.

USAP participants should be sure that all wooden crates used for shipping through Chile to Palmer Station and the Antarctic Peninsula area are in good condition without stains or signs of fungi. An agriculture stamp indicating the wood is free of contamination will help expedite clearance through Customs.
Wood Packing Material, United States

The following regulations have been put in place by the US Department of Agriculture (USDA) on all wood packing materials entering the United States. Please be aware that wood packaging materials used to ship cargo to Antarctic field sites must comply with these regulations to be returned to the United States, as repackaging material or recycled material — all material in retrograde movement from Antarctica.

Wooden packaging material (WPM) like pallets, crates, and boxes entering the US must be treated or fumigated with methyl bromide and marked with the International Plant Protection Convention (IPPC) logo. Effective September 16 2005, the same requirements apply to regulate WPM arriving in the US. Refer also to WPM guidelines published by USDA Animal and Plant Health Inspection Service (APHIS) at the following Internet address:

http://www.aphis.usda.gov/aphis/home/

Wood packing materials destined for the US must comply with this statement:

The wood packaging materials used in this shipment comply with the International Standards for Phytosanitary Measures, Publication 15, March 2002 (ISPM 15). The material used consists of processed wood material and solid sawn wood subjected to the approved heat treatment. Those packages that use heat-treated wood have been certified as being compliant with ISPM 15 and the Internal National Plant Protection Convention (IPPC) and are so marked by an approved and inspected agent (Number US-4522) of the American Lumber Standard Committee.

Containers

Pack reusable containers with hinged, clamped, or screw-fastened tops. Containers should be made to withstand hard contact, sharp corners, crushing weight, and shock sustained by rough handling in transit, in the warehouse, aboard ship, and on the station. Use sturdy material that is well fastened, securely braced, and reinforced.

**CAUTION** All participants must be aware of the very rough conditions during transport to Antarctica.

Some plastic containers may not be suitable for use in extreme cold, where they become brittle and may crack or break. In short, consider the environmental conditions of Antarctica when choosing a container.

Conditions

Insulated containers may be appropriate if they will eventually be used for retrograde material that must be kept frozen (KF) or keep chilled (KC).

Material is often exposed to excessive moisture and temperature extremes during storage and transportation. It is also common for condensation to build up inside boxes during shipment, especially retrograde cargo from South Pole Station to McMurdo Station or Palmer Station on vessels.
Primary shipment to Antarctica is on board ocean-going vessels that are subject to ocean conditions in transit, which cannot be predicted. Therefore, it is necessary to pack for extremely rough handling and various weather conditions.

**Weight and Volume**

Crates weighing over 100 pounds must be palletized for safer cargo handling. Consider also the total volume of the box, and do not pack anything over 125 cubic feet (5x5x5 feet). Crates larger and heavier may restrict handling and cause materials to be delayed.

Small boxes may also pose a problem. They are challenging to account for in a cargo cache or the cargo hold of a ship. Avoid boxes smaller than 12 inches on a side. Many small boxes can be packed together and then shipped more readily.

Cargo aircraft only applies to any package exceeding the following sizes:

- Longer than 125” (10 ½ feet, or 3.2 m)
- Wider than 96” (8 ft. or 2.4 m)
- Higher than 64” (5 ¼ ft. or 1.6 m)

**Marking and Labeling**

Mark all boxes and crates distinctively and visibly. Using a stencil or a permanent marker, make the markings bold and clear. Use consecutive numbers for more than one box in the same shipment; for example, "Box 1 of 4." Make sure the marking is impervious to water and weather. If boxes or crates are reused from previous seasons in Antarctica or other locations, remove any old labels, barcodes, and markings to prevent delays or misdirection.

**Special Handling**

All applicable special handling instructions must be marked on the outside of the container. Appropriate and bold labels or stencils should provide cargo handlers with instructions. Common examples include but are not limited to, the following:

- Do Not Freeze
- Do Not Xray
- Fragile
- Keep Dry
- Keep Upright
- Do Not Expose to Magnetic Field
- Do Not Drop

**Required Documentation**

Provide Port Hueneme Operations with a copy of the shipping information by email (**PH-CargoOps@usap.gov**) or fax. Send a bill of lading or an air waybill, and make sure that the information is clear and concise. Indicate the following:

- Delivering carrier
- Shipment number
- Piece count
- Date departed
- Scheduled delivery date
- Total weight
- Special handling instructions

A detailed packing list, *USAP Proforma/Invoice* (TL-FRM-0005), must be completed and emailed to PH-CargoOps@usap.gov.

Due to compliance regulations, the level of detail for the packing list has increased. Information on the contents must include a detailed description of the item, manufacturer part number, manufacturer and country of origin, US dollar amount (US$) per item, and the total cost for all items. Please be specific to prevent delays. US Customs requires this information for exportation.

If information is missing or incomplete, cargo may be delayed until the information is obtained from the packing list.

- *USAP Proforma/Invoice* (TL-FRM-0005)
  - This template is used by USAP participants shipping cargo to or from Antarctica not traveling on the annual resupply vessel, on military aircraft back to CONUS, or if the final destination is New Zealand

**Note** "Scientific Equipment, Office Supplies, Lab Supplies" are no longer an acceptable description for a packing list and will result in delays clearing Customs.

### Shipping Dates

Advanced planning can help to reduce USAP transportation costs and ensure timely delivery to Antarctica.

Please note that the material cut-off schedule changes as the vessel schedules are adjusted. Before shipping materials to Port Hueneme, please confirm the required material cut-off dates with the appropriate science planning support manager or other POC.

**Commercial Air (COMAIR)**

COMAIR shipments average a 21-day processing and transit time from Port Hueneme to McMurdo Station. South Pole Station may need an additional 24 days. Hazardous materials and oversized items require more time, up to 60 days.

Cargo not within certain size limits or designated cargo aircraft only (CAO) will move by truck from Auckland to Christchurch, adding four to five days to the transit time.

**Commercial Surface (COMSUR)**

COMSUR shipping is cargo on a commercial vessel other than the regular USAP contracted resupply vessel to McMurdo Station. Oversized material that is late but still required may be sent via COMSUR. Cargo and supplies going to the Peninsula Area and Palmer Station may be sent COMSUR at any time during the calendar year. It travels to
Punta Arenas, Chile, and is transferred to one of the research vessels for final transport to Palmer Station.

**Note** When shipping to the Peninsula Area, be sure to consult the schedule posted in the *Peninsula Logistics Schedule* (TL-FRM-0100).

Table 1 shows shipping times from Port Hueneme to various USAP destinations frequented. To ensure that oversized cargo arrives on time, plan, and schedule for COMSUR; however, any cargo can be subject to delays, including labor strikes, holidays in foreign countries, and Customs clearance.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Approximate time</th>
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<tr>
<td>McMurdo Station</td>
<td>56 days</td>
</tr>
<tr>
<td>South Pole Station</td>
<td>67 days</td>
</tr>
<tr>
<td>Hazardous material and Oversize cargo to New Zealand (en route to McMurdo Station, South Pole, and Research Vessels)</td>
<td>67 days</td>
</tr>
<tr>
<td>Research Vessels (to New Zealand)</td>
<td>52 days</td>
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<tr>
<td>Southern ports (Chile) and Palmer Station</td>
<td>97 days</td>
</tr>
<tr>
<td>Hazardous material to Southern ports (Chile) and Palmer Station</td>
<td>112 days (3 ½ months)</td>
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**Required Delivery Date (RDD), Peninsula Area**

The required delivery date (RDD) for shipments bound for the Antarctic Peninsula area includes Palmer Station, field camps, and vessel operations.

Cut-off dates to meet the Peninsula area cruise schedule for the RV/IB *Nathaniel B. Palmer* (NBP) or the ARSV *Laurence M. Gould* (LMG) are located at the following address:

[https://masterlist.denver.usap.gov/MasterList TL-FRM-0100.xlsx](https://masterlist.denver.usap.gov/MasterList TL-FRM-0100.xlsx)

Meeting the RDD noted at these sites allows materials to be shipped by the preferred, most cost-effective means available. Materials that cannot meet the RDD will need to be sent via COMAIR. Shipping COMAIR is the most expensive method, and requires approval from NSF before shipping.

Oversized cargo shipments destined for Peninsula sites will be delayed a minimum of 14 days or more by the lack of scheduled cargo aircraft to Punta Arenas, labor strikes, special events, or national holidays in other countries. Oversized cargo must arrive in Port Hueneme on time for COMSUR transportation, based on published cut-off schedules. This is necessary to afford adequate planning and transportation for Damco delivery, in case there is no opportunity to fly the oversized cargo even part of the way. Any item that is CAO or oversized will be trucked from Santiago, Chile to Punta Arenas, which will take a minimum of 14 days.
Required Delivery Date, Continental Area

The required on site (ROS) date determines when the RDD to Port Hueneme is to arrive in Antarctica on time. Schedule a ROS date, whether McMurdo Station, South Pole Station, Palmer Station, and onboard the vessels. The ROS date determines when the RDD to Port Hueneme is to arrive in Antarctica on time.

Note Cargo may not meet its prescribed ROS date if the RDD is not met.

Table 2 shows the ROS dates and RDD for cargo shipments during the 2020/2021 field season. Cargo that does not arrive within these prescribed guidelines may require COMAIR shipment. Shipping COMAIR is expensive and requires NSF approval.

<table>
<thead>
<tr>
<th>Required on Site Date</th>
<th>Julian ROS Date</th>
<th>Required Delivery Date to Port Hueneme</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 31, 2021</td>
<td>1233</td>
<td>June 15, 2021</td>
</tr>
<tr>
<td>October 9, 2021</td>
<td>1282</td>
<td>August 7, 2021</td>
</tr>
<tr>
<td>October 16, 2021</td>
<td>1289</td>
<td>August 14, 2021</td>
</tr>
<tr>
<td>October 23, 2021</td>
<td>1296</td>
<td>August 21, 2021</td>
</tr>
<tr>
<td>October 30, 2021</td>
<td>1303</td>
<td>August 28, 2021</td>
</tr>
<tr>
<td>November 6, 2021</td>
<td>1310</td>
<td>September 4, 2021</td>
</tr>
<tr>
<td>November 13, 2021</td>
<td>1317</td>
<td>September 11, 2021</td>
</tr>
<tr>
<td>November 20, 2021</td>
<td>1324</td>
<td>September 18, 2021</td>
</tr>
<tr>
<td>November 27, 2021</td>
<td>1331</td>
<td>September 25, 2021</td>
</tr>
<tr>
<td>December 4, 2021</td>
<td>1338</td>
<td>October 2, 2021</td>
</tr>
<tr>
<td>December 11, 2021</td>
<td>1345</td>
<td>October 9, 2021</td>
</tr>
<tr>
<td>December 18, 2021</td>
<td>1352</td>
<td>October 16, 2021</td>
</tr>
<tr>
<td>December 25, 2021</td>
<td>1359</td>
<td>October 23, 2021</td>
</tr>
<tr>
<td>January 1, 2022</td>
<td>2001</td>
<td>October 30, 2021</td>
</tr>
<tr>
<td>January 8, 2022</td>
<td>2008</td>
<td>November 6, 2021</td>
</tr>
<tr>
<td>January 15, 2022</td>
<td>2015</td>
<td>November 13, 2021</td>
</tr>
<tr>
<td>January 22, 2022</td>
<td>2022</td>
<td>November 20, 2021</td>
</tr>
<tr>
<td>January 29, 2022</td>
<td>2029</td>
<td>November 27, 2021</td>
</tr>
<tr>
<td>February 5, 2022</td>
<td>2036</td>
<td>December 4, 2021</td>
</tr>
<tr>
<td>February 12, 2022</td>
<td>2043</td>
<td>December 11, 2021</td>
</tr>
<tr>
<td>February 19, 2022</td>
<td>2050</td>
<td>December 18, 2021</td>
</tr>
<tr>
<td>February 26, 2022</td>
<td>2057</td>
<td>December 25, 2021</td>
</tr>
</tbody>
</table>

Intermodal Shipping Containers

Intermodal cargo transportation includes shipping freight in containers that can be moved between different modes of transportation (e.g., rail, ship, truck) without any handling of the freight itself between modes. For instance, container shipments can move from an ocean vessel...
to the USAP Airlift without being unloaded and repacked. Intermodal shipping reduces cargo handling, improves security, reduces damages or loss, and allows freight to be transported faster. The International Organization for Standardization (ISO) maintains container requirements, which were first based upon the original Department of Defense (DOD) standards.

There are instances when science equipment received at Port Hueneme Operations is loaded into intermodal shipping containers for transshipment to Antarctica. There are many different kinds (closed and open) and brands of intermodal shipping containers; all must be ISO certified.

When using preloaded, intermodal containers, USAP participants must notify the Port Hueneme Operations manager in advance to receive specific instructions.

For instance, if the container includes Do Not Freeze (DNF) cargo for the project, the shipper is required to use a refrigerated container. If a powered refrigerated container is not available, DNF cargo must be shipped separately. DNF cargo might be transshipped via COMAIR or COMSUR, as determined by the Port Hueneme Operations manager.

Port Hueneme Operations visually verifies the contents of each container for seaworthiness, to include the proper blocking and bracing of cargo for transport. This inspection is documented and reported to the grantee and to ASC management. In addition, hazardous materials must be shipped separately and must include a safety data sheet (SDS) with the packing list.

To accurately detail requirements for certifying an intermodal container for maritime transportation to Antarctica, the following are the current military specification (MILSPEC) certification guidelines:

- **Standard Practice for Military Packaging** (MIL-STD-2073-1D);
  

### Fumigation Requirement for New Zealand and Australia

Due to the possible infestation and protection from the Brown Marmorated Stink Bug, all commercial surface shipments must be fumigated 120 hours before departure from California. This requirement is in effect for all cargo shipped between September 1 and April 30 each year.

There are two fumigants used, Methyl Bromide, which leaves no residue and Sulfuryl Fluoride, which is often requested if the shipment contains delicate electronic equipment. If shipping food, please pack these articles separately to avoid possible contamination from the fumigants.

### Shipping to Port Hueneme

USAP participants should send all shipments to Port Hueneme Operations for transport to Antarctica. Cargo entering the USAP transportation system at Port Hueneme is assigned a shipping number in Maximo for tracking.

Customs inspections or other unforeseen reasons are beyond USAP control. NSF and ASC have instituted shipping procedures to reduce or eliminate delays in shipping materials to Antarctic research sites.

Contact Port Hueneme Operations before shipping any oversize, unusual cargo, anything very heavy, and any intermodal container cargo. Send all documentation, including the tracking
information, and proforma (TL-FRM-0005) for each shipment to Port Hueneme Operations at PH-CargoOps@usap.gov.

**Address for Cargo Shipments**

Use the following address and information for cargo shipments to Port Hueneme. Label each box with the following information. Ensure this information is clear and legible.

National Science Foundation  
c/o Antarctic Support Contract  
5020 Stethem Road  
Building 471, North End, NBVC  
Port Hueneme, CA 93043  
ATTN: USAP <station abbreviation>  
<Station code>  
<Principal Investigator>  
<Event number> or <Project code>  
<ROS>

**Note** Information in brackets (< >) in the above address will be specific to the project or deployment.

**Station Abbreviations and Station Project Codes**

Table 3 identifies station abbreviations and Project Codes.

<table>
<thead>
<tr>
<th>Antarctic Station</th>
<th>Station Abbreviation</th>
<th>Science Station Code</th>
<th>ASC Station Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>McMurdo Station</td>
<td>ZCM</td>
<td>DR1</td>
<td>DW1</td>
</tr>
<tr>
<td>South Pole Station</td>
<td>NPX</td>
<td>DR3</td>
<td>DW3</td>
</tr>
<tr>
<td>Punta Arenas, Chile</td>
<td>PUQ</td>
<td>DR4</td>
<td>DW4</td>
</tr>
<tr>
<td>Palmer Station and Peninsula</td>
<td>PAL</td>
<td>DR7</td>
<td>DW7</td>
</tr>
<tr>
<td>Christchurch, New Zealand</td>
<td>CHC</td>
<td>DR9</td>
<td>DW9</td>
</tr>
<tr>
<td>RV/IB Nathanial B. Palmer</td>
<td>NBP</td>
<td>NBP</td>
<td>NBP</td>
</tr>
<tr>
<td>AR/SV Laurence M. Gould</td>
<td>LMG</td>
<td>LMG</td>
<td>LMG</td>
</tr>
</tbody>
</table>

**Example of Address and Priority Number Label**

National Science Foundation  
c/o Antarctic Support Contract  
5020 Stethem Road  
Building 471, North End, NBVC  
Port Hueneme, CA 93043  
ATTN: USAP — NPX  
DR3  
R. Amundsen  
A-404-S  
0319
Shipping to Port Hueneme from Foreign Countries

Equipment shipped from a foreign country, then through the US to Antarctica, enters the US as imported material. When entering the United States, complete US Customs Transportation Entry and Manifest of Goods Subject to CBP Inspection and Permit (CBP Form 7512; February 2012). The form is available online, at the following Internet address:

http://www.cbp.gov/newsroom/publications/forms

Other forms may be required. When shipping foreign goods through the US, use a recognized customs broker to prepare the documentation needed for forwarded shipments. It is recommended to make prior contact with the Port Hueneme Operations manager to facilitate processing through US Customs and shipment, onward to Antarctica.

**CAUTION** When shipping by truck from a foreign location, Port Hueneme Operations must have the driver's name thirty (30) working days in advance to arrange clearance through DHS for delivery to NBVC.

All cargo shipments from foreign countries to Port Hueneme, California, must be shipped prepaid from the point of origin. All transportation charges, including surface or air cargo in the US, freight-forwarding fees, and brokerage commissions, must be prepaid.

**Canada**

All shipments from Canada or Canadian vendors should be shipped by air to Port Hueneme. Try to use standard US shippers, such as FedEx or UPS. If cargo moving to or from Canada is shipped by truck, we strongly recommend using FedEx, UPS, or Yellow Roadway Corporation (YRC).

**Direct Commercial Shipping to Port Hueneme**

Contact Port Hueneme Operations before shipping anything large or unusually heavy, any odd-sized cargo, loaded intermodal containers, and any unique or extremely valuable cargo. If intending to send a large volume of cargo, contact Port Hueneme Operations before the commencement of shipment. Port Hueneme has several options and services to offer in USAP support. Be aware that they may need advance notice for support of special cargo. They may be able to contact specialized carriers in a specific geographic area.

Contacting Port Hueneme Operations before directly shipping cargo will help them locate and track the cargo during shipment. Providing advanced notice also helps them prepare for receiving the cargo if any special handling is needed.

**Direct Commercial Shipping to New Zealand or Chile**

It may be more practical for cargo originating outside the United States to be shipped directly to New Zealand or Chile in some situations. In these cases, please consult with Port Hueneme Operations for advice and to coordinate delivery.

**Note** Neither NSF nor ASC is responsible for commercial shipments sent directly to these destinations.
New Zealand

For shipments to New Zealand, please email CHC-CourierNotifications@usap.gov for advice and assistance. Forward the original paperwork for shipments to New Zealand to:

- Email: CHC-CourierNotifications@usap.gov
- Fax: +64-3-358-1479

Send to the attention of the terminal operations manager.

Please ensure that a commercial invoice is included with the bill of lading, which outlines specific contents and dollar values. The appropriate paperwork must be received before the arrival of the cargo. The following information must be identified on all correspondence:

- Master Airway Bill (MAWB) number (if applicable)
- Flight number
- Departure dates
- Bill of lading numbers (COMSUR)
- Number of boxes
- Contents of each box
- Commercial value in US$

**Note** Some companies, such as Federal Express in New Zealand, do not operate 24 hours a day and are closed on weekends, which may affect how quickly items can be delivered to our Christchurch cargo operation.

Use the following address for shipping directly to New Zealand:

National Science Foundation
c/o PAE (New Zealand) Limited
Gate 1, Orchard Road North
Christchurch International Airport
Christchurch, New Zealand
Tel: +64-3-358-8139
FAX: +64-3-358-1479

**Note** All direct shipments must be sent duty delivery paid (DDP).

Chile

Ensure a commercial invoice, which outlines specific contents and dollar values, is included with the Bill of Lading. The appropriate paperwork must be received prior to the arrival of the cargo. The following information must be identified on all correspondence:

- MAWB number (if applicable)
- Flight number
- Departure dates
- Bill of lading numbers (COMSUR)
- Number of boxes
- Contents of each box
- Commercial value in US$

Email a copy of the Bill of Lading to Damco Chile, at PA-PuntaArenasAll@usap.gov, with a copy forwarded sent to Palmer.Logistics@usap.gov.

Use this address for shipping directly to Punta Arenas, Chile:

Master R/V NATHANIEL B PALMER or R/V LAURENCE M. GOULD or PALMER STATION
c/o Damco Chile SA
Avenida Bernardo O’Higgins NBR. 1385
Muelle Arturo Prat
Punta Arenas, Chile

To avoid Customs delays, put these instructions below the address:

FOR FURTHER SHIPMENT TO ANTARCTICA
<Name>
<Station abbreviation>
<Station code>
<Grantee>
<Event number> or <Project code>
<ROS>
<Box of number-of-boxes> (e.g., “Box 1 of 4”) Do Not Freeze

Some cargo cannot tolerate the extreme temperatures in Antarctica. Do Not Freeze space is limited.

The size restrictions on DNF cargo are as follows (L x W x H):
48” x 45” x 40” or 122 cm x 114 cm x 102 cm

This is roughly the size of a standard, tri-wall container used in the USAP airlift. Larger DNF items may be shipped through the USAP transportation system, but only with significant business or science justification in writing in advance.

In addition to size restrictions, NSF has mandated that under no circumstances shall DNF cargo be mixed in the same box with non-DNF cargo. Heated storage is very limited in Antarctica, and mixing cargo may result in DNF material being stored outside. While that would not be a problem in Port Hueneme, it would be a significant failure at the South Pole.

Note
DNF cargo may be inspected at any point in the USAP transportation system. Items will be segregated at the start of the logistics train in Port Hueneme to prevent repacking items once on the Ice.

Marking

For ready identification and continuity throughout the USAP transportation system, mark temperature restricted items as DO NOT FREEZE (DNF).

Mark the box used for shipping DNF cargo by making a square field in black, with distinct white letters to say DO NOT FREEZE; or use appropriate DNF stickers. Mark DNF on all four sides — not on top or bottom.
Include all other cargo markings and required documentation.

Southbound COMAIR

McMurdo Station

DNF cargo is turned over to the freight forwarder for commercial flights to New Zealand. On arrival at the Air Cargo Yard in Christchurch, New Zealand, cargo is palletized and transported via the USAP airlift. At McMurdo Station, DNF cargo is placed in a temperature-controlled warehouse until delivered to the grantee or ASC work center.

South Pole Station

DNF cargo is turned over to the freight forwarder for commercial flights to New Zealand. On arrival at the Air Cargo Yard in Christchurch, New Zealand, cargo is palletized and transported via the USAP Airlift through McMurdo Station. DNF cargo is placed in a temperature-controlled warehouse until manifested on a flight to South Pole Station. On arrival at the South Pole Station, DNF cargo is kept in a temperature-controlled area until turned over to the grantee or ASC work center. Peninsula Logistics

DNF cargo is shipped to Damco in Punta Arenas, Chile. On arrival, it is stored in a temperature-controlled warehouse environment until containerized for transport to Palmer Station, or until loaded as breakbulk cargo on the research and support vessel.

| Note | All DNF cargo for the Peninsula area is loaded on the vessel and stored in temperature-controlled areas on a lower deck. |

Southbound COMSUR

Port Hueneme Operations loads all science-related DNF cargo in intermodal shipping containers and manifests them for surface vessel to Christchurch, New Zealand, or Punta Arenas, Chile.

McMurdo Station

Ocean vessels are offloaded in Lyttelton, New Zealand, and trucked to Christchurch International Airport. DNF cargo is palletized at the Air Cargo Yard and transported via the USAP Airlift to McMurdo Station. On arrival at McMurdo Station, DNF cargo is placed in a temperature-controlled warehouse until delivered to the grantee or ASC work center.

South Pole Station

Ocean vessels are offloaded in Lyttelton, New Zealand, and trucked to Christchurch International Airport. DNF cargo is palletized at the Air Cargo Yard and transported via the USAP Airlift to McMurdo Station. There, DNF cargo is placed in a temperature-controlled warehouse until manifested on a flight to South Pole Station. On arrival at the South Pole, DNF cargo is moved to a temperature-controlled area until turnover to the grantee or ASC work center.
Peninsula Logistics

For Peninsula Logistics, DNF cargo is shipped to Damco in Punta Arenas, Chile. On arrival, it is stored in a temperature-controlled warehouse until containerized for transport to Palmer Station, or until loaded as breakbulk cargo on the research and support vessel.

Resupply Vessel

Port Hueneme Operations loads all science-related DNF cargo into refrigerated containers set at four degrees Celsius (4°C) thirty-nine point two degrees Fahrenheit (39.2°F) to ensure temperature control in transit. If refrigerated containers are not available, DNF cargo is offloaded in Lyttelton, New Zealand, and trucked 12 miles to Christchurch for airlift to McMurdo Station.

After the resupply vessel is loaded, reports are generated by PTH Operations staffing to ensure that all DNF cargo is identified. Cargo disposition is determined based on the following criteria and distributed to the resupply vessel offload team for full situational awareness.

Criteria for determining DNF cargo disposition:

1. Size and scope of cargo.
2. DNF storage capacity on the station.
3. Number of refrigerated container power plug-ins on the resupply vessel, or stated an insufficient number of plug-ins to support DNF refrigerated containers.
4. Refrigerated container capacity at McMurdo Station.

Should one or more criteria restrict the transport of DNF cargo on the resupply vessel to McMurdo Station, that cargo is offloaded in Lyttelton, New Zealand and transported to McMurdo Station via USAP airlift. Upon arrival at McMurdo Station, DNF cargo is placed in a temperature-controlled environment until ready to be received by the grantee or work center.

Baggage Allowances

Personnel will travel from their airport of departure to Christchurch, New Zealand or Punta Arenas, Chile on commercial carriers. It is essential to review the airline's baggage limitations and fees before departure. Typically, commercial airline baggage allowances were two bags, 23 kilograms (kg)/50 pounds (lb) each, plus a carry-on.

All personnel, summer, and winter, have the same luggage weight allowance when flying from New Zealand to McMurdo Station. A maximum of 39 kg/85 lbs for luggage plus 7 kg/15 lbs for carry-on is allowed for this leg of the journey.

Note

The extreme cold weather (ECW) clothing issued to personnel in Christchurch weighs about 10 kg/22 lb. There is a requirement to wear certain items on the flight. The rest of the issued clothing (about 3 kg/7 lb) is considered checked baggage.
The program does not reimburse costs for excess baggage. However, indicate on the Trip Details form that excess baggage is being carried, as this allows the Christchurch Travel Office to plan weight and balance for flights to McMurdo Station.

**Hazardous Material**

Hazardous materials may not be carried in checked baggage or carry-on luggage. Military flights are no exception. For any questions, contact the hazardous cargo supervisor at (720) 568-2177 or at 1 (800) 688-8606, ext. 32035 or send emails to USAP-Haz-Cargo-Questions@usap.gov.

**Cargo Damage, Insurance, and Customs Inspections**

Neither NSF nor ASC shall be responsible for lost or damaged scientific equipment and general cargo in the following categories:

- Shipped between the point of origin and Antarctica
- Shipped between Antarctica and the destination
- While in Antarctica
- While being transported via USAP transportation (research vessels, annual resupply vessel, or aircraft)

If the ASC contractor is found to be grossly negligent during handling and shipping, claims for lost or damaged shipments will be considered.

All participants are highly recommended to obtain their own insurance. It is also highly encouraged to use some type of rough handling indicator on delicate, high-value equipment being shipped within the USAP transportation network. The brand used by the USAP can be found at the following internet address:


**Reporting Damage or Loss**

Cargo damage must be reported as soon as found. Make reports directly to the T&L work center on station (e.g., USAP Cargo at McMurdo Station, South Pole Logistics, or Peninsula Logistics). For vessels, report immediately to the MPC. For retrograde cargo, report damage or loss to the Port Hueneme Operations manager or Port Hueneme Cargo supervisor via email at PH-CargoOps@usap.gov.

Collect digital images whenever possible. On vessels, the MPC often has a digital camera for use. Send an email with attached digital pictures to the USAP Cargo supervisor on station or MPC on vessels. Material or cargo that never arrives (loss), or that is not available as scheduled, should also be reported in an email.

**Note** Refer to Cargo Disposition Reporting Procedure (TL-SOP-0004) for more complete details.

Each damage report is investigated to determine the extent of damage, the cause of damage, and the location where the damage occurred. Completed reports are forwarded to the T&L manager. The objective is to identify the nature and frequency of occurrences so that process and performance may be adjusted (as required) to prevent future damage.
Insurance and Customs

Participants are responsible for insuring their shipments. The insured value should be as high as the current replacement value of the material. Except for military transport, items may be insured at any point during transit. It is solely the shipper's responsibility to accurately describe the contents and declare the value of shipments. *The Antarctic Support Contract cannot and will not make this declaration.*

Customs Value

The insured value is not the same as the Customs value. The declared Customs value should be the actual market value; that is, the value of the item in its present condition and current age (e.g., the Blue-Book value).

Provide the actual market value on Customs forms for Chile and New Zealand. This is the same value reported when using *Cargo Disposition Report* (TL-FRM-0035). It is the shipper's responsibility to accurately describe contents and declare the value.

**Note** Refer to *Shipping Retrograde Cargo* (TL-MAN-0010) for more complete details.

The US Customs Office will scrutinize high-dollar value shipments more closely than less expensive cargo. When the cargo value reaches a certain dollar threshold, Customs personnel give the shipment more attention and ask more questions. That takes more time, so using the replacement cost (typically more expensive), rather than the current market value, may delay clearing Customs. The same is true for the retrograde of equipment. When US Customs identifies incoming shipments of highly technical equipment, they may specify a need for an import license. While the actual incidence is low in the USAP, proper identification and declaration is crucial.

Import/Export Licensing

Participants are responsible for compliance with all relevant US and foreign government export and import authorities and for obtaining any required export or import permits, licenses, or other authorizations. Please refer to the cognizant agency or agencies to confirm whether cargo requires a special authorization for exportation to or importation from Antarctica. Relevant US government agencies may include, but are not limited to, the following:

- US Department of Commerce ([www.bis.doc.gov](http://www.bis.doc.gov))
- US Department of State ([www.pmddtc.state.gov](http://www.pmddtc.state.gov))
- Nuclear Regulatory Commission ([www.nrc.gov](http://www.nrc.gov))
- Bureau of Alcohol, Tobacco, Firearms, and Explosives ([www.atf.gov](http://www.atf.gov))
- US Food and Drug Administration ([www.fda.gov](http://www.fda.gov))
- US Fish and Wildlife Service ([www.fws.gov/international](http://www.fws.gov/international))
Padlocks

Some shippers send cargo to Antarctica in locked containers. Both US and foreign Customs agents can and do cut off padlocks to inspect the contents. Serialized seals are recommended instead of padlocks.

Feedback and Contacts

To better serve participants, we encourage feedback about our transportation system. Positive feedback tells us what satisfies our customers and meets their needs. Constructive feedback highlights problem areas that may provide opportunities for improvement and improves grantee support. We ask for both.

The following are the POCs for issues concerning Logistics:

- Transportation and Logistics manager
- USAP Logistics manager
- Port Hueneme Operations manager
- Antarctic Terminal Operations (ATO) manager
- USAP Cargo supervisor
- Hazardous Cargo supervisor
- Peninsula Logistics manager
- Leidos Office of International Trade Compliance

**Note** These are contacts for shipping cargo and equipment. For postal mailing addresses, refer to the *USAP Participant Guide* (NSF 06-52).

Port Hueneme

Freight contact and correspondence address:

National Science Foundation  
c/o Antarctic Support Contract  
5020 Stethem Road  
Building 471, North End, NBVC  
Port Hueneme, CA 93043

Port Hueneme telephone contacts:

- Direct: (805) 985-6851
- Toll free: (800) 688-8606; x33615, x33619, and x33603
- Fax: (805) 984-5432
- Email: PH-CargoOps@usap.gov
US Customs

US Customs Office
Treasury Department
2100 K Street, NW.
Washington, DC, 20037

US Freight Carriers

Table 4 lists the contact numbers for freight forwarders in the USAP transportation system.

<table>
<thead>
<tr>
<th>Carrier</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABF Freight Systems, Inc.</td>
<td>(800) 610-5544</td>
</tr>
<tr>
<td>Con-way Freight</td>
<td>(800) 755-2728</td>
</tr>
<tr>
<td>FedEx Express</td>
<td>(800) 463-3339</td>
</tr>
<tr>
<td>FedEx Freight</td>
<td>(866) 393-4585</td>
</tr>
<tr>
<td>Old Dominion</td>
<td>(800) 610-6500</td>
</tr>
<tr>
<td>UPS Freight</td>
<td>(800) 333-7400</td>
</tr>
<tr>
<td>UPS Domestic</td>
<td>(800) 742-5877</td>
</tr>
<tr>
<td>YRC (Yellow-Roadway Corp.)</td>
<td>(800) 775-2728</td>
</tr>
</tbody>
</table>

Use the following information to contact Damco regarding the USAP transportation system:

- Email: asc.lax@damco.com
- Phone: 281-224-8159

New Zealand

National Science Foundation
c/o PAE (New Zealand) Limited
Gate 1, Orchard Road North
Christchurch International Airport
Christchurch, New Zealand

Phone: +64-3-358-8139
Fax: +64-3-358-1479

Chile

Master R/V NATHANIEL B PALMER, Master R/V LAURENCE M. GOULD or
PALMER STATION
c/o Damco Chile SA
Avenida Bernardo O’Higgins NBR. 1385
Muelle Arturo Prat
Punta Arenas, Chile
Tel: +1 720 568 2870
References

Internal Documents

Cargo Disposition Reporting Procedure (TL-SOP-0004)
Cargo Disposition Report Form (TL-FRM-0035)
Intercontinental Shipment of Dangerous Goods (TL-MAN-0017)
Peninsula Logistics Manual (TL-MAN-0004)
Peninsula Logistics Schedule (TL-FRM-0100)
Port Hueneme Operations Manual (TL-MAN-0001)
Shipping Retrograde Cargo (TL-MAN-0010)
Hand-Carry Authorization Form (TL-FRM-0053)
USAP Proforma/Invoice (TL-FRM-0005)

External Supporting Documents

Refer to the following documents when completing these instructions.

Antarctic Conservation Act (www.nsf.gov/od/opp/antarct/aca/aca.jsp)
Certificate of Registration of Foreign Manufactured Item (US Customs form 4455)
Declaration for Free Entry of Unaccompanied Articles (US Customs form 3299 www.cbp.gov/xp/cgov/toolbox/forms/)
Management Manuals, Standard Operating Procedures, and Preventive Maintenance Manuals (ASC contract deliverable NSFDACS 1219442, F006)
Ministry for Primary Industries (https://www.mpi.govt.nz/biosecurity/)
New Zealand Customs (Form NZCS 213 (www.customs.govt.nz/)
Transportation Entry and Manifest of Goods Subject to CBP Inspection and Permit (US Customs form 7512 (https://www.cbp.gov/newsroom/publications/forms?title=7512)
USAP Participant Guide (NSF 06-52)

External Standards and Guidelines

Drug Enforcement Agency (21 CFR §1300-1399)
Export Administration Regulations (15 CFR §730-774)
Food and Drug Administration (21 CFR §1-1299)
GAO Standards for Internal Control in the Federal Government
Government Property (FAR Part 44)
International Traffic in Arms Regulations (22 CFR §120-130)
Management's Responsibility for Internal Control (OMB A-123)
Records

Table 5 describes the records that result from the processes described in this manual.

Table 5: Records

<table>
<thead>
<tr>
<th>Record ID (&amp; Owner)</th>
<th>Format &amp; Location</th>
<th>Protection &amp; Retrieval</th>
<th>Retention &amp; Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USAP Proforma/Invoice</strong> (TL-FRM-0005)</td>
<td>Hard copy kept at ASC Denver.</td>
<td>Attached to shipping record in Maximo</td>
<td>Electronic copy on USAP Cargo drive for five years</td>
</tr>
<tr>
<td>Owner: USAP cargo supervisor</td>
<td></td>
<td>Retrieved per request to USAP Cargo supervisor</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 1: Methods for Shipping Cargo

Unless otherwise directed by NSF, ASC will determine the mode of transport based on the date received and date required on site. To meet the Port Hueneme cargo cut-off dates, consider the shipping mode and transit time.

Resupply Vessel

The USAP charters one container ship each year to move cargo between Port Hueneme, CA, and McMurdo Station. That often includes a stop at Port Lyttelton, New Zealand. The Resupply Vessel departs from Port Hueneme, CA, and arrives at McMurdo Station in late January or early February. Considering all methods of transport to Antarctica, the annual resupply vessel is the most cost effective.

The resupply vessel returns with retrograde cargo to Port Hueneme for offload in mid-March. The onward shipment of scientific materials and samples is a priority over general cargo. Shipping via the resupply vessel should be the first option considered for cost and efficiency to support temperature sensitive cargo.

Commercial Shipping

Commercial surface shipping (COMSUR) moves cargo via ocean going surface vessel. Cargo that arrives at Port Hueneme by the RDD is containerized and shipped COMSUR to New Zealand or Chile. COMSUR is the primary and most cost-effective transportation mode. For Punta Arenas, Chile, and New Zealand, COMSUR shipments depart at regular intervals throughout the year.

Cargo that cannot arrive at Port Hueneme by the RDD must be flown by commercial air (COMAIR) if that is the only way to meet the ROS date. Shipping COMAIR is costly, and not recommended. Also, planning to COMAIR requires prior approval from NSF.

USAP Airlift

Special Assignment Airlift Mission (SAAM) flights are United States Air Force (USAF) cargo planes chartered by the USAP to transport cargo, and participants. SAAM flights typically start at the beginning of the austral summer.
Appendix 2: Transportation Costs and Planning

Acquisition planning schedules provide timelines for moving cargo to Antarctica. Plan ahead and use the lowest cost options as shown in table 6. Contact the Port Hueneme Operations manager with any questions about lead times for special handling.

<table>
<thead>
<tr>
<th>Transport Mode</th>
<th>TO:</th>
<th>Transit Time</th>
<th>Cost</th>
<th>Lead Time</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMSUR</td>
<td>Christchurch, New Zealand</td>
<td>25 Days</td>
<td>US$ .64 per pound</td>
<td>52 days</td>
<td>Due in Port Hueneme 52 days before ROS date. Cost is less than other modes. Still more expensive than the Resupply vessel.</td>
</tr>
<tr>
<td></td>
<td>Punta Arenas, Chile</td>
<td>55 Days</td>
<td></td>
<td>97 Days</td>
<td>Due in Port Hueneme 97 days before ROS date. Schedule based on vessel cut-off dates. Oversized cargo can be delayed in Santiago, Chile, up to 14 days.</td>
</tr>
<tr>
<td>COMAIR</td>
<td>Christchurch, New Zealand</td>
<td>2 to 6 days</td>
<td>US$ 6.49 per pound</td>
<td>7 to 10 days</td>
<td>Due Port Hueneme 7 to 10 days before CHCH. Most expensive shipping. Quickest delivery. Provides goods on short notice. Outsized items sometimes go thru Chicago, and can take weeks as air freight.</td>
</tr>
<tr>
<td></td>
<td>Punta Arenas, Chile</td>
<td>27 days</td>
<td></td>
<td>30 days</td>
<td>Due to Port Hueneme 30 days.</td>
</tr>
<tr>
<td>Resupply Vessel</td>
<td>Port Lyttelton, New Zealand</td>
<td>17 days</td>
<td></td>
<td>ALL DUE</td>
<td>Port Hueneme November 27, 2020 Most cost effective shipment. Move containers and bulk cargo at same time. Move outsized and overweight cargo at no added cost.</td>
</tr>
<tr>
<td></td>
<td>McMurdo Station South Pole Station</td>
<td>5 to 6 days</td>
<td>US$ 0.45 per pound</td>
<td>ALL DUE</td>
<td>Port Hueneme November 27, 2020 Most cost effective shipment. Move containers and bulk cargo at same time. Move outsized and overweight cargo at no added cost.</td>
</tr>
</tbody>
</table>

Port Lyttelton, New Zealand

McMurdo Station South Pole Station
<table>
<thead>
<tr>
<th>Transport Mode</th>
<th>TO:</th>
<th>Transit Time</th>
<th>Cost</th>
<th>Lead Time</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel offloads cargo at McMurdo; loads retrograde and recycle for return trip.</td>
<td>Retrograde to Port Lyttelton</td>
<td>6 to 10 days, depending on reload.</td>
<td>US$ 0.45 per pound</td>
<td>ALL DUE McMurdo Station January 31</td>
<td>Most cost effective return shipment. Most assured for temperature controlled samples. Most secure for containers and bulk samples on return.</td>
</tr>
<tr>
<td></td>
<td>Retrograde to Port Hueneme</td>
<td>17 days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USAP Airlift</td>
<td>Contract airlift NZ to McMurdo, then to South Pole and deep field camps.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>McMurdo Station</td>
<td>6 – 8 hours, depending on aircraft</td>
<td>N/A USAP subcontract</td>
<td>7 Days Due in CHCH 7 to 10 days before ROS date McMurdo.</td>
<td>Move passengers (PAX) and cargo between CHC and McMurdo Station.</td>
</tr>
<tr>
<td></td>
<td>South Pole Station</td>
<td>3 to 4 hours, depending on weather.</td>
<td></td>
<td>10 Days Due in CHCH 10 to 14 days before ROS at South Pole.</td>
<td>Move PAX and cargo between McMurdo Station and South Pole Station.</td>
</tr>
<tr>
<td>Retrograde and Redeployment</td>
<td>Christchurch, New Zealand</td>
<td>6 – 8 hours, depending on aircraft</td>
<td></td>
<td>7 Days Due in McMurdo 7 to 10 days before flight to CHCH.</td>
<td>Move PAX and cargo back to NZ at end of season.</td>
</tr>
</tbody>
</table>
Appendix 3: Vessel Required Delivery Dates

Please refer to the RDD for Port Hueneme to determine the date when cargo must be received at Port Hueneme for on-time delivery via COMSUR. Refer to the table 7 and table 8 for resupply vessel RDDs to McMurdo Station. All science projects must have cargo to Port Hueneme no later than (NLT) November 30.

Table 7: Vessel Delivery Dates and Priority for McMurdo Station

<table>
<thead>
<tr>
<th>Life, Health, Safety Critical</th>
<th>RDD Pt. Hueneme</th>
<th>Required On Site</th>
<th>ROS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Requisitions</td>
<td>30 November 2020</td>
<td>25 January 2021</td>
<td>1121</td>
</tr>
<tr>
<td>Mission Essential</td>
<td>30 November 2020</td>
<td>25 January 2021</td>
<td>1123</td>
</tr>
<tr>
<td>Mission Important</td>
<td>30 November 2020</td>
<td>25 January 2021</td>
<td>1124</td>
</tr>
<tr>
<td>MCM VSL Project Requests</td>
<td>30 November 2020</td>
<td>25 January 2021</td>
<td>1124</td>
</tr>
</tbody>
</table>

Table 8: Vessel Delivery Dates and Priority for South Pole Station

<table>
<thead>
<tr>
<th>Life, Health, Safety Critical</th>
<th>RDD Pt. Hueneme</th>
<th>Required On Site</th>
<th>ROS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Requisitions</td>
<td>30 November 2020</td>
<td>25 January 2021</td>
<td>1121</td>
</tr>
<tr>
<td>Mission Essential</td>
<td>30 November 2020</td>
<td>25 January 2021</td>
<td>1123</td>
</tr>
<tr>
<td>Mission Important</td>
<td>30 November 2020</td>
<td>25 January 2021</td>
<td>1124</td>
</tr>
</tbody>
</table>
## Glossary

Refer also to the list of approved terms at [den.usap.gov/empresources/sctnglossary.cfm](http://den.usap.gov/empresources/sctnglossary.cfm)

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFMAN</td>
<td>Air Force Joint Manual</td>
</tr>
<tr>
<td>APHIS</td>
<td>Animal and Plant Health Inspection Service</td>
</tr>
<tr>
<td>AR/SV</td>
<td>Antarctic Research and Supply Vessel</td>
</tr>
<tr>
<td>ASC</td>
<td>Antarctic Support Contract</td>
</tr>
<tr>
<td>ATO</td>
<td>Antarctic Terminal Operations</td>
</tr>
<tr>
<td>CAO</td>
<td>Cargo Aircraft Only</td>
</tr>
<tr>
<td>Cargo Resupply Vessel</td>
<td>A chartered vessel hired to move cargo between Port Hueneme and McMurdo Station. It generally includes a port call at Port Lyttelton, New Zealand. Often referred to as &quot;the Vessel,&quot; it is the most cost efficient transport for moving material to McMurdo Station. That cargo is often moved on to inland camps and the South Pole Station.</td>
</tr>
<tr>
<td>CHC</td>
<td>Christchurch, New Zealand</td>
</tr>
<tr>
<td>Chilean Territory</td>
<td>Generally the area around the country of Chile May also refer to the area between 50° and 90° East latitude.</td>
</tr>
<tr>
<td>COMAIR</td>
<td>Commercial Air</td>
</tr>
<tr>
<td>COMSUR</td>
<td>Commercial Surface</td>
</tr>
<tr>
<td>Continental Site</td>
<td>Any USAP site throughout the Antarctic continent Typically, transit occurs through Christchurch, NZ, to McMurdo Station; transit occurs to the South Pole Station or Inland field camps.</td>
</tr>
<tr>
<td>CONUS</td>
<td>Continental United States</td>
</tr>
<tr>
<td>COTR</td>
<td>Contract Officer Technical Representative</td>
</tr>
<tr>
<td>Damco</td>
<td>The logistics support agent contracted by ASC.</td>
</tr>
<tr>
<td>DDP</td>
<td>Duty Delivery Paid</td>
</tr>
<tr>
<td>DHL</td>
<td>Dalsey, Hillblom and Lynn</td>
</tr>
<tr>
<td>DHS</td>
<td>Department of Homeland Security</td>
</tr>
<tr>
<td>DNF</td>
<td>Do Not Freeze</td>
</tr>
<tr>
<td>DOD</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>ECW</td>
<td>Extreme Cold Weather</td>
</tr>
</tbody>
</table>
Eutectic Ice

The solid formed when a mixture of 76% water and 23% salt (by weight) is frozen. It melts at −21°C (-5°F), with about three times the refrigerant effect of dry ice.

FAA
Federal Aviation Administration

FAR
Federal Acquisition Regulation

FedEx
Federal Express

IPPC
International Plant Protection Convention

ISIP
Internal Support Information Package

ISO
International Organization for Standardization

ISPM
International Standards for Phytosanitary Measures

KC
Keep Chilled

KF
Keep Frozen

LMG
AR/SV Laurence M. Gould

MPI
Ministry for Primary Industries, in New Zealand

Mainbody
Refers to the large movements of people and cargo at the beginning and end of the austral summer

MAWB
Master Airway Bill

Maximo
Maximo manages USAP inventory and asset information, to include: purchase requisitioning and purchase order tracking; receipt of inventory at USAP operating locations; support of in-transit visibility of cargo; and work order data to include preventive maintenance, emergency work order, and service requests.

MILSPEC
Military Specification

MPC
Marine Project Coordinator

MPI
Ministry for Primary Industries

MLT
Marine Laboratory Technician

NBP
RV/IB Nathaniel B. Palmer

NBVC
Naval Base Ventura County
Located at Port Hueneme, California

NLT
No Later Than

NPX
National Weather Service airfield designator for South Pole Station

NRC
Nuclear Regulatory Commission

NSF
National Science Foundation

OMB
Office of Management and Budget

OPP
Office of Polar Programs
Oversized Cargo

Oversized cargo is cargo that cannot be flown on passenger aircraft or that which exceeds the capabilities of the aircraft available for the proposed route.

Peninsula: Cargo that is more than 43" L (100 cm) x 43" W (100 cm) x 43" H (100 cm), with a total weight of over 125 Kg.

Continental: Cargo that is more than 124" L, 96" W, 62" H. No specific weight limit. Oversized and heavy items may be moved overland from Auckland to Christchurch without an expedite fee.

PAL

National Weather Service designator for Palmer Station

PAX

Passengers

Peninsula Site

Any USAP site along the Antarctic Peninsula

Many vessel operations, Palmer Station, and surrounding field sites fall into this category.

PI

Principal Investigator

POC

Point Of Contact

The individual or office used to centralize input and exercise control over a project. For most events, this will be the Science Planning Manager.

PTH

USAP designator for Port Hueneme, California

PUQ

Punta Arenas, Chile

RDD

Required Delivery Date

The deadline for cargo intended to arrive at Port Hueneme for further shipped via USAP resources. Please refer to the Required Delivery Date section in this document to determine the cargo deadline to Port Hueneme.

ROS

Required On Site

Date when an item is required at the location, where it will be used, whether on station, vessel, or field camp. Computing this date migrates to cargo scheduling, bar codes, flight manifests and on to the destination. Cargo tracking uses the first Saturday following the requested date. Cargo is manifested to reach its site by that Saturday. That date is then converted into a four-digit number representing the year and Julian date. For Peninsula operations, this is generally understood to be the date 12 days prior to departure of the vessel arrives at Punta Arenas or in some cases when the material must be carried via alternate means.

RSP

Research Support Plan

RV/IB

Research Vessel, Ice Breaker

SAAM

Special Assignment Airlift Mission

SDS

Safety Data Sheet

Shipping Number

A field in Maximo that indicates a shipping code (an automated bar code) for shipping and receiving cargo and supplies through Port Hueneme and cargo staging areas, CONUS and on station.

SIP

Support Information Package
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>T&amp;E</td>
<td>Transportation Entry</td>
</tr>
<tr>
<td></td>
<td>A shipping form: US Customs Transportation Entry form 7512</td>
</tr>
<tr>
<td>T&amp;L</td>
<td>Transportation and Logistics Division of ASC</td>
</tr>
<tr>
<td>TSSC</td>
<td>Temperature Sensitive Science Cargo</td>
</tr>
<tr>
<td></td>
<td>Material which must be kept frozen, chilled, or prevented from freezing. For shipping:</td>
</tr>
<tr>
<td></td>
<td>Keep Frozen = -80°C to -20°C (-112°F to -4°F)</td>
</tr>
<tr>
<td></td>
<td>Keep Chilled = 4°C to 10°C (39°F to 50°F)</td>
</tr>
<tr>
<td>TSA</td>
<td>Transportation Security Administration</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UPS</td>
<td>United Parcel Service</td>
</tr>
<tr>
<td>USAF</td>
<td>United States Air Force</td>
</tr>
<tr>
<td>USAP</td>
<td>United States Antarctic Program</td>
</tr>
<tr>
<td>USAP Airlift</td>
<td>This term refers to the scheduled movement of cargo and passengers (PAX) from Christchurch, NZ, to McMurdo Station via aircraft certified to operate in Antarctica.</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>YRC</td>
<td>Yellow Roadway Corporation</td>
</tr>
<tr>
<td>WinFly</td>
<td>Winter Fly-in</td>
</tr>
<tr>
<td></td>
<td>Deploying essential personnel and supplies to McMurdo Station before Mainbody. Arriving in late August, these people serve as an advance party for the start of each season.</td>
</tr>
<tr>
<td>WPM</td>
<td>Wooden Packaging Material</td>
</tr>
<tr>
<td>ZCM</td>
<td>National Weather Service airfield designator for McMurdo Station</td>
</tr>
</tbody>
</table>

**Signature:** Pete Cruser

**Email:** peter.cruser.contractor@usap.gov