



# Packing & Shipping Instructions

TL-MAN-0002  
Version 7

May 2016

Risk Factor: 1

**This document applies to the following locations:**

ARL <input type="checkbox"/>	CHC <input checked="" type="checkbox"/>	DEN <input checked="" type="checkbox"/>	LMG <input checked="" type="checkbox"/>	McM <input checked="" type="checkbox"/>	NBP <input checked="" type="checkbox"/>	PAL <input checked="" type="checkbox"/>	PTH <input type="checkbox"/>	PUQ <input checked="" type="checkbox"/>	SP <input checked="" type="checkbox"/>
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Prepared by the Antarctic Support Contractor  
for the  
National Science Foundation Division of Polar Programs

## Version History

Version #	Date	Section (if applicable)	Author/Editor	Change Details
1	18 June 2012	All	USAP Cargo Supervisor	Annual update with notes from last season. Revise shipping dates for upcoming season. New requirements from new contractor.
2	29 Aug 2012	Marking and Labeling	USAP Cargo Supervisor	Update with the required format for packing list for shipping cargo south and north bound. Introduction of three new forms for shipping cargo. Revised the glossary with new terminology for the Marine Laboratory Technicians.
2	April 2013	All	J. Mastro	Reference document numbers updated.
3	May 2013	All	USAP Cargo Supervisor	Annual update with notes from last season. Revise shipping dates for upcoming season.
4	30 Aug 2013	Shipping Dates	USAP Cargo Supervisor	Updating of timeline for shipping material by different modes
5	September 2014	All	M. Davis J. Ludwig	Content edit to address IBM Maximo conversion. Remove Legacy Document # (LO-A-100) from title page. Revise shipping dates for upcoming season.
6	June 2015	All	M. Davis	Annual update with notes from last season. Revise shipping dates for upcoming season.
7	May 2016	All	M. Davis J. Ludwig	Annual update with notes from previous season. Revised shipping dates for upcoming season. Replaced <i>Retrograde Packing List Form</i> (TL-FRM-0005). Added section of the use of shock watch indicators. Updated title page.

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

Approved by:



Transportation & Logistics Manager

5/18/2016

Date

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## Purpose

This manual contains instructions for documenting, packaging, marking, and shipping materials to and from all United States Antarctic Program (USAP) locations and research vessels. These instructions are published to assist USAP participants in preparing and forwarding their supplies and equipment to — and later, their equipment, data, and specimens — from Antarctica in the most efficient manner.

The logistic streams to Antarctica are some of the longest and most difficult cargo distribution routes in the world. The distance, the few transportation modes, customs inspections through several countries, frequency of delivery, and volume limitations all contribute to difficulties planning on-time delivery of needed materials.

Because of these transportation difficulties, advance planning is critical.

Your actions are the first of many in a long logistics pipeline. Improper documentation, poor packaging or labeling, failure to meet the required delivery dates — whether at Port Hueneme, CA, USA; Punta Arenas, Chile; or directly to Christchurch, New Zealand — can all result in delay, which could jeopardize the accomplishment of planned work.

All cargo receives normal handling, which is generally rough treatment characteristic of stevedoring and transportation aboard ocean going vessels. Cranes and forklifts are used for loading and unloading. To ensure safe arrival, all material should be packaged anticipating the rigors associated with transport by land, sea, and air over several continents. Pack with greater care and mark all containers to indicate contents which may be sensitive to impact, temperature, moisture, orientation (e.g., “This End Up”), etc.

All shipping costs for processing and transport between point of 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 weight allowances that were requested and approved from the Support Information Package (SIP) require prior authorization from the 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, South Pole Station
- Commercial Surface (COMSUR)
- Commercial Air (COMAIR)

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

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## Authorities and Mandates

The prime contract NSFDACS 1219442, Deliverable F006 - Management Manuals, Standard Operating Procedures, and Preventive Maintenance Manuals 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.

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

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

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**Note** Risks associated with these procedures are addressed further in other sources. Refer to the *Port Hueneme Operations Manual* (TL-MAN-0001).

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## Scope

This document applies to all grantees and participants sending cargo to or from Antarctica.

## Responsibilities

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

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

### USAP Cargo Supervisor

The USAP Cargo supervisor is responsible for annually reviewing and updating this procedure and all retrograde cargo operations at McMurdo Station. 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 ensure that all temperature sensitive science cargo (TSSC) is protected, including receipt and storage of TSSC, updating IBM Maximo, and protecting the transfer to the resupply vessel or transport aircraft, whether with USAP partners or other contractors. The USAP Cargo supervisor is responsible for making sure these procedures are followed throughout the McMurdo area.

### USAP Cargo Administrative Coordinator

The USAP Cargo administrator is responsible for administrative support for the USAP Cargo office at McMurdo Station. The administrator shall be responsible for entering data into IBM Maximo for cargo operations at McMurdo Station, as directed by the USAP Cargo supervisor.

## **Port Hueneme Operations Manager**

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

## **Marine Terminal Supervisor**

The Marine Terminal supervisor is responsible for coordinating movement of cargo on marine resources and of cargo to the vessel, enabling the loading of containers, and ensuring that container placement on the vessel is accurately recorded in the IBM Maximo database.

## **Marine Project Coordinator**

Within the Science Support division, the Marine Project Coordinator (MPC) is responsible for following all these procedures, both on board and while conducting support for the research vessels, 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) on board, depending on the caseload and science planning for that cruise. The MLT is available to assist grantees, 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 Logistics Supervisor**

The South Pole Logistics supervisor is responsible for these procedures at the South Pole Station and for planning all logistical support at the South Pole. All science cargo is coordinated in advance with the South Pole Logistics supervisor.

## **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 making sure these procedures are followed throughout the Peninsula area, Palmer Station, and research vessels.

## **Peninsula Logistics Supervisor**

The Peninsula Logistics supervisor is responsible for making sure these procedures are followed throughout the Peninsula area, Palmer Station, and research vessels. The Peninsula Logistics supervisor is responsible for completing the steps described here. As the point of contact (POC) for science sample shipments from Palmer Station and the peninsula area, the Peninsula Logistics supervisor oversees retrograde movement of all

TSSC. For further details, please refer to the *Palmer Station Logistics Manual* (TL-MAN-0004).

## **Damco**

Continuing logistical support in South America is subcontracted through Damco Chile, who must meet the standards set in this procedure. Refer also to the *Palmer Station Logistics Manual* (TL-MAN-0004) and the *Punta Arenas Warehouse Logistics Manual* (TL-MAN-0003) for more details on Peninsula operations.

## **Grantees and Participants**

Everyone who requires sending cargo to or from Antarctica, whether back to the US or otherwise, must following the steps in this procedure.

## **Port Hueneme, California**

Through contractual arrangements with the Antarctic Support Contract (ASC), the Port Hueneme Operations manager is responsible for the receipt and movement of all USAP cargo shipments going to or returned from Antarctica. Material going to Antarctica is first processed at Port Hueneme Operations (California), where it is entered into the USAP transportation system.

The Port Hueneme Operations manager is the point of contact (POC) for all matters related to processing outgoing cargo, and can be reached at the contact information provided below.

### **Freight:**

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

### **Correspondence:**

National Science Foundation  
c/o Antarctic Support Contract  
Post Office Box 338  
Port Hueneme, California 93041

### **Telephone:**

805-985-6851  
800-688-8606, x33601

### **Fax:**

805-984-5432

### **Email:**

PH-CargoOps@usap.gov

## 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 states that the shipment does not contain any unauthorized explosives, destructive devices, or hazardous materials. The Port Hueneme Operations manager is responsible for preventing the unauthorized addition of explosives or hazardous materials to contents. The unauthorized shipment of hazardous materials via air carriers subjects the shipper to a 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.

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

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Therefore, each container arriving at the Port Hueneme Operations facility is subject to inspection before it can be forwarded to Antarctica. Containers shipped with locking devices, such as padlocks, will also be inspected. Cargo will not be forwarded if the container cannot be opened. 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.

## South Bound Cargo Shipping

All USAP participants should send all shipments to Port Hueneme Operations for transport to Antarctica, as this is the most reliable method for the delivery and tracking shipments to USAP Stations and research sites. Cargo entering the USAP Cargo stream at Port Hueneme is assigned a Shipping Number in IBM Maximo, which is used to manage the movement and staging of cargo, just as a FedEx number is used to track movement of material shipped by this mode. The Shipping Number can also be used for tracking and to identify the updated status of items in the cargo stream.

Contact Port Hueneme Operations before shipping any unique or unusual cargo, anything very large or unusually heavy, any odd-sized cargo, and any intermodal container cargo. Provide Port Hueneme Operations with shipping information so that they can prepare for receiving and trans-shipment. If any special handling is needed, Port Hueneme Operations will know the requirements that must be met. Call Port Hueneme Operations with any questions.

## Address for Cargo Shipments

Use the following address and information for cargo shipments to Port Hueneme. The information should be labeled on each box. Make sure this information is clear and legible.

National Science Foundation  
c/o Antarctic Support Contract  
Naval Base Ventura County  
5020 Stethem Road  
Building 471, North End

Port Hueneme, CA 93043  
ATTN: USAP <station abbreviation>  
<Station code>  
<Grantee>  
<Event number> or <Project code>  
<ROS>

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

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### Example Address

The following is an example address from a fictitious project:

National Science Foundation  
c/o Antarctic Support Contract  
Naval Base Ventura County  
5020 Stethem Road  
Building 471, North End  
Port Hueneme, CA 93043  
ATTN: USAP — NPX  
DR3  
M. Davis  
A-404-S  
4319

### Station Abbreviations and Station Project Codes

Table 1 identifies station abbreviations and Project Codes.

**Table 1:** Station Abbreviations and Station Project Codes

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

Shipping cargo outside of the USAP to an Antarctic gateway, such as Christchurch, New Zealand, or Punta Arenas, Chile, may encounter delays in customs inspections or other unforeseen reasons that are beyond USAP control. The NSF and ASC (LMCO) have instituted shipping procedures in order to reduce or eliminate delays in shipping materials to Antarctic research sites.

If shipping directly to a gateway destination is unavoidable, be sure to explain it to the appropriate Science Planning and Support manager POC. Follow their direction. They will advise the sender to contact the Port Hueneme Operations manager for further instruction.

## Shipping to Port Hueneme from Foreign Locations

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 required documentation 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.

Cargo consigned to the USAP at Port Hueneme will be re-exported from Port Hueneme, California (NBVC), which is covered by US Customs. To clear inspections by the Department of Homeland Security (DHS), make sure the Lockheed Martin obo National Science Foundation is listed as consignee for these shipments. Start Transportation Entry (T&E) shipments early enough to allow for occasional short delays, while the carrier arranges local delivery witnessed by US Customs officials.

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**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 the Department of Homeland Security (DHS) for delivery to NBVC.

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All cargo shipments from foreign countries to Port Hueneme, CA 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 from 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 YRC.

## 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.

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**Note** Copies of New Zealand Customs Form NZCS 213 are available from the ASC Travel department. Be sure to have Form NZCS 213 completed before departure.

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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 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 equipment 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 *Temporary Property Hand Receipt* (BO-FRM-0001) 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.

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

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## Direct Commercial Shipping

All USAP participants should use the NSF Port Hueneme facility for cargo shipments southbound to Antarctica, as this is the most reliable method for delivery and for tracking shipments to Antarctic research sites. Shipments may be made directly overseas.

Port Hueneme Operations must be contacted before shipping anything that may be very 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 commencement of shipment. Port Hueneme has several options and expert services to offer in USAP support. Be aware that they may need advance notice for support of special cargo. They may be able contact special carriers in your area.

Contacting Port Hueneme Operations before directly shipping cargo will help them locate and track the cargo during shipment. This also helps them prepare for receiving the cargo, in case any special handling is needed. It also helps process items that may need transshipment onward to the final destination.

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

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**Note** Neither the NSF nor ASC (LMCO) is responsible for commercial shipments sent directly to these destinations.

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Recent changes in Transportation Security Administration (TSA) security policy may affect direct cargo shipments. Please consult the TSA website to determine if additional information or measures are required to ship cargo outside of the USAP supply chain. For more information, please refer to the Air Cargo Security Changes letter issued by the TSA, which is available at the following Internet address:

- [http://www.tsa.gov/sites/default/files/assets/pdf/Intermodal/newsletter\\_january\\_2013.pdf](http://www.tsa.gov/sites/default/files/assets/pdf/Intermodal/newsletter_january_2013.pdf)

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")

Preparing material for direct commercial shipping is the same as preparing for shipment in the USAP supply chain; refer to other sections in this manual.

Be sure to notify the USAP representatives at the destination that materials have been shipped to the addresses listed below. Ensure that the commercial invoice is included with the Bill of Lading, which outlines specific contents and dollar values. The appropriate paperwork must be received prior to the arrival of the cargo. The following information must be identified on all correspondence:

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

It is strongly recommended that the shipper confirm receipt of all communications with the transportation terminals listed below.

## **New Zealand**

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

- Email: [CHC-CourierNotifications@usap.gov](mailto: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 prior to 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\$

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**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.

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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

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**Note** All direct shipments must be sent Duty Delivery Paid (DDP).

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## Chile

For surface shipments, a copy of the Bill of Lading is required to be emailed to Damco Chile, at PA-PuntaArenasAll@usap.gov.

Please ensure that 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:

- 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\$

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

## Preparing Cargo for Shipment

During the shipping process, equipment and material will receive treatment characteristic of stevedoring operations. Delicate or sensitive equipment must be well-packed and protected by means of the packaging used. Grantees and their packing agents should not only give

consideration for providing additional packing, but should also consider the type of materials utilized for shock-absorbent packing.

Contact Port Hueneme Operations before shipping any unique or unusual cargo, anything very large or unusually heavy, any odd-sized cargo, and any intermodal container cargo. Provide them with the shipping information so that they can prepare for receiving and transshipment. If any special handling is needed, Port Hueneme Operations will know the requirements that must be met. Call first with any questions.

## Packing Material

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

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

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Do not use polystyrene, polyurethane foam, or silicone sponge. Suitable alternatives are bubble wrap, shredded paper, corrugated cardboard, burlap, and packing tissue. Paper products are more easily recycled, and therefore, more suitable for shipping material to Antarctica. Some cargo shipments have been delayed on entry to both New Zealand and Chile due to the condition of the packing crates, when the outside material failed inspection. Wooden packaging material (WPM), such as pallets, crates, and boxes are often reused to return material to the United States, which has some of the 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. All shipments of lumber must be accompanied by a certificate from the manufacturer stating the extent and level of any treatment process.

Inspections are conducted by the Ministry for Primary Industries (MPI) to prevent accidentally introducing any insects or fungi that could damage New Zealand forests and 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. Grantees 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:

- <http://www.mpi.govt.nz>

### **Wood Packing Material, Chile**

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

Grantees 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 in order 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 16 September 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 are in compliance 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.

## Packing Containers

As often as possible, pack reusable containers with hinged, clamped, or screw-fastened tops — most especially if items are to be returned or reused in retrograde.

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 station. Use sturdy material that is well fastened, securely braced, and reinforced. All boxes and containers should be secured with steel banding or Cordstrap. The number of straps depends on the size of the box, but it is recommended to use at least two straps per box.

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**CAUTION** All participants must be aware of the very rough conditions that may be encountered by material during transport.

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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 to 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.

Extremely small boxes may also pose a problem. They are difficult 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.

Any air cargo longer than 125 inches (10 ½ feet, or 3.2 m) must be sent via cargo carrier. Sometimes, mail or air cargo can be expedited on passenger aircraft. The following sizes can only be flown by cargo carriers:

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

## Marking and Labeling

Mark all boxes and crates in a distinctive and obvious manner. 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 re-used from previous seasons in Antarctica or other locations, remove any old labels, barcodes, and markings to prevent delays or misdirection.

### Required Documentation

Provide the Port Hueneme Operations manager 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 should be created and attached to the outside of each box or emailed to PH-CargoOps@usap.gov. Be sure to do the following:

1. Describe the contents, especially any hazardous materials.
2. List the event number.
3. Use the Antarctic station abbreviation.
4. Indicate the required on-site (ROS) date and any temperature requirements or special handling needed.

Due to compliance regulations, the level of detail for the packing list has been increased. Information on the contents must include a detailed description of item, manufacturer part number, manufacturer and country of origin, US dollar amount (US\$) per item, and the total cost for all items. Please be as specific as possible to prevent any problems. This information is required for each item shipped within each box/crate/pallet/tote/etc. to be used by USAP personnel to create the proforma invoice required by US Customs for export.

In the event that information is missing from the packing list, cargo may be delayed until the information is obtained. There are specific templates to be used depending on shipping situations. The templates are as follows:

- *USAP Southbound Cargo Packing List Form* (TL-FRM-0004)
  - This template is to be used by all USAP participants to ship southbound cargo to Antarctica.
- *USAP Northbound Cargo Retrograde Packing List Form* (TL-FRM-0005)

— This template is to be used by all science groups and contractors to ship northbound or retrograde cargo from Antarctica not traveling on the annual resupply vessel. The only instance that the *USAP Northbound Cargo Retrograde Packing List Form* is not completed is if the final destination of the cargo is New Zealand.

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

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In addition, forward the electronic copies of the detailed packing lists in Microsoft Excel that were attached to each box that outline the contents of each package.

### Special Handling

Some items require specific treatment. We must prevent some contents from freezing and other contents that must not thaw. Boxes will need to be kept upright or protected from energy sources.

Special handling instructions must be marked outside the box. Appropriate and bold labels or stencils should provide cargo handlers with instructions. Common examples include the following:

- Fragile
- Do Not X-Ray
- Keep Dry
- Keep Frozen
- Do Not Freeze

## Do Not Freeze

Some cargo cannot tolerate freezing. Some materials become very brittle when they get cold. Certain cargo cannot tolerate constriction or shrinkage that occurs at freezing temperatures. Some food stuffs will spoil if allowed to freeze. Some computer equipment or digital components can be ruined by freezing due to the extreme temperatures in Antarctica. Batteries and some chemicals can be rendered useless if subjected to these extreme temperatures.

The size restrictions on Do Not Freeze (DNF) cargo are as follows:

48" x 45" x 40"                      (L x W x H)                      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 justification or science need provided in writing in advance. With that, further arrangements need to be made with the Port Hueneme Operations manager.

In addition to size restrictions, the 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.

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**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.

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After the DNF cargo is processed through Port Hueneme Operations, follow the procedures in the following sections to ensure that cargo is not damaged by freezing temperatures.

## 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

For 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 NZ, cargo is palletized and transported via the USAP Airlift. At McMurdo Station, DNF cargo is placed in a temperature-controlled warehouse environment until delivered to the grantee or appropriate work center.

For 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, NZ, cargo is palletized and transported via the USAP Airlift through McMurdo Station. DNF cargo is placed in a temperature-controlled warehouse environment until manifested on a flight to South Pole Station. On arrival at the South Pole, DNF cargo is also kept in a temperature-controlled environment until turned over to the grantee or ASC (LMCO) 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 environment until containerized for transport to Palmer Station, or until loaded as break bulk cargo on the research and support vessel.

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

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## Southbound COMSUR

Port Hueneme Operations loads all science-related DNF cargo in an intermodal container, and manifests the container for surface vessel to Christchurch, New Zealand. Cargo is off-loaded from the ocean vessels in Port Lyttelton, New Zealand. On delivery to the Air Cargo Yard in Christchurch, DNF cargo is unloaded from the container, palletized, and transported to McMurdo Station via USAP airlift. On arrival at McMurdo Station, DNF cargo is placed in a temperature-controlled warehouse environment until delivered to the grantee or work center.

## South Pole Station

For South Pole Station, DNF cargo is turned over to the freight forwarder for commercial shipping to New Zealand. Ocean vessels are off-loaded in Lyttelton, New Zealand and trucked about 20 km (12 miles) 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 environment until manifested on a flight to South Pole Station. On arrival at the South Pole, DNF cargo is quickly moved to a temperature-controlled environment 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 environment until containerized for transport to Palmer Station, or until loaded as break bulk cargo on the research and support vessel.

## Resupply Vessel

Port Hueneme Operations loads all science-related DNF cargo into refrigerated containers set at 4°C (39.2°F) to ensure temperature control while being transported on the resupply vessel. 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 the Marine Terminal supervisor to ensure that all DNF cargo has been identified. Cargo disposition is determined based on the following criteria, and distributed to the resupply vessel off-load team for full situational awareness.

Criteria for determining DNF cargo disposition:

1. Size and scope of cargo.
2. DNF storage capacity on station.
3. Number of refrigerated container power plug-ins on the resupply vessel, or stated 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 off-loaded 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.

## 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 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, grantees must notify the Port Hueneme Operations manager in advance to receive specific instructions.

For instance, if the container includes 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 should be shipped separately when possible, and must include a safety data sheet (SDS) with the packing list.

To accurately detail requirements for certifying an intermodal container for seaward transportation to Antarctica, the following are the current MILSPEC certification guidelines:

- MIL-STD-2073-1D *Standard Practice for Military Packaging*  
<https://acc.dau.mil/adl/en-US/53966/file/56105/MIL-STD-2073-1D.pdf>

## Hazardous Material

The shipper is responsible for declaring dangerous goods and for ensuring the proper packaging, marking, labeling, and documentation of the package. Failure to provide proper disclosure puts logistics personnel at risk and poses a danger to all aircraft and vessels throughout the system. Required information will include the UN number, proper shipping name, class/division, and net quantity, and may include the packing group, flashpoint, and type of specification packaging. Failure to identify hazardous material violates federal law, and holds penalties up to \$100,000 and ten years in jail. Identify and label all material being shipped, hazardous and otherwise. All hazardous materials must be accompanied by a SDS.

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**Note** Many common items used every day are considered hazardous material for shipment by aircraft and vessel. When in doubt, ask.

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The shipment of hazardous material through the USAP transportation system is supervised by the Hazardous Cargo supervisor at ASC Denver. Consultation or advice at the following email address:

- [USAP-Haz-Cargo-Questions@usap.gov](mailto:USAP-Haz-Cargo-Questions@usap.gov)

Messages to this email address are reviewed by the Hazardous Cargo supervisor and Port Hueneme Operations personnel to assist with shipments to Antarctica.

Participants planning shipments of hazardous cargo should consult *all* the following regulations:

- U.S. Code of Federal Regulations, Title 49, Parts 100-185 (49CFR), *Hazardous Materials Regulations*
- Air Force Interservice Manual (AFMAN) 24-204, *Preparing Hazardous Materials for Military Air Shipments*
- International Air Transport Association (IATA), *Dangerous Goods Regulations*
- International Maritime Dangerous Goods (IMDG) Code

Hazardous cargo should be prepared in accordance with the restrictions applicable to passenger aircraft.

## Packaging

Participants are responsible for packaging materials for their project. Shipments made by a third party are still the responsibility of the participant. Ensure that the third party is aware of precautions and requirements for hazardous materials.

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**Note** Packing lists must describe all materials used in packing hazardous items.

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Hazardous materials must be segregated by UN number and packaged separately from other cargo. There are nine Hazard classes:

1. Explosives
2. Gases
3. Flammable liquids
4. Flammable solids
5. Oxidizers
6. Poisons
7. Radioactive material
8. Corrosives
9. Miscellaneous

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**Note** With the exception of some medicinal and toilet articles for personal use, hazardous materials may never be carried in baggage.

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Participants requiring assistance in preparing shipments may contact the Port Hueneme Operations manager or secure the services of a professional shipper.

## Shipping

When shipping hazardous materials (hazmat) internationally, packages may move through the system slowly due to the various regulations that restrict hazmat transportation. In order to ensure timely arrival of hazardous material, send them to Port Hueneme Operations as early as possible. Follow the dates for COMSUR as specified on the materials cut-off schedule described in Table 3: Required Delivery Dates to Port Hueneme.

## Waivers

Hazardous materials requiring packaging waivers for US military air shipment should be identified as soon as possible so that the Hazardous Cargo supervisor can start the *45-day process*. The US Air Force Materiel Command (AFMC) requires 30 days to process a waiver request. The Hazardous Cargo supervisor needs at least 15 days to research the request before applying for a waiver from AFMC.

Shippers are required to provide to the Hazardous Cargo supervisor all pertinent specifications concerning the hazardous material shipment, including the manufacturer's part number.

## Safety Data Sheet

Safety data sheets (SDSs) contain detailed information on materials, from generic name to specific chemical properties and emergency, first aid procedures. They are commonly available from manufacturers and vendors. Participants must ensure that this information is included with each shipment of hazardous material through the USAP transportation system.

This may be difficult with custom materials, which are purified or mixed individually, but a SDS is still required. Also, participants should maintain copies of each SDS shipped in case the original is not delivered to Port Hueneme Operations by the shipping agent.

## Examples of Hazardous Cargo

Many common items used every day are considered hazardous, and may be regulated for shipment by aircraft and surface vessel. When in doubt, contact Hazardous Cargo supervisor for clarification. Examples of hazardous cargo are described in Table 2.

**Table 2:** Examples of Hazardous Cargo

pyrotechnics and explosives	SCUBA cylinders (air)	fire extinguishers	aerosols and compressed gas cylinders
cryogenic liquids: oxygen (LOx), nitrogen (LN2), helium (LHe)		cigarette lighters and lighter fluid	kerosene and gasoline
methanol, ethanol, and isopropyl alcohol	acetone and benzene	paint, spray paint, paint thinner	some cleaning solvents and adhesives
ether, chloroform	carbon tetrachloride	hydrochloric acid, nitric acid, sulfuric acid	glutaraldehyde
formaldehyde	automobile batteries	ammonia	lithium batteries

This is not a comprehensive list, and is not intended to offer complete details — these are merely examples. Use this as a guide to help identify if a material is subject to regulation when placed in the transportation system.

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**Note** For help with identification and classification any hazardous material, contact the Hazardous Cargo supervisor at (800) 688-8606, ext. 32261. Or, contact the Port Hueneme Operations manager.

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## Dry Ice

Dry ice is regulated as a dangerous good. When shipped as cargo, dry ice is subject to a maximum of 200 kg (440 pounds) per package. Because dry ice is a dangerous good, delays in transportation via commercial airlines may occur. Dangerous goods are always subject to refusal for flight by the airline or pilot.

## Liquid Nitrogen Dry Shippers

Liquid nitrogen dry shippers are utilized when extremely low temperatures are needed to preserve the integrity of science samples for long periods.

**WARNING: Liquid nitrogen can destroy human tissue on contact.**

Liquid nitrogen is a regulated dangerous good. Liquid nitrogen dry shippers may be hand-carried or checked as baggage, but operator approval (e.g., the airline) must be obtained in advance. Even with advance approval, however, delays and refusals are common. Shipment cannot be guaranteed. Therefore, LN2 dry shippers as a means of transporting samples is discouraged by the USAP. All other means for shipping samples must be reviewed and eliminated before a dry shipper will be approved.

## Explosives

Extremely dangerous, and an obvious hazard, explosives may still be transported to Antarctica. Prior planning is essential due to the need to check state, federal, military, and international regulations. Port Hueneme Operations is located on a US Naval base, and is not permitted to accept, receive, ship, or store explosives or any Class 1 hazardous materials. Deliveries of explosives will be refused and attempts are subject to fines.

Shipment of explosives must be coordinated in advance. Some explosive shipments need 12 months lead time or more. Please contact the Hazardous Cargo supervisor at (720) 568-2035 (toll free: 1 (800) 688-8606 ext. 32035), or ask the Port Hueneme Operations manager for more information.

## Lithium Batteries

Lithium battery shipments or shipments with items that contain charged batteries may overheat and ignite in certain conditions and, once ignited, may be difficult to extinguish.

### ***Lithium Ion Batteries***

Lithium ion batteries are rechargeable batteries that are often found in the following:

- Cameras
- Cell phones
- Laptop computers

Effective 1 April, 2016 all lithium ion cells and batteries shipped by themselves (as defined in UN 3480) are forbidden for transport as cargo on passenger aircraft.

All packages containing lithium ion batteries must be prepared in accordance with Packing Instruction 965, Section IA, IB and must bear a label indicating “Cargo Aircraft Only” in addition to existing labels. Lithium ion cells and batteries must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity. Cells and/or batteries at a SoC of greater than 30% may only be shipped with the *approval of the State of Origin and the State of the Operator*, under the written conditions established by those authorities.

### **Lithium Metal Batteries**

Lithium metal batteries are non-rechargeable batteries that are designed to be discarded.

All lithium metal cells and batteries shipped alone (as defined in UN 3090) are forbidden for transport as cargo on passenger aircraft. All packages prepared in accordance with Packing Instruction 968, Section IA, IB and II must bear a label indicating “Cargo Aircraft Only” in addition to existing labels.

### **Basic Packaging Requirements**

Table 3 outlines the basic packaging requirements for lithium batteries according to Packing Instruction 965

**Table 3:** Basic Packaging Instructions for Lithium Batteries

<b>Requirement</b>	<b>Description</b>
Section IA	<p>Cells and batteries must be placed in inner packagings that completely enclose the cell or battery and then tightly packed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance standards.</p> <p>Batteries with a weight of 12 kg or greater and having a strong, impact-resistant outer casing may be transported when packed in strong outer packagings or protective enclosures (e.g., in fully enclosed or wooden slatted crates).</p> <p>Batteries manufactured after 31 December 2011 must be marked with the Watt-hour rating on the outside case.</p>
Section IB	<p>Cells and batteries must be packed in inner packagings that completely enclose the cell or battery. To provide protection from damage or compression to the batteries, the inner packagings must be tightly packed in a strong rigid outer packaging.</p>
Section II	<p>Cells and batteries must be packed in inner packagings that completely enclose the cell or battery. To provide protection from damage or compression to the batteries, the inner packagings must be placed in a strong rigid outer packaging of one of the packaging.</p> <p>A shipper is not permitted to offer for transport more than one (1) package prepared according to Section II in any single consignment. Not more than one (1) package prepared in accordance with Section II of PI 965 may be placed into an overpack. The lithium battery handling label and Cargo Aircraft Only must be visible.</p> <p>A <i>Shipper's Declaration for Dangerous Goods</i> is not required.</p>

For lithium batteries packaged according to Section 1B or Section II, each consignment must be accompanied with a document that indicates that the package contains lithium ion cells or batteries. Additionally, the following must be followed:

- The package must be handled with care and that a flammability hazard exists if the package is damaged.
- Special procedures must be followed in the event that the package is damaged, including inspection and repacking if necessary.
- The package must include a telephone number for additional information.

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**CAUTION** Recalled or defected lithium batteries are forbidden for air transport.

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## Radioactive Materials, New Zealand

Shipment and use of radioactive materials in Antarctica requires strict adherence to a Memo of Understanding between the NSF and the Nuclear Regulatory Commission (NRC) for US Antarctic policies and procedures in order to avoid contaminating the Antarctic environment and to ensure safety. Approval by the NSF Office of Polar Programs (NSF/OPP) to use any type of radioisotopes in Antarctica must be obtained in advance, before any radioactive material is shipped south. The approval process is described in the science project's SIP. Also, contact the appropriate Science Planning Support manager with the information, or contact another ASC (LMCO) POC for further information on this process. A hard copy of the NSF/OPP Radioisotope Authorization (NSF form 1368) should accompany all radioactive material shipments to and from Antarctica.

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**Note** Grantees are responsible for procuring, packaging, documenting, transporting, and retrograde movement of all radioactive materials and radioisotopes required for research.

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The Radiation Safety Officer (RSO) for each institution can specify the requirements for the radioisotope, radioactive substance, or radioactive emissions to be shipped to ensure compliance with state, national, and international regulations pertaining to packaging and shipping. For further information, the RSO may consult with the Hazardous Material (HazMat) Specialist, Christchurch, New Zealand, by email ([hazmat@usap.gov](mailto:hazmat@usap.gov)) or by fax (+64-3-358-1479) for shipments to and through New Zealand. When shipping radioactive materials, or having them consigned from a vendor, please ensure that material is packaged within category Yellow-II, that it does not exceed a transport index of 1.0, and that any Yellow-III packages do not exceed a transport index of 3.0.

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**Note** It is against the law to hand carry radioactive materials into New Zealand.

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The HazMat Specialist, Christchurch, New Zealand, must receive import documents five (5) business days before radioisotopes are received in New Zealand, whether being shipped to the country, or transshipped through to Antarctica. Accordingly, if vendors are planning to ship radioisotopes directly to New Zealand, all orders must be marked by the vendor as follows:

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

The Project or Event number and principal investigator (PI) name must be included in the shipping instructions so that the HazMat Specialist in Christchurch will know to whom to consign the shipment in Antarctica.

After the order is placed with the vendor, notify the HazMat Specialist in Christchurch. Notification in writing may be made by email (hazmat@usap.gov) or fax (+64-3-358-1479), and include the information identified in the next sections.

### **Unsealed**

Radioactive items that are not an integral part of equipment must include the following information:

- Radioactivity per item
- Number of items
- Description of radioactive material
- Country of origin
- Expected departure date from country of origin. Include country name (e.g., United States)
- Arrival in New Zealand

### **Sealed**

Radioactive items that are an integral part of the instrument or equipment must including the following information:

- Radionuclide
- Activity per item
- Number of items
- Year of manufacture (if known)
- Serial number (if known)
- Instrument type (if part of an instrument or other equipment)
- Model
- Country of origin
- Expected departure date from country of origin (include country name)
- Arrival in New Zealand

It is also a requirement to follow up with written confirmation for any radioactive compounds or radioisotopes being shipped. The Airway Bill (Bill of Lading), flight numbers, and any special handling instructions need to be provided as soon as the shipment is confirmed. Include any special handling, such as Keep Frozen (KF) or Do Not Freeze (DNF).

When received in Christchurch, the HazMat Specialist consigns the shipment to the PI on station or research vessel. Contact the HazMat Specialist in New Zealand with any questions using the following information:

## Terminal Operations Cargo Coordinator

PAE (New Zealand) Limited

Tel: +64-3-358-1471

Fax: +64-3-358-1479

Cell: 027-4357731

Email: hazmat@usap.gov

## Radioactive Materials, Chile

The local shipping agent in Chile is Damco.

Shipment and use of radioactive materials in Antarctica follows strict guidelines between the NSF and the NRC for safety and to avoid contaminating the Antarctic environment. Prior approval is required for use of any type of radioisotopes in the Antarctic, before any such material can be shipped south. The approval process will be described in the science project's SIP. The appropriate Science Planning Support manager (POC) can help with this process. A hard copy of the NSF/OPP Radioisotope Authorization (NSF form 1368) should accompany all radioactive material shipments to and from Antarctica.

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**Note** All participants are responsible for procurement, packaging, transport, and retrograde movement of all radioactive materials and radioisotopes required for their research project. Shipment can occur only with prior approval from the NSF.

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The RSO for the related institution can specify the requirements for the radioisotope, radioactive substance, or radioactive emissions to be shipped to ensure compliance with state, national, and international regulations pertaining to packaging and shipping. Grantees must direct requirements through the RSO at their institution or consult the Port Hueneme Operations manager for shipments to or through Chile.

There are two ways to ship radioisotopes through Chile, as follows:

- The vendor ships directly to Damco, Punta Arenas, Chile.
- The parent organization ships directly to Damco.

Whether planning to have the vendor ship directly, or sent from a parent organization, follow these instructions:

1. Make arrangements with a local RSO to assure compliance with state, national, and international regulations for packing and shipping radioactive materials.
2. Ship to the address given below.
3. Safety Data Sheet (SDS) must accompany all shipments.
4. The PI is responsible for contacting the Peninsula Logistics manager and Science Planning Support manager at the time of shipment.

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**Note** Peninsula Logistics should be informed of any special storage requirements for the radioisotopes; like, Keep Frozen (KF) or Do Not Freeze (DNF). This is important, since radioisotopes may be stored for weeks in Chile before being forwarded to Palmer Station.

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Radioisotopes should arrive in Punta Arenas at least two weeks before the scheduled vessel departure. Check with the appropriate POC for the latest vessel schedule. Send radioisotopes directly to Chile using the following address:

Manager, Punta Arenas Operations  
c/o Damco Chile SA  
Avenida Bernardo O'Higgins NBR. 1385  
Muelle Arturo Prat  
Punta Arenas, Chile

When arriving in Punta Arenas, Chile, Damco facilitates clearance through Chilean Customs. The radioisotopes are assigned a Shipping Number according to the grantee's project code, and stored in a warehouse at Punta Arenas until such time as they can be turned over to the MPC. The MPC delivers the package to the grantee when all required safeguards have been verified. For isotopes to be used at Palmer Station, the MPC delivers the package to the Palmer Lab supervisor.

## Cargo Damage, Insurance, and Customs Inspections

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

- Shipped between 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)

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**Note** Claims for lost or damaged shipments will be considered if the ASC contractor is found to be grossly negligent during handling and shipping.

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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:

- [http://www.uline.com/BL\\_1053/Shockwatch](http://www.uline.com/BL_1053/Shockwatch)

## 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 Marine Projects Coordinator (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 report of damage or loss is investigated to determine the extent of damage, the cause of damage and, if possible, 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 own 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 — 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 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 retrograde return 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 very important.

### 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 Drug Enforcement Administration ([www.justice.gov/dea](http://www.justice.gov/dea))
- US Fish and Wildlife Service ([www.fws.gov/international](http://www.fws.gov/international))
- US Department of Agriculture ([www.usda.gov](http://www.usda.gov))
- USDA Animal and Plant Health Inspection Service ([www.aphis.usda.gov](http://www.aphis.usda.gov))

### **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 in lieu of padlocks.

## **Shipping Dates**

Pre-shipment planning is essential to timely material delivery in Antarctica. Advanced planning can help to reduce USAP transportation costs, while improving the probability of on-time delivery.

---

**Note** Allow an additional 15 days lead time for hazardous or oversized materials in order to make each required delivery date (RDD).

---

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.

Cargo en route might be checked through Port Hueneme Operations.

### **Required Delivery Date, 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 are located on the websites indicated in the next sections.

#### **Vessel Schedule and Cut-Off Dates for RV/IB *Nathaniel B. Palmer***

Find the Peninsula logistics schedule on the usap.gov Logistics web page, at:

- <http://www.usap.gov/Logistics/documents/TL-FRM-0100.pdf>

#### **Vessel Schedule and Cut-Off Dates for ARSV *Laurence M. Gould***

Find the Peninsula logistics schedule on the usap.gov Logistics web page, at:

- <http://www.usap.gov/Logistics/documents/TL-FRM-0100.pdf>

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 the NSF before shipping.

Oversized cargo shipments destined for Peninsula sites can be delayed 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.

## Required Delivery Date, Continental Area

Schedule a required on-station (ROS) date, whether McMurdo Station, South Pole Station, Palmer Station, and on board the vessels. The ROS date determines when the required delivery date (RDD) must be met in Port Hueneme, CA to arrive in Antarctica on time.

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

---

Table 4 shows the ROS dates and RDD for cargo shipments during the 2016-2017 field season. Cargo that does not arrive within these prescribed guidelines may require COMAIR shipment. Shipping COMAIR is expensive and requires NSF approval.

**Table 4:** RDD Continental Area

Required Delivery Date (RDD) to Port Hueneme	ROS date	ROS number
6 July 2016	20 August 2016	6233
24 August 2016	8 October 2016	6282
31 August 2016	15 October 2016	6289
7 September 2016	22 October 2016	6296
14 September 2016	29 October 2016	6303
21 September 2016	5 November 2016	6310
28 September 2016	12 November 2016	6317
5 October 2016	19 November 2016	6324
12 October 2016	26 November 2016	6331
19 October 2016	3 December 2016	6338
26 October 2016	10 December 2016	6345
2 November 2016	17 December 2016	6352
9 November 2016	24 December 2016	6359
16 November 2016	31 December 2016	6366
23 November 2016	7 January 2017	7007
30 November 2016	14 January 2017	7014
7 December 2016	21 January 2017	7021
14 December 2016	28 January 2017	7028
21 December 2016	4 February 2017	7035
28 December 2016	11 February 2017	7042
4 January 2017	18 February 2017	7049

## COMAIR Shipping

Commercial air (COMAIR) cargo shipments may require up to 21 days to process from Port Hueneme to McMurdo Station. Remember to allow for processing time as much as shipping time. Going to the South Pole Station may need up to 45 days. Hazardous and oversized cargo needs more time for inspection and clearance, sometimes up to 60 days.

## COMSUR Shipping

Commercial surface (COMSUR) shipping is cargo on an ocean vessel other than the regular USAP container vessel to McMurdo Station each year. 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.

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

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Table 5 shows shipping times from Port Hueneme to various USAP destinations frequented. To ensure that oversized cargo arrives on time, plan ahead and schedule for COMSUR; however, any cargo can be subjected to unforeseen delays, including labor strikes, holidays in foreign countries, and Customs clearance.

In general, allow for at least as many days listed in Table 5 for shipping.

**Table 5:** General Dates

Destination	Approximate time
McMurdo Station	35 days
South Pole Station	50 days
Hazardous material to New Zealand (en route to McMurdo Station, South Pole, and Research Vessels)	65 days
Research Vessels (to New Zealand)	50 days
Southern ports (Chile) and Palmer Station	90 days
Hazardous material to Southern ports (Chile) and Palmer Station	105 days (3 ½ months)

## Baggage

Frequently confused, “baggage” is distinctly different from “cargo.”

The NSF does not authorize reimbursement for excess baggage costs. Participants are responsible for all commercial airline baggage costs. ASC Travel suggests shipping excess baggage via the USAP Transportation System. Contact Travel directly for any oversize or overweight items that must be sent through USAP Transportation. Refer to the *Participant Guide* (NSF 06-52).

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**Note** Participants who self-ticket are not eligible for excess baggage allowances.

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Regardless of the baggage allowance on regular commercial airlines, standard checked baggage on flights from Christchurch to Antarctica is 39 kg (85 lbs.) of personal luggage or 50 kgs (110 lbs.) for winter-over personnel. The total includes luggage, personal equipment, and extreme cold weather (ECW) gear issued.

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**Note** Wear or carry boots, bibs, parka, goggles, and gloves on all flights to and from Antarctica as well as throughout the continent.

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Any baggage or personal luggage over the limits here must be approved by the NSF. Weight limits are strictly enforced from Christchurch to McMurdo Station, and are enforced even more diligently on flights to the South Pole Station. Any additional baggage must be requested in advance and authorized by the NSF.

## Hazardous Material

Hazardous materials and restricted substances are strictly forbidden in baggage. Many chemicals used by USAP grantees are hazardous material for commercial transportation, and may not be carried in checked baggage or carry-on luggage.

Military flights are no exception. Typically, if an item can be carried on a commercial airline in the U.S., it can be carried on the flight to Antarctica.

## Feedback and Contacts

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

The following are the points of contact (POCs) for issues concerning Logistics:

- Transportation and Logistics Manager
- USAP Logistics Manager
- Port Hueneme Operations Manager
- Antarctic Terminal Operations (ATO) Manager
- USAP Cargo Supervisor
- Peninsula Logistics Manager
- Lockheed Martin International Trade Compliance Office

We wish you the best in your Antarctic research.

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

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## Port Hueneme

Freight contact address:

National Science Foundation  
c/o Antarctic Support Contract

Naval Base Ventura County  
5020 Stethem Road  
Building 471, North End  
Port Hueneme, CA 93043

Correspondence address:

National Science Foundation  
c/o Antarctic Support Contract  
Post Office Box 338  
Port Hueneme, California 93041

Port Hueneme telephone contacts:

- Direct: (805) 985-6851
- Toll free: (800) 688-8606; x33615, x33619, and x33601
- Fax: (805) 984-5432
- Email: PH-CargoOps@usap.gov

## US Customs

U.S. Customs Office  
Treasury Department  
2100 K Street, N.W.  
Washington, D.C., 20037

## US Freight Carriers

Table 6 lists the contact numbers for freight forwarders in the USAP transportation system.

**Table 6:** Freight Carrier Contact Numbers

Carrier	Phone
ABF Freight systems, Inc.	(800) 610-5544
Con-way Freight	(800) 755-2728
FedEx Express	(800) 463-3339
FedEx Freight	(866) 393-4585
Old Dominion	(800) 610-6500
UPS Freight	(800) 333-7400
UPS Domestic	(800) 742-5877
YRC (Yellow-Roadway Corp.)	(800) 775-2728

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

- Email: asc.lax@damco.com
- Phone: 973.610.0826

## 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

### Supporting Documents

Refer to the following documents when completing these instructions:

- *Antarctic Conservation Act* [www.nsf.gov/od/opp/antarct/aca/aca.jsp](http://www.nsf.gov/od/opp/antarct/aca/aca.jsp)
- *Certificate of Registration of Foreign Manufactured Item* U.S. Customs form 4455
- *Transportation Entry and Manifest of Goods Subject to CBP Inspection and Permit* U.S. Customs form 7512  
[http://forms.cbp.gov/pdf/CBP\\_Form\\_7512.pdf](http://forms.cbp.gov/pdf/CBP_Form_7512.pdf)
- *Declaration for Free Entry of Unaccompanied Articles* U.S. Customs form 3299  
[www.cbp.gov/xp/cgov/toolbox/forms/](http://www.cbp.gov/xp/cgov/toolbox/forms/)
- *New Zealand Customs* Form NZCS 213  
[www.customs.govt.nz/](http://www.customs.govt.nz/)
- *Ministry for Primary Industries (MPI)* [www.biosecurity.govt.nz](http://www.biosecurity.govt.nz)
- *Participants Guide* NSF 06-52
- *Radioisotope Authorization* NSF form 1368

### Standards and Guidelines

- AFMAN 24-204 *Preparing Hazardous Materials for Military Air Shipments*
- CFR Title 49 *Transportation*

- FAR Part 44 *Government Property*
- GAO Standards for Internal Control in the Federal Government
- International Air Transport Association *Dangerous Goods Regulations*
- International Air Transport Association *Packaging Instructions 202*
- *International Maritime Dangerous Goods (IMDG) Code*
- MIL-STD-2073-1 *Packaging Requirement Code (PRC)*
- OMB A-123 *Management's Responsibility for Internal Control*
- United States Code, Title 49 *Parts 100-185 Hazardous Materials Regulations*
- 22 CFR §120-130 *International Traffic in Arms Regulations*
- 15 CFR §730-774 *Export Administration Regulations*
- 10 CFR §0-30 *Nuclear Regulatory Commission*
- 21 CFR §1-1299 *Food and Drug Administration*
- 21 CFR §1300-1399 *Drug Enforcement Agency*

## Related Internal Documents

- *Temporary Property Hand Receipt (BO-FRM-0001)*
- *Cargo Disposition Reporting Procedure (TL-SOP-0004)*
- *Cargo Disposition Report (TL-FRM-0035)*
- *Palmer Station Logistics Manual (TL-MAN-0004)*
- *Punta Arenas Warehouse Logistics Manual (TL-MAN-0003)*
- *Shipping Retrograde Cargo (TL-MAN-0010)*
- *Port Hueneme Operations Manual (TL-MAN-0001)*
- *USAP Southbound Cargo Packing List Form (TL-FRM-0004)*
- *USAP Northbound Cargo Retrograde Packing List Form (TL-FRM-0005)*
- *Peninsula Logistics Schedule (TL-FRM-0100)*
- *USAP Excess Baggage Request and New Zealand High-value Good Declaration (TL-FRM-0094)*

## Records

Table 7 describes the records that result from the processes described in this manual.

**Table 7:** Records

Record ID (& Owner)	Format & Location	Protection & Retrieval	Retention & Disposition
<i>USAP Southbound Cargo Packing List</i> (TL-FRM-0004) Owner: PTH Operations Manager	Hard copy kept at ASC in Port Hueneme, CA. Electronic copy on PTH J:\drive.	Kept in a filing cabinet. Retrieved per request to USAP Cargo Supervisor.	Retained for one year and then destroyed.
<i>USAP Northbound Cargo Retrograde Packing List</i> (TL-FRM-0005) Owner: USAP Cargo Supervisor	Hard copy kept at ASC Denver. Electronic copy on the ATO J:\drive.	Kept in a filing cabinet. Retrieved per request to USAP Cargo Supervisor.	Retained for one year and then destroyed.

## Appendices

This document contains the following appendices:

- Appendix 1: Methods for Shipping Cargo
- Appendix 2: Transportation Costs and Planning
- Appendix 3: Vessel Required Delivery Dates

## Glossary

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

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

### **AFMAN**

Air Force Joint Manual

### **AFMC**

USAF Material Command

### **APHIS**

Animal and Plant Health Inspection Service of the US Department of Agriculture

### **AR/SV**

Antarctic Research and Supply Vessel

### **ASC**

Antarctic Support Contract

### **ATO**

Antarctic Terminal Operations

### **Cargo Resupply Vessel**

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 “the Vessel,” 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.

### **CHC**

Christchurch, New Zealand

**Chilean Territory**

Generally the area around the country of Chile.  
May also refer to the area between 50° and 90° East latitude.

**CITES**

Convention on the International Trade in Endangered Species  
See <http://www.cites.org/>

**COMAIR**

Commercial Air  
Material or supplies transported via commercial aircraft, rather than USAP subcontractor (ANG, Kenn Bork Air Ltd., etc.). This is the most expensive shipping method for the USAP. Please avoid whenever possible. Advance authorization from the NSF is required for all COMAIR shipments.

**COMSUR**

Commercial Surface  
Cargo transported by a commercial shipping line, usually an ocean-going vessel.

**Continental Site**

Any USAP site throughout the Antarctic continent.  
Typically, transit occurs through Christchurch, NZ, to McMurdo Station; from there, transit occurs to the South Pole Station or Inland field camps.

**CONUS**

Continental United States

**COTR**

Contract Officer Technical Representative

**Damco**

The logistics support agent contracted by ASC (LMCO).

**DDP**

Duty Delivery Paid

**DHS**

Department of Homeland Security

**DNF**

Do Not Freeze

**DOD**

Department of Defense

**DOT**

US Department of Transportation

**ECW**

Extreme Cold Weather Gear  
Issued for deployment.

**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

**HazMat**

Hazardous Material

**HBCF**

Hydrobromochlorofluorocarbon  
An organic compound damaging to the ozone layer.

**HCFC**

Hydrochlorofluorocarbon  
An organic compound damaging to the ozone layer.

**IATA**

International Air Transport Association  
These regulations on dangerous goods govern commercial hazardous material transport.

**IBM Maximo**

IBM 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.

**ICAO**

International Civil Aviation Organization

**IMDG**

International Maritime Dangerous Goods

**INACH**

Instituto Anartico Chileno  
Chile Government Antarctic Institute, Ministry of Foreign Affairs. See <http://www.inach.cl/>

**IPPC**

International Plant Protection Convention

**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**

Large movement  
The period of majority transport to Antarctica for season opening. The same movement occurs in retrograde at station closing.

**MAWB**

Master Airway Bill

**MCC**

Movement Control Center

**MPC**

Marine Project Coordinator

**MLT**

Marine Laboratory Technician

**NBP**

RV/IB *Nathaniel B. Palmer*

**NBVC**

Naval Base Ventura County  
Located at Port Hueneme, California.

**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 57" L, 43" W, 31" H, with total weight over 265 pounds.

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

**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.

**PUQ**

Punta Arenas, Chile

**RDD**

Required Delivery Date  
The deadline for cargo intended to arrive at Port Hueneme in order to be further shipped via

USAP resources. Please refer to the Required Delivery Dates to Port Hueneme section in this document to determine the date which cargo needs to be received in 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 the vessel arrives at Punta Arenas or in some cases when the material must be carried via alternate means.

**RSO**

Radiation Safety Officer

**RV/IB**

Research Vessel, Ice Breaker

**SAAC**

South American Air Cargo

This is COMAIR cargo moving to Punta Arenas, Chile, for deployment to Palmer Station or USAP research vessels.

**SAAM**

Special Assignment Airlift Mission

**SAV**

South American Vessel

This is COMSUR cargo traveling to Punta Arenas for deployment to Palmer Station or USAP research vessels.

**SCUBA**

Self-contained Underwater Breathing Apparatus

**SDS**

Safety Data Sheet

**Shipping Number**

A field in IBM 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

**SoC**

State of Charge.

**SOPP**

SPAWAR Office of Polar Programs

**SPAWAR**

Space and Naval Warfare Systems Command

This USN support contractor provides services to the NSF supporting communications, navigation, and air traffic management for the USAP.

**T&E**

Transportation Entry

A shipping form: *U.S. Customs Transportation Entry form 7512.*

**T&L**

Transportation and Logistics Division

**TSSC**

Temperature Sensitive Science Cargo

Material which must be kept frozen, chilled, or prevented from freezing. For shipping:

Keep Frozen = -70°C to -20°C (-94°F to -4°F)

Keep Chilled = 4°C to 10°C (39°F to 50°F)

**TSA**

Transportation Security Administration

**UN**

United Nations

**UPS**

United Parcel Service

**USAF**

United States Air Force

**USAP**

United States Antarctic Program

**USAP Airlift**

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.

**USDA**

United States Department of Agriculture

**WinFly**

Winter Fly-in

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.

**WPM**

Wooden Packaging Material

**ZCM**

National Weather Service airfield designator for McMurdo Station

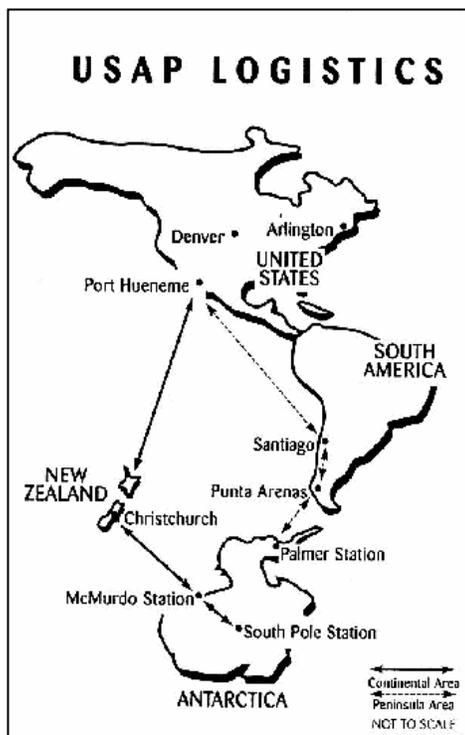
## Appendix 1: Methods for Shipping Cargo

Unless otherwise directed by the NSF, ASC (LMCO) will determine the mode of transport based on when the cargo is received and what is available at the time. To meet the Port Hueneme cargo cut-off dates, consider the shipping mode and transit time.

### Resupply Vessel

The USAP charts 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. Often referred to as “The Vessel,” it leaves from Port Hueneme, CA and arrives at McMurdo Station in February. Considering all methods of transport to Antarctica, the annual resupply vessel is most cost effective.

The vessel returns to Port Hueneme for retrograde offload in mid-March. The onward shipment of scientific materials and samples is first priority. Shipping via the resupply vessel should be the first option considered for cost and the ability 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. This is a primary and 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, it requires prior approval from the NSF.

### USAP Airlift

Special Assignment Airlift Mission (SAAM) flights are USAF cargo planes chartered by the USAP to transport oversized or perishable cargo, like helicopters and liquid helium. SAAM flights typically start at the beginning of the austral summer. Special coordination is required for all SAAM flights, and they are expensive. Do not plan to send cargo by SAAM; there is no guarantee a SAAM flight will be available.

## 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 8. Contact the Port Hueneme Operations manager with any questions about lead times for special handling.

**Table 8:** Costs and Planning

Transport Mode	TO:	Transit Time	Cost	Lead Time	Advantage
<b>COMSUR</b> Container ship. Break-bulk cargo too large for containers.	Christchurch, New Zealand	25 Days	<b>US\$ 1.13</b> per pound	<b>45 days</b> Due in Port Hueneme 35 days before ROS date.	Cost is less than other modes. Still more expensive than the Resupply vessel.
	Punta Arenas, Chile	45 Days		<b>65 Days</b> Due in Port Hueneme 65 days before ROS date.	Schedule based on vessel cut-off dates. Oversized cargo can be delayed in Santiago, Chile, up to 14 days.
<b>COMAIR</b> Commercial airline Cargo moved by freight handler or as freight on regular flights.	Christchurch, New Zealand	2 to 6 days	<b>US\$ 5.05</b> per pound	<b>7 to 10 days</b> Due Port Hueneme 7 to 10 days before CHCH.	Most expensive shipping. Quickest delivery. Provides goods on short notice.
	Punta Arenas, Chile	27 days		<b>30 days</b> Due to Port Hueneme 30 days.	Outsized items sometimes go thru Chicago, and can take weeks as air freight.
<b>Resupply Vessel</b> Chartered vessel moving from Port Hueneme, CA to Lyttelton, NZ, to McMurdo Sta. South Pole cargo moved later from McMurdo Sta. (airlift or overland).	Port Lyttelton, New Zealand	17 days	<b>US\$ 0.45</b> per pound	ALL DUE Port Hueneme 1 December	Most cost effective shipment. Move containers and bulk cargo at same time. Move outsized and overweight cargo at no added cost.
	McMurdo Station South Pole Station	5 to 6 days (23 days to McMurdo) Movement to South Pole by air or land, next season.			

**Table 8 (continued):** Costs and Planning

<b>Transport Mode</b>	<b>TO:</b>	<b>Transit Time</b>	<b>Cost</b>	<b>Lead Time</b>	<b>Advantage</b>
Vessel offloads cargo at McMurdo; loads retrograde and recycle for return trip.	Retrograde to Port Lyttelton	6 to 10 days, depending on reload.	<b>US\$ 0.30</b> per pound	ALL DUE McMurdo Station 31 January	Most cost effective return shipment. Most assured for temperature controlled samples. Most secure for containers and bulk samples on return.
	Retrograde to Port Hueneme	17 days			
<b>USAP Airlift</b> Contract airlift NZ to McMurdo, then to South Pole and deep field camps.	McMurdo Station	6 – 8 hours, depending on aircraft.	N/A  USAP subcontract	<b>7 Days</b> Due in CHCH 7 to 10 days before ROS date McMurdo.	Move passengers (PAX) and cargo between CHC and McMurdo Station.
	South Pole Station	3 to 4 hours, depending on weather.		<b>10 Days</b> Due in CHCH 10 to 14 days before ROS at South Pole.	Move PAX and cargo between McMurdo Station and South Pole Station.
Retrograde and Redeployment	Christchurch, New Zealand	6 – 8 hours, depending on aircraft.		<b>7 Days</b> Due in McMurdo 7 to 10 days before flight to CHCH.	Move PAX and cargo back to NZ at end of season.

## 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 9 and Table 10 below for resupply vessel RDDs to McMurdo Station. All science projects must have cargo to Port Hueneme NLT than 1 December.

**Table 9:** Vessel Delivery Dates and Priority for McMurdo Station

	<b>RDD Pt. Hueneme</b>	<b>Required On Site</b>	<b>ROS</b>
Life, Health, Safety Critical	9 November 2016	21 January 2017	<b>7121</b>
Food Requisitions	1 November 2016	21 January 2017	<b>7121</b>
Mission Critical	9 November 2016	21 January 2017	<b>7122</b>
Mission Essential	9 November 2016	21 January 2017	<b>7123</b>
Mission Important	9 November 2016	21 January 2017	<b>7124</b>
MCM VSL Project Requests	1 December 2016	21 January 2017	<b>7124</b>

**Table 10:** Vessel Delivery Dates and Priority for South Pole Station

	<b>RDD Pt. Hueneme</b>	<b>Required On Site</b>	<b>ROS</b>
Life, Health, Safety Critical	9 November 2016	21 January 2017	<b>7121</b>
Food Requisitions	1 November 2016	21 January 2017	<b>7121</b>
Mission Critical	9 November 2016	21 January 2017	<b>7122</b>
Mission Essential	9 November 2016	21 January 2017	<b>7123</b>
Mission Important	9 November 2016	21 January 2017	<b>7124</b>