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Handbook 700

Agricultural Export Transportation Handbook



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Agricultural Export Transportation Handbook

by

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This handbook provides a compilation of best industry practices, and its recommendations have been shown to be effective under normal conditions.

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Introduction

In calendar year 1995, U.S. agricultural exports rose 22 percent to a record \$55.8 billion. Export data for the first half of 1996 shows a 13-percent increase over the 1995 record-breaking level. U.S. exports of high-value agricultural products accounted for \$30.2 billion in 1995, up 11 percent from the previous year.¹ Taking advantage of these growing export opportunities is not limited by company size. Many small- to medium-sized companies are successfully selling their products overseas.

Is your company ready to take advantage of these export opportunities? Have you developed an international marketing plan? Do you know which foreign market(s) hold the greatest potential and risk for your product(s) and have you located foreign customers? These are a few of the questions your company needs to answer before shipping product(s) overseas.

This publication provides you with a list of resources to help you answer these questions. But mainly, this handbook looks at the export transportation portion of the export process. That is, how to physically move agricultural products overseas. The focus of this publication is on shipping high-value or value-added agricultural products. (Limited information on shipping bulk commodities has been included.)

Many shippers simply rely on a freight forwarder, a travel agent for cargo, to handle all their transportation needs. The right freight forwarder is a valuable ally, but the shipper must also take an active role. It is the shipper's reputation, and repeat sales, on the line. By understanding who the key players are and their responsibilities, incoterms (international commercial terms), ocean and air cargo services, transport documentation, cargo insurance, methods of payment, and product handling, shippers can work with their freight forwarder to better ensure the success of their export venture.

This handbook provides an overview of an export shipment, highlighting what parties are involved and their responsibilities. It looks at the role of the freight forwarder, non-vessel operating common carrier, and customs broker. Incoterms, how to quote a price, and methods of payment are also covered. It covers

ocean and air transportation. It explains the more common documents used in export transportation and provides samples. It also explains the different types of cargo insurance available, where to obtain them, and the procedures to follow when filing a claim. It offers guidelines for the safe transport of agricultural products to the overseas buyer, including tips on cooling, grading, packing, loading, storage, and the selection of transport equipment and mode of transportation. The sections on trade assistance and publications are included to provide shippers with other sources of information when the answer cannot be found within this text.

This handbook has changed considerably from the 1993 edition. New sections have been added, many sections have been significantly revised, and some deleted altogether. Our goal is to provide agricultural shippers with the information they need, in a concise, user-friendly format. We have also gone to considerable lengths to ensure that the information in this publication is accurate. Should you discover information that is incorrect, we would appreciate hearing about it. Also, if you have any comments, suggestions for improvements, or additional information we should include, we would like to hear from you.

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¹*Economic Research Service, Foreign Agricultural Trade of the United States (FATUS), p. 2, January/February/March 1996.*

Overview

A typical export shipment from the United States involves approximately 40 steps that are carried out by 11 separate entities. The following is an outline of an export shipment going by sea using a confirmed irrevocable letter of credit as the method of payment. This is followed by a list of the entities involved and their individual responsibilities.

Forty Steps of an Export Shipment ²

1. The buyer requests a quotation from the supplier/seller.
2. The seller responds by sending a pro forma invoice. The buyer uses the pro forma invoice to apply to its bank for a letter of credit.
3. The buyer/consignee's bank issues the letter of credit.
4. A purchase order and the letter of credit are sent to the shipper.
5. Shipper issues instructions to the freight forwarder for shipping the goods.
6. The freight forwarder books space with an ocean carrier (and inland carrier if requested by the shipper). When the booking is made, the carrier assigns a booking number which is used to identify the shipment.
7. The freight forwarder prepares and submits a bill of lading master and a shippers export declaration which are sent to the ocean carrier.
8. The shipper's freight forwarder transmits the inland bill of lading and delivery instructions to the selected inland carrier, a truck, rail, or barge line.
9. The inland carrier picks up the cargo at the specified location and issues a cargo receipt to the shipper.
10. The cargo is delivered, along with a set of prepared dock receipts, to the out-bound pier terminal.
11. After taking delivery of the cargo, the outbound terminal gives a signed copy of the dock receipt to the inland carrier.
12. A copy of the dock receipt is also sent to the ocean carrier's office.
13. The ocean carrier's office matches the dock receipt with the booking number; it prepares a loading stowage plan.
14. The cargo is lifted aboard and stowed on the vessel, according to the stowage plan.
15. After the cargo has been loaded, the terminal sends the bills for stevedoring and wharfage to the outbound carrier's office.
16. Outbound carrier's office issues an ocean bill of lading with on-board certification, when required, to the shipper's freight forwarder. This bill of lading is a negotiable instrument and acts as title to the goods.
17. Upon receipt of the due bills from the outbound carrier's office, the shipper's freight forwarder pays the amounts due (if prepaid).
18. If the terms of sale indicate that the shipper is responsible for all transportation costs, and the shipper has not already prepaid, then the freight forwarder collects payment from the shipper in exchange for the transportation documents.
19. Shipper submits a commercial set—the documents required for collection of payment as stated in the letter of credit—typically a negotiable bill of lading, an invoice and insurance certificate, and a customs invoice, if necessary—to the bank.
20. The bank carefully reviews the documents in the commercial set to guarantee that there are no discrepancies. After acceptance of the commercial set, the bank pays the shipper in accordance with the letter of credit issued by the buyer's bank.
21. The shipper's bank transmits the commercial set and a debit invoice to the consignee's bank.

² Source: *Sea-Land Service, Inc.*

22. A non-negotiable copy of the bill of lading is sent to the consignee as notification that the cargo has been shipped.
23. After the vessel has sailed, the manifest, freight bills (if sent freight due), delivery receipts, container list, and arrival notice are sent to the carrier's overseas office.
24. Within 4 working days of the vessel's clearance, U.S. Customs receives a non-negotiable bill of lading copy with the shipper's export declaration.
25. Copies of the manifest are provided to the inbound pier terminal.
26. The consignee's bank releases the commercial set to the consignee against payment of the invoice amount.
27. Before the ship's arrival, the carrier's overseas office issues an arrival notice and invoice covering the ocean freight and other charges due if freight charges are for the buyer's account.
28. The buyer sends the commercial set, arrival notice and invoice, and forwarding instructions to its customs broker.
29. The customs broker presents the endorsed negotiable bill of lading to the inbound carrier's office as proof of title to the goods, and pays the ocean freight (if freight charges are for the buyer's account).
30. Upon receipt of freight due (if a collect shipment) and the negotiable bill of lading, the carrier releases the cargo to the customs broker.
31. At the same time, the carrier's office notifies the inbound pier terminal that the consignee's cargo may be released.
32. The consignee's customs broker submits to the local customs office the proper documents and duties due for clearance in accord with local regulations.
33. The customs office reviews the documents and may elect to inspect the shipment. Once it is satisfied that the shipment is in compliance with the laws, the customs office authorizes the release of the cargo to the customs broker.
34. In the case when the release is not effected at the berth, the customs office notifies its inspector at the inbound pier terminal that the cargo may be released.
35. Customs broker issues a delivery order to the inbound pier terminal authorizing delivery of the cargo to the designated inland carrier.
36. Consignee's customs broker issues an inland bill of lading to the selected inland carrier.
37. The inland carrier picks up the cargo at the inbound pier terminal.
38. Cargo is delivered to the buyer.
39. The inland carrier issues a freight bill to the consignee's customs broker.
40. With the shipment having been completed, the consignee's customs broker issues a bill to the consignee covering ocean freight, terminal charges (if these bills are charged to the buyer's account), inland freight, and fees for the customs broker's services.

USDA's Transportation and Marketing Division has produced a video, *A Business of Details—Exporting High Value U.S. Agricultural Products*, which follows an agricultural shipment from the farm to an overseas market. This video demonstrates the information covered in this section. (You can order a free copy of the video from TMD at the address listed on page 132.)

Responsibilities ³

Shippers

- Contact freight forwarder with specifics of shipment including:
 - Number of packages
 - Marks and numbers
 - Description of cargo
 - Foreign destination
 - Gross weight of each package shipped
 - Foreign party to be notified
- Arrange inland freight *
- Prepare inland bill of lading *
- Prepare dock receipt *
- Prepare packing list

³ Source: *Sea-land Service, Inc., and the Port Authority of New York and New Jersey*

- Mark cargo for:
 - Gross and net weight
 - Cubic measurement
 - Foreign destination
 - Identification marks
 - Country of origin
- Check documents prepared by freight forwarder for accuracy

* Denotes tasks that can also be handled by the freight forwarder.

Freight Forwarders

- Arrange inland transportation **
- Book space with steamship company or air carrier
- Prepare documents, including:
 - Inland bill of lading **
 - Dock receipt **
 - Ocean bill of lading/air waybill master
 - Consular invoice
 - Delivery order
 - Shipper's export declaration
- Pay the ocean freight charges
- Secure the original documents for the shipper

** Denotes tasks that the shipper can also perform.

Inland Carriers

- Receive delivery instructions ***
- Pick up cargo from shipper
- Deliver cargo to export point
- Have dock receipt signed ***
- Notify exporter of arrival of cargo ***

*** This information can be supplied by either the shipper or the freight forwarder, whoever made the arrangements for inland transportation.

Commercial Banks

- Issue financial documents guaranteeing payment under specified terms and conditions

Terminal Operators

- Control truck traffic by issuance of pass to driver
- Check the delivery order or dock receipt
- Assign a checker for loading and unloading
- Stuff containers for breakbulk cargo
- Control parking of containers
- Assign stowage locations

- Coordinate movement of containers to the vessel
- Load and secure the vessel

Ocean Carriers

- Book cargo
- Dispatch containers
- Process the bill of lading
- Prepare:
 - Freight invoice
 - Manifest
 - Arrival notice
 - Delivery receipt
 - Stow plan
- File shippers export declaration (SED) with U.S. Customs
- Notify consignee of arrival and availability of cargo
- Arrange inland transportation when required

Customs Inspectors

- Check import documents
- Inspect cargo
- Control release of cargo
- Assess duties where required
- Complete the processing of import permits

Customs Brokers

- Prepare required customs entry and files with customs
- Effect customs release, freight release
- Coordinate with inland carrier for pickup of import cargo
- Verify information on bill of lading and prepare delivery orders
- Guarantee loading charges with terminal operator

Conference Cargo Inspectors

- Spot-check exported cargo against submitted documents
- Check against commodity description, weight, and cube

Port Authorities

- Quasi-governmental organizations responsible for the control and movement of vessels and cargo in and out of the port

Insurance Surveyors

- Survey cargo damage as requested by shipper or carrier

Quoting a Price

Terms of Sale

Export terms of sale determine what costs are covered in the price of the cargo. They also indicate at what point ownership transfers to the buyer and at what point responsibility for the cargo transfers.

International commercial terms (incoterms) provide “the international rules for the interpretation of trade terms.” The International Chamber of Commerce (ICC) publications *incoterms 1990* and *GUIDE TO incoterms 1990* are the latest publications covering all trade terms. The more commonly used trade terms are:

- **EXW (Ex Works...named point of origin)**—The price quoted applies only at the point of origin, and the seller agrees to place the goods at the buyer’s disposal at the specified place on the date or within the period fixed. All other charges are the responsibility of the buyer. EXW is sometimes referred to as Free on Board (FOB) ...packing house, warehouse, etc. Example: EXW Factory, EXW Warehouse, etc.
- **FAS (Free Alongside Ship...named port of shipment)**—Under this term, the seller quotes a price for goods that includes charges for delivery of the goods alongside a vessel at the port. The seller handles the cost of unloading and wharfage, loading, ocean transportation, and insurance costs are left to the buyer.
- **FOB (Free on Board...named port of shipment)**—Under this term, the seller quotes a price for goods that includes the cost of loading onto the transport vessel at the designated point. Ocean transportation and insurance are left to the buyer’s account.
- **CFR (Cost and Freight...named port of destination)**— For shipments to designated overseas port of import, the seller quotes a price for the goods that includes the cost of transportation to the named point of debarkation. The buyer is responsible for the cost of insurance. This is referred to as C & F in the old incoterms. The cost of unloading cargo at the port of destination is paid for by the seller, to the extent that they are included in the freight charges. If the charges are separate then they fall to the account of the buyer.
- **CIF (Cost, Insurance, Freight)**—Under this term, for shipments to designated overseas port of import, the seller quotes a price for the goods, including insurance costs and all transportation and miscellaneous charges, to the point of debarkation from the

vessel or aircraft. The cost of unloading cargo at the port of destination is paid for by the seller, to the extent that they are included in the freight charges. If the charges are separate then they fall to the account of the buyer.

The terms of sale dictate the point at which the title of goods will transfer from the shipper to the consignee. Until such time as the title of the goods transfers from the shipper to the consignee, the shipper has a financial and an insurable interest in the safe arrival of the goods sold.

Determining Price

To calculate the cost of the export product, first determine the total product cost by multiplying the cost per unit by the number of units. Then add the following:

- + Profit
- + Commissions
- + Banking fees
- + Palletization/export packing
- + Freight forwarding and documentation fees
- + USDA inspection and phytosanitary certificate fees
- + Other direct expenses related to special shipping requirements such as temperature recorder charges
- = **EXW price**
- + Inland transportation
- = **FAS price**
- + Terminal handling charges
- = **FOB price**
- + Ocean freight charges
- + Ancillary charges
- = **CFR price**
- + Insurance
- = **CIF price**

Freight Forwarding

International Freight Forwarder

The international freight forwarder plays an integral part in the transportation process. Freight forwarders act on behalf of the exporter in arranging transportation services. They are familiar with the import rules and regulations of foreign countries, methods of shipping, U.S. Government export regulations, and documents connected with foreign trade.

Services—Freight forwarders provide a number of services. During the initial planning phases the freight forwarder can help decide:

- Which carriers to use
- Best days of the week to ship
- The best route
- The most economical shipment size

At the beginning of a sale, they can provide the exporter with a quotation on:

- Freight costs
- Port charges
- Consular fees
- Cost of special documentation
- Insurance costs
- Freight forwarder's fees

This information can be used in the preparation of an accurate price quotation to foreign customers. At the shipper's request, the freight forwarder can make the actual arrangements and provide the necessary services for expediting the shipment to its overseas destination. This can include:

- Booking space with the carrier
- Completing export documentation
- Arranging for cargo insurance
- Advising on foreign import regulations
- Providing guidance on packaging, marking, and labeling
- Arranging for products to be packed and containerized at the exporter's request

Some freight forwarders are also freight consolidators, but this is not a standard service.

Cost—Freight forwarders operate on a fee basis paid by the exporter. The forwarder's fees consist of an agreed upon amount, plus documentation charges.

The cost for their services should be figured into the price charged to the customer. Freight forwarders also collect a percentage of the freight costs from the carrier.

Selection Criteria—Every company has its own needs to consider when selecting a freight forwarder. The following list includes a few suggestions of criteria to consider:

- Is the freight forwarder licensed by the Federal Maritime Commission (FMC) to handle ocean cargo?

Currently, all ocean freight forwarders in the United States must be licensed by the FMC.

- Is the freight forwarder registered with the International Air Transport Association (IATA) to deal with international air cargo?

Being registered with IATA is not a requirement to handle air freight. However, to register, freight forwarders must meet IATA criteria regarding financial and credit standing, physical facilities, professional qualifications, and ethical practice.

- Is the freight forwarder financially stable?

Ask for credit references and check them. Check with carriers to see that the freight forwarder has a good payment record. Review a copy of their annual report. If it's a larger company you can check them on the New York Stock Exchange, NASDAQ, or Dun and Bradstreet.

- Does the freight forwarder have a record of customer satisfaction?

Ask the freight forwarder for a list of customers and call them.

- Does the freight forwarder have knowledge of and experience with your product, desired shipment method, and destination country?

Many companies feel that a freight forwarder experienced with moving their product, shipment method, and destination market will make a better partner. However, some freight forwarders feel that although they do not have prior experience shipping

a given product or shipping to a specific destination, they could handle any move, anywhere.

- Does the freight forwarder have a network of overseas agents?

Does the freight forwarder have an office in your destination market? Are they agents or owned and operated offices? Do the offices have the ability to communicate with one another on-line?

- Is the forwarder large enough—with ample facilities—to handle your business?

Do they have warehouse facilities if that service is needed? Do they have electronic data interchange (EDI) capabilities? Do they have sufficient staff to handle your volume and other needs?

- Does the freight forwarder have “errors and omissions insurance”?
- Is the freight forwarder willing to take the time to explain terms and procedures in a way you can understand?

The Shipper and Exporter Assistance Program (SEA) of TMD, USDA Agricultural Marketing Service, has recently compiled a directory of freight forwarders who handle a variety of agricultural products. To obtain a copy, contact SEA at the address on page 132.

Non-Vessel Operating Common Carrier

Smaller shippers, with less-than-containerload (LCL) shipments, can take advantage of the lower costs associated with being a big shipper. Non-vessel operating common carriers (NVOCCs) book space on steamships in large quantities at lower rates and sell space to shippers in smaller amounts. NVOCCs consolidate small shipments into containerloads that move under one bill of lading. More favorable rates are passed on to the shipper. Services typically offered by NVOCCs, in addition to customary services provided by freight forwarders, are:

- Consolidation of freight
- Financial liability for goods due to loss or damage

NVOCCs operate as a carrier and should be evaluated by applying the same service, price, and delivery standards.

Shippers Association

Shippers associations operate in much the same way as NVOCCs. They are non-profit associations that represent a number of shippers. The members pool their cargo to increase the volume of total shipments. The shippers' association can then book larger amounts of space on steamships at a lower rate than would be available to the individual shippers. There are presently about 40 active shippers associations in the United States; very few deal exclusively in agricultural products.

Customs Broker

Customs brokers act on behalf of exporters and importers to clear goods through customs and deliver the items to the importer's warehouse. They are licensed and regulated by the U.S. Treasury Department. Importers may designate a particular customs broker. Some freight forwarders are also customs brokers.

Ocean and Air Cargo Services

When transporting U.S. agricultural products overseas, the shipper ideally looks for the *fastest* and most *efficient* mode(s) of transportation that will deliver the shipment in perfect *condition* at the lowest possible *cost*. The actual selection will be a compromise among these factors. The mode(s) of transportation may be specified by the buyer or selected by a systematic approach in which the buyer's requirements, import regulations of the destination country, terms of sale, speed of delivery requirements, and destination and available routes determine the mode. Although most moves use a combination of transportation options—truck, rail, ocean, and air—the following is a look at ocean and air shipping options.

Ocean Cargo

Ocean transportation takes longer than movements by air, but the cost of transportation is usually lower. There are three means of shipping products by ocean vessel—bulk, breakbulk, and containerized. The means you select depends on the type of cargo you are shipping and the size of the shipment.

Bulk—Bulk carriers haul full shiploads or full hulls of dry or liquid bulk cargoes such as grain, logs, fertilizer, and vegetable oil.

Breakbulk—Breakbulk cargo is loaded on and off a vessel by individual piece or bundle of cargo such as palletized cargo. Breakbulk ships can handle either dry or refrigerated cargo.

Containerized—Product is loaded into containers and moved from door to door without the contents being handled. Container vessels can handle both dry and refrigerated cargo. Containerized shipments are the most common mode of transportation for high-value or value-added agricultural exports.

Because this publication is geared towards the movement of high-value or value-added agricultural products, the remainder of this section on ocean cargo will look primarily at factors relating to containerized shipments.

The Shipping Act of 1984—The Shipping Act of 1984 has a broad regulatory scope, embracing a wide range of maritime activities. The act affects ocean ports, marine terminal operators, freight forwarders, importers, and exporters. The primary objective of the

act is to regulate international ocean common carriers operating to or from U.S. shores. The ocean common carrier (or liner) industry is comprised of domestic and foreign firms that operate vessels on regularly scheduled routes between the United States and foreign ports.

The Shipping Act of 1984 has three declared purposes: (1) to establish a nondiscriminatory regulatory process for the common carriage of goods in foreign commerce; (2) to provide an efficient and economic ocean transport system that is in harmony with international practices; and (3) to encourage the development of the U.S.-flag liner fleet. The scope of the act does not include maritime labor agreements, the carriage of goods on domestic waterways (cabotage), or maritime cargo preference programs.

A primary function of the act is to grant antitrust immunity to ocean common carrier conferences. Carriers formulate conferences or agreements to fix rates, pool revenues, apportion markets, limit the volume or character of cargo transported, and control competition in international ocean shipping. Shippers cannot challenge the formation of conference agreements, but the Federal Maritime Commission (FMC) can seek injunctive relief for any agreements that it considers to be substantially anticompetitive.

The conference's objective is to increase carrier revenue by regulating the price and availability of transportation services in a geographic region. Carriers can choose to operate independently and not join the conference. Independents, or non-conference carriers, are free to set their own published rates and services. The U.S.-outbound conferences presently control about 50 to 70 percent of all outbound vessel capacity. Conferences are required by the act to have open membership. Presently, most conferences are comprised mainly of foreign-flag carriers.

Tariff—In addition to antitrust provisions, the act establishes rules for filing ocean freight tariffs. Common carriers are required to file tariffs with the FMC and make them available for public inspection. The tariffs must contain all of the rates, rules, and services offered by each carrier and conference. Intermodal rates that include charges for the inland movement of cargo to and from ports are also filed in the tariff. In addition to the base rate, carriers frequently include bunker fuel, currency adjustment,

terminal handling, and port congestion surcharges in the tariff. However, four groups of commodities are exempt from tariff filing requirements: bulk cargo, forest products, recycled metal scrap, and wastepaper. It is illegal for carriers to offer rates that are not published in the tariff.

Routes—Ocean liners operate on regularly scheduled routes. Publications such as the Pacific Shipper and Journal of Commerce's "Shipcards" section lists steamship companies, their routes, and departure and arrival dates.

Charters—In addition to regularly scheduled routes, chartered vessels can be contracted to haul full shiploads or full hulls of dry or liquid bulk cargoes such as grain, logs, fertilizer, and vegetable oil. Vessels can be chartered for individual trips or specified amounts of time. These charters are generally free from tariff filing requirements.

Rates—Conferences and independent carriers set freight rates based on the commodity being shipped, its value, weight, level of service provided, and destination. Sometimes several different rates are offered for the same commodity. For example, there may be one rate for shipping citrus and separate rates listed for oranges, grapefruit, etc. Separate rates may also be listed for intermodal shipments.

Freight rates are quoted in one of two ways: a basic rate plus ancillary charges, or an all-inclusive rate.

Basic Rate—The basic rate is based on the commodity being shipped, and volume (quantity, size, and weight) of the shipment. The rate is also dependent upon where the shipment originates, its destination point, and whether the shipment moves in a refrigerated or non-refrigerated container. Once the basic rate is established, ancillary charges are added to determine the total freight rate.

Ancillary Charges—Ancillary charges are often levied over and above the quoted freight rates. When applicable, these charges often include, but are not limited to:

- CAF—currency adjustment factors
- BAF—bunker fuel charges, also called fuel adjustment factor (FAF)
- THC—terminal handling charges
- Port congestion surcharges

Ancillary charges are stated in the conference or carrier rules tariff. Ancillary charges can be calculated as a percentage of the freight rate or a flat fee and can add up to more than 50 percent of the base freight rate.

All-Inclusive Rate—A single rate which incorporates all charges.

When obtaining a quote from a carrier, exporters or their freight forwarders should ask if any ancillary charges apply to the shipment. It is a good idea to always get quotes in writing.

Freight rates can be obtained directly from the steamship companies or conferences, freight forwarders, NVOCCs, or by visiting the FMC tariff library. Many steamship companies and conferences publish their own tariffs which can be obtained for a fee.

The Shipper and Exporter Assistance Program (SEA) of TMD, USDA, produces a monthly Ocean Freight Rate Bulletin which tracks high-value, containerized agricultural shipments to various East Asian markets. The publication provides a side-by-side comparison of the rates and services provided for each commodity which was exported during the preceding month. Commodities tracked by the Bulletin include: apples, cherries, grapes, grapefruit, lemons, pears, oranges, almonds, raisins, pistachios, frozen beef, frozen poultry, and lettuce. To obtain a copy, contact SEA at the address on page 132.

Containers—Typically, modern liner carriers operate containerships that are designed to transport cargo stowed in 20-, 40-, or 45-foot ocean-shipping containers. The use of containers reduces many risks associated with moving a product, such as adverse temperatures, handling damage, and theft. The most common container sizes are 20-foot equivalent units (TEU) and 40-foot equivalent units (FEU). The table at the end of this section lists some of the common ocean-container dimensions. Each carrier's equipment is slightly different in size, so check on the exact dimensions of the equipment you will use when placing a booking.

Independent Action—The mandatory right of independent action is one of the key provisions of the Shipping Act of 1984. It specifies that conferences must allow members to offer a lower rate or different type of service than specified in the conference tariff. The FMC must receive at least 10 days' notice prior to enactment of the independent action, but conference approval is not required. Any similarly situated shipper

moving the same commodity can “me-too” any filed rate, including independent actions.

Independent action can serve as a competitive “relief valve” for the conferences to respond to changing market conditions. Independent action can increase rate-making flexibility and vent competitive pressures among conference members. Each conference member is allowed the latitude to act independently of conference-wide decisions. This may result in fewer carriers opting to leave conferences to pursue individual pricing strategies.

Service Contracts—The act also created a new form of ocean freight contractual agreement called a service contract. A service contract is an agreement between a shipper and carrier in which the shipper commits a specified volume of cargo over a fixed period of time in exchange for carrier rate concessions and specific service obligations. The essential terms of the contract must be filed with the FMC and made available for public inspection. These essential terms must be made available to any “similarly situated shipper” interested in obtaining a service contract for that commodity.

The mandatory right of independent action does not extend to service contracts. Conferences may prohibit their members from entering into these arrangements, but cannot prevent independent (nonconference) carriers from entering into service contracts. A number of conferences have chosen to prohibit individual service contracts, contending that they undermine their rate making processes.

Loyalty Contracts—A loyalty contract is formed when a shipper agrees to ship a minimum percentage of its cargo over a period of time in exchange for a lower rate. Although not commonly used, this could be a valuable tool when the shipper is attempting to open in a new market and is not certain of the volume to be shipped, but desires a lower rate.

Negotiating Skills—Obtaining a lower freight rate is not the only incentive for negotiating with a carrier or conference. Equally important to many shippers is the level of customer service and dependability. When entering into negotiations the shipper should:

- Know the points of origin and destination, volume, frequency, mandatory arrival dates, and special requirements of the shipments.

- Clearly define the service goals and transportation needs, including equipment interchange, transit times, and delivery requirements.
- Determine selection criteria based on shipment needs and goals.
- Select potential carriers, both U.S.-flag and foreign-flag, based on geographic areas or routes, service, sailing schedules, and price.
- Estimate the cost of transportation the company can afford to pay based on the overseas price, deducting all costs not related to overseas transportation. This information can be used as leverage in the negotiations.
- Prepare a comprehensive bid package including volume and flow information.
- Analyze carrier bids based on established criteria.
- Establish a system to evaluate performance. If there is evidence of poor performances, a negotiator should approach long-term contractors with comments, suggestions, or problems that they may be able to solve.

Complaints—Ocean common carriers are prohibited from engaging “in any unfair or unjustly discriminatory practice in the manner of rates.” However, the Shipping Act of 1984 does not provide the FMC or shippers with authority to challenge the “reasonableness” or “fairness” of carrier tariff rate increases. The Shipping Act of 1916 granted the FMC the authority to review the “reasonableness” of proposed rate increases and establish maximum freight charges. The 1984 act simply requires that the FMC ensure that both shippers and carriers adhere to the published tariff rates and rules. The FMC does investigate unfair or discriminatory rate practices by carriers. Complaints or problems regarding rates, services, or tariffs should be directed to the FMC.

The act prohibits a number of practices. Common carriers are prohibited from rebating, offering unreasonable preference to any shipper, employing “fighting ships” to drive off competitive carriers, or engaging in predatory practices. Shippers are prohibited from demanding rates not listed in the tariffs, or providing false information regarding the weight or contents of cargo shipments. One of the FMC’s primary responsibilities is to investigate potential infractions of these and other provisions of the act, and assess penalties for violations. One of the most common infractions has been rebating.

Questions regarding the application of the Shipping Act of 1984, service contracts, tariffs, or potential

violations of the act can be directed to the Federal Maritime Commission in Washington, DC at (202) 523-0300, or to the following FMC district offices:

New Orleans	(504) 589-6662
Los Angeles	(310) 514-4905
Miami	(305) 536-4316
Seattle	(206) 533-0221

Agricultural shippers can also contact the USDA-AMS Transportation and Marketing Division at (202) 690-1304 regarding questions or problems with ocean liner shipping.

Currently the act and the future status of the FMC are under review by Congress. Antitrust immunity, mandatory tariff filing, and service contracts are also being reconsidered by Congress. The outcome of this review could have a considerable impact on ocean shipping, and on the rates and services available to agricultural exporters.

Harbor Maintenance Fee⁴ (HMF)

Summary—Since 1987, the U.S. Customs Service has assessed a Harbor Maintenance Fee (HMF) on all imports and exports. This tax, .125 percent of the value of the shipment, is collected for the Harbor Maintenance Trust Fund, which is used for dredging the nation's deep draft harbors and navigation channels. On October 25, 1995, the Court of International Trade (CIT) declared the HMF unconstitutional. This decision is being appealed, likely to the Supreme Court, but until the appeals process is complete the Federal Government will continue to collect the tax.

Background—The HMF on imports is routinely collected by the U.S. Customs Service at the same time other general import duties are collected. Because Customs has not had a uniform documentation process for the pre-clearance and control of exports (this is about to change as Customs implements the Automated Export System), the fee has been collected sporadically, namely when the exporter has chosen to pay. While some exporters have not been paying the HMF, most have. For many, this amounts to a considerable amount of money. Currently, the Trust Fund runs an annual surplus of about \$300 million.

These monies are appropriated by Congress to the Corps of Engineers to conduct dredging and maintenance

of the ports. The Harbor Maintenance Trust Fund revenues have increased much faster than expenditures as a result of increased trade, stricter enforcement of the tax, fairly consistent Corps harbor maintenance appropriations, and an increased HMF rate (rate was .04 percent of cargo value until 1990). The surplus in the trust fund grew from \$120.6 million at the end of FY 1992, to \$865 million at the end of FY 1996. The Administration projects that the trust fund surplus will grow to \$1.112 billion by the end of 1997.

The "Export Clause" of the U.S. Constitution specifically prohibits taxes or duties on exports: "No Tax or Duty shall be laid on Articles exported from any State." (Article 1, Section 9, Clause 5.) Since the Harbor Maintenance Fee statute exclusively refers to a "tax," never to a "fee," the courts are being asked to declare the HMF unconstitutional and to stop its collection.

On October 25, 1995, the Court of International Trade (CIT) declared the HMF unconstitutional, finding that the HMF's primary purpose was not to regulate commerce or reimburse the U.S. Government for any benefits received, but primarily to raise revenue. As a result, CIT found HMF in violation of the Export Clause, and therefore unconstitutional. This decision will be appealed, and could be confirmed, reversed, or significantly changed during the appeals process.

It is important to note that the CIT assumed jurisdiction under its general residue power (28 U.S.C. 1581(l)), which has a 2-year statute of limitation. This is important because it would limit relief to actions within the last 2 years. However, a concurring opinion (which reflects a view not accepted by the Court's majority) argued that because the law was unconstitutional from its inception, all HMF assessments since 1987 should be refunded. The refund policy will also be determined by the higher courts decision during the appeals process. Thus, until a final issue is ordered, it will not be known as to how far back one might be able to seek refunds.

Seeking Refunds—On May 7, 1996, the CIT denied "class action" status in the HMF litigation. A class action would have allowed all exporters to reap benefits of a favorable decision, without requiring each exporter to file a summons in the Court. While the CIT has already ruled that filing a protest with Customs is insufficient, the Court's recent ruling means that refunds will have to be pursued individually, by each exporter.

⁴The technical information on the Harbor Maintenance Fee was provided by the Agricultural Ocean Transportation Coalition (AgOTC).

A final verdict is not expected until 1997. The only way that an exporter can ensure their right to a refund of HMF paid before that decision is to participate in the litigation by filing a claim directly with the Court. This filing fee is about \$120 plus the cost of retaining legal representation, who generally works on a contingency fee arrangement. Also, administrative protests must be filed with the Customs Service within 90 days of each quarterly payment and detailed records of past HMF payments maintained.

Currently, about 2,500 exporters have filed for refunds.

Air Cargo

For agricultural products with relatively short shelf lives, such as fresh asparagus, strawberries, and cherries, time in transit is the critical factor in determining which transportation method is used. Air shipment of these products is often used due to the fast in-transit time. However, the cost for moving product by air tends to be higher than the cost of ocean transportation.

Air cargo moves in one of three ways: in combination passenger/cargo flights, all cargo flights, or charters. Both passenger/cargo and all cargo flights have scheduled flight times and destinations.

Shippers also have the option of chartering a plane to carry their cargo. Charters are essentially aircraft for hire, with no pre-set schedules and destinations. Sometimes a freight forwarder or group of freight forwarders will charter planes offering space to their shippers at a special rate. This is known as a split charter, or forwarder charter, and is authorized in many markets.

International air carriers have antitrust immunity to establish "fixed" rates. A group of air carriers that have jointly agreed on a fixed rate are known as International Air Transport Association (IATA) conferences. These fixed tariffs represent the maximum amount that airlines can charge for air cargo. Airlines are free to charge lower rates than the agreed-upon maximum.

Tariff—Tariffs define the rates, rules, and regulations associated with air cargo on a given carrier. Tariffs define the "product" offered by the airlines. For example, does the price include airport-to-airport delivery or door-to-door delivery? Does it include customs clearance? What is the carrier's liability? The rules section

of the tariff also specifies the shipper's responsibilities such as payment method, restrictions, and packing and marking requirements. Check with your freight forwarder or airline to obtain tariff information.

Schedules—Air carriers operate regularly scheduled flights. Schedule information can be obtained directly from the air carriers, freight forwarder, and publications such as the *Official Airline Guides Air Cargo Guide* (OAG).

Booking Space with the Airlines—When booking space with an airline, the shipper or shipper's freight forwarder needs to supply the following information:

- Air waybill number
- Total number of packages to be shipped
- Weight of the entire shipment
- Dimension and volume of the shipment
- Nature of goods being shipped (e.g., perishable foodstuffs, live animals, etc.)
- Airport of departure
- Airport of destination
- Requested route

Also, any special considerations must be mentioned during the booking. Special considerations include temperature and other requirements for perishables, live animals, restricted cargo, etc.

A cargo booking with an airline means that your cargo will move from the airport of departure to the airport of destination. It does not guarantee that this will happen on a specific flight, following an identified route, in a specified time period. Airlines do not guarantee a fixed arrival time for cargo and can change transportation arrangements at anytime without notice.

Rates—Freight rates vary depending on the commodity being shipped, its value, level of service provided, destination, weight, and seasonal variations in demand for cargo space.

The weight of a shipment is calculated on either the actual weight (in kilograms), the dimensional weight (length x width x height), or the positional weight, whichever is greater.

Air freight forwarders and air carriers are the best sources for obtaining freight rates. There are also companies that specialize in publishing air cargo tariffs. These publishing companies charge a fee for their services.

Containers—When sending multiple boxes or pieces of cargo to one destination, cargo is loaded into an aircraft container or assembled and secured on an aircraft pallet. Both the aircraft container and pallet are called a unit load device (ULD). ULDs enable cargo to be assembled into a standard sized unit for rapid loading and unloading. ULDs also help to cut down on split shipments and lost cargo. Containers of different size and dimensions are available for shipper use from the airlines. A table at the end of this section provides a description of standard ULDs.

Negotiations—The air cargo industry is intensely competitive and air carriers are sometimes willing to negotiate with shippers to get their business. The key to getting the best rate and/or level of service is to shop around. With a knowledge of the level of service and rates being offered, many shippers can enter into private negotiations with carriers.

Hazardous Materials—The U.S. Code of Federal Regulations, Title 49, contains explicit regulations that list and define restricted articles, noting which may or may not be carried, quantities allowed, and proper shipper certification, packing, marking, labeling, and handling. Dry ice transforms from a solid to gaseous carbon dioxide, displacing oxygen in enclosed spaces. When shipped by air, dry ice is considered a dangerous commodity and regulated by the U.S. Department of Transportation.

Table 1: Container Specifications

EQUIPMENT	INTERIOR DIMENSIONS	DOOR OPENING	TARE WEIGHT	CUBIC CAPACITY	PAYLOAD
45' High Cube Container	L: 13.582 m 44' 6 1/2" W: 2.347 m 7' 8 1/4" H: 2.690 m 8' 10"	W: 2.340 m 7' 8" H: 2.584 m 8' 5 3/4"	4,110 kg 9,061 lb	85.7 m ³ 3,026 ft ³	28,390 kg 62,589 lb
40' High Cube Container	L: 12.056 m 39' 6 1/2" W: 2.347 m 7' 8 1/4" H: 2.684 m 8' 9 1/2"	W: 2.340 m 7' 8" H: 2.585 m 8' 5 3/4"	2,900 kg 6,393 lb	76.0 m ³ 2,684 ft ³	29,600 kg 65,256 lb
40' Dry Freight Container	L: 12.051 m 39' 6 1/2" W: 2.340 m 7' 8" H: 2.380 m 7' 9 1/2"	W: 2.286 m 7' 6" H: 2.278 m 7' 5 1/2"	3,084 kg 6,799 lb	67.3 m ³ 2,377 ft ³	27,397 kg 60,401 lb
20' Dry Freight Container	L: 5.919 m 19' 5" W: 2.340 m 7' 8" H: 2.380 m 7' 9 1/2"	W: 2.286 m 7' 6" H: 2.278 m 7' 5 1/2"	1,900 kg 4,189 lb	33.0 m ³ 1,165 ft ³	22,100 kg 48,721 lb
45' High Cube Reefer Container	L: 13.102 m 39' 6" W: 2.294 m 7' 6 5/16" H: 2.509 m 8' 2 3/4"	W: 2.467 m 8' 1 1/8" H: 2.290 m 7' 6 1/8"	5,200 kg 11,464 lb	75.4 m ³ 2,663 ft ³	27,300 kg 60,186 lb
40' High Cube Reefer Container	L: 11.775 m 37' 11" W: 2.286 m 7' 6" H: 2.491 m 8' 2"	W: 2.286 m 7' 6" H: 2.454 m 8' 1/2"	4,320 kg 9,524 lb	65.8 m ³ 2,324 ft ³	28,180 kg 62,126 lb
40' Reefer Container	L: 11.207 m 36' 9" W: 2.246 m 7' 4" H: 2.183 m 7' 2"	W: 2.216 m 7' 3" H: 2.183 m 7' 2"	4,600 kg 10,141 lb	54.9 m ³ 1,940 ft ³	25,881 kg 57,059 lb

Source: *Maersk Line*

Table 2: Containers Provided by Airlines

These containers are owned by the airlines and are certified as an integral part of the aircraft. These units are available from the carrier for shipper use. The specifications may vary slightly by owner. This information is provided as a guide only.

<p>TYPE: A1 Dom./SAB-UAB Intl.</p> <p>Int. Capacity: 393 ft³ Ext. Dim.: 88 by 125 by 87 in Max. Gross Weight: 13,300 lb Cube Displacement: 425 ft³</p>	<p>TYPE: LD6 Dom./AWC-AWF Intl.</p> <p>Int. Capacity: 316 ft³ Ext. Dim.: 25 by 60.4 by 64 in Max. Gross Weight: 5,680 lb Cube Displacement: 339 ft³</p>
<p>TYPE: A2, A3 Dom./AAA-SAA Intl.</p> <p>Int. Capacity: 440 ft³ Ext. Dim.: 88 by 125 by 87 in Max. Gross Weight: 12,500 lb Cube Displacement: 475 ft³</p>	<p>TYPE: LD7, LD9 Dom./AAP-AAR Intl.</p> <p>Int. Capacity: 355 ft³ Ext. Dim.: 125 by 88 by 64 in Max. Gross Weight: 13,300 lb Cube Displacement: 401 ft³</p>
<p>TYPE: FTC Dom./</p> <p>Int. Capacity: 151 ft³ Ext. Dim.: 81 by 60.4 by 62.75 in Max. Gross Weight: 4,500 lb Cube Displacement: 174.5 ft³</p>	<p>TYPE: LD8 Dom./ALE Intl.</p> <p>Int. Capacity: 253 ft³ Ext. Dim.: 196 by 60.4 by 60 in Max. Gross Weight: 5,400 lb Cube Displacement: 280 ft³</p>
<p>TYPE: LD2 Dom./APA Intl.</p> <p>Int. Capacity: 120 ft³ Ext. Dim.: 47 by 60.4 by 64 in Max. Gross Weight: 2,700 lb Cube Displacement: 134 ft³</p>	<p>TYPE: LD10 Dom./AWR-AWS Intl.</p> <p>Int. Capacity: 246 ft³ Ext. Dim.: 125 by 60.4 by 64 in Max. Gross Weight: 5,680 lb Cube Displacement: 76 ft³</p>
<p>TYPE: LD3 Dom./AVE-AKE Intl.</p> <p>Int. Capacity: 150 ft³ Ext. Dim.: 79 by 60.4 by 64 in Max. Gross Weight: 3,500 lb Cube Displacement: 166 ft³</p>	<p>TYPE: LDW Dom./=</p> <p>Int. Capacity: 70 ft³ Ext. Dim.: 98 by 42.2 by 41.6 in Max. Gross Weight: 1,700 lb Cube Displacement: 76 ft³</p>
<p>TYPE: LD4 Dom./DLP-DLF Intl.</p> <p>Int. Capacity: 193 ft³ Ext. Dim.: 96 by 60.4 by 64 in Max. Gross Weight: 5,400 lb Cube Displacement: 215 ft³</p>	<p>TYPE: M1 Dom./ARA Intl.</p> <p>Int. Capacity: 572 ft³ Ext. Dim.: 125 by 96 by 96 in Max. Gross Weight: 15,000 lb Cube Displacement: 666 ft³</p>
<p>TYPE: LD5, LD11 Dom./AWB-AWD Intl.</p> <p>Int. Capacity: 265 ft³ Ext. Dim.: 125 by 60 by 64 in Max. Gross Weight: 7,000 lb Cube Displacement: 265 ft³</p>	<p>TYPE: M2 Dom./ASE-ASG Intl.</p> <p>Int. Capacity: 1077 ft³ Ext. Dim.: 240 by 96 by 96 in Max. Gross Weight: 25,000 lb Cube Displacement: 1,286 ft³</p>

Source: *Air Cargo from A to Z*

Transport Documentation

The average international shipment involves 46 separate documents. The specific documents required for any given shipment depend on U.S. Government regulations, destination country's import regulations, importer's requirements, terms of sale, method of payment, and mode of transportation.

U.S. Export Requirements—The United States Government requires export documentation for a number of different reasons including national security, control of products in short supply, compiling export statistics, administration of export laws, protection of endangered species, and to protect U.S. export markets by ensuring product quality of specific exports. The main document required by the United States Government is the Shippers Export Declaration (SED).

Importing Country Requirements—Each country has different requirements regarding the documentation that accompanies any given import shipment. Importing countries require these documents for the administration of their import laws, assessment of taxes, and protection from hazardous pests and diseases. Some of the more frequently required documents are: commercial invoice, bill of lading, phytosanitary certificate (for plants or plant products), veterinary health certificate (for animals or animal products), packing list, and certificate of origin.

Other import regulations that may affect a shipment are packaging and labeling requirements, and recycling laws.

Importer's Requirements—The buyer/importer may require documents in addition to the documents required by their government. An importer may need a specific document in order to receive an import permit from their government, or to obtain financing from their financial institution. Possible documents requested are: pro forma invoice, inspection certificate for grade and condition, or a statement of processing methodology (depending on the level of processing involved).

Additional Documents—Additional documents are required based on the terms of sale, method of payment, and transportation mode. These documents could include a letter of credit, shipper's letter of instruction, certificate of insurance, dock receipt, bill of lading, and air waybill.

Although only the most common documentation requirements will be addressed here, exporters must know all regulations that apply to their shipment.

An experienced freight forwarder can assist exporters in determining what documents are required and can complete much of the documentation on the shipper's behalf. Additional sources for determining documentation requirements for any given shipment are: importer, bank, destination country's consulate, and USDA's Foreign Agricultural Service, Animal and Plant Health Inspection Service, and Food Safety and Inspection Service. Publications like the *Official Export Guide*, Bureau of National Affairs' *International Trade Reporter-Export Reference Manual*, and Dun's Marketing Services' *Exporters' Encyclopaedia* also provide this type of information.

Slight discrepancies or omissions in documentation may prevent goods from being exported, may result in the shipper not getting paid, or may even result in seizure of the goods by U.S. or foreign customs agents. Completion of much of the documentation is routine for freight forwarders or customs brokers, but the exporter is ultimately responsible for accuracy of the documentation.

This section looks at the most commonly required documents and includes sample documents.

Pro Forma Invoice

Export transactions, particularly first-time transactions, may begin with an inquiry from abroad, followed by a request for a quotation or a pro forma invoice. The pro forma invoice is essentially a quotation in an invoice format. It is a form the buyer uses when applying for an import license or arranging for funds.

The following information should be included on the pro forma invoice:

- Seller's name, address, phone, telex, and FAX numbers
- Buyer's name and address
- Buyer's reference number and date of inquiry
- Listing of requested products and brief description
- Price of each item (preferably to quote in U.S. dollars in order to reduce foreign exchange risk)
- Whether the product is new or used

- Gross and net shipping weight (in metric units where appropriate)
- Total cubic volume and dimensions (in metric units where appropriate) when packed for export
- Trade discount (if applicable)
- Delivery point
- Terms of payment
- Insurance and shipping costs
- Validity period for quotation
- Total charges to be paid by customer
- Estimated shipping date from factory to U.S. port (it is preferable to give U.S. port)
- Estimated date of shipment arrival

In addition to the preceding items, a pro forma invoice should include a statement certifying that the invoice is true and correct and a statement naming the country of origin of the goods. The invoice also should be conspicuously marked "pro forma invoice."

Quotations should state explicitly that they are subject to change without notice. If a specific price has been agreed upon or guaranteed by the exporter, and must be upheld in the quotation, the precise period during which the offer remains valid should be specified.

Commercial Invoice

The commercial invoice is a bill for the goods. The buyer needs the invoice to prove ownership and to arrange payment. Some governments use the commercial invoice to assess customs duties. Although there is no standard form for a commercial invoice, the following information should be included:

- Seller's name and address
- Buyer's name and address
- Exact description of goods (kind, grade, quality, weight)
- Agreed-upon price (preferably in U.S. dollars in order to reduce foreign exchange risk)
- Type of container
- Description of packages (number, kind, markings)
- Delivery point
- Terms of payment
- Date and place of shipment
- Method of shipment
- Signature of shipper/seller

USDA Inspection Certificates

Agricultural exporters are frequently required to provide a certificate attesting to the condition of the goods

shipped. Depending on the product, the USDA, or USDA-certified inspector, will inspect agricultural exports for specific insects and diseases, wholesomeness, and grade and condition, and issue certificates attesting to the product's condition at the time of inspection. Contact information for the USDA agencies that conduct these inspections is included in the Export Advice and Assistance section of this publication. Included among these certificates are:

Phytosanitary Certificate—The purpose of the phytosanitary certificate, Plant Protection and Quarantine (PPQ) form 577, is to expedite the entry of plants or plant products into a foreign country. This certificate certifies to a foreign country that the plants or plant products described were inspected by the U.S. Government and are free from quarantine pests and other injurious pests of specific concern to the importing country. This certificate is completed by USDA's Animal and Plant Health Inspection Service (APHIS).

Export Certificate-Processed Plant Products—The export certificate for processed plant products, PPQ form 578, was created for processed plant products that cannot be given a phytosanitary certificate but have been denied entry to one or more countries because no certification process existed. This certificate certifies to a foreign country that the processed plant product has been inspected by the U.S. Government and that the shipment was processed or manufactured to the extent that there is negligible risk of harboring injurious plant pest of specific concern to the importing country. Examples of products that fall under this category are:

1. Meal extracted from seeds by solvent
2. Bulk newsprint derived from wood pulp
3. Nuts in bulk that are salted, roasted, or vacuum-packed (in or out of their shells)
4. Oilseed cake of any kind
5. Pelletized plant material
6. Soy-fortified products
7. Soy protein, isolated
8. Thread waste from cotton milling
9. Wood products, molding, pressure-treated lumber, particle board, plywood, timber impregnated with creosote, tongue-in-groove flooring, paneling, ceiling, veneer, and furniture parts, either sanded or unsanded

The processed product certificate is also completed by APHIS.

Federal-State Inspection Certificate-Export Apple and Pear Act—Apples and pears exported from the United States must meet minimum quality and other requirements established by the Export Apple and Pear Act. This act also requires that USDA, through a Federal or Federal-State inspection service, officially inspects and certifies these fruits as being in compliance with the regulations. The Fruit and Vegetable Division of the USDA Agricultural Marketing Service administers this act.

Federal-State Inspection Certificate-Export Grape and Plum Act—Vinifera grapes exported from the United States must meet minimum quality and other requirements established by the Export Grape and Plum Act. Export shipments of vinifera grapes must be inspected and certified by the Federal or Federal-State inspection service. Exports of plums are not currently regulated under this act since other regulations already restrict exports of plums to better grades and sizes. The Fruit and Vegetable Division of the USDA Agricultural Marketing Service administers this act.

Voluntary Food Quality Certification—USDA's Agricultural Marketing Service (AMS) offers, for a fee, a voluntary food quality certification service. Quality certificates are offered by the Dairy Division, Fruit and Vegetable Division (for both fresh and processed products), Livestock and Seed Division, and Poultry Division.

Contract Certification—For a fee, AMS will review contracts and work with exporters to develop a written specification for the quality certification of food products.

Meat and Poultry Export Certificate of Wholesomeness—USDA's Food Safety and Inspection Service (FSIS) inspectors located in the U.S.-based, government approved processing/slaughter facilities issue the meat and poultry export certificate of wholesomeness, FSIS form 9060-5. This certificate certifies that all meat and meat products for human consumption are safe, wholesome, and accurately labeled to meet both the U.S. standards and the receiving country's import requirements.

Additional export certificates issued by FSIS include horsemeat export certificate, inedible product export certificate, and animal casings export certificate.

Veterinary Health Certificate—USDA's Veterinary Services, a division in APHIS, inspects animals and

animal by-products and provides certification that the specific health requirements of the importing country have been met.

Organic Certification—With implementation of national organic standards and accreditation of private and State certifiers, foreign buyers will look to the USDA for assurances that the products are produced organically. All producers and handler/processors wishing to label their products as organic must have their production and handling systems certified by USDA-accredited certifiers. These certifiers will also be able to verify that any organic products meet specific additional requirements of foreign buyers. All imported organic products must be produced and certified under systems that are equivalent to the U.S. standards as determined by USDA. This includes imported products that may become ingredients in processed products for export from the United States.

Other Certification Programs—USDA-AMS's Science and Technology Division (STD) provides export certification services. STD laboratories test for Salmonella enteritidis in poultry products intended for export to South Africa. They also test honey, dry whole milk, and butteroil, and certify that they meet the requirements of the importing countries. STD tests soybeans intended for export to Japan for pesticide residues.

In addition to the USDA agencies listed above, the Grain Inspection, Packers and Stockyards Administration (GIPSA) inspects grain shipments to ensure that they meet contract specifications. Contact information for the USDA agencies that provide these inspection services are listed in the Export Advice and Assistance section of this handbook.

Weight Certification

The Intermodal Safe Container Act of 1992 was enacted to attempt to reduce the number of overweight loads on the Nation's highways. This legislation will affect all agricultural importers and exporters. Effective April 6, 1997, shippers are required to provide weight certifications for intermodal movements of containers or trailers. Shippers are required to provide accurate and complete information to the intermodal carrier, and the carrier will be responsible for transmitting this information to any subsequent carrier.

The following is a brief summary of the requirements, liability, and penalties.

Certification Requirements—All cargoes that are either loaded into trailers or ocean shipping containers that are part of an intermodal movement, that will travel by motor carrier on a U.S. public highway, and weigh more than 29,000 pounds will require certification.

The certificate must include:

- The identification number of the container or trailer.
- The actual gross weight, including all packaging material and pallets.
- A general description of the contents. Shippers should note that the FAK (Freight of all Kinds) cargo designation will not be acceptable after December 31, 2000, for shipments where any one commodity equals or exceeds 20 percent of the total weight. The certificate should note if the cargo is perishable, or likely to shift in transit.
- The identity of the certifying party. No signature is required.
- The date of certification.

Prior to tendering the cargo, the shipper must notify the carrier, either by telephone or electronic transmission, of the gross cargo weight and a general description of the cargo.

The certificate may be incorporated into other shipping documents as long as the document contains all of the required information. The date of transfer of the certificate, and the identity of the party performing the transfer, must be noted on the document. If a separate document is used, it must be conspicuously marked as "Intermodal Certification."

Each carrier transporting the cargo in the intermodal chain is responsible for forwarding the certification to the next carrier. If no certification is received by the subsequent carrier before, or when, the container or trailer is tendered, the subsequent carrier may presume that no certification is required.

Liability—The party tendering the cargo is liable for any false information on the certificate and for failure to provide a certificate. The party transferring the certification data is liable for inaccurately transferred data. The carrier is liable for failure to forward the certificate to the subsequent carrier.

Exceptions—Notification and certification requirements do not apply to intermodal containers or trailers containing consolidated shipments loaded by a motor

carrier who performs the highway portion of the movement, or assumes responsibility for weight-related penalties for any other motor carrier.

Penalties—Federal law provides for penalties ranging from \$500 to \$1,000 per count for violations of the certification requirements. Violations of the act include: improper weight certification, failure to provide certification, failure to forward certification, inaccurate transfer of certification data. Failure to pay fines may result in a lien against the cargo until payment is received, but lien provisions do not apply to perishable agricultural commodities. Shippers should also note that highway weight requirements for State (non-Federal) roads may vary, and they should ensure that intermodal movements meet all local standards.

Contact—For further information regarding weight certification requirements, contact the Federal Highway Administration in Washington, DC, (202) 366-0650.

Packing List

The export packing list is considerably more detailed and informative than a standard domestic packing list. An export packing list itemizes the material in each individual package and indicates the type of package—box, crate, drum, carton, etc. It shows the individual net, legal, tare and gross weights, and measurements for each package (in both imperial and metric units).

- Net weight—Weight of the goods not including packaging.
- Legal weight—Weight of product plus paper, box, bottle, etc., contains the article as usually carried in stock.
- Tare weight—Weight of packaging, or weight of shipping container.
- Gross weight—Weight of goods and packaging.

Package markings should be shown along with the shipper's and buyer's references. The packing list should either be included in or attached to the outside of a package in a waterproof envelope marked "packing list enclosed." The list is used by the shipper or forwarding agent to ascertain the total shipment weight and volume in addition to determining whether the correct cargo is being shipped. In addition, customs officials (both U.S. and foreign) may use the list to check the cargo and assess import duties.

Shipper's Letter of Instruction

This document is completed by the shipper and includes all of the information necessary for the freight forwarder or carrier to make transportation arrangements and complete the bill of lading and other related documents. The shipper's letter of instruction should include:

- Shipper's company name, address, phone, fax, and contact name
- Shipper employee identification number
- Shipper reference numbers (bill of lading, invoice, purchase order, etc.)
- Product information (description of goods, product quantity, number of packages, weight in pounds, cubic feet, marks)
- Consignee information
- Notify party
- Product invoice value
- Harmonized commodity code
- Freight and documentation billing information
- Special instructions
- Signature and date

Dock Receipt

The dock receipt is used to transfer accountability when the export item is moved by the domestic carrier to the port of embarkation and left with the international carrier for export. There is no standard format for a dock receipt, but it should include a description of shipment and shipping information. This document is traditionally produced by the exporter or the exporter's freight forwarder and is signed by the receiving clerk for the carrier. With more and more ports utilizing electronic data interchange (EDI), this document is being transmitted electronically.

Certificate of Origin

Certain nations require a signed statement as to the origin of the export item. The certificate is usually obtained through a semi-official organization, such as a local Chamber of Commerce. It may be required even though the commercial invoice contains the information.

Consular Invoice

A consular invoice for imported goods may be required by certain nations. It is used as a means to control and identify imported goods. The invoice must be pur-

chased from the consulate of the country where the goods are being shipped and usually must be prepared in the language of that country.

Insurance Certificate

If the seller is responsible for providing insurance, the insurance certificate should state the type and amount of coverage. This is a negotiable instrument.

Shipper's Export Declaration

The U.S. Government requires that exporters complete a Shipper's Export Declaration (SED) for international shipments. The SEDs, forms 7525-V, 7525-V-Alternate (Intermodal), and 7513 (In-Transit Goods), are joint Bureau of the Census/International Trade Administration documents. They include pertinent information on the export transaction such as parties to the transaction, transportation details, Schedule B classification, value of the goods, and export licensing information. The information collected is used for compiling official U.S. export statistics and administering the requirements of the Export Administration Act. SED forms and the Brochure Correct Way To Fill Out The Shipper's Export Declaration are available from the Bureau of the Census, Foreign Trade Division, Regulation Branch, Washington, DC 20233, phone (301) 457-2238.

Export Licensing

An export license may be required for filling out the shipper's export declaration. Determining which export authorization to use may appear complex. But in most cases, it is a straightforward process.

There are two types of export authorization: export license and license exception. Licenses are given for transactions, not for individuals or companies. Ninety-five percent of products exported from the United States do not require an export license.

To comply with export licensing regulations, the exporter needs to determine if the product being exported requires an export license. Determining which authorization is needed is based on three factors:

1. What product is being exported? The Government restricts exportation of some products for reasons of national security, foreign policy, short supply, nuclear proliferation, or terrorist activity. For

example, cedar logs require an export license because of short supply. But almost no other agricultural products require an export license for these reasons.

The Bureau of Export Administration (BXA), Department of Commerce, can provide information on how to determine if a product is restricted and requires an export license. The number to call at BXA is (202) 482-4811.

2. Where is the product's final destination? Are there any trade restrictions on products going to this destination? U.S. Government policy restricts trade with some countries. Exporting to a country with trade restrictions is either prohibited or requires an export license. At the time of publication, there are trade embargoes on exports to Iraq, Iran, Cuba, Libya, and North Korea.

To verify that there are no trade restrictions for exporting to any given country, contact the U.S. Department of the Treasury, Office of Foreign Assets Control, 1500 Pennsylvania Avenue NW., Washington, DC 20220, phone (202) 622-2480 or fax (202) 622-1657.

3. What will the product be used for? The Government restricts exportation of some products if they could be used for terrorist activities.

License Exception—If the exporter determines that there are no restrictions on exporting a product to the destination country, there is no need to formally apply for a license. *Agricultural exporters ship under a license exception and type "NLR" (no license required) when requested for the license symbol on the shipper's export declaration.* A license exception is a broad grant of authority by the U.S. Government to all exporters for certain categories of products. There is no application process for a license exception. Agricultural products usually qualify for this type of authorization.

Export License—If the exporter determines that the product being shipped is considered by the U.S. Government to be in short supply, or is being shipped to a country with which the U.S. Government has trade restrictions, or could be used for terrorist activities, an export license will be necessary. An export license is a specific grant of authority from the U.S. Government to a particular exporter to export a particular product. This license is granted on a case-by-case basis, either

for a single transaction or for a specified period of time. An exporter must apply for an export license. For information on obtaining an export license contact BXA, Department of Commerce. The number to call at BXA is (202) 482-4811.

Although most agricultural shipments are exported using a license exception, exporters should know that violations of the Export Administration Regulations carry both civil and criminal penalties. It is recommended that exporters follow the above procedure to verify that they are using the correct export authorization.

Other U.S. Government agencies may have additional export regulations regarding a given commodity other than the licensing requirements. For instance, exporters of alcoholic beverages must obtain a permit from the Department of the Treasury's Bureau of Alcohol, Tobacco, and Firearms. The U.S. Department of the Interior, Fish and Wildlife Service restricts exportation of endangered wildlife and plants. (See Export Advice and Assistance section of this handbook for contact information.) Many States also have rules and regulations governing exports. A State's department of agriculture can assist exporters in understanding State rules and regulations.

Schedule B Harmonized Commodity Description and Coding System

The United States has adopted the Harmonized Commodity Description and Coding System (HS) for classifying merchandise in international trade. Exporters, freight forwarders, and carriers must report export shipments in terms of the HS on their SEDs. The HS code for any given agricultural product can be obtained from the Department of Commerce publication: Schedule B—Statistical Classification of Domestic and Foreign Commodities Exported from the United States, or by contacting the Bureau of the Census, Foreign Trade Division, Nondurables Section, Washington, DC 20233, (301) 457-3492 or 457-2981.

When filling out the Schedule B commodity number on the SED, be sure to include the entire 10-digit code and the check digit. The Schedule B commodity number's corresponding quantities and shipping weights must be reported on the SED using the metric system. The following conversion factors can be used to convert English weights into metric units.

Approximate Metric Conversion Factors

When You Know Number Of	Multiply By	To Find The Number Of
pounds (lb)	0.4536	kilograms (kg)
long tons (lt)	1.016	metric tons (mt)
short tons (st)	0.907	metric tons (mt)

Bill of Lading

Ocean bills of lading (b/l) serve three purposes:

- They act as a contract between the owner of the goods and the carrier to deliver the goods, spelling out all legal responsibilities and liability limits for all parties to the shipment.
- They act as receipt from the ocean carrier, confirming that they have received the goods for shipment.
- They act as title to the shipment and can be used to transfer title to the goods to a party named in the document.

The b/l is issued by the steamship line. Bills of lading can be made out in two different ways, "to order" or "direct" (straight). When the b/l is made "to order" it offers protection to the shipper by making it absolutely necessary that the consignee present the original endorsed b/l before the goods will be released from the port of destination. An original endorsed b/l is called a negotiable b/l, and acts as title to the goods. A copy of an original endorsed bill of lading is non-negotiable and cannot act as title to the goods.

Air Waybill

The air waybill, like the bill of lading, is a contract of carriage between the air carrier and shipper. Due to the short transit times there are no negotiable air waybills. The air waybill is issued by the airline or consolidator.

Sample Transport Documents	Page
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Phytosanitary Certificate27
Export Certificate—Processed Plant Products28
Federal-State Inspection Certificate—Export Apple and Pear Act29
Federal-State Inspection Certificate—Export Grape and Plum Act30
Certificate of Quality and Condition31
Meat and Poultry Export Certificate of Wholesomeness32
Veterinary Health Certificate33
Packing List34
Shipper's Letter of Instruction35
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Insurance Certificate38
Shipper's Export Declaration39
Bill of Lading40
Air Waybill41

Pro Forma Invoice

<p>FRESH ORANGE EXPORTER 123 FIRST STREET AMERICAN CITY, U. S. A. 10000</p> <p>ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG</p> <p>ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG</p>	<p>CARRIER'S BOOKING NUMBER 123456 BILL OF LADING NUMBER APLU123456789 SHIPPER'S REFERENCE NUMBER FOE 001 JEL REFERENCE NUMBER SFO1060423 TRAFFIC MANAGER D. ENBERG CARRIER'S AGENT AMERICAN PRESIDENT LINES FORWARDING AGENT (415) 781-7040 J. E. LOWDEN & CO. 275 Battery Street, Ste 400 San Francisco CA 94111-3701 POINT & COUNTRY OF ORIGIN FAX 415-392-3790 CALIFORNIA USA TLX/EMAIL 404235592</p>
<p>PIER TERMINAL BERTH 723 VESSEL VOYAGE # FLAG v. 13 APL JAPAN PORT OF DISCHARGE HONG KONG</p>	<p>PORT OF LOADING SAN PEDRO FOR TRANSSHIPMENT TO HONG KONG</p>

PROFORMA INVOICE

100 CARTONS SIZE 88 USA BRAND NAVEL ORANGES AT USD15.70	USD 6280.00
350 CARTONS SIZE 72 USA BRAND NAVEL ORANGES AT USD16.20	USD 8910.00
950 CARTONS C. I. F. HONG KONG	USD 15190.00

TERMS OF PAYMENT: CAD T/T TO OUR BANK ACCOUNT
WITHIN 10 DAYS OF SHIPMENT
DATE

THANK YOU
FRESH ORANGE EXPORTER

11 MAR 97

INVOICE

FOE 001

11 MAR 97

SELLER:

FRESH ORANGE EXPORTER
123 FIRST STREET
AMERICAN CITY, U. S. A. 10000

CARRIER'S BOOKING NUMBER 123456
BILL OF LADING NUMBER APLU123456789
SHIPPER'S REFERENCE NUMBER FOE 001
JEL REFERENCE NUMBER SFO1060423
TRAFFIC MANAGER D. ENBERG
CARRIER'S AGENT AMERICAN PRESIDENT LINES
FORWARDING AGENT (415)781-7040
J. E. LOWDEN & CO. FMC 87
275 Battery Street #400
San Francisco, CA 94111

SOLD TO:
ORIENTAL FRESH FOODS
456 ORIENTAL BEND ROAD
KOWLOON, HONG KONG

POINT & COUNTRY OF ORIGIN
CALIFORNIA USA
CUSTOMER ORDER NO:
TERMS OF SALE:
C. I. F. HONG KONG

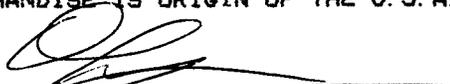
PIER/TERMINAL
BERTH 223
VESSEL VOYAGE # FLAG V. 13
APL JAPAN
PORT OF DISCHARGE
HONG KONG

SAN PEDRO
PORT OF LOADING
SAN PEDRO
FOR TRANSSHIPMENT TO
HONG KONG

SHIP TO:

DESCRIPTION	SIZE	PRICE	AMOUNT
400 CARTONS	88	15.70	6,280.00
550 CARTONS	72	16.20	8,910.00
TOTAL 950 CARTONS "USA BRAND" FRESH NAVEL ORANGES			USD 15,190.00 C. I. F. HONG KONG

WE CERTIFY THAT THIS INVOICE IS TRUE AND CORRECT. WE CERTIFY THAT THE MERCHANDISE IS ORIGIN OF THE U. S. A.


FRESH ORANGE EXPORTER
WE HEREBY CERTIFY THAT
THIS INVOICE IS TRUE
AND CORRECT

Phytosanitary Certificate

No phytosanitary certificate can be issued until an application is completed (7 CFR 353). See reverse for additional OMB information. FORM APPROVED OMB NO 0579 0052

UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE PLANT PROTECTION AND QUARANTINE PHYTOSANITARY CERTIFICATE		FOR OFFICIAL USE ONLY PLACE OF ISSUE NO: FPC 2000003 DATE INSPECTED	
TO: THE PLANT PROTECTION ORGANIZATION(S) OF			
CERTIFICATION			
This is to certify that the plants or plant products described below have been inspected according to appropriate procedures and are considered to be free from quarantine pests, and practically free from other injurious pests; and that they are considered to conform with the current phytosanitary regulations of the importing country.			
DISINFESTATION AND/OR DISINFECTION TREATMENT			
1. DATE	2. TREATMENT		
3. CHEMICAL (active ingredient)	4. DURATION AND TEMPERATURE		
5. CONCENTRATION	6. ADDITIONAL INFORMATION		
DESCRIPTION OF THE CONSIGNMENT			
7. NAME AND ADDRESS OF THE EXPORTER		8. DECLARED NAME AND ADDRESS OF THE CONSIGNEE	
9. NAME OF PRODUCE AND QUANTITY DECLARED		10. BOTANICAL NAME OF PLANTS	
11. NUMBER AND DESCRIPTION OF PACKAGES		12. DISTINGUISHING MARKS	
13. PLACE OF ORIGIN		14. DECLARED MEANS OF CONVEYANCE	
		15. DECLARED POINT OF ENTRY	
Any intentional false statement in this phytosanitary certificate or misrepresentation relative to this phytosanitary certificate is a violation of law, punishable by a fine of not more than \$10,000, or imprisonment of not more than 5 years, or both. (18 U.S.C. §1001)			
ADDITIONAL DECLARATION			
 			
16. DATE ISSUED	17. NAME OF AUTHORIZED OFFICER (Type or Print)	18. SIGNATURE OF AUTHORIZED OFFICER	
No financial liability shall attach to the United States Department of Agriculture or to any officer or representative of the Department with respect to this certificate.			

PPQ FORM 577 (JUN 96)

Previous editions of FPC series may be used

PART 1 - SHIPPER'S ORIGINAL

Source: USDA Animal and Plant Health Inspection Service

Export Certificate—Processed Plant Products

Public reporting burden for this collection of information is estimated to average .03 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, Room 404-W, Washington, D.C. 20250, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

FORM APPROVED
OMB NO. 0579-0052

UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE PLANT PROTECTION AND QUARANTINE <div style="font-size: 48px; opacity: 0.5; position: absolute; top: 50px; left: 50px;">S</div> <h2 style="margin: 0;">EXPORT CERTIFICATE</h2> <h3 style="margin: 0;">PROCESSED PLANT PRODUCTS</h3>	FOR OFFICIAL USE ONLY PLACE: DATE: NUMBER: P 072608
--	---

NAME AND ADDRESS OF EXPORTER <div style="font-size: 48px; opacity: 0.5; text-align: center;">A</div>	NAME AND ADDRESS OF CONSIGNEE
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MEANS OF CONVEYANCE	POINT OF ENTRY
---------------------	----------------

DESCRIPTION OF CONSIGNMENT PRODUCT (Kind, Quantity, and Weight)
M
P

IDENTIFICATION
ORIGIN

This is to affirm that, based upon inspection of submitted samples and/or by virtue of processing received, the plant products described above are believed to be free from injurious plant pests.



NAME OF AUTHORIZED OFFICER <div style="font-size: 48px; opacity: 0.5; text-align: center;">L</div>
SIGNATURE <div style="font-size: 48px; opacity: 0.5; text-align: center;">E</div>

No liability shall attach to the United States Department of Agriculture or to any officer or representative of the Department with respect to this certificate.

PPQ FORM 578
(OCT 91)

PART 1 - SHIPPER'S ORIGINAL

Federal-State Inspection Certificate—Export Apple and Pear Act



U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 FRUIT AND VEGETABLE DIVISION

X-021655-6

EXPORT FORM CERTIFICATE
 FOR NON - CANADIAN DESTINATIONS

INSPECTION STARTED: ^m 0 ^m 9 ^d 22 ^y 97		WARNING: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate, or participate in any such actions, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both.	
INSPECTION COMPLETED: ^m 0 ^m 9 ^d 22 ^y 97			
APPLICANT / SHIPPER: PAPA'S PEARS AND APPLES		CITY / STATE: COURTLAND, CA	
RECEIVER: MAMA'S PEARS AND APPLES, LTD		CITY / COUNTRY: LONDON, ENGLAND	
<input type="checkbox"/> CARRIER ID.	CA FSL 922-SAC	CERT. / WORKSHEET NUMBER: N/A	
<input checked="" type="checkbox"/> PLI No.			
PRODUCT	NUMBER AND TYPE OF CONTAINERS	DESCRIPTION OF PRODUCT (BRAND, VARIETY, SIZE, ORIGIN, etc.)	GRADE
APPLES	400 CTNS	"EXPORT" FUJI, 72 COUNT PRODUCE OF USA	US EXTRA FANCY
ALL APPLES SHOW 50% TO 100%, MOSTLY 50% TO 75% BLUSH OR RED SURFACE COLOR. MOSTLY HARD, SOME FIRM. DEFECTS WELL WITHIN TOLERANCE, NO DECAY			
PEARS	400 CTNS	"EXPORT" BARTLETT, 110 COUNT PRODUCE OF USA	US NO. 1
MOSTLY HARD, MANY FIRM, GROUND COLOR MOSTLY LIGHT GREEN, SOME GREEN. DEFECTS WITHIN TOLERANCE. NO DECAY			
THIS IS TO CERTIFY THAT THE <input checked="" type="checkbox"/> APPLES, <input checked="" type="checkbox"/> PEARS, <input type="checkbox"/> TABLE GRAPES IN THE ABOVE IDENTIFIED LOT(S) HAVE BEEN INSPECTED AT THE PLACE AND DATE STATED ABOVE, AND FOUND TO MEET THE REQUIREMENTS OF THE :			
<input checked="" type="checkbox"/> Export Apple and Pear Act <input type="checkbox"/> Export Grape and Plum Act			
<input type="checkbox"/> Export Grape and Plum Act except for export to destinations in Europe, Greenland, or Japan.			
REMARKS: APPLICANT STATES ABOVE PRODUCTS TO BE AIR SHIPPED TO DESTINATION.			
DATA BLOCK - FOR USDA USE ONLY		I, the undersigned, a duly authorized inspector of the United States Department of Agriculture, do hereby certify that samples of the herein described product were inspected and the grades as shown by said samples were as herein stated.	FEE: \$
CORRECTS FV-207 CERTIFICATE NO.:			INSPECTOR'S SIGNATURE: C. M. Inspector
APPLICANT NO.: 21		DATE ISSUED: 9/22/97	EXPENSES:
CWT	ON-SITE HOURS:	ISSUING OFFICE: WEST SACRAMENTO, CA	ESTIMATED TOTAL:
	O.T. (hours):	Information listed below is furnished by the applicant / packer and is not verified by the USDA Inspection Service.	
	TRAVEL MILES:	VESSEL:	VOYAGE NO.:
	O.T. (hours):	CONTAINER NO.:	
INSPECTED BY:	OTHER:	OTHER RELEVANT SHIPPING INFORMATION:	
		AUTHORIZED REPRESENTATIVE:	

FORM FV-207 (07 / 92)

ORIGINAL / APPLICANT

Federal-State Inspection Certificate—Export Grape and Plum Act



U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 FRUIT AND VEGETABLE DIVISION

X - 021653-1

EXPORT FORM CERTIFICATE
 FOR NON - CANADIAN DESTINATIONS

INSPECTION STARTED: 0 9 1 5 9 7		WARNING: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate, or participate in any such actions, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both.	
INSPECTION COMPLETED: 0 9 1 5 9 7			
APPLICANT / SHIPPER: ABC TABLE GRAPES		CITY / STATE: DELANO, CA	
RECEIVER: MONGOLIAN TRADING CO.		CITY / COUNTRY: BEIJING, CHINA	
<input type="checkbox"/> CARRIER ID.		CERT. / WORKSHEET NUMBER: N/A	
<input checked="" type="checkbox"/> PLI No. CA FSL 915-DEL			
PRODUCT	NUMBER AND TYPE OF CONTAINERS	DESCRIPTION OF PRODUCT (BRAND, VARIETY, SIZE, ORIGIN, etc.)	GRADE
TABLE GRAPES	540 LUGS	"CHINA GOLD" FLAME SEEDLESS PRODUCE OF USA	US No. 1 TABLE
		BUNCHES MOSTLY MEDIUM, SOME SMALL BERRIES MOSTLY MEDIUM, SOME SMALL. MOSTLY WELL, MANY REASONABLY WELL COLORED. DEFECTS AVERAGE WITHIN TOLERANCE	
SAMPLE			
THIS IS TO CERTIFY THAT THE <input type="checkbox"/> APPLES, <input type="checkbox"/> PEARS, <input checked="" type="checkbox"/> TABLE GRAPES IN THE ABOVE IDENTIFIED LOT(S) HAVE BEEN INSPECTED AT THE PLACE AND DATE STATED ABOVE, AND FOUND TO MEET THE REQUIREMENTS OF THE :			
<input type="checkbox"/> Export Apple and Pear Act <input type="checkbox"/> Export Grape and Plum Act			
<input checked="" type="checkbox"/> Export Grape and Plum Act except for export to destinations in Europe, Greenland, or Japan.			
REMARKS:			
DATA BLOCK - FOR USDA USE ONLY		I, the undersigned, a duly authorized inspector of the United States Department of Agriculture, do hereby certify that samples of the herein described product were inspected and the grades as shown by said samples were as herein stated.	
CORRECTS FV-207 CERTIFICATE NO.:		FEE: \$	
APPLICANT NO.: 21		OVERTIME:	
		EXPENSES:	
		ESTIMATED TOTAL	
CWT		Issuing Office: DELANO, CA	
ON-SITE HOURS:		Information listed below is furnished by the applicant / packer and is not verified by the USDA Inspection Service.	
O.T. (hours):		VESSEL:	
TRAVEL MILES:		VOYAGE NO.:	
INSPECTED BY		CONTAINER NO.:	
O.T. (hours):		OTHER RELEVANT SHIPPING INFORMATION: BOOKING # A-1357-BCI-89	
OTHER:		AUTHORIZED REPRESENTATIVE:	

FORM FV-207 (07 / 92)

ORIGINAL / APPLICANT

Source: USDA Agricultural Marketing Service

Certificate of Quality and Condition

UNITED STATES DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE		Please refer to this certificate by number and inspection office
CERTIFICATE OF QUALITY AND CONDITION (PROCESSED FOODS)		
This certificate is receivable in all courts of the United States as prima facie evidence of the truth of the statements therein contained. It does not excuse failure to comply with any applicable Federal or State laws. WARNING: Any person who knowingly falsely make, issue, alter, forge, or counterfeit this certificate, or participate in any such action is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both (7 U.S.C. 1622 (h)). The conduct of all services and the licensing of all personnel under the regulations governing such services shall be accomplished without discrimination as to race color, religion, sex or national origin.		166-A-1 December 1996 EXHIBIT 3
		DATE March 5, 1996
APPLICANT ABC Frozen Foods	ADDRESS Portland, Oregon 97206	
RECEIVER OR BUYER Trappe Trading Co.	ADDRESS London, England	
SOURCE OF SAMPLES Submitted by Applicant	PRODUCT INSPECTED FROZEN WHOLE KERNEL CORN	

CODE MARKS ON CONTAINERS

T34; and T36...

PRINCIPAL LABEL MARKS

"Frozen Cut Corn net weight 16 ounces. Distributed by Major, Inc. Sacramento, California 92210"

Net weights: 16.0 and 16.2 ounces.
 Color: Golden (or yellow).

SAMPLE

GRADE:

J. S. Grade C or U. S. Standard

Score: 75 points each

CERTIFICATE RESTRICTED: This certificate covers the examination of 2-16 ounce cartons submitted by applicant and does not officially represent any lot.

REMARKS:

Exporter declares this consignment is for 800 cases, 24/16 ounce containers, (19,200 pounds applicant's count and weight), and covered by loading manifest number A-3345.

Pursuant to the regulations issued by the Secretary of Agriculture under the Agricultural Marketing Act of 1946, as amended (7 U.S.C. 1621-1627), governing the inspection and certification of the product designated herein. I certify that the quality and condition of the product as shown by samples inspected on the above date were as shown, subject to any restrictions specified above.



ADDRESS OF INSPECTION OFFICE
 340 High Street, NE
 Salem, Oregon 97301-3631
 (503) 399-5761

SIGNATURE OF INSPECTOR

John Doe

FORM FV-146CS (9-92)

Meat and Poultry Export Certificate of Wholesomeness

U.S. DEPARTMENT OF AGRICULTURE
 FOOD SAFETY AND INSPECTION SERVICE
 MEAT AND POULTRY INSPECTION OPERATIONS
**MEAT AND POULTRY EXPORT CERTIFICATE
 OF WHOLESOMENESS**

A knowingly false entry or false alteration of any entry on this certificate may result in a fine of not more than \$10,000 or imprisonment for not more than five years or both (18 USC 1001). Additional penalties exist under the Federal Meat Inspection Act [21 USC 611 (b) (1), (2), and (5), 21 USC 676] and the Poultry Products Inspection Act [21 USC 458 (c) (1), (2), and (5), 21 USC 461] for an unauthorized or false alteration or misuse of this certificate.

AREA OFFICE Long Beach, CA	COUNTRY OF DESTINATION Singapore	DATE ISSUED June 9, 1997	MPC - 339824
EXPORTED BY (Applicant's name and address including ZIP Code) Columbia Trading Co. 33 Pacific View Ave. Torrance, CA 90509		PRODUCT EXPORTED FROM: EST. / PLANT NUMBER (If applicable) Est. 3000X CITY Los Angeles, CA	
CONSIGNEE TO (Name and address, including ZIP Code) Columbia Trading Co. 26 Harbor St. Singapore		<input type="checkbox"/> @ SLAUGHTERING PLANT <input type="checkbox"/> @ PROCESSING PLANT <input checked="" type="checkbox"/> @ WAREHOUSE <input type="checkbox"/> @ DOCKSIDE	
TOTAL MARKED NET WEIGHT 42,000 lbs.	TOTAL CONTAINERS 1207		

PRODUCT AS LABELED	MARKED WEIGHT OF LOT 1/	NUMBER OF PACKAGES IN LOT 1/	SHIPPING MARKS 1/	EST. / PLANT NUMBER ON PRODUCT
Frozen Beef Tenderloins	3550 lbs.	50	4336/Singapore	Est. 38
Frozen Beef Short Ribs	3700 lbs.	50	" "	Est. 38
Beef Stew 24 oz.	3240 lbs.	40	" "	Est. 38
Frozen Corned Beef Brisket	3900 lbs.	50	" "	Est. 00
Assorted Beef Jerky 12-8 oz.	1200 lbs.	200	" "	Est. 00
Frozen Fryer Parts	6000 lbs.	150	" "	P-42
Frozen Chicken Wings	3200 lbs.	80	" "	P-42
White Turkey Rolls	4700 lbs.	235	" "	P-00
Raw Turkey Breast	6450 lbs.	150	" "	P-00
Cooked Boneless Diced Chicken Meat	6060 lbs.	202	" "	P-42X

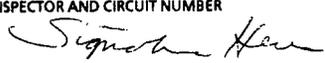
1/ As stated by applicant or contractor

REMARKS
 The canned products have been manufactured and inspected in accordance with Section 318.11 of USDA regulations.

I CERTIFY that the meat or meat food product specified hereon is from animals that received both antemortem and postmortem inspection and were found sound and healthy and that it has been inspected and passed as provided by law and regulations of the Department and is sound and wholesome.

I CERTIFY that the poultry and poultry products specified above came from birds that were officially given an antemortem and postmortem inspection and passed in accordance with applicable laws and regulations of the United States Department of Agriculture and are wholesome and fit for human consumption.

NOT VALID UNLESS SIGNED BY AN INSPECTOR OF MEAT AND POULTRY INSPECTION PROGRAM

By order of the Secretary of Agriculture | INSPECTOR AND CIRCUIT NUMBER
 James R. David, DVM 202-21

This certificate is receivable in all courts of the United States as prima facie evidence of the truth of the statements therein contained. This certificate does not excuse failure to comply with any of the regulatory laws enforced by the United States Department of Agriculture.

Source: USDA Food Safety and Inspection Service

Veterinary Health Certificate

UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE EXPORT CERTIFICATE ANIMAL PRODUCTS	FOR OFFICIAL USE ONLY Port Date and No. EXAMPLE ONLY
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This is to certify that rinderpest, foot-and-mouth disease, and contagious bovine pleuropneumonia do not exist in the United States of America.

ADDITIONAL DECLARATION

THE PLANT OF ORIGIN CERTIFIES THAT THE MATERIALS USED IN THE MANUFACTURING OF THE DECREASED BONE CHIPS TO BE SHIPPED WERE FROM ANIMALS SLAUGHTERED UNDER THE SUPERVISION OF USDA AND PROCESSED AT A FACILITY CAPABLE OF SUBJECTING THE RAW MATERIALS TO A TEMPERATURE OF 260 DEGREES FAHRENHEIT AND THAT THE DRY RENDERED PRODUCT HAS BEEN SUBJECTED TO A TREATMENT OF 210-250 DEGREES FAHRENHEIT FOR A PERIOD OF AT LEAST ONE AND ONE HALF HOURS.

USDA/APHIS VETERINARY SERVICES HAS ON FILE A LETTER ATTESTING TO THE ABOVE.



EXAMPLE

 (Signature)

APHIS OFFICER
 (Title)

DESCRIPTION OF THE CONSIGNMENT

NAME AND ADDRESS OF EXPORTER

EXCEL CORPORATION
 123 Main Street
 Anywhere, MD 12345

NAME AND ADDRESS OF CONSIGNEE

Mr. Marolo Garcia
 USDA/APHIS/VS/NCIE
 4700 River Road, Unit 40
 Riverdale, MD 20737

PRODUCT (Kind, quantity, weight)

4 CONTAINERS, BONES GROUND AND ARE CHIPS AT 178660.0 POUNDS

IDENTIFICATION

CONVEYANCE

No liability shall attach to the United States Department of Agriculture or to any officer or representative of the Department with respect to this certificate.

VS FORM 16-4
 (NOV 72)

Packing List

PACKING LIST

SHIPPER:
 FRESH ORANGE EXPORTER
 123 FIRST STREET
 AMERICAN CITY, U. S. A. 10000

CARRIER'S BOOKING NUMBER 123456 10 MAR 97
 BILL OF LADING NUMBER APLU123456789
 SHIPPER'S REFERENCE NUMBER FOE 001
 JEL REFERENCE NUMBER SF01060423
 TRAFFIC MANAGER D. ENBERG
 CARRIER'S AGENT AMERICAN PRESIDENT LINES
 FORWARDING AGENT 415-781-7040
 J. E. LOWDEN & CO. FMC 87
 275 Battery Street, Ste 400
 San Francisco CA 94111-3701
 POINT & COUNTRY OF ORIGIN FAX (415)392-3970
 CALIFORNIA USA

NOTIFY PARTY:

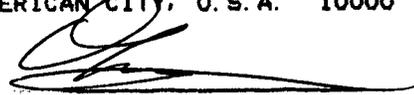
ORIENTAL FRESH FOODS
 456 ORIENTAL BEND ROAD
 KOWLOON, HONG KONG

PIER/TERMINAL BERTH 223 SAN PEDRO
 VESSEL VOYAGE # FLAG V. 13 PORT OF LOADING
 APL JAPAN SAN PEDRO
 PORT OF DISCHARGE HONG KONG FOR TRANSSHIPMENT TO
 HONG KONG HONG KONG

MARKS & NOS.	NO. PKGS.	DESCRIPTION OF GOODS	GRS WEIGHT	MEASUREMENT
CONTAINER APLU 596327-1	950	CARTONS FRESH ORANGES 1/40 FT. CYCLO CONTAINER SHIPPERS LOAD AND COUNT (NET WEIGHT 35.150 LBS.) LARGE UNDER REFRIGERATION MAINTAIN TEMPERATURE AT 42 DEGREE F FLOWS 45 CFM	39900# 18098K	1140 / 32.280M3
	950	TOTAL	39900# 18098K	1140 / 32.280M3

WE HEREBY CERTIFY THAT THE ABOVE WEIGHTS ARE
 TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE.

FRESH ORANGE EXPORTER
 123 FIRST STREET
 AMERICAN CITY, U. S. A. 10000


 D. ENBERG

Shipper's Letter of Instruction

SHIPPER'S INSTRUCTIONS & CONFIRMATION MEMO

J. E. LOWDEN & CO. - International Freight Forwarders

275 Battery Street, Suite 400, San Francisco, CA 94111
 FMC#87 PHONE: (415) 781-7040 FAX: (415) 392-3970

SHIPPER / EXPORTER			SHIPPER TO ENTER INFO & SEND TO LOWDEN OR LOWDEN TO RECORD INFO FROM PHONE CALL THEN ADD INFO & SEND TO SHIPPER OR OTHERS		LOWDEN FILE NO. SF010
			EXPORTER'S REFERENCE	SHIPPER'S REP	
			SERVICE CONTRACT	LOWDEN'S REP	
CONSIGNEE			OCEAN CARRIER		
			BOOKING NUMBER	DATE BOOKED	
			POINT & COUNTRY ORIGIN		
NOTIFY PARTY			SUPPLIER / LOCATION OF CARGO FOR PICK UP		
LAST RECEIVING DATE & TIME			SAIL DATE	ARRIVAL DATE	
PIER / TERMINAL			TERMINAL CHARGES PREPAID <input type="checkbox"/> COLLECT <input type="checkbox"/>		
TRUCK / RAIL CARRIER		PLACE OF RECEIPT	OCEAN FREIGHT CHARGES PREPAID <input type="checkbox"/> COLLECT <input type="checkbox"/>		
VESSEL / VOYAGE		PORT OF LOADING	TEMPERATURE SETTINGS _____ VENTS _____		
PORT OF DISCHARGE		PLACE OF DELIVERY	RATES & COMMENTS		
MARKS & NUMBERS	NUMBER OF PACKAGES	DESCRIPTION OF CARGO (SHOW SUFFICIENT DETAIL TO DETERMINE SCHEDULE B NUMBER)		GROSS WEIGHT & CUBIC MEASURE	NET QUANTITY, UNITS, & FAS VALUE FOR SED
					DECLARED VALUE FOR B/L: US\$

HAZARDOUS: YES ___ NO ___ EXPORT LICENSE: YES ___ NO ___ NEED MARINE INSURANCE: YES ___ NO ___

(Additional details and documents required if hazardous or licensed)

POWER OF ATTORNEY - DESIGNATION OF FORWARDING AGENT

I hereby authorize J. E. Lowden & Co. to act as our forwarding agent for export control and customs purposes, and to perform other acts to facilitate this export shipment on our behalf. We also authorize J. E. Lowden & Co. to delegate this authority to their agents or representatives.

Name: _____ Date: _____

Title: _____ Shipper's EIN: _____

Required unless a separate power of attorney is on file at J. E. Lowden & Co.

TRANSMITTAL RECORD

DATE OF INSTRUCTIONS FROM SHIPPER _____

INSTRUCTIONS BY: PHONE _____ FAX _____ IN PERSON _____

DATE MEMO SENT BY FORWARDER: _____

SUBSEQUENT COMMUNICATIONS:

TO _____ FROM _____ DATE _____

TO _____ FROM _____ DATE _____

TO _____ FROM _____ DATE _____

503-961211

Dock Receipt

DOCK RECEIPT

SHIPPER/EXPORTER FRESH ORANGE EXPORTER 123 FIRST STREET AMERICAN CITY, U.S.A. 10000		DOCUMENT NO. BOOKING#:123456 APLU123456789	
CONSIGNEE ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG		EXPORT REFERENCES SHIPPER'S REF NO: FOE 001 JEL REF NO: SF01060423 SC#	
NOTIFY PARTY ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG		FORWARDING AGENT - REFERENCES J.E. LOWDEN & CO. FMC87 - CHB5118 275 Battery Street #400 San Francisco, CA 94111	
PIER OR AIRPORT SAN PEDRO		POINT AND COUNTRY OF ORIGIN CALIFORNIA USA	
EXPORTING CARRIER (Vessel/Airline) APL JAPAN		PORT OF LOADING SAN PEDRO	ONWARD INLAND ROUTING BERTH 223
AIR/SEA PORT OF DISCHARGE HONG KONG		FOR TRANSSHIPMENT TO HONG KONG	

PARTICULARS FURNISHED BY SHIPPER

MARKS AND NUMBERS	NO. OF PKGS.	DESCRIPTION OF PACKAGES AND GOODS	GROSS WEIGHT	MEASUREMENT
FREIGHT PREPAID CONTAINER APLU 596327-1	950	CARTONS FRESH ORANGES 1/40 FT. CY/CY CONTAINER SHIPPER'S LOAD AND COUNT (NET WEIGHT 35,150 LBS.) CARGO UNDER REFRIGERATION MAINTAIN TEMPERATURE AT 42 DEGREE F VENTS 45 CFM	39900# 18098K	1140' 32.280M
	950	TOTAL LADEN ON BOARD		
LICENSE EXCEPTION: NLR NO SED REQUIRED, SEC 30.	39 FTSR, CAS-JL	TOTAL	39900# 18098K	1140' 32.280M

DELIVERED BY: LIGHTER TRUCK ARRIVED- DATE TIME UNLOADED-DATE TIME CHECKED BY..... PLACED IN SHIP ON DOCK LOCATION 502 WHSE. NO. 0846 JOB NO. H 6949	RECEIVED THE ABOVE DESCRIBED GOODS OR PACKAGES SUBJECT TO ALL THE TERMS OF THE UNDERSIGNED'S REGULAR FORM OF DOCK RECEIPT AND BILL OF LADING WHICH SHALL CONSTITUTE THE CONTRACT UNDER WHICH THE GOODS ARE RECEIVED, COPIES OF WHICH ARE AVAILABLE FROM THE CARRIER ON REQUEST AND MAY BE INSPECTED AT ANY OF ITS OFFICES. <div style="border: 1px solid black; width: 100px; height: 100px; margin: 20px auto;"></div> FOR THE MASTER BY..... RECEIVING CLERK DATE
--	---

ONLY CLEAN DOCK RECEIPT ACCEPTED.

Source: J.E. Lowden & Company

Certificate of Origin

CERTIFICATE OF ORIGIN

<p>SHIPPER: FRESH ORANGE EXPORTER 123 FIRST STREET AMERICAN CITY, U. S. A. 10000</p>	<p>CARRIER'S BOOKING NUMBER 123456 BILL OF LADING NUMBER APLU123456789 SHIPPER'S REFERENCE NUMBER FOE 001 JEL REFERENCE NUMBER SFO1060423 TRAFFIC MANAGER D. ENBERG CARRIER'S AGENT AMERICAN PRESIDENT LINES FORWARDING AGENT J. F. LOWDEN & CO. FMC 87 275 Battery Street #400 San Francisco, CA 94111 PHONE (415) 781-7040 FAX (415) 392-3970 TLX/EMAIL 404235592</p>
<p>NOTIFY PARTY: ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG</p>	
<p>PIER/TERMINAL BERTH 223 VESSEL VOYAGE # FLAG V. 13 APL JAPAN PORT OF DISCHARGE HONG KONG</p>	<p>ALSO NOTIFY: SAN PEDRO PORT OF LOADING SAN PEDRO FOR TRANSSHIPMENT TO HONG KONG</p>

MARKS & NOS.	NO. PKGS.	DESCRIPTION OF GOODS	GRS WEIGHT	MEASUREMENT
CONTAINER APLU 596327-1	950	CARTONS FRESH ORANGES 1/40 FT. CY/CY CONTAINER SHIPPER'S LOAD AND COUNT (NET WEIGHT 35,150 LBS.) CARGO UNDER REFRIGERATION MAINTAIN TEMPERATURE AT 42 DEGREE F VENTS 45 CFM	39900# 18098K	1140 ' 32.280M3
	950 TOTAL		39900# 18098K	1140 ' 32.280M3
LADEN ON BOARD	11 March 97		PREPAID	

THE UNDERSIGNED, D. ENBERG (AGENT), DOES HEREBY DECLARE FOR THE ABOVE NAMED SHIPPER, THE GOODS DESCRIBED ABOVE WERE SHIPPED ON THE ABOVE DATE AND CONSIGNED AS INDICATED AND ARE PRODUCTS OF THE UNITED STATES OF AMERICA. DATED AT SAN FRANCISCO, CALIFORNIA ON 12 March 97



 SIGNATURE OF OWNER OR AGENT

INSURANCE CERTIFICATE

**AMERICAN NATIONAL
FIRE INSURANCE COMPANY**
1350 Treat Blvd #470
Walnut Creek, CA 94596

CARRIER'S BOOKING NUMBER 123456
BILL OF LADING NUMBER APLU123456789
SHIPPER'S REFERENCE NUMBER FDE 001
JEL REFERENCE NUMBER SF01060423
TRAFFIC MANAGER D. ENBERG
CARRIER'S AGENT **AMERICAN PRESIDENT LINES**
FORWARDING AGENT

We hereby certify that on _____, we
the undersigned, insured under, and subject
to the terms and conditions of Policy No.
OMC-7567613 (terms, conditions,
endorsements, riders attached) for
FRESH ORANGE EXPORTER
123 FIRST STRFET
AMERICAN CITY, U. S. A. 10000

J. E. LOWDEN & CO.
275 BATTERY ST. #400
SAN FRANCISCO, CA 94111

POINT & COUNTRY OF ORIGIN
CALIFORNIA USA

IN THE SUM OF: \$16709.00 *US

PIER/TERMINAL
BERTH 223
VESSEL VOYAGE # FLAG 13
APL JAPAN
PORT OF DISCHARGE
HONG KONG

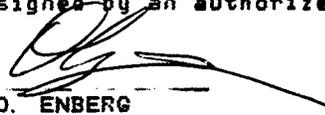
SAN PEDRO
PORT OF LOADING
SAN PEDRO
FOR TRANSSHIPMENT TO
HONG KONG

- FPAEC
- With Average, irrespective of percentage
- All Risk Refrigeration Clause
- Theft, Pilferage & Non-delivery
- Air Clauses

This insurance is subject to the following
current American Institute Clauses: Amended
F. C. & S. Warranty, S. R. & C. C. Endorsement,
Marine Extension Clauses, War Risk Insurance,
60 Day South American Clause, American
Institute WAREHOUSE to WAREHOUSE Clause.

MARKS	PKGS	DESCRIPTION	GRS WEIGHT/MEASURE	
CUNTAINDER	950	CARTONS FRESH ORANGES	39900#	1140'
APLU 596327-1		1/40 FT. CY/CY CONTAINER	18098K	32.280M3
		SHIPPERS LOAD AND COUNT (NET WEIGHT 35,150 LBS.) CARGO UNDER REFRIGERATION MAINTAIN TEMPERATURE AT 42 DEGREE F VENTS 45 CFM		
	950	TOTAL	39900#	1140'
			18098K	32.280M3

In case of loss the same is payable to the order of the Assured.
This certificate invalid unless countersigned by an authorized representative
of this Company or ASSURED.


D. ENBERG

Shipper's Export Declaration

OMB No. 0607-0152

DO NOT USE THIS AREA

U.S. DEPARTMENT OF COMMERCE - BUREAU OF THE CENSUS - INTERNATIONAL TRADE ADMINISTRATION
FORM 7525-V-ALT. (Intermodal) (1-1-88) SHIPPER'S EXPORT DECLARATION

2. EXPORTER (Principal or seller-license and address including ZIP Code)

FRESH ORANGE EXPORTER
123 FIRST STREET
AMERICAN CITY, U.S.A. 10000

CONFIDENTIAL - For use solely for official purposes authorized by the Secretary of Commerce (13 U.S.C. 301 (g)).

5a. B/L OR AWB NUMBER

NAWB: 618-4260-9732HAWBSFO-001974

6. EXPORT REFERENCES

SHIPPER'S REF NO: 11334
JEL REF NO: SFO3001924

ZIP CODE

3. CONSIGNEE TO

ORIENTAL FRESH FOODS
456 ORIENTAL BEND ROAD
KOWLOON, HONG KONG

7. FORWARDING AGENT (Name and address - references)

J.E. LOWDEN & CO IATA 01-1-3839/024
510 MYRTLE AVE., SUITE 210
S. SAN FRANCISCO, CA. 94080

8. POINT (STATE) OF ORIGIN OR FTZ NUMBER

4. NOTIFY PARTY/INTERMEDIATE CONSIGNEE (Name and address)

9. DOMESTIC ROUTING/EXPORT INSTRUCTIONS

31. ULTIMATE CONSIGNEE (Give name and address of party to whom goods are consigned for)

32. DATE OF EXPORTATION (Not required for vessel shipments)

33. COUNTRY OF ULTIMATE DESTINATION

34. EXPORTER'S EIN (IRS) NUMBER

35. PARTIES TO TRANSACTION

36. Check digit

Value - Selling price or cost if not sold (U.S. dollars, omit cents)

Quantity - Schedule B unit(s) (Nearest whole unit)

24. SCHEDULE B NO.

25a. QUANTITY 1

25b. QUANTITY 2

26. VALUE

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25a. QUANTITY 1

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26. VALUE

Bill of Lading

GLOBETRANS, INC.

BILL OF LADING

FOR COMBINED TRANSPORT AND
PORT TO PORT SHIPMENT
NOT NEGOTIABLE UNLESS CONSIGNED 'TO ORDER'

EXPORTER / SHIPPER FRESH ORANGE EXPORTER 123 FIRST STREET AMERICAN CITY, U.S.A. 10000		BILL OF LADING NUMBER BOOKING#: 123456	CONTAINER NUMBER APLU123456789
CONSIGNEE TO ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG		EXPORT REFERENCES SHIPPER'S REF NO: FOE 001 JEL REF NO: SF01060423 SC#	
NOTIFY PARTY / INTERMEDIATE CONSIGNEE ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG		FORWARDING AGENT J.E. LOWDEN & CO. FMC87 - CHB5118 275 Battery Street #400 San Francisco, CA 94111	
* PRE-CARRIAGE BY VESSEL V.13		* PLACE OF RECEIPT BY PRE-CARRIER SAN PEDRO	
FOREIGN PORT OF UNLOADING HONG KONG		* PLACE OF DELIVERY BY ON-CARRIER HONG KONG	
PORT OF LOADING / EXPORT SAN PEDRO		BERTH 223	

CARRIER'S RECEIPT		PARTICULARS FURNISHED BY SHIPPER		
MARKS AND NUMBERS	NO. OF PKGS	DESCRIPTION OF PACKAGES AND GOODS	GROSS WEIGHT	MEASUREMENT
FREIGHT PREPAID		TERMINAL CHARGES PREPAID		
CONTAINER APLU 596327-1	950	CARTONS FRESH ORANGES 1/40 FT. CY/CY CONTAINER SHIPPERS LOAD AND COUNT (NET WEIGHT 35,150 LBS.) CARGO UNDER REFRIGERATION MAINTAIN TEMPERATURE AT 42 DEGREE F VENTS 45 CFM	39900# 18098K	1140' 32.280M
	950	TOTAL LADEN ON BOARD	TOTAL 39900# 18098K	1140' 32.280M

LICENSE EXCEPTION: NLR
NO SED REQUIRED, SEC 30.39 FTSR, CAS-JL

* APPLICABLE ONLY WHEN DOCUMENT USED AS A COMBINED TRANSPORT BILL OF LADING.

DECLARED VALUE (For AD VALOREM purpose only).
(Refer to clause 5D(c) on reverse hereof) in US \$

In accepting this bill of lading, any local customs or privileges to the contrary notwithstanding, the shipper, consignee and owner of the goods and the holder of this bill of lading, agree to be bound by all the stipulations, exceptions and conditions stated herein whether written, printed, stamped or incorporated on the front or reverse side hereof, as fully as if they were all signed by such shipper, consignee, owner or holder.

In witness whereof three (3) bills of lading, all of this tenor and date have been signed, one of which being accomplished, the others to stand void.

GLOBETRANS, INC.

BY

AGENT FOR THE CARRIER

DATED

FREIGHT AND CHARGES			
DESCRIPTION OF CHARGE	RATE	PREPAID	COLLECT
TOTAL PREPAID			
TOTAL COLLECT			

Source: J.E. Lowden & Company

Air Waybill

SQ AIR SFO-001974

SQ AIR SFO-001974

Shipper's Name and Address FRESH ORANGE EXPORTER 123 FIRST STREET AMERICAN CITY, U. S. A. 10000		Shipper's Account Number		Not Negotiable	
Consignee's Name and Address ORIENTAL FRESH FOODS 456 ORIENTAL BEND ROAD KOWLOON, HONG KONG		Consignee's Account Number		SINGAPORE AIRLINES Air Waybill BOX 8746 Issued by SAN FRANCISCO CA 94128 Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity.	
Issuing Carrier's Agent Name and City J. E. LOWDEN & CO IATA 01-1-3839/024 510 MYRTLE AVE., SUITE 210 S. SAN FRANCISCO, CA. 94080		Accounting Information JEL REF#: SFO3001924 SHIPPER#: 11334 HAWB: SFO-001974 MAWB: 618-4260-9732			
Agent's IATA Code 01-1 3839/024		Account No			
Airport of Departure (Addr. of First Carrier) and Requested Routing SAN FRANCISCO AIRPORT					
To	By First Carrier	Routing and Destination	to	by	to
HKG	SQ				
Airport of Destination HONG KONG		Flight/Date 173/13	For Carrier Use Only	Flight/Date	Amount of Insurance
					INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures in box marked "Amount of Insurance".
Handling Information PLEASE CONTACT CONSIGNEE UPON ARRIVAL. TP# 66-9932-4471					
These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. Law Prohibited.					
No. of Pieces RCP	Gross Weight	kg	Rate Class	Chargeable Weight	Rate / Charge
400	7200	K	Q	7200	1.70
Total		Total		Nature and Quantity of Goods (incl. Dimensions or Volume)	
12240.00		12240.00		ORANGES IN CARTONS 1.25 CU FT/CTN	
Prepaid	Weight Charge	Collect	Other Charges AGT:		
12240.00			DUE CARR: \$. 10 FSCH 720.00		
Valuation Charge		Tax			
Total Other Charges Due Agent		Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the goods described herein are properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.			
720.00		FRESH ORANGE EXPORTER 123 FIRST STREET AMERICAN CITY, U. S. A. 10000			
Total Other Charges Due Carrier		J. E. LOWDEN & CO. AS AUTHORIZED AGENTS FOR, ISSUING CARRIER,			
720.00		13 MAR 97 SAN FRANCISCO AIRPORT			
Total Prepaid		Total Collect		Executed on (date) at (place) Signature of Issuing Carrier or its Agent	
12960.00				ENBERG	
Currency Conversion Rates		CC Charges in Dest. Currency		Total Collect Charges	
				SQ AIRHAWB SFO-001974732	
For Carrier's Use only at Destination		Charges at Destination			

ORIGINAL 3 (FOR SHIPPER)

Source: J.E. Lowden & Co.

Methods of Payment

When deciding which method of payment to use, or combination of methods, the seller must weigh the risks and costs involved. The buyer doesn't want to tie up capital on product that it doesn't yet possess, which means that the seller can lose the sale if its competitors are willing to offer more attractive terms. On the other hand, the seller needs assurances that the buyer won't default on payment once it has received the goods. Companies need to develop an international credit policy that does not impede sales, but protects against loss. By answering the following questions, the seller can evaluate which payment options it can afford to offer the customer.

- Can the sale be made without offering credit?
- Does the buyer have a good credit history?
- What are conditions (i.e., market or political stability) in the buyer's country?
- What is company policy on extending credit?
- Can the seller offer credit and still make a profit?
- Can the business survive if it does not get paid?

Once the seller has determined the risks its company can afford to take, it's time to evaluate the risks associated with the more common methods of payment. Consulting with a qualified international banker at this time can help the seller make an informed selection. Ranked in order of risk from the seller's perspective, from the most secure to the least secure, the more common methods of payment are:

- Cash in advance
- Standby letter of credit
- Commercial letter of credit
- Documentary collection
- Open account
- Mixed methods
- Additional payment methods

The chart at the end of this section highlights the more common methods of payment and their associated risks.

Cash in Advance

Cash in advance is typically considered the safest method of collecting payment for the seller. Cash in advance can take the form of a wire transfer or payment by check. An international wire transfer is the preferred method, because it allows for quick receipt

of good funds. Sellers should provide clear routing instructions to the buyer when using an international wire transfer including the name and address of the receiving bank and branch, the bank's SWIFT, Telex, and ABA numbers, and the seller's name and address, bank account title, and account number.

Collecting payment using an international check is a less attractive option than wire transfer because it can result in lengthy delays of final receipt of good funds. If the foreign buyer pays by check, made payable in U.S. dollars and drawn on a U.S. bank, the collection process is the same as any U.S. check. If, however, the check is in a foreign currency or drawn on a foreign bank, the collection process becomes more complicated and can delay the availability of funds. There is also a risk that any check may be returned due to insufficient funds in the buyer's account. This can result in a charge-back and possible overdraft charges in the buyer's account.

An additional factor to consider is that advance payment creates cash flow problems and increases risks for the buyer. If the competition is willing to extend credit, the buyer may go elsewhere.

Commercial Letters of Credit

A letter of credit (L/C) is a commitment or promise from the buyer's bank to pay the seller once the seller has met all the terms and conditions of the letter of credit. L/C's are irrevocable, which means that once the L/C is established it cannot be changed without the consent of all parties.

The L/C more evenly distributes risk between the seller and buyer. The seller is assured of payment when the conditions of the L/C are met and the buyer is assured of receiving the goods ordered. It is a commonly used method of payment, especially when the seller/buyer relationship is a new one.

The L/C is, however, not without disadvantages. If any discrepancies exist in the documents required by the L/C the buyer has the option to approve the discrepancies and pay for the shipment or reject the shipment. A rejected shipment means that the seller must quickly locate a new buyer, re-negotiate with the buyer, usually at a lower price, or pay for the shipment to be returned. An L/C also adds to the cost of the product

and can tie up the buyer's working capital or credit line prior to final payment.

A word of advice: when using an L/C, the seller should always have its international bank and its freight forwarder carefully scrutinize the L/C. They can help you determine if the L/C is legitimate, if all the terms can be met, and all the necessary bases are covered.

There are four parties formally involved in the collection of payment using an L/C:

- Buyer or applicant
- Applicant's bank or issuing bank
- Beneficiary's bank, which can act as an advising bank or confirming bank
- Seller or beneficiary

Applicant—The applicant (buyer) applies to its bank for the issuance of an L/C. The applicant must have a credit relationship with the issuing bank or pay cash.

Applicant's bank—The applicant's bank, or issuing bank, issues the L/C. The applicant's bank verifies that all documents comply with the terms and conditions of the L/C, and pays the seller.

Beneficiary's bank—The beneficiary's bank can act as an advising bank and/or confirming bank. An advising bank is the beneficiary's bank in the U.S. It verifies that the L/C is authentic and notifies the beneficiary of its receipt. The advising bank also receives the documents from the beneficiary and forwards them on to the issuing bank. However, the advising bank has no liability for payment of the L/C.

At the beneficiary's request, an advising bank can add its confirmation to the L/C. This means that the confirming bank adds its promise to pay the beneficiary for documents presented in compliance with the terms and conditions of the L/C. The confirming bank charges a fee for this service, based on its perception of the credit risk of the issuing bank. The beneficiary would request this service if it feels that there is a risk of not receiving payment from the issuing bank, due to country or bank risk issues.

Beneficiary—The seller is called the beneficiary. The beneficiary is responsible for the collection, presentation, and accuracy of the documents required by the L/C.

A confirmed irrevocable L/C follows these steps:

1. After the terms of sale have been agreed upon, the buyer/applicant arranges for its bank to open an L/C.
2. The applicant's bank prepares an irrevocable L/C that includes shipping instructions.
3. The issuing bank sends the L/C to a U.S. bank, requesting confirmation.
4. The confirming bank in the U.S. prepares a letter of confirmation and delivers it to the beneficiary along with the irrevocable L/C.
5. The exporter/beneficiary, and the beneficiary's bank and freight forwarder, carefully review the L/C. The beneficiary verifies with its freight forwarder that the shipping dates can be met. If any of the terms or conditions in the L/C cannot be met, the beneficiary contacts the buyer/applicant immediately.
6. The exporter makes arrangements with the freight forwarder for the goods to be delivered to the port or airport.
7. Once the terms of the L/C have been met, the freight forwarder completes the documents required by the L/C.
8. The beneficiary or freight forwarder presents the required documents to the confirming bank.
9. The confirming bank reviews the documents. If the documents are in order and fully comply with the L/C, the confirming bank forwards them to the issuing bank for review and transmittal to the buyer/applicant.
10. The buyer/applicant, or its customs broker, receives from the issuing bank the documents necessary to claim title to the goods.
11. The confirming bank pays the beneficiary as specified in the L/C.

For more information on L/Cs, consult *Uniform Customs and Practices for Documentary Credits* (ICC Publication No. 500) or a qualified international banker.

Standby Letter of Credit

Like the letter of credit, the standby letter of credit is a commitment or promise from the buyer's bank to pay the seller once the seller has met all the terms and conditions of the standby letter of credit. The difference is that the standby letter of credit is a guarantee of payment from the bank only if the buyer defaults on the payment. The buyer pays on open account or credit terms. Should the buyer default, the seller

presents to the bank a sight draft and a written statement certifying that the buyer has failed to make payment on the shipment secured by the standby letter of credit, and collects payment from them. The use of a standby letter of credit adds a bank guarantee of payment at a lower cost than payment collection using a letter of credit.

Documentary Collection

To collect payment from a foreign buyer using documentary collection, the seller sends a draft or other demand for payment with the related shipping documents through bank channels to the buyer's bank. The bank releases the documents to the buyer upon receipt of payment or promise of payment. The banks involved in facilitating this collection process have no responsibility to pay the seller should the buyer default. Documentary collection carries the risk that the buyer will not or cannot pay for the goods upon receipt of the draft and documents. If this occurs it is the burden of the seller to locate a new buyer or pay for return shipment.

Documentary collections are best considered when shipping by ocean freight. This is because the ocean bill of lading (b/l) is a negotiable document and acts as title to the goods. The steamship company will not release the shipment from the port unless the buyer has the original b/l, and the buyer cannot get the original b/l unless they pay the bank. In the case of air shipments, the b/l is not a negotiable document, does not act as title to the goods, and the benefit of using a documentary collection is lost.

Drafts—A draft (or bill of exchange) is a written order by one party directing a second party to pay to the order of a third party. Drafts are a negotiable instrument, easily transferable from one party to another. There are two types of drafts: sight drafts and time drafts.

Sight Drafts—In the case of a sight draft, once the goods have been shipped, the seller signs the original bill of lading and delivers it to the bank along with the sight draft, invoices, and other supporting documents required by the buyer and destination country, to be forwarded to the buyer's bank. The buyer's bank then notifies the buyer that it has received the documents. When the buyer pays the sight draft, the bank releases the bill of lading, passing title of the goods to the buyer.

Time Drafts—A time draft requires payment within a certain time after the buyer accepts the draft and receives the goods. By signing and writing "accepted" on the draft, the buyer is expected to pay within the stated time period. A buyer can delay payment by delaying acceptance of the draft or refusing to pay at maturity. In most countries, an accepted time draft is stronger evidence of debt than an unpaid invoice.

Open Account

Under an open account, collection of payment is the same as in cash in advance, wire transfer, or check. The difference is in the timing of collection. The exporter bills the buyer, who is expected to pay under agreed terms at a future date. Open account is a low-risk method of payment for the buyer and many large companies will only buy on open account. Due to the high risk involved for the seller, the seller must be confident that the buyer is well established, has a long and favorable payment record, has good credit, and is legally able to convert currency into U.S. dollars. Collection on delinquent payments under open account is difficult and costly due to the lack of documents and banking channels.

Mixed Methods

The payment options discussed in this section are not mutually exclusive. It is possible, and frequently practiced, that a seller will use a combination of payment methods. For example: the seller may require 50 percent of the payment as cash in advance using a wire transfer and the remaining 50 percent documentary collections using a sight draft.

Additional Methods of Payment

Credit Card—U.S. exporters who sell directly to the consumer may select credit cards as a viable method of payment. The rules governing credit card transactions differ from domestic use to international use. Exporters should check with their credit card company(s) for specific rules on international use of credit cards.

Consignment—Under consignment, the foreign distributor sells goods on behalf of the exporter. The exporter does not receive payment until the distributor sells the goods and transfers title of the goods. If the foreign distributor is unable to sell the goods, the exporter must pay for the return shipment. This method of payment is risky for the exporter.

Countertrade and Barter—Countertrade or barter may be necessary when selling to companies that cannot obtain convertible currency. In countertrade, the “buyer” agrees to undertake specified initiatives that compensate and benefit the “seller.” Barter is the exchange of goods or services between two parties.

Currency of Payment

The simplest currency of payment for U.S. exporters is U.S. dollars. When quoting prices and requiring payment in U.S. dollars, exporters are placing the burden and risk of foreign currency conversion on the buyer. On the other hand, some U.S. exporters knowledgeable in foreign exchange find it profitable to accept payment in other currencies. If the shipment’s value is large enough, say U.S. \$25,000 to \$50,000 or more, it may be possible to hedge against the foreign exchange risk. Experienced international bankers can offer advice on foreign exchange risks and offer suggestions on how to hedge against those risks.

International Payment Instruments Comparison Chart

Payment Method	Features	Advantages	Disadvantages
Wire Transfer	<ul style="list-style-type: none"> Fully electronic means of payment Uses correspondent bank accounts and Fed Wire U.S. Dollars and foreign currencies Same convenience and security as domestic wires Pin numbers for each authorized individual Repetitive codes for frequent transfers to same Beneficiaries 	<ul style="list-style-type: none"> Fastest way for Beneficiary to receive good funds Easy to trace movement of funds from bank to bank 	<ul style="list-style-type: none"> Cost is usually more than other means of payment Funds can be hard to recover if payment goes astray Intermediary banks deduct charges from the proceeds Details needed to apply funds received for credit management purposes are often lacking/insufficient Impossible to stop payment after execution
Foreign Checks	<ul style="list-style-type: none"> Paper instrument that must be sent to Beneficiary and is payable in Beneficiary's country Uses account relationships with foreign correspondent banks Available in U.S. Dollars and all major foreign currencies 	<ul style="list-style-type: none"> Convenient when Beneficiary's bank details are not known Useful when information/documentation must accompany payment (subscriptions, registrations, reservations, etc.) Relatively easy to stop payment if necessary 	<ul style="list-style-type: none"> Mail or courier delivery can be slow Good funds must still be collected from the drawee bank If payable in foreign currency, value may change during the collection period State dating rules differ in various countries
Commercial Letters of Credit	<ul style="list-style-type: none"> Bank's credit replaces Buyer's credit Payment made against compliant documents Foreign bank risk can be eliminated via confirmation of a bank in Beneficiary's country Acceptance credits offer built-in financing opportunity 	<ul style="list-style-type: none"> Rights and risks of Buyer and Seller are balanced Seller is assured of payment when conditions are met Buyer is assured of receiving the goods ordered Confirmation eliminates country risk and commercial risk 	<ul style="list-style-type: none"> More costly than other payment alternatives Issuance and amendments can take time Strict documentary compliance by Seller is required Reduces applicant's credit facilities
Standby Letters of Credit	<ul style="list-style-type: none"> Powerful instrument with simple language Increasingly popular in U.S. and abroad Foreign bank risk can be eliminated via confirmation of a bank in Beneficiary's country "Evergreen" clauses shift expiry risk from Beneficiary to issuer 	<ul style="list-style-type: none"> May be cheaper than Commercial Letter of Credit More secure than open account or Documentary Collection Discrepancies less likely than under Commercial L/C Confirmation eliminates country risk and commercial risk 	<ul style="list-style-type: none"> Weak language can give Beneficiary unintended advantages More costly than Documentary Collections Reduces Buyer's credit facilities
Documentary Collections	<ul style="list-style-type: none"> Seller uses banks as agents to present shipping documents to Buyer against Buyer's payment or promise to pay With Direct Collection Letter (DCL), Seller ships and sends shipping documents directly to Buyer's bank, which collects and remits funds to Seller's bank 	<ul style="list-style-type: none"> More secure than open account Cheaper and less rigid than Commercial L/C No strict compliance rules apply No credit facilities required 	<ul style="list-style-type: none"> Country risk and commercial risk exist No guaranty of payment by any bank No protection against order cancellation No built-in financing opportunity as with Commercial L/C

Source: Firstar Bank

Exporter's Checklist

For Reviewing a Letter of Credit in Favor of the Seller

- _____ Is the L/C irrevocable?
- _____ Has the credit been confirmed, if requested?
- _____ Is the type of credit (revolving, transferable, etc.) as agreed?
- _____ Is the amount of the credit sufficient to cover all costs permitted by the terms of the contract? Are the Incoterms correct? Have the terms "about" or "approximately" been included?
- _____ Is the credit available with your bank, freely negotiable, or available with any bank, or is it restricted to the issuing bank or any other designated bank?
- _____ Are the descriptions of the goods and unit prices, if any, in accordance with the sale contract? Have the terms "about" or "approximately" been included, if requested?
- _____ Are transshipment and partial shipments allowed, if necessary?
- _____ Are the points of dispatch/taking in charge/loading on board of the goods, as the case may be, and of discharge/final destination as agreed?
- _____ Do the shipping and expiry dates and the period for presentation of documents after issuance of the transport document allow sufficient time for processing the order, effecting shipment, and presenting the documents to the bank?
- _____ Are the provisions for insurance in accordance with Incoterms?
- _____ Can the necessary documents be obtained in the form required and in the timeframe allowed by the credit?
- _____ Have any unacceptable conditions been added to the credit without your approval; e.g., an inspection certificate to be provided by the buyer?

Commercial Letter of Credit

Common Discrepancies Which Can Lead To Non-payment

General

1. Documents inconsistent with each other.
2. Description of goods on invoice differs from that in the credit.
3. Marks and numbers differ between the documents.
4. Absence of documents called for in the credit.
5. Incorrect names and addresses.

Draft (Bill of Exchange)

1. Amount does not match invoice.
2. Drawn on wrong party.
3. Not endorsed correctly.
4. Drawn payable on an indeterminable date.

Transport Documents

1. Shipment made between ports other than those stated in the credit.
2. Signature on bill of lading does not specify on whose behalf it was signed.
3. Required number of originals not presented.
4. Bill of lading does not evidence whether freight is prepaid or collect.
5. No evidence of goods actually "shipped on board."
6. Bill of lading incorrectly consigned.
7. "To order" bills of lading not endorsed.

Insurance

1. Insurance document presented of a type other than that required by the credit.
2. Shipment is underinsured.
3. Insurance not effective for the date in the transport documents.
4. Insurance policy incorrectly endorsed.

Deadlines

1. Late shipment.
2. Late presentation of documents.
3. Credit expired.

Source: *Firststar Bank*

Sample Letter of Credit—SWIFT Format

507 july 95 09:13

page: 2355

LP00

*** HARDCOPY msg id 0131-00010-00333 ***

RECEIVED FROM: IMPORTER'S COMMERCIAL BANK
TAIPEI, TAIWAN

sent to :

SELLER'S U.S. COMMERCIAL BANK
INTERNATIONAL DIVISION
SAN FRANCISCO, CA

date : 07 july 95 time : 09.13 issue of a documentary credit **urgent**

:27 /sequence of total :1/1
:40a/form of documentary credit :IRREVOCABLE
:20 /documentary credit number :DOC.500
:31C/date of issue :950707 USA
:31D/date and place of expiry :950921 USA
:50 /applicant :IMPORTER'S COMPANY NAME
IMPORTER'S COMPANY ADDRESS
TAIWAN
:59 /beneficiary :EXPORTER'S COMPANY NAME
EXPORTER'S COMPANY ADDRESS
USA
:32B/currency code amount
currency code : USD US DOLLAR
amount : #100,000.00#
:39B/maximum credit amount :NOT EXCEEDING
:41D/available with/by-name, address :ANY BANK
BY NEGOTIATION
:42C/drafts at :SIGHT
:42D/drawee - name and address :IMPORTER'S COMMERCIAL BANK
TAIWAN
:43P/partial shipments :PROHIBITED
:43T/transshipment :PROHIBITED
:44A/on board/disp/taking charge :USA PORT
:44B/for transportation to :TAIWAN PORT
:44C/latest date of shipment :950831
:45A/descr goods and/or services :FUJI APPLES
CIF TAIWAN
:46B/documents required :+COMMERCIAL INVOICE AND THREE COPIES.
+FULL SET CLEAN ON BOARD BILLS OF LADING, MARKET FREIGHT
PREPAID CONSIGNED TO BUYER.
+INSURANCE CERTIFICATE.
+CERTIFICATE OF ORIGIN.
+USDA INSPECTION CERTIFICATE.
:47A/additional conditions :+ALL DRAFTS MUST INDICATE: DRAWN UNDER IMPORTER'S
COMMERCIAL BANK TAIWAN LETTER OF CREDIT NUMBER DOC.500
:48 /period for presentation :DOCUMENTS ARE TO BE PRESENTED WITHIN 21 DAYS AFTER
SHIPMENT BUT WITHIN L/C VALIDITY.
:49 /confirmation instructions :WITH

:78 /instructions to pay/acc/neg bk

:ALL REQUIRED DOCUMENTS ARE TO BE SENT TO IMPORTER'S COMMERCIAL BANK, TAIPEI, TAIWAN IN ONE SET, VIA COURIER CONFIRMING THAT ALL TERMS AND CONDITIONS HAVE BEEN COMPLIED WITH. DOCUMENTS ARE TO INCLUDE YOUR SETTLEMENT INSTRUCTIONS.

:72 /sender to receiver information

:THIS CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS ICC PUBLICATION NO. 500, 1993 REVISION.

-AUT/*** Authentication Result

*END

Source: *Firstar Bank*

Swift Field Descriptions

Most letters of credit are issued by electronic means. The following is a list of the fields in a SWIFT MT 700 message (Issuance of Documentary Letter of Credit). Only a few fields are mandatory; most are optional and depend on the nature of the transaction.

27	Sequence # (Page number within the total sequence)
40A	Form of Documentary Credit (Irrevocable or Revocable)
20	Issuing bank's reference number
31C	Date of issue
31D	Date and place of expiry
51A/D	Applicant bank/applicant reference number
50	Applicant
59	Beneficiary
32B	Currency code and amount
39A	Percentage credit amount tolerance
39B	Maximum credit amount
39C	Additional amounts covered
41A/B	Available with (bank)...by (payment, negotiation, acceptance)
42C	Drafts at (sight, time, etc.)
42A	Drawn on (what party)
42M	Mixed payment details (part sight, part time)
42P	Deferred payment details
43P	Partial shipments (allowed or prohibited)
43T	Transshipments (allowed or prohibited)
44A	Loading on board/dispatch/taking in charge from/at...
44B	For transportation to...
44C	Latest date of shipment
44D	Shipment period
45A	Description of goods and/or services
46A	Documents required
47A	Additional conditions
71B	Charges (which party pays)
48	Period for presentation (within L/C validity)
49	Confirmation instructions (with/without)
53A	Reimbursement bank
78	Instructions to paying/accepting/negotiating bank
57A	"Advise Through" Bank
72	Sender to receiver information

Insurance

Cargo Insurance

The purpose of cargo insurance is to protect the cargo owner's financial interests while their cargo is exposed to the risks of transit. Air and ocean carriers provide limited coverage while a shipment is in their possession. The bill of lading states the liability that the carrier assumes. It is critical that the shipper understand that the carrier is not responsible for such perils as "Acts of God." When filing a claim with a carrier, the shipper must prove the cause of loss, that the loss occurred while in the carrier's possession, and that the carrier is directly liable for the loss.

Airline—The airlines are liable up to \$9.07 per pound or \$20 per kilo on shipments to foreign destinations and \$0.50 per pound on domestic shipments. Shippers have the option of declaring a higher value for the shipment and paying higher freight charges based upon this declared value.

Ocean Carrier—Similar to the airlines, ocean carriers provide a limited amount of coverage, \$500 per customary shipping unit (CSU), as stated on the back of the bill of lading. The CSU is generally interpreted as the ocean container. This coverage is rarely sufficient in covering the cost of the goods shipped.

Outlets for obtaining cargo insurance are:

- Through a freight forwarder.
- From an insurance company specializing in ocean and air cargo insurance.

Freight Forwarder—Most freight forwarders have open cargo policies under which they will arrange coverage on behalf of their clients. These open cargo policies are called "house policies," which the freight forwarder offers as a value-added service to its clients. House policies cover both air and ocean cargo.

Insurance Company—The second means of obtaining air cargo and ocean marine insurance is through an independent agent or marine insurance broker. The agent or broker often represents insurance companies that specialize in ocean and air cargo insurance.

The insurance agent can offer a range of coverage options. Depending upon the size and scope of the shipper's operation, the marine insurance policy will

come in the form of an open cargo policy or a special marine policy.

1. **Open Cargo Policy**—Open cargo policies are used when the shipper has a continuous flow of goods being shipped over a long period of time. The open cargo policy contains no expiration date and provides automatic coverage when the shipper must insure the goods. The policy is customarily issued on a warehouse-to-warehouse basis which provides the shipper continuous coverage throughout the normal course of transit.

Open cargo policies can also be tailored to meet a shipper's many specific needs, such as returned or refused shipments, warehouse exposures outside the scope of the policy, inland transit, and shipments sold on terms other than under CIF.

Since the policy provides automatic coverage, it usually lists the insured party's name, the cargo covered, the insuring conditions, areas of the world that coverage is granted, and the insurance rates. The shipper is required to submit a monthly report of all shipments that have occurred under the policy and to pay a premium on those shipments at the agreed upon insurance rates. Depending on the shipper's needs, the open cargo policy may offer the broadest possible insurance terms for the lowest price.

2. **Special Marine Policy**—The special marine policy is designed to provide coverage on individual shipments. This policy provides the same coverage available under the open cargo policy. However, it does not provide automatic coverage. Once the shipment has been completed and coverage has ceased, this policy automatically terminates.

Coverage

There are three common types of cargo coverage: named perils, broad named perils, and all risks. Named perils coverage is written with clauses that specify what portion of the covered loss will be paid in the case of damage. These clauses are Free of Particular Average (FPA) and With Particular Average (WA or WPA). (In insurance terminology, "WPA"

means “partial loss.”) A policy written with a FPA clause does not pay for partial damage sustained by cargo. The WPA clause pays for partial damage to cargo caused by named perils but is subject to a deductible specified in the policy.

- A. *Named Perils*—This coverage includes perils of the sea, fires, jettisons, barratry, explosions, hurricanes, earthquakes, and other risks. Its coverage can include the FPA or WPA clauses.
- B. *Broad Named Perils*—This policy frequently includes a WPA clause and covers a greater number of risks, such as theft, pilferage, non-delivery, hook damage, fuel oil damage, damage by contact with other cargo, breakage, and leakage.
- C. *All Risks*—This is the broadest type of standard policy, covering all physical loss or damage from any external causes. This coverage does not include loss caused by improper packing, abandonment of cargo, rejection of goods by Customs, failure to pay or collect accounts, inherent vice, employee conversion or dishonesty, loss in excess of policy limits, barge shipments, war, strikes, riots, trade losses, or loss of market.

Many of the perils not covered by the All Risks Policy can be written into the policy for an additional cost. In the case of special cargos or circumstances, the agent or broker can work with the underwriter to modify the policy.

Two other clauses always incorporated into a marine policy are “general average” and “salvage charges.” The “general average” clause stipulates that if any shipper sustains loss or damage for the general benefit of the vessel, then all parties shipping product on that vessel must contribute proportionately to reimburse the sufferer for the loss.

“Salvage charges” are paid to a third party that renders services in a time of cargo peril. These charges are paid proportionately by all those who benefited from the service.

The value of the cargo is generally determined by the cost of the cargo, insurance, and freight as indicated on the exporter’s invoice, with an additional 10 percent.

Contingency Insurance—When product is sold under terms that require the buyer to provide insurance, experienced exporters often choose to purchase contingency insurance. Contingency insurance acts as a backup insurance for the seller in case the insurance provided by the buyer is not sufficient to cover the value of the shipment.

Filing a Claim

In the case of international shipments, the consignee (the receiver) will most likely be the first to discover any damage to, or loss of, a shipment. The receiver must thoroughly inspect each shipment and note any signs of damage or loss on the delivery receipt. Even if no outward evidence of loss or damage exists, it is important to inspect the entire shipment as soon as possible for any hidden damage. When loss or damage is discovered, the consignee must take all reasonable actions to minimize the loss or damage. Any reasonable expenses in doing so will be reimbursed by the insurer. The shipping container, packing materials, damaged merchandise, and shipping documents should be kept as evidence of the loss and for claim purposes.

If the cargo is damaged or if any damage or loss is suspected, the insured party must immediately file a claim with the carrier to avoid filing deadlines. If the insured fails to take this step, or signs a waiver of carrier responsibility, it may result in the loss of coverage. The letter of claim to the carrier should include the following information:

- Company name of ocean or air carrier
- Bill of lading or air waybill number
- Voyage or flight number
- Destination arrival date
- Container number
- Description of cargo
- Dollar amount of claim

The consignee or insured must contact the nearest claim agent so that a survey of damage can be arranged. The carrier or carrier’s agent should be notified of the time and location of the survey so that he or she can be represented. When filing a claim the assurer may request some or all of the following documents:

- Non-negotiable copy of the bill of lading or air waybill (both front and back)
- Certificate of insurance or declaration of insurance

- Copies of letters of claims filed with carriers
- Correspondence or verbal advice from carriers
- Commercial invoice
- Packing list
- Evidence of loss or damage
- Delivery receipt
- Inland waybill
- Consignee's receiving report
- Customs documents
- Confirmation of nondelivery by carrier
- Survey report
- Valued inventory
- Repair estimates (if applicable)
- Sue & labor reimbursements
- Other (as specified by the assurer)

Under the "general average" clause in a cargo insurance policy, a shipper can be held partially financially responsible for losses incurred by another shipper if that loss was incurred to benefit the good of the voyage. An example is when cargo is jettisoned to save the ship and remaining cargo. When filing this type of claim, the shipper should contact the claims agent and provide the following documents:

- Commercial invoice
- Ocean bill of lading showing freight charges
- Special cargo policy or declaration

Maintaining Product Quality During Transportation

In addition to obtaining competitive freight rates and services, a shipper should ensure that the product will arrive in excellent condition. Of particular concern are products of a perishable nature, such as frozen and chilled foods, as well as processed and packaged foods, drinks, and juices. Important considerations include:

- Effective packaging and labeling;
- Temperature, humidity, and other environmental controls;
- Well-maintained transportation equipment; and
- Proper loading, in-transit monitoring, and unloading.

Under the best circumstances, product quality can only be maintained, not improved, during transportation. Initial product quality should be the highest possible. Products in top-quality condition:

- Have a longer shelf life;
- Allow more time for transportation, storage, and marketing;
- Satisfy importers, brokers, and consumers;
- Increase repeat sales and profits; and
- Help expand markets.

Exporters should keep in mind that products must be protected from:

- Rough handling during loading and unloading;
- Compression from the overhead weight of other product containers;
- Impact and vibration during land, ocean, and air transportation;
- Rolling, pitching, yawing, heaving, swaying, and surging during ocean transportation;
- Loss or gain of moisture to or from the surrounding air;
- Higher or lower than recommended temperature; and
- Cross-contamination or odors from other products or residues.

By selecting and packing only top-quality products, shippers can help ensure good arrival condition. Effective packaging, environmental controls, and proper transportation equipment are essential.

Effective Packaging and Labeling

Proper packaging of agricultural products is essential to maintaining quality during transportation and marketing. Packaging serves to enclose the product and facilitate handling. Labeling provides required information and a further opportunity to position the product in the market through attractive graphics. Shipping high-quality, high-value, perishable products in poor-quality packaging can lead to damage, decay, low prices, or outright rejection by the buyer. Improper labeling can also lead to delays and product loss.

Packaging must withstand:

- Rough handling during loading and unloading;
- Compression from the overhead weight of other containers;
- Impact and vibration during transportation; and
- High humidity during precooling, transit, and storage.

Packaging materials are chosen on the basis of the product and environmental considerations. Factors to be considered are method of packing, temperature, humidity, desired atmosphere around the product, packaging strength, cost, availability, buyer specifications, graphics, labeling, freight rates, and government regulations. Packaging manufacturers, foreign buyers, wholesale markets, retail stores, packaging magazines, and consultants are an important source of information on current packaging trends and desires.

All packaging should be recyclable or reusable, and the necessary amount of material should be used to protect the product. The options of incinerating packaging waste or shipping waste to landfills are being reduced throughout the United States and Europe. Mandatory recycling programs, packaging bans, and solid waste reduction programs have been established in many countries.

Packaging also should be standardized to facilitate unit loading on standard-size, reusable pallets in use in the United States, Europe, and other countries. Pallet handling and leasing companies have been established in response to economic as well as environmental concerns.

Boxes should be sized and filled in accordance with the importer's or buyer's desires. Boxes that are very wide and weigh more than 20 kg (44 lb) encourage rougher handling, product damage, and container failure. Excessive weights and damaged packaging are common complaints of importers of U.S. meat products who receive boxes weighing up to 45 kg (100 lb). In the Netherlands, for example, a single worker does not have to lift over 15 kg (33 lb) unassisted, in accordance with labor regulations and occupational safety concerns.

Overfilling causes product damage and excessive bulging of the box, which leads to reduced compression strength and container failure. Underfilling also may cause product damage. The product may be bruised as it moves around inside the box during transport and handling or during crushing of the available headspace.

Widely used packaging materials include:

- Fiberboard—Pallets, slipsheets, bins, boxes (glued, stapled, interlocking), lugs, trays, flats, dividers, and partitions.
- Wood—Pallets, bins, crates (wirebound, nailed), baskets, trays, and lugs.
- Paper—Bags, sleeves, wraps, liners, pads, excelsior, and labels.
- Plastic—Pallets, bins, boxes, trays, bags (mesh, solid), containers, sleeves, film wraps, liners, coatings, dividers, and slipsheets.
- Polystyrene—Foam boxes, trays, lugs, sleeves, liners, dividers, and pads.

Fiberboard Boxes—Fiberboard boxes are the most widely used packaging, due to their versatility and recyclability. There are many fiberboard box styles and sizes. A minimum 19.3 kg/cm² (275 lb/in²) bursting-test-strength or 7.86 kg/in (44 lb/in) width edge crush test fiberboard is recommended for boxes intended for export. The strength is needed for the handling, transport conditions, and high humidity the boxes must endure. Many boxes are now certified with an edge crush test instead of the bursting strength test. This information is available from the packaging supplier and stamped on each box. Foreign buyers or importers should be consulted about the size, pack, and box style desired.

Fiberboard boxes for products that are precooled in the box, packed wet, or packed with ice are wax-impregnated or coated with water-resistant material.

Wax-treated fiberboard is generally not considered recyclable, so polyethylene and other coatings have been developed instead.

Water-resistant coatings may be needed because the compression strength of untreated fiberboard can be reduced by more than one-half in conditions of high relative humidity common in refrigerated environments. In addition to maintaining box strength, coatings help to reduce the loss of moisture from the product to the fiberboard or weakening of the fiberboard from moisture from the product. All glued boxes should be made with a water-resistant adhesive that also is recyclable.

Specially coated modified atmosphere fiberboard packaging has been developed to slow product respiration rate and eliminate the need for ice and wax coatings in packages of fresh broccoli and other products. Film wraps of individual commodities and film wraps of fiberboard boxes of product have also been developed with the same purpose in mind. Proper product precooling and maintenance of refrigerated product temperatures are required for modified atmosphere packaging to work as intended.

Holes are provided in fiberboard boxes of some products to provide ventilation of product heat (respiration) and allow circulation of cold air to the product when a modified atmosphere is not required. Handholds provide a means of handling boxes during loading and unloading. All holes must be designed and placed in a manner that does not substantially weaken the box.

Wood Crates—Wood crates and wirebound wood crates are popular with some shippers due to their material strength and resistance to high humidity and moisture damage during precooling, transit, and storage. The crates are constructed in a manner that allows a lot of air circulation around the packed product. There is concern over whether wood crates are recyclable or reusable. Machines are available to grind up wood crates for conversion into mulch or other materials, but some countries in Europe have discouraged their use. Fasteners or wire in wood crates to be recycled should be made of steel with a maximum diameter of 10 mm, to allow grinding of the crates and extraction of the fastener particles with magnets.

Stacking

The majority of fiberboard boxes and wood crates are designed to be stacked top-to-bottom. Compression strength and product protection are sacrificed when boxes or crates are stacked on their ends or sides. Misaligned fiberboard boxes can lose up to 30 percent of their strength, while boxes that are not stacked top-to-bottom (stacked either crosswise or off-center) can lose up to 50 percent of their top-to-bottom compression strength.

Various materials are added to boxes to provide additional strength and product protection. Fiberboard trays, dividers, or partitions, and double-or triple-layer sides and ends in boxes provide additional compression strength and reduce product damage.

Pads, wraps, sleeves, and excelsior are used to reduce bruising. Pads also are used to: provide moisture, as with asparagus; absorb moisture as with retail packages of meat, poultry, and seafood; provide chemical treatment to reduce decay, as with sulfur dioxide pads for grapes; and absorb ethylene, as with potassium permanganate pads used in boxes of bananas and flowers, or oxygen in the case of some modified-atmosphere packaging.

Plastic Film Liners or Bags—Plastic film liners or bags are used to retain moisture, provide for a modified atmosphere, or maintain product integrity, such as in a cluster of grapes or tomatoes. Plastic with various size perforations, depending on commodity requirements, is used to let oxygen in and carbon dioxide out. Special films are used to seal the products and provide for a modified atmosphere either by allowing the product to consume oxygen, releasing carbon dioxide and therefore slow product respiration and ripening, or by flushing the package with a modified atmosphere or by vacuum packaging. This is done for bananas, strawberries, cherries, tomatoes, meat, poultry, seafood, and many other products that benefit from a modified atmosphere.

Paper and Polystyrene Foam Liners—Liners help to insulate the product from hot or cold temperatures when they are shipped in unrefrigerated air cargo holds and uninsulated air cargo containers. Wet paper is used to provide moisture to fresh cut herbs and flowers.

Shippers should check with the Foreign Agricultural Service (FAS) or Animal and Plant Health Inspection

Service (APHIS) for packaging materials restrictions in foreign countries, especially those made from plant parts such as wood, straw, or leaves. Some of these items are prohibited in other countries or require special documentation or quarantine treatments. Countries with phytosanitary or environmental restrictions on packaging materials include Australia, New Zealand, and the European Community. Soil also is restricted by many countries.

Packing Methods

Types of Packs

Types of packs include:

- **Volume Fill**—Products are placed by hand or machine into the box until the desired capacity, weight, or count is reached.
- **Tray or Cell Pack**—Products are placed in molded trays or cells which provide separation and reduce bruising.
- **Place Pack**—Products are wrapped and carefully placed in the box. This provides reduced bruising and a pleasing appearance.
- **Consumer Pack or Prepack**—Relatively small amounts of the product are packaged, weighed, and labeled for retail sale.
- **Flexible Packaging**—Each product is individually wrapped and sealed in film to reduce moisture loss and decay, and in some cases, provide for a modified atmosphere by letting oxygen in and carbon dioxide out through the design of the film layers, at a rate that slows product respiration and ripening. For some commodities the film may be treated with fungicides or other chemicals.
- **Modified Atmosphere**—Individual commodities, consumer packs, boxes, or pallet loads of commodities are sealed with special plastic film or bags and flushed with nitrogen to slow respiration, ripening, or aging of the product. In each case the packaging is formulated for a specific product.

Packing Fresh Fruits and Vegetables

The packing of fresh fruits and vegetables is of concern due to their highly perishable nature. Growers, processors, packers, shippers, and repackers should:

- Ensure adequate sanitation during harvesting and packing to avoid contamination of produce with pathogenic organisms that can cause food-borne illness;

- Use a chlorinated wash to remove dirt, debris, and organisms present in harvest operations;
- Sort out bruised, cut, decayed, insect-infested, odd-sized, immature, or overripe items;
- Use the minimum amount necessary of fungicides/bactericides to limit decay on certain products, strictly in accordance with label instructions and foreign country restrictions;
- Use the minimum amount necessary of officially approved wax or resin coatings to reduce moisture loss on certain products, strictly in accordance with label instructions and foreign country restrictions;
- Use the minimum amount necessary of officially approved pesticides for certain products to eliminate insect pests, strictly in accordance with label instructions and foreign country restrictions;
- Remove field heat (precool) as soon as possible after harvest, and maintain the cold chain;
- Use grade standards or buyer's specifications in packing;
- Place only uniform sizes or amounts in each box;
- Place only products with a uniform level of maturity in each box; and
- Clearly mark the grade, size, weight, or count on the box, along with any other required label information, such as country of origin, exporter, importer, gross and net weights in kilograms, total number of packages, size of package in centimeters, handling marks (international pictorial symbols), cautionary marks, port of entry, pesticides, and fungicides used, or wax or resin coatings used, in a language accepted by the destination country.

Damaged fresh products can ruin an entire shipment and reduce importers' confidence in the grower and shipper. Products in this condition:

- Spread decay to other products in the load;
- Produce more ethylene gas and heat, which cause further ripening and decay; and
- Lose more water resulting in shriveling and wilting.

Packing methods for fresh produce include:

- **Field Packing**—Products are placed in fiberboard boxes or wood crates during harvesting. Some products are wrapped. The filled containers are then taken to a precooling facility to reduce field heat.
- **Shed Packing**—Products are processed or packed indoors or under cover at a central location. The product is brought from the field to the packing shed in bulk in field crates, bins, or trucks. The products

are precooled either before or after they are placed in shipping containers.

- **Repacking**—Products are taken out of one container, regraded, and placed in another. This is often done to make smaller boxes for the retailer or consumer packages.
- **Fresh-cut Processing**—Products are washed, trimmed, shredded, peeled, cut, and otherwise processed into salad mixes or ready-to-eat items under sanitary and temperature-controlled conditions using Hazard Analysis Critical Control Point (HACCP) or similar systems of quality control. These items are then placed in modified-atmosphere consumer and foodservice packages which are then grouped in fiberboard boxes for distribution under constant refrigeration.

Packing Meat, Poultry, and Seafood Products

Through careful sanitation, modified-atmosphere packaging technology, temperature control, and loading of marine containers at meat packing plants, extended shelf life of 70 days or more for chilled beef and lamb has been possible since the late 1980's. This has provided higher revenues for the meat exporter as compared to frozen product shipped by sea or chilled product shipped by air. Recently instituted HACCP procedures may help additional firms get into the export market with extended shelf-life, quality-assured chilled and frozen products.

Standardization

Due to the large number of different box sizes in use, box and pallet standards have been developed by the fresh produce, frozen food, floral, and grocery industries in Europe and the United States to reduce handling damage and packaging waste. Standardized boxes can:

- Reduce box inventory for manufacturers and growers;
- Provide unit loads and more stable mixed pallet loads;
- Reduce transportation and marketing costs; and
- Use 90 to 100 percent of the pallet surface with no overhang and little underhang.

The following are standard pallet sizes:

- Standard Grocery Manufacturers Association (GMA) pallet used in the United States—1219 by 1016 mm (48 by 40 in).

- International Standards Organization (ISO) pallet used in Europe—1200 by 1000 mm (47.24 by 39.37 in).
- Europallet, also widely used in Europe—1200 by 800 mm (47.24 by 31.5 in).

The following five box sizes that fit well on all three of the above pallets are recommended for international trade, especially in Europe.

- 600 by 400 mm
- 400 by 300 mm
- 400 by 200 mm
- 300 by 200 mm
- 200 by 150 mm

Unit Loads

Shippers, carriers, and receivers prefer handling palletized unit loads instead of individual boxes, one at a time. Most distribution centers are set up to store palletized loads in three-tier or higher racks.

Unit loads provide for:

- Reduced handling of boxes;
- Less damage to the boxes and the products inside;
- Faster loading and unloading of transportation equipment;
- More efficient distribution center operations; and
- Reduced pilferage of products.

Unit loads may include some of the following features:

- Standard size reusable or recyclable wood pallets or slipsheets;
- Fiberboard, plastic, or wire vertical interlocking tabs between boxes;
- Boxes with holes for air circulation, which align when the boxes are stacked squarely on top of one another, corner to corner;
- Recyclable glue between boxes to resist horizontal slipping;
- Plastic netting around the pallet load of boxes; and
- Fiberboard, plastic, or metal cornerboards with plastic or metal strapping around the cornerboards and boxes.

Pallets

Wood pallets must be strong enough to allow storage in racks. Pallets also should be capable of being reused a number of times. Provisions for forklift and

pallet jack handling are necessary. The design of the bottom of the pallet should not block air circulation.

Block-style 1200 by 1000 mm pallets are standard in European pallet pools and should be used for any exports to Europe. The Europallet, 1200 by 800 mm, also is popular in some European countries. Australia uses an 1100 by 1100 mm pallet.

One-way pallets are increasingly being rejected by importers and receivers due to recycling and disposal costs. Product received in Europe on pallets other than the 1200 by 1000 mm and 1200 by 800 mm pallets used in those countries may be required to be repalletized at the port of entry, leading to additional handling costs, product damage, and pallet disposal costs.

Pallets must have an adequate number of top deck boards to support fiberboard boxes. Otherwise the boxes may collapse between deck boards, crush the product, or cause the entire load to lean or fall off the pallet. A sheet of fiberboard with holes for air circulation can be used to help distribute weight across the pallet.

Boxes must not overhang the edges of the pallets. Overhang can reduce the strength of fiberboard boxes by one-third. This condition can lead to collapse of the entire load, crushing of the product, and difficulty in loading, unloading, and storage in racks. On the other hand, boxes that use less than 90 percent of the pallet surface and do not align with the pallet edge can shift in transit.

Pallet loads of boxes that are not strapped or netted should have at least the top three layers of containers cross-stacked to provide stability. Some shippers use film wrap, tape, or glue on the top layers in addition to cross-stacking. The boxes must be strong enough to be cross-stacked without collapsing. Film wrap should not be used on boxes of products that need ventilation.

Slipsheets

Slipsheets, made of sheets of fiberboard or plastic, are used by some shippers instead of pallets to reduce transportation costs. Slipsheets eliminate the cost of buying, disposing, or returning pallets. A special forklift with a clamping device is needed to transfer slipsheet loads to and from the warehouse pallets at the shipper's and receiver's distribution center and into the

trailer, container, or railcar. If this special forklift is not available, the unit loads must be transferred box by box onto pallets, leading to costly delay and product damage.

Slipsheets made of recyclable fiberboard or plastic must be strong enough to be clamped and pulled onto the forklift tines or plate for lifting. Fiberboard slipsheets should be treated with a recyclable coating for use in wet conditions. Slipsheets used in transportation equipment should have holes for air circulation under the load. The use of slipsheets in refrigerated transportation equipment with shallow floor channels is not recommended due to the need for adequate air circulation under the load. Unit loads of boxes on slipsheets should be netted, stretch-wrapped, or otherwise secured with cornerboards and strapping.

Labeling and Branding

Labeling of boxes may provide required information for export certification, identify and advertise the products, and assist receivers in storing and retrieving the boxes. Fiberboard boxes can be preprinted with colorful graphics. Wood packaging has glued, stamped, or stenciled labeling. Some high-quality fruits and vegetables are individually branded with small colorful trademark stickers. Some shippers also provide selection, storage, recipes, posters, and other point-of-sale material for the retailer or consumer.

All boxes and consumer packages should be clearly labeled, bar coded, and branded in the language accepted by the destination country. The following information should be included on boxes along with any other data required by the foreign country:

- Common name of the product;
- Net weight, count, and/or volume;
- Brand name as well as name and address of the packer or shipper;
- Country of origin;
- Size and grade, when standards are used;
- Recommended storage temperature;
- Special handling instructions; and
- Name of officially approved fungicides or bactericides used in packaging.

Each country has labeling requirements that must be followed. Labeling of consumer packages is mandatory under most national regulations. For example, the United States requires that in addition to the product name, net weight, and name and address of the man-

ufacturer, packer, or distributor, processed items must have a nutrition label and all ingredients listed in descending order of prominence. The Food and Drug Administration (FDA) classifies fruits and vegetables with wax or resin coatings as processed products which must be properly labeled with names of the coating displayed at the point of retail sale or on the individual items. Many processed products also are labeled with a "sell by" date or "best if used by" date.

Temperature, Humidity, and Other Environmental Controls

Removal of field heat by the process of precooling to a recommended storage temperature and relative humidity is absolutely necessary to maintain the quality of fresh fruits, vegetables, plants, and cut flowers. The quality of most products will rapidly deteriorate if field heat is not removed before loading into transportation equipment. The rate of respiration and ripening increases two to three times for every 10 °C (18 °F) above the recommended storage temperature.

Refrigerated transportation equipment is designed to maintain temperature and should not be used to remove field heat from products packed in shipping containers. The refrigeration units also are not capable of raising or controlling the relative humidity.

A high temperature difference between the refrigeration unit evaporation coil and the product will increase the loss of product moisture. This will cause the evaporator to frost and the products to shrivel or wilt and weigh less. Most fruits and vegetables have a water content between 80 and 95 percent.

Precooling Factors

Precooling extends product life by reducing:

- Field heat;
- Rate of respiration (heat generated by the product);
- Rate of ripening;
- Loss of moisture (shriveling and wilting);
- Production of ethylene (ripening gas generated by the product); and
- Spread of decay.

The success of precooling is dependent on:

- Time between harvest and precooling;
- Type of shipping container, if product is packed beforehand;

- Initial product temperature;
- Velocity or amount of cold air, water, or ice provided;
- Final product temperature;
- Sanitation of the precooling air or water to reduce decay organisms; and
- Maintenance of the recommended temperature after precooling.

Precooling should occur as soon as possible after harvest. Harvesting should be done in early morning hours to minimize field heat and the refrigeration load on precooling equipment. Harvested products should be protected from the sun with a covering until they are placed in the precooling facility.

Many products are field or shed packed and then pre-cooled. Wood wirebound or nailed crates and waxed or coated fiberboard boxes are used for packed products that are pre-cooled with water or ice after packing. This process is being modified in response to the demand for recyclable boxes.

Precooling of products packed in boxes and stacked in unitized pallet loads is especially important as air circulation around and through the packaging may be limited during transportation and storage.

Precooling is particularly important for products that produce a lot of heat. The following are examples of products that have high respiration rates, and short transit and storage lives:

artichokes	kale
asparagus	lettuce
beans, lima	mushrooms
beans, snap	onions, green
bean sprouts	okra
blackberries	parsley
broccoli	peas
brussels sprouts	raspberries
carrots, bunched	spinach
corn, sweet	strawberries
endive	watercress

Precooling Methods

The choice of precooling method depends on the nature, value, and quantity of the product, as well as the cost of labor, equipment, and materials. Precooling methods include:

- **Room Cooling**—Boxes of products are stacked in a refrigerated room. Some products are misted or sprayed with water during room cooling.
- **Forced-Air Cooling or Wet Pressure Cooling**—Air is drawn through stacks or unit loads of boxes of products in a refrigerated room. For some products, water is added to the air.
- **Hydrocooling**—Products are flushed with ice water in bulk tanks, bins, or boxes.
- **Vacuum Cooling**—Heat is removed from products packed in boxes by drawing a vacuum in a chamber.
- **Hydrovacuum Cooling**—Moisture is added to products packed in boxes before or during the vacuum process to speed the removal of heat.
- **Package-icing**—Slush or crushed ice is injected into each box of product. Some operations use bulk bins.

Portable ice plants, hydrocoolers, vacuum coolers, forced-air coolers, and package-icing machines are available for use in the fields. This equipment is useful for remote or small-scale operations that cannot justify investment in a fixed precooling facility. Mounted on skids, dollies, or tractor trailers, the equipment can follow the harvest from field to field and be shared by many growers.

Hydrocooling and vacuum cooling are the fastest cooling methods. Cooling times of half an hour are possible. Products and packaging must be able to withstand direct water contact in hydrocooling. In vacuum cooling, the products should have a large surface area, low density, and high moisture content. The boxes and wrapping must allow ventilation of heat.

Forced-air cooling can take 1 or 2 hours, depending on the amount of packaging, while room cooling may take 24 to 72 hours. Packaging must allow ventilation of heat for these methods to be successful. Package-icing provides effective cooling and a high relative humidity for products and packaging that can withstand direct contact with ice.

Many tropical fruits, vegetables, plants, and cut flowers require much less cooling than products that are cooled to 0 °C (32 °F). All products should be pre-cooled as near as possible to the recommended storage temperature and relative humidity. Product temperatures should be taken in sample boxes by inserting an electronic thermometer into the product. The data should be recorded for future reference.

Tables 3-8 at the end of this section provide lists of products and their recommended temperatures, relative humidities, and approximate transit and storage lives.

Precautionary Measures

Products listed in tables 9 and 10 at the end of this section are sensitive to chilling or freezing injury. Care must be taken not to precool or store the products below the recommended temperature. Often the visible effects of chilling injury are delayed until the product is offered for retail sale. These effects include failure to ripen properly, pitting, decay, watery breakdown, and discoloration in fruits and vegetables. Flowers and plants lose florets or foliage, fail to open, discolor, or wilt.

All products are sensitive to decay. Precooling equipment and water should be sanitized continuously with a hypochlorite solution to eliminate decay-producing organisms. Care also must be taken not to allow products to warm up after precooling. Condensation on cool product surfaces at higher air temperatures also spreads decay.

Harvesting and packaging of most products should be closely coordinated with transportation to minimize time in transit and storage, and maximize product freshness in the hands of consumers. After precooling, the products must be properly loaded and transported at or near the recommended storage temperature and relative humidity to maintain quality.

Transportation

The design and condition of the transport equipment, and the loading method used, are critical to maintaining product quality. The mode of transportation and the carrier should be chosen carefully.

Selection Factors

The mode of transportation and type of equipment used should be based on:

- Destination;
- Value of the product;
- Degree of product perishability;
- Amount of product to be transported;
- Recommended storage temperature and relative humidity;

- Outside temperature conditions at origin and destination points;
- Time in transit to reach destination by air, land, or ocean transport;
- Freight rates negotiated with the carriers; and
- Quality of transportation service.

The reliability and quality of transportation services provided by different carriers must be carefully considered along with the rates charged. Services and schedules are subject to change. Shippers should contact air and ocean port authorities at their origin and destination locations to receive the most current information on available services. Local trade publications also are excellent sources of information, as many carriers and their agents advertise their schedules and destinations.

Refrigerated trailers and containers are recommended for products shipped in large volumes with transit and storage lives of 1 week or more. After transit, there must be enough remaining product life for marketing. Carriers using trailers and containers may offer door-to-door service, which reduces handling, exposure, damage, and theft of the products.

Air cargo containers also can be used to provide door-to-door service. Products transported by air are generally high in value, highly perishable, but shipped in lower volumes. Freight costs are higher by air, but transit time is reduced considerably.

Many products are shipped in unrefrigerated air containers or on air cargo pallets. This requires close coordination at the origin and destination airports to protect the products when flights are delayed. Cold storage facilities are needed at airports to ensure product quality. Refrigerated air containers, insulated blankets, or gel pack refrigerants should be used when possible.

Products that can be shipped in refrigerated trailers and van containers are sometimes shipped by air to take advantage of brief market opportunities, such as the beginning of a season when prices are high and supply is limited. Often an importer who is first to receive a certain product is able to build goodwill and increase sales throughout the season.

Available Equipment

The following transportation equipment is available:

- **Air Cargo Containers**—For air and highway transport.
- **Air Cargo Pallets With Netting**—For air and highway transport.
- **Highway Trailers**—For highway transport only.
- **Piggyback Trailers**—For rail, highway, and roll-on/roll-off ocean transport.
- **Containers**—For rail, highway, and lift-on/lift-off ocean transport.
- **Breakbulk Reefer Vessels**—Handling palletized loads in refrigerated holds.
- **Bulk Vessels**—Handling dry and liquid products in holds.
- **Railroad Boxcars**—Handling palletized or individual shipping containers.

Refrigeration and Ventilation Systems

The following systems are available:

- **Mechanical**—Diesel-generated electric power is used over the road and aboard ocean vessels. Van containers are plugged into electrical power at depots and aboard ships.
- **Cryogenic**—Liquid or gaseous nitrogen or carbon dioxide, which is released into cargoes of frozen food and occasionally chilled food under controlled conditions. Some products, such as leafy green vegetables, are not compatible with carbon dioxide refrigeration.
- **Dry Ice**—Solid blocks of carbon dioxide in special trays or compartments are used in air cargo containers, pallet containers, and within individual shipping containers of frozen product. Shippers must check with airlines prior to using dry ice, as it is considered a hazardous material. If permitted, the containers and accompanying documents must be properly marked to show the amount of dry ice used. Some products, such as leafy green vegetables, are not compatible with dry ice. Direct contact with dry ice will injure fresh products.
- **Wet Ice**—Ice is used within individual shipping containers or on top of a load of containers, either as a supplement or instead of mechanical refrigeration. Many airlines refuse to handle shipping containers with wet ice due to the risk of expensive damage

from leaking containers. Airlines that do permit wet ice require that it be placed in sealed polyethylene bags inside a leakproof container with a moisture absorbent pad.

Top-ice is used for certain fresh products to supplement mechanical refrigeration and help maintain a high humidity. Most refrigeration units on trailers and containers cannot control relative humidity and actually remove moisture from products as a natural part of the cooling process.

Top-ice on loads should be applied in rows instead of a solid mass, especially in bottom air delivery equipment. Air circulation should not be blocked. The thermostat on top-iced loads should be set at 2 °C (35 °F) to prevent freezing of the ice into a solid mass which would block air circulation. Table 11 at the end of this section provides a list of products that benefit from top-icing. Products that can be top-iced also can be package-iced, provided the correct packaging materials are used.

- **Gel Refrigerant**—Frozen containers of chemical eutectic gel are used to maintain temperature within shipping containers. This is the refrigeration system preferred by most airlines.
- **Ventilation, Ethylene Scrubbing, Humidity Control**—Fresh air exchange in the refrigeration system or vents in dry or insulated containers can be used to protect products from a buildup of heat, moisture, carbon dioxide, or ethylene. Leafy green vegetables are sensitive to carbon dioxide, while many products are sensitive to ethylene.

In lieu of ventilation, potassium permanganate pads can be installed in the trailer or container at the refrigeration unit to absorb ethylene. These ethylene scrubbers also can be placed inside individual shipping containers.

Moisture absorbents and kraft paper liners are used to control condensation on products during transportation through different climates. Some refrigeration units are capable of maintaining humidity at optimum levels.

- **Multitemperature**—A mechanical or cryogenic system provides two or three temperature conditions in separate compartments of a trailer or container which can be used to carry loads of frozen, chilled, and dry products in one vehicle. Advance planning

is required when loading multitemperature trailers. The conditions provided by three compartment trailers may include -18 °C (0 °F), 0 °C (32 °F), 10 °C (50 °F), or ambient temperature for products not requiring refrigeration.

The frozen compartment is usually located at the front of the trailer closest to the refrigeration unit. Movable bulkheads are placed between the compartments. Separate evaporators or ventilation between compartments provide temperature control for the nonfrozen products. Side doors are needed to access the forward compartments when the trailers are inspected at ports of entry or used to make multiple deliveries on a single run.

- **Modified or Controlled Atmosphere**—Nitrogen and some carbon dioxide gas is added to pallet bags, or to the cargo compartment of refrigerated van containers, displacing oxygen. This reduces product decay, respiration, and ripening of certain products. Controlled-atmosphere systems monitor and replenish the nitrogen, scrub carbon dioxide, and adjust the level of oxygen according to specific product requirements. This allows products to be shipped at a higher level of maturity. Controlled atmosphere also allows for longer transit times enabling shippers to use less costly land and sea transport instead of air transport for highly perishable products and to allow the transport of riper fruit. Products shown to benefit include apples, asparagus, avocados, bananas, cherries, kiwifruit, mangoes, pears, and strawberries.

Modified or controlled atmospheres of reduced oxygen, and elevated nitrogen and carbon dioxide, are provided to specially equipped containers of certain fruits, vegetables, meat, and seafood after loading is completed. The atmospheres are tailored for each commodity. Three controlled atmosphere systems are available: gas injection, membrane air separation, and pressure swing absorption. Ethylene scrubbers can be added to these systems.

For modified and controlled-atmosphere gas injection systems, containers are equipped with channels at the doorway. A plastic curtain is sealed in the channels to reduce air leakage. Gas ports in the side of the container are used for the injection of the desired atmosphere and discharge of the existing air. In the case of controlled atmosphere, an electronic controller, a scrubber for absorbing

excess carbon dioxide, and an air exchange port to allow in more oxygen are provided.

Trailers are generally considered too leaky, and transit times too short to benefit from modified or controlled atmospheres. Instead, shippers may use a gas injection system of modified atmosphere, which is applied either to pallet loads enclosed by a plastic bag or applied to individual modified-atmosphere shipping containers. The pallet application is primarily used for strawberries. The packaging application has been used for tomatoes and broccoli.

The above systems are proprietary and, applied under a service agreement, available at select ports and shipping points around the world. In the case of container loads, the service applicators must check the container for excessive air leakage prior to the application and correct major problems.

The membrane air separation system is either built into the refrigeration unit or clipped on to it. The pressure swing absorption system is installed separately in the container in addition to the refrigeration unit. These systems generate nitrogen, reduce oxygen, and add or remove carbon dioxide as needed. These systems can be programmed by the shipper and are able to overcome some air leakage. Membrane air separation is also available to service individual holds in refrigerated vessels or a number of porthole containers in the hold of a vessel.

Research continues to be conducted on using controlled atmosphere systems to reduce or eliminate insect infestations. Warning labels must be applied to containers and vessel holds with controlled atmospheres to caution employees that the atmosphere will not support human life. The cargo area must be ventilated properly before personnel can enter to unload the cargo.

Equipment Features

Long-distance transportation through tropical and frigid climates requires rugged, well-designed equipment to withstand the transit environment and protect the products. Desirable features in refrigerated trailers and containers include:

- Adequate refrigeration capacity to hold frozen food at extreme ambient temperatures;
- Adequate air circulation for uniform product temperature and high relative humidity throughout the load;

- A solid return air bulkhead at the front of the trailer to ensure air circulation throughout the load;
- Vertical ribs on side walls and the rear door to assist in air circulation;
- Adequate insulation and provisions for heating in areas with extreme cold weather;
- Deep floor grooves or channels to provide an adequate cross-sectional area for air circulation under loads placed directly on the floor;
- Supply-air temperature sensing of the operation of the refrigeration unit to reduce product chilling and freezing injury;
- Provisions for ventilation to prevent ethylene or carbon dioxide buildup;
- Provisions for application of controlled or modified atmospheres; and
- Adequate suspension to reduce the amount of shock and vibration transferred to the shipping containers and the products inside.

The capacities and dimensions of air cargo containers, air cargo pallets, refrigerated trailers, and refrigerated van containers vary among carriers due to differences in equipment design and manufacture. Sample specifications are provided at the end of this section.

Carriers should be consulted for specifications, availability, and rates well in advance of shipping. Many carriers provide valuable assistance and information on loading and operating their equipment.

Room for air circulation must be provided in transport equipment loaded with agricultural products. The nature of the product, packaging type, and loading method affect air circulation, as well as the total weight and volume occupied by the load.

Maximum cargo weights are limited by carriers to comply with restrictions on particular transport and handling equipment, or limits enforced by Government agencies to protect roads and bridges. Due to light product density or load limits, many loads do not use the maximum rated-weight capacity of the transport equipment.

Most carriers check their transport equipment before delivery to the shipper for loading. Good equipment condition is critical to maintaining product quality. The shipper also should check the equipment to ensure it is in good working order and meets the needs of the

product. Carriers provide guidance on checking and operating the refrigeration systems.

All transportation equipment should be checked for:

- **Cleanliness**—The load compartment should be regularly steam cleaned.
- **Damage**—Walls, floors, doors, and ceilings should be in good condition.
- **Temperature Control**—Refrigerated units should have been calibrated recently and capable of supplying continuous air circulation for uniform product temperatures.

Shippers should insist on clean equipment. A load of products can be ruined by:

- Odors from previous shipments;
- Toxic chemical residues;
- Insects nesting in the equipment;
- Decaying remains of agricultural products; and
- Debris blocking drain openings or air circulation along the floor.

Shippers should insist on well-maintained equipment and check for the following:

- Damage to walls, ceilings, or floors, which can let in the outside heat, cold, moisture, dirt, and insects;
- Operation and condition of doors, ventilation openings, and seals; and
- Provisions for load locking and bracing.

For refrigerated trailers and containers, the following additional checks are important:

- With the doors closed, the cargo area should be checked from inside for light—door gaskets must seal. A smoke generator also can be used to detect leaks.
- The refrigeration unit should cycle from high to low speed when the desired temperature is reached and then back to high speed.
- The location of the sensing element that controls the discharge air temperature must be located. If it measures return air temperature, the thermostat will have to be set higher to avoid a chilling injury or freezing injury to the products.
- A solid return air bulkhead should be installed at the front of the trailer.
- A heating device should be available for transportation in areas with extreme cold weather.
- Equipment with a top air delivery system must have a fabric air chute or metal ceiling plenum in good condition.

Products requiring refrigeration should be thoroughly precooled prior to loading into transportation equipment. Product temperatures should be taken with an electronic probe thermometer and recorded on the bill of lading for future reference.

The load compartment in the equipment also should be precooled to the recommended transport or storage temperature for the product. Ideally, the loading area should be enclosed and refrigerated, with dock seals at the trailer or container doors.

Proper loading practices are critical to maintaining temperature and relative humidity, protecting the products from impact and vibration forces in transit, and preventing insects from entering the load. Special care must be taken when shipping mixed loads—the products must be compatible.

Loading Methods

Basic loading methods include:

- Bulkloading, by machine or hand, of unpackaged commodities;
- Hand loading individual boxes with or without pallets; and
- Unit loading of palletized or slipsheet loads of boxes with pallet jacks or forklifts.

Mixed Loads

Many products are often transported in mixed loads or stored with other products. They must be compatible in terms of:

- Recommended temperature and relative humidity;
- Production and sensitivity to ethylene; and
- Production and absorption of odors.

Groups of fresh products suitable for transportation and storage together have been identified and are listed in table 15 at the end of this section. Products sensitive to chilling, freezing, moisture loss, ethylene, and odors are listed in tables 9-14.

Many products are subject to chilling injury when transported or stored at lower than recommended temperatures (table 9, table 10). This damage often becomes apparent after the products warm up. Products injured may show pitting, discoloration, water-soaked areas, decay, and failure to ripen.

Many products are recommended to be transported or stored at temperatures only 1 °C to 3 °C (2 °F to 6 °F) above their freezing points. Thermostats on some trailers and van containers are set 1 °C to 3 °C (2 °F to 6 °F) higher than the recommended temperature of 0 °C (32 °F) for chilled products. Most tropical products that freeze are first damaged by chilling injury.

Most products need to be transported and stored at a high relative humidity. Some products are more susceptible to moisture loss than others (table 11, table 12). Moisture loss results in wilting and shriveling. To reduce moisture loss, products must be adequately precooled before transit. Some products also are waxed, film-wrapped, package-iced, or top-iced. Relative humidity during transit and storage must be maintained as much as possible.

Never transport or store fruits and vegetables that produce a lot of ethylene with products that are sensitive to it (table 13). Ethylene can cause premature ripening of some products and will ruin others, such as plants and cut flowers. Cucumbers and celery turn yellow, while lettuce will turn brown, in the presence of ethylene. Potassium permanganate pads can be used to absorb ethylene during transit and storage.

Never transport or store odorous products with products that will absorb the odors (table 14). Never load fruit, vegetables, or other food products with nonfood products that provide any risk of contamination through transfer of toxic chemical residues.

Similar-sized shipping containers should be loaded together in mixed loads for increased stability. Heavier shipping containers of products should be loaded first and distributed evenly across the floor of the trailer or container. Lighter shipping containers can then be placed against or on top of the heavier products.

Load lock bars, load gates, and pallets placed in a vertical position can be used to separate and secure stacks of different-sized shipping containers. To facilitate inspection of mixed loads at ports of entry, a representative sample of each commodity should be available near the door. This can minimize the unloading of cargo for examination.

The longer the transit time, the higher the risks in transporting mixed loads of agricultural products. Therefore, it is essential that guidelines be followed closely to maintain quality in distant markets.

Providing for Air Circulation

Inadequate provisions for air circulation will ruin a load, even in well-designed transportation equipment. When possible, boxes should be kept off shallow floors and away from flat sidewalls by using pallets, racks, and dunnage. Room for air circulation must be provided under, around, and through the load to protect the products from:

- Heat gain from the outside air during hot weather;
- Heat generated by the produce through respiration;
- Ethylene produced by certain products;
- Heat loss to the outside air during extreme cold weather; and
- Chilling injury or freezing injury during operation of the refrigeration unit.

Temperature Monitoring and Recording

Shippers should follow the carrier's recommendations on loading and setting the temperature of the equipment's load compartment to avoid chilling or freezing injury to fresh products. Discharge air may be colder than the set-point temperature if the refrigeration system operates on return-air temperature sensing. The temperature should be clearly marked on the bill of lading. Drivers and shipper should check product temperatures with a pulp thermometer and record the temperatures during the loading process.

Many carriers advise setting the thermostat temperature 1 °C to 3 °C (2 °F to 6 °F) higher than the recommended temperature of 0 °C (32 °F) for chilled products. This depends on the design of the transportation equipment. Newer equipment with supply-air temperature sensing and good air circulation can be operated closer to the recommended temperature.

For most tropical fruits and vegetables and plants that have recommended temperatures in the 10 °C to 21 °C (50 °F to 70 °F) range, the thermostat is set at or near the recommended temperature.

It is now possible to monitor refrigeration unit operating conditions from a central control room on a ship or by satellite transmission.

Refrigeration units for trailers and containers may have an electronic recorder which can monitor up to three different points in the load. This data can be downloaded and analyzed on a computer. Mechanical

temperature recorders which place data on a circular chart also are used.

In addition to trip insurance, all loads should have a small portable air-temperature recorder (supplied by the shipper) placed between packages in the area where the warmest temperatures occur. Recorder companies recommend placement on top of the load, near a sidewall, one-third of the way in from the rear doors, and away from any direct discharge of refrigerated air.

Railcars should have two or three portable recorders. In loads with top-ice or humidity above 95 percent, the recorders should be waterproof or enclosed in a plastic bag. Models are available for frozen food applications.

Shippers and receivers must follow the recorder company's instructions on documenting the load, starting the recorder, reading the results, and returning it for calibration and certification. The temperature recorder chart and/or instrument number should be clearly marked on the bill of lading. These steps are essential for settling claims over temperature management during transportation.

In the European Union temperature recording is mandatory. It also is necessary in the case of cold treatment quarantine shipments in which fruit is held at specific temperatures to kill fruit flies.

Cold Treatment and Pest Control

Shippers should avoid loading at night. Insects attracted by light can enter the load and cause problems upon inspection at destination. The loading area should be enclosed to prevent insects from reinfesting treated and packaged products. The Animal and Plant Health Inspection Service (APHIS) operates a pre-clearance program in which product is inspected and certified to be free of injurious insect pests and plant diseases. Such shipments are marked and sealed to prevent tampering and infestation.

Fumigations for pest control inside loaded transportation equipment are usually done under APHIS supervision in accordance with the necessary treatment schedule for a particular product and insect. Cold treatment of certain products during transportation also is used to kill insects. This involves strict temperature control throughout the load for up to 2 weeks. APHIS maintains a list of refrigerated vessels and refrigerated

containers certified as capable of maintaining intransit cold treatment temperatures.

Bracing the Load

Loads should be secured with some of the following materials to prevent vibration and impact damage in transit:

- Aluminum or wood load locks;
- Fiberboard honeycomb fillers;
- Wood blocking and nailing strips;
- Inflatable kraft paper air bags;
- Cargo nets and straps; and
- Wood load gates constructed of 25 by 102 mm (1 by 4 in) material.

Loading Air Cargo Equipment

Air cargo containers are loaded by hand or with forklifts when using fiberboard LD-3 container inserts. Polystyrene foam triangular inserts, wood blocking, and fiberboard dunnage are recommended to brace boxes and provide a level platform on the sloped surface of LD-3 containers. Refrigerated air cargo containers should be used when available.

Air cargo pallets are loaded by hand or with forklifts. The loads should be secured with straps, tape, or cross-stacking of the boxes. A weatherproof or insulated cover can be placed over the load along with the required cargo netting, provided the pallet load is protected from sunlight.

Loading Trailers and Containers

For refrigerated trailers and containers the following loading practices are recommended:

- Precool the trailer or container to the recommended transport or storage temperature. Turn off the refrigeration unit during loading if the loading area is not refrigerated; otherwise, the evaporator will frost due to the warm air drawn in by the unit.
- Thoroughly precool unit loads, as air circulation to some of the shipping containers may be limited. The containers should have openings for cooling and ventilation of product heat.
- Avoid loading tightly against flat sidewalls. Use centerline loading for unit loads.
- Secure unitized loads with dunnage between the walls and load.
- Do not block air circulation at the rear door.

- Secure the rear of both hand-stacked and unitized loads with straps, load gates, or load lock bars to prevent the load from shifting against the rear doors. Figures 1-5 at the end of this section illustrate unit loading and hand loading patterns.

Trailers and Containers With Top Air Delivery

For refrigerated trailers and containers with air delivered to the top of the load by chutes or ceiling ducts, these additional practices are necessary to maintain product quality:

- Hand-stacked loads should be evenly spaced, with lengthwise air flow channels created on every other layer, to ventilate product heat (respiration).
- Header stacks must be provided at the front bulkhead of the trailer or container in hand-stacked loads to connect all the lengthwise channels and allow the air to return to the evaporator.
- Loads of frozen food or nonrespiring products can be loaded solidly without air channels in the middle of the load.
- Fiberboard boxes must be strong enough to counter the reduced stacking strength due to the boxes being offset to provide airflow channels.
- Pallets should be used with hand-stacked loads to provide adequate air circulation in equipment with flat or shallow grooved floors.
- The load should not block the ceiling air chute or plenum.

Trailers and Containers With Bottom Air Delivery

For refrigerated trailers and containers with air delivered to the bottom of the load through the floor channels, these additional practices are necessary to maintain product quality:

- Hand-stacked and unit loads of boxes should have bottom-to-top ventilation slots that align in the stacks. Otherwise, small vertical air flow channels are needed between boxes as a result of the slight bulge in the box sides.
- At least 13 mm (5 in) of space should be provided at the ceiling for return-air circulation.
- The load should cover most of the floor surface to force more air through the load. Pieces of fiberboard can be used to cover any remaining floor space next to unit loads or stacks of boxes. Only the floor area next to the doorway should be open to permit return air flow.

Intransit Procedures

During transportation of refrigerated loads in trailers and containers, the carrier should check the operation of the refrigeration unit and temperature of the load compartment regularly.

Receiving Procedures

Before completely unloading a shipment for storage, receivers usually check the load to determine if it meets specifications for quality, grade, and packaging. The receiver also will note whether the load was adequately braced and the correct temperature was maintained.

Product temperatures in sample shipping containers throughout the load should be taken and recorded, using an electronic probe thermometer. The air-temperature recorder should be read, if one was placed in the load. Shippers and carriers should be notified of any problems with the product, packaging, loading method, or transportation equipment, so corrective action can be taken.

If there is a problem with the load, the receiver, carrier, or shipper can request an inspection by a licensed inspector. Unresolved disputes over product quality or payment can be referred to arbitration or other legal avenues.

Unloaded products need to be protected from direct sun, condensation, ethylene, and contamination. Products needing refrigeration or protection from hot or cold temperatures should be placed in the recommended storage conditions as soon as possible. Otherwise, the efforts of growers, shippers, and carriers to maintain product quality will have been in vain.

Air Circulation and Sanitation in Storage

Uniform air circulation in the storage room at the proper temperature and relative humidity is important to remove product heat that occurs from respiration, and from outside heat that enters through door openings and building surfaces. Doors to refrigerated storage areas should be protected with plastic strip curtains to reduce heat gain during operations. Warm air will quickly reduce relative humidity in the cold storage area.

To maintain temperature and relative humidity, the storage room refrigeration system should have a large

evaporator surface area, an adequate number of fans, and a humidifier. Temperature control should be by an electronic thermostat. The system must be carefully balanced to avoid free moisture or excessive air flow.

Electric forklifts and pallet jacks should be used with horticultural products to reduce ethylene. Periodic sanitation of the storage room walls, ceilings, floor, and refrigeration units is necessary to reduce decay organisms and odors. Carbon filters can be used to absorb odors and volatile gases, while potassium permanganate pads and air exchange can reduce ethylene.

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Table 3: Recommended Temperature and Relative Humidity, and Approximate Transit and Storage Life for Fruits and Vegetables

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Amaranth	0 to 2	32 to 36	95 to 100	10 to 14 days
Anise	0 to 2	32 to 36	90 to 95	2 to 3 wk
Apples, hardy varieties	-1 to 0	30 to 32	90 to 95	2 to 7 mo
Apples, chill sens. var.	3 to 4	38 to 40	90 to 95	2 to 7 mo
Apricots	-0.5 to 0	31 to 32	90 to 95	1 to 2 wk
Artichokes, globe	-0.5 to 0	31 to 32	95 to 100	2 to 3 wk
Asian pear	1	34	90 to 95	5 to 6 mo
Asparagus	0 to 2	32 to 36	95 to 98	2 to 3 wk
Atemoya	13	55	85 to 90	4 to 6 wk
Avocados, Fuerte, Hass	7	45	85 to 90	2 to 3 wk
Avocados, Lula, Booth-1	4	40	85 to 90	4 to 8 wk
Avocados, Fuchs, Pollock, Waldin	13	55	85 to 90	2 wk
Babaco	7	45	85 to 90	1 to 3 wk
Bananas, green	13 to 14	56 to 58	90 to 95	1 to 4 wk
Barbados cherry	0	32	85 to 90	7 to 8 wk
Bean sprouts	0	32	95 to 100	1 wk
Beans, dry	4 to 10	40 to 50	40 to 50	6 to 10 mo
Beans, green or snap	4 to 7	40 to 45	95 to 98	7 to 10 days
Beans, lima, in pods	5 to 6	41 to 43	95	5 days
Beets, bunched	0	32	98 to 100	10 to 14 days
Beets, topped	0	32	98 to 100	4 to 6 mo
Belgian endive	2 to 3	36 to 38	95 to 100	2 to 4 wk
Bitter melon	12 to 13	53 to 55	86 to 90	2 to 3 wk
Black sapote	13 to 15	55 to 60	85 to 90	2 to 3 wk
Blackberries	-0.5 to 0	31 to 32	90 to 95	2 to 5 days
Blood orange	4 to 7	40 to 44	90 to 95	3 to 8 wk
Blueberries	-0.5 to 0	31 to 32	90 to 95	12 to 15 days, first harvest
Bok choy	0	32	95 to 100	3 wk
Boniato	13 to 15	55 to 60	85 to 90	4 to 5 mo
Breadfruit	13 to 15	55 to 60	85 to 90	2 to 6 wk
Broccoli	0	32	95 to 98	10 to 14 days, 4 to 6 wk under controlled atmosphere (CA)
Brussels sprouts	0	32	95 to 98	3 to 5 wk

Table 3: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Cabbage, early	0	32	98 to 100	3 to 6 wk
Cabbage, late	0	32	98 to 100	5 to 6 mo, 7 to 9 mo under CA
Cactus leaves	2 to 4	36 to 40	90 to 95	3 wk
Cactus pear	2 to 4	36 to 40	90 to 95	3 wk
Caimito	3	38	90	3 wk
Calabaza	10 to 13	50 to 55	50 to 70	2 to 3 mo
Calamondin	9 to 10	48 to 50	90	2 wk
Canistel	13 to 15	55 to 60	85 to 90	3 wk
Cantaloups	2 to 4	35 to 40	90 to 95	1 to 2 wk
Calamondin	9 to 10	48 to 50	85 to 90	2 wk
Carambola	5 to 10	41 to 50	85 to 90	4 to 7 wk
Carrots, bunched	0	32	95 to 100	10 to 14 days
Carrots, mature topped	0	32	98 to 100	7 to 9 mo
Carrots, immature topped	0	32	98 to 100	4 to 6 wk
Cashew apple	0 to 2	32 to 36	85 to 90	5 wk
Cauliflower	0	32	95 to 98	2 to 4 wk
Celeriac	0	32	95 to 99	6 to 8 mo
Celery	0	32	98 to 100	1 to 3 mo
Chard, Swiss	0	32	95 to 100	1 to 2 wk
Chayote squash	7	45	85 to 90	1 to 2 wk
Cherimoya	8 to 9	46 to 48	85 to 90	1 to 2 wk
Cherries, sour	0	32	90 to 95	3 to 7 days
Cherries, sweet	-1 to -0.5	30 to 31	90 to 95	2 to 3 wk
Chinese broccoli	0	32	95 to 100	10 to 14 days
Chinese cabbage	0	32	95 to 100	2 to 3 mo
Chinese Dates	10	50	85 to 90	10 wk
Chinese long bean	4 to 7	40 to 45	90 to 95	7 to 10 days
Chives	0	32	90 to 95	2 wk
Citron (Citrus Medica)	13	55	85 to 90	6 to 8 wk
Clementine	4	40	90 to 95	2 to 4 wk
Coconuts	0 to 1.5	32 to 35	80 to 85	1 to 2 mo
Collards	0	32	95 to 100	10 to 14 days
Corn, sweet	0	32	95 to 98	4 to 8 days
Cranberries	3.3 to 4	38 to 40	80 to 85	2 to 4 mo

Table 3: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Cucumbers	10 to 13	50 to 55	90 to 95	10 to 14 days
Currants	-0.5 to 0	31 to 32	90 to 95	1 to 4 wk
Custard apples	5 to 7	41 to 45	85 to 90	4 to 6 wk
Diakon	0 to 1	32 to 34	95 to 100	4 mo
Dates, soft, semi-soft	0	32	75	6 mo, soft 12 mo, semi-soft
Dewberries	-0.5 to 0	31 to 32	90 to 95	2 to 3 days
Durian	4 to 6	39 to 42	85 to 90	6 to 8 wk
Eggplants	8 to 12	46 to 54	90 to 95	1 to 2 wk
Elderberries	-0.5 to 0	31 to 32	90 to 95	1 to 2 wk
Endive and escarole	0	32	95 to 98	2 to 3 wk
Feijoa	5 to 10	41 to 50	90	2 to 3 wk
Figs, fresh	0	32	85 to 90	7 days
Figs, dried	0 to 10	32 to 50	50 to 70	1 year
Garlic	0	32	60 to 70, ventilation	6 to 7 mo, if properly cured
Ginger root	13	55	65 to 75	4 to 6 mo
Gooseberries	-0.5 to 0	31 to 32	90 to 95	3 to 4 wk
Granadilla	10	50	85 to 90	3 to 4 wk
Grapefruit, CA & AZ	14 to 15	58 to 60	85 to 90	6 to 8 wk
Grapefruit, FL & TX	10 to 15	50 to 60	85 to 90	6 to 10 wk
Grapes, Vinifera	-1 to -0.5	30 to 31	90 to 95	2 to 6 mo
Grapes, American	-0.5 to 0	31 to 32	85 to 90	3 to 8 wk
Greens, leafy	0	32	95 to 100	10 to 14 days
Guava	7 to 10	45 to 50	90	2 to 3 wk
Haricot vert	4 to 7	40 to 45	95	7 to 10 days
Horseradish	-1 to 0	30 to 32	98 to 100	10 to 12 mo
Jaboticaba	13 to 15	55 to 60	90 to 95	2 to 3 days
Jackfruit	13	55	85 to 90	2 to 6 wk
Jaffa orange	8 to 10	46 to 50	85 to 90	8 to 12 wk
Japanese eggplant	8 to 12	46 to 54	90 to 95	1 wk
Jerusalem Artichoke	-0.5 to 0	31 to 32	90 to 95	4 to 5 mo
Jicama	13 to 18	55 to 65	65 to 70	1 to 2 mo
Kale	0	32	95	3 wk
Kiwano	10 to 15	50 to 60	90	6 mo

Table 3: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Kiwifruit	0 to 0.6	32 to 33	90 to 95	3 to 4 mo
Kohlrabi, without leaves	0	32	98 to 100	2 to 3 mo
Kumquats	4 to 5	39 to 41	90 to 95	2 to 4 wk
Langsat	11 to 14	52 to 58	85 to 90	2 wk
Leeks	0	32	95 or above	3 mo
Lemons	7 to 10	45 to 50	85 to 95	2 to 3 mo
Lettuce, Iceberg	0 to 1	32 to 34	95 to 100	2 to 3 wk
Limes	9 to 10	48 to 50	85 to 90	6 to 8 wk
Lo bok	0 to 1.5	32 to 35	95 to 100	2 to 4 mo
Loganberries	-0.5 to 0	31 to 32	90 to 95	2 to 3 days
Longan	1.5	35	90 to 95	3 to 5 wk
Loquats	0	32	90	2 to 3 wk
Lychees	0 to 2	32 to 36	90 to 95	3 to 5 wk
Malanga	7	45	70 to 80	3 mo
Mamey	13 to 15	55 to 60	90 to 95	2 to 6 wk
Mangoes	13	55	85 to 90	2 to 3 wk
Mangosteen	13	55	85 to 90	2 to 4 wk
Melons:				
Casaba	7 to 10	45 to 50	90 to 95	4 to 6 wk
Crenshaw	7 to 10	45 to 50	90 to 95	2 wk
Honeydew	7 to 10	45 to 50	90 to 95	2 to 3 wk
Persian	7 to 10	45 to 50	90 to 95	2 wk
Mushrooms	0 to 1.1	32 to 34	90 to 95	3 to 5 days
Nectarines	-0.5 to 0	31 to 32	90 to 95	2 to 4 wk
Okra	7 to 10	45 to 50	90 to 95	7 to 10 days
Olives, fresh	7	45	85 to 90	2 to 4 wk
Onions, green	0	32	95 to 100	4 wk
Onions, Bermuda	0	32	65 to 70	1 to 2 mo
Onions, Globe	0	32	65 to 70	6 to 8 mo
Onions, Spanish	0	32	65 to 70	3 to 6 mo
Onions, dehydrated	10	50	65 to 70	3 to 6 mo
Onions, dehydrated	2	36	65 to 70	12 mo
Onion sets	0	32	65 to 70	6 to 8 mo
Oranges, CA	5 to 7	41 to 45	85 to 90	2 to 6 wk

Table 3: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Oranges, AZ, March	9	48	85 to 90	6 to 8 wk
Oranges AZ, June	3	37	85 to 90	6 to 8 wk
Oranges, FL & TX	0 to 1	32 to 34	85 to 90	8 to 12 wk
Oranges, Jaffa	8 to 10	46 to 50	85 to 90	8 to 12 wk
Oranges, Mandarin	3 to 4	38 to 40	85 to 90	3 to 4 wk
Papayas, partially ripe	10 to 13	50 to 55	85 to 90	1 to 3 wk
Papayas, fully ripe	4 to 10	40 to 50	85 to 90	2 to 3 days
Passion Fruit	7 to 10	45 to 50	85 to 90	3 to 4 wk
Parsley	0	32	95	2 to 3 wk
Parsnips	0	32	98 to 100	4 to 6 mo
Peaches	-0.6 to 0	31 to 32	90 to 95	2 to 4 wk
Pears, Anjou	-1.5 to -0.6	29 to 31	90 to 95	6 to 7 mo
Pears, Bartlett	-1.5 to -0.6	29 to 31	90 to 95	2 to 3 mo
Pears, Bosc	-1.5 to -0.6	29 to 31	90 to 95	3 to 4 mo
Pears, Comice	-1.5 to -0.6	29 to 31	90 to 95	4 to 5 mo
Pears, Hardy	-1.5 to -0.6	29 to 31	90 to 95	2 to 3 mo
Pears, Kieffer	-1.5 to -0.6	29 to 31	90 to 95	2 to 3 mo
Pears, Packham Triumph	-1.5 to -0.6	29 to 31	90 to 95	5 to 6 mo
Pears, Seckel	-1.5 to -0.6	29 to 31	90 to 95	3 to 3.5 mo
Pears, Winter Nelis	-1.5 to -0.6	29 to 31	90 to 95	7 to 8 mo
Peas, green	0	32	95	1 wk
Peas, southern	4 to 5	40 to 41	95	1 wk
Pepino	7.5 to 10	45 to 50	85 to 90	1 mo
Peppers, Chili (dry)	0 to 10	32 to 50	60 to 70	6 mo
Peppers, sweet	7 to 10	45 to 50	90 to 95	2 wk
Persimmons, Japanese	0 to 2	32 to 36	90 to 95	2 to 4 mo
Pineapples	7 to 10	45 to 50	85 to 90	2 to 3 wk
Plantain	13 to 14	55 to 58	90 to 95	1 to 5 wk
Plums, Angelino	-0.6 to 0	31 to 32	90 to 95	3 to 5 wk
Plums, Black Amber	-0.6 to 0	31 to 32	90 to 95	3 to 5 wk
Plums, Casselman	-0.6 to 0	31 to 32	90 to 95	5 to 6 wk
Plums, El Dorado	-0.6 to 0	31 to 32	90 to 95	3 to 5 wk
Plums, Friar	-0.6 to 0	31 to 32	90 to 95	3 to 4 wk
Plums, Kelsey	-0.6 to 0	31 to 32	90 to 95	2 wk

Table 3: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Plums, Laroda	-0.6 to 0	31 to 32	90 to 95	3 to 4 wk
Plums, Late Santa Rosa	-0.6 to 0	31 to 32	90 to 95	3 wk
Plums, Nubiana	-0.6 to 0	31 to 32	90 to 95	2 wk
Plums, President	-0.6 to 0	31 to 32	90 to 95	3 wk
Plums, Queen Ann	-0.6 to 0	31 to 32	90 to 95	3 to 4 wk
Plums, Red Beaut	-0.6 to 0	31 to 32	90 to 95	1 to 2 wk
Plums, Roysum	-0.6 to 0	31 to 32	90 to 95	3 to 4 wk
Plums, Santa Rosa	-0.6 to 0	31 to 32	90 to 95	3 to 5 wk
Plums, Simka	-0.6 to 0	31 to 32	90 to 95	3 wk
Plums, Wickson	-0.6 to 0	31 to 32	90 to 95	4 wk
Pomegranates	5	41	90 to 95	2 mo
Potatoes, curing condition	10 to 18	50 to 65	95	10 to 14 days
Potatoes, early, cured	4	40	95	3 to 5 mo
Potatoes, late, cured	4	40	95	5 to 10 mo
Potatoes, seed, cured	3	38	95	5 to 10 mo
Potato for french fry cured	10	50	95	1 to 10 mo
Potato for chipping cured	13	55	95	1 to 8 mo
Potatoes, dehydrated	7	45		3 to 6 mo
Potatoes, dehydrated	0	32		6 to 12 mo
Prunes, Italian	-0.6 to 0	31 to 32	90 to 95	2 to 3 wk
Pummelo	7 to 9	45 to 48	85 to 90	12 wk
Pumpkins	10 to 13	50 to 55	60 to 70	2 to 3 mo
Quinces	-0.5 to 0	31 to 32	90	2 to 3 mo
Raddichio	0 to 1	32 to 34	95	2 to 3 wk
Radishes, spring, topped	0	32	95+	3 to 4 wk
Radishes, winter	0	32	95+	3 to 4 mo
Rambutan	12	54	90 to 95	1 to 3 wk
Raspberries	-0.5 to 0	31 to 32	90 to 95	2 to 3 days
Rhubarb	0	32	95	2 to 4 wk
Rutabagas	0	32	95 to 100	4 to 6 mo
Salsify	0	32	95 to 98	2 to 4 mo
Santol	7 to 9	45 to 48	85 to 90	3 wk
Sapodilla	15 to 20	60 to 68	85 to 90	2 to 3 wk
Sapote, Turning	15 to 20	60 to 68	85 to 90	2 to 3 wk

Table 3: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Sapote, Ripe	0 to 2	32 to 36	85 to 90	1 to 2 wk
Scorzonera	0 to 1	32 to 34	95 to 98	6 mo
Seedless cucumbers	10 to 13	50 to 55	85 to 90	10 to 14 days
Snow peas	0 to 1	32 to 34	90 to 95	1 to 2 wk
Soursop	13	55	85 to 90	1 to 2 wk
Spinach	0	32	95 to 100	1 to 2 wk
Squashes, summer	5 to 10	41 to 50	95	1 to 2 wk
Squashes, winter:				
Table Queen, Acorn	10 to 13	50 to 55	60 to 70	5 to 7 wk
Quality	10 to 13	50 to 55	60 to 70	11 wk
Butternut	10 to 13	50 to 55	60 to 70	3 mo
Connecticut Field	10 to 13	50 to 55	60 to 70	2 to 3 mo
Cushaw	10 to 13	50 to 55	60 to 70	2 to 3 mo
Hubbard	10 to 13	50 to 55	60 to 70	6 mo
Kabocha	10 to 13	50 to 55	60 to 70	3 mo
Turban	10 to 13	50 to 55	60 to 70	3 mo
Strawberries	-0.5 to 0	31 to 32	90 to 95	5 to 10 days
Sugar apples	7	45	85 to 90	4 wk
Sweet potatoes	13 to 16	55 to 60	85 to 90	3 to 10 mo
Tamarillos	7 to 10	45 to 50	90	1 to 2 wk
Tamarinds	7	45	90 to 95	3 to 4 wk
Tangerines	3 to 4	38 to 40	85 to 95	2 to 4 wk
Taro root (Dasheen)	7 to 10	45 to 50	85 to 90	4 to 5 mo
Tomatillos	13 to 15	55 to 60	85 to 90	3 wk
Tomatoes, mature-green	13 to 18	55 to 65	85 to 90	2 to 3 wk
Tomatoes, pink	10 to 13	50 to 55	85 to 90	7 to 10 days
Tomatoes, ripe	7 to 10	45 to 50	90 to 95	3 to 5 days
Turnips	0	32	95	4 to 5 mo
Turnip greens	0	32	95 to 100	10 to 14 days
Uniq fruit, Ugli™ tangelo	4	40	90 to 95	2 to 3 wk
Waterchestnuts	1 to 2	34 to 36	90 to 98	2 to 4 mo
Watercress	0 to 1	32 to 34	95 to 100	2 to 3 wk
Watermelons	10 to 16	50 to 60	90	2 to 3 wk
White sapote	19 to 21	67 to 70	85 to 90	2 to 3 wk

Table 3: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
White asparagus	0 to 2	32 to 36	95 to 100	2 to 3 wk
Winged bean	10	50	90	4 wk
Yams	16	61	70 to 80	3 to 6 mo
Yucca root	0 to 2	32 to 36	85 to 90	1 to 2 mo

Source: *The Refrigeration Research and Education Foundation; The Packer; Hardenburg, Watada, and Wang; McGregor; Sea-Land Service, Inc.; American President Lines.*

Table 4: Suggested Shipping Temperatures for Acclimatized Foliage Plants

Plant name	1 to 14 days ¹ shipment		15 to 28 days ¹ shipment	
	°C	°F	°C	°F
<i>Acoelorrhaphe wrightii</i>	10 to 13	50 to 55	—	—
<i>Aglaonema</i> 'Fransher'	13 to 15.5	55 to 60	15.5 to 18.3	60 to 65
<i>Aglaonema</i> 'Maria'	13 to 18.3	55 to 65	13 to 18.3	55 to 65
<i>Aglaonema</i> 'Silver Queen'	15.5 to 18.3	60 to 65	15.5 to 18.3	60 to 65
<i>Aphelandra squarrosa</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60 ²
<i>Araucaria heterophylla</i>	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Ardisia crispa</i>	10 to 15.5	50 to 60	10 to 15.5	50 to 60
<i>Aspidistra elatior</i>	10 to 13	50 to 55	10 to 13	50 to 55
<i>Asplenium nidus</i>	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Beaucarnea recurvata</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Brassaia actinophylla</i>	10 to 13	50 to 55	10 to 13	50 to 55
<i>Cereus peruvianus</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Chamaedorea elegans</i>	10 to 15.5	50 to 60	10 to 15.5	50 to 60
<i>Chamaedorea seifrizii</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Chrysalidocarpus lutescens</i>	13 to 18.3	55 to 65	15.5 to 18.3	60 to 65 ³
<i>Codiaeum variegatum</i> 'Norma'	15.5 to 18.3	60 to 65	15.5 to 18.3	60 to 65
<i>Cordyline terminalis</i>				
'Baby Doll'	13 to 15.5	55 to 60	10 to 13	50 to 55 ³
<i>Cordyline terminalis</i>				
'Dragon Tongue'	15.5 to 18.3	60 to 65	—	—
<i>Crassula argentea</i>	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Dieffenbachia</i> 'Tropic Snow'	13 to 18.3	55 to 65	13 to 18.3	55 to 65 ³
<i>Dizygotheca elegantissima</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Dracaena deremensis</i>				
'Janet Craig'	15.5 to 18.3	60 to 65	15.5 to 18.3	—
<i>Dracaena deremensis</i> 'Warneckii'	15.5 to 18.3	60 to 65	—	—
<i>Dracaena fragrans</i> 'Massangeana'	15.5 to 18.3	60 to 65	15.5 to 18.3	60 to 65
<i>Dracaena godseffiana</i>				
'Florida Beauty'	13 to 18.3	55 to 65	13 to 15.5	55 to 60 ²
<i>Dracaena marginata</i>	13 to 18.3	55 to 65	15.5 to 18.3	60 to 65 ³
<i>Dracaena reflexa</i>	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Epipremnum aureum</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60 ²
<i>Ficus benjamina</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Ficus elastica</i> 'Burgundy'	10 to 15.5	50 to 60	10 to 13	50 to 55

Table 4: Continued

Plant name	1 to 14 days ¹ shipment		15 to 28 days ¹ shipment	
	°C	°F	°C	°F
<i>Ficus elastica</i> 'Robusta'	10 to 15.5	50 to 60	10 to 15.5	50 to 60
<i>Ficus lyrata</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Ficus retusa</i> 'Nitida'	13 to 15.5	55 to 60	13 to 15.5	55 to 60 ³
<i>Hedera helix</i> 'Eva'	13 to 15.5	50 to 60	10 to 13	50 to 55
<i>Hedera helix</i> 'Sweetheart'	10 to 13	50 to 55	10 to 13	50 to 55 ³
<i>Howea forsteriana</i>	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Hoya carnosa</i> 'Tricolor'	13 to 18.3	55 to 65	13 to 18.3	55 to 65
<i>Maranta leuconeura</i>	10 to 13	50 to 55	10 to 13	50 to 55 ²
<i>Nephrolepis exaltata</i> 'Bostoniensis'	13 to 15.5	55 to 60	13 to 15.5	55 to 60 ²
<i>Philodendron scandens</i> oxycardium	13 to 15.5	55 to 60	13 to 15.5	55 to 60 ²
<i>Philodendron selloum</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Phoenix roebelenii</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60
<i>Plectranthus nummularius</i>	13 to 15.5	55 to 60	13 to 15.5	55 to 60 ²
<i>Pilea</i> 'Moon Valley'	13 to 18.3	55 to 65	13 to 18.3	55 to 65
<i>Pilea</i> 'Silver Tree'	13 to 15.5	55 to 60	13 to 15.5	55 to 60 ²
<i>Pittosporum tobira</i>	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Pittosporum tobira</i> 'Wheelerii'	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Podocarpus gracilior</i>	10 to 18.3	50 to 65	10 to 18.3	50 to 65
<i>Rhapis excelsa</i>	10 to 13	50 to 55	13 to 15.5	55 to 60
<i>Schefflera arboricola</i>	10 to 13	50 to 55	10 to 13	50 to 55
<i>Spathiphyllum</i> 'Mauna Loa'	10 to 13	50 to 55	13 to 18.3	55 to 60
<i>Syngonium</i> 'White Butterfly'	13 to 15.5	55 to 60	13 to 18.3	55 to 60 ²
<i>Washingtonia robusta</i>	10 to 15.5	50 to 60	10 to 13	50 to 55
<i>Yucca elephantipes</i>	10 to 13	50 to 55	10 to 13	50 to 55

¹Plants shipped or stored for 1 to 7 days should be held at the highest temperature listed for that plant.

²Plants observed to have severe loss in quality beyond 2 wk.

³Plants observed losing about 25 percent quality wkly beyond 2 wk.

Source: *Sea-Land Service, Inc.*

Table 5: Recommended Temperature, Relative Humidity, and Storage Period for Potted Plants Not Acclimated to Darkness

Plant Common name/ Scientific name(s)	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
African Violet <i>Saintpaulia ionantha</i>	21 to 24	70 to 75	—	—
Aglaonema <i>Aglaonema</i> spp.	16 to 21	60 to 70	65 to 85	10 days
Asparagus <i>Asparagus densiflorus sprengeri</i> , <i>Asparagus setaceus</i>	18 to 21	65 to 75	—	—
Azalea <i>Rhododendron</i> hybrid	16	60	—	3 days
Begonia <i>Begonia</i> x <i>hiemalis</i>	16 to 21	60 to 70	—	—
Bromeliads <i>Aechmea fasciata</i> , <i>Neoregelia</i> <i>caroliniae tricolor</i>	21 to 27	70 to 80	—	—
Chrysanthemum <i>Chrysanthemum morifolium</i>	2	35	80 to 90	5 days
Cyclamen <i>Cyclamen persicum giganteum</i>	10	50	80 to 90	4 days
Dieffenbachia <i>Dieffenbachia</i> spp.	16 to 21	60 to 70	—	5 days
Dracaena <i>Dracaena</i> spp., <i>Cordyline terminalis</i>	16 to 24	60 to 75	—	7 days
Easter Lily <i>Lilium longiflorum</i> , flower buds puffy, white, unopened	0 to 3	32 to 37	—	14 days
Ferns <i>Nephrolepis</i> spp., <i>Adiantum raddianum</i> , <i>Asplenium nidus</i> , <i>Pteris cretica</i> , <i>Pteris ensiformis</i>	16 to 24	60 to 75	75 to 85	7 days
Ficus <i>Ficus</i> spp.	13 to 21	55 to 70	65 to 85	7 days
Gloxinia <i>Sinningia speciosa</i>	16	60	70 to 90	4 days
Hibiscus <i>Hibiscus rosa-sinensis</i>	18 to 24	65 to 75	—	—
Kalanchoe <i>Kalanchoe blossfeldiana</i>	16	60	—	4 days
Palm <i>Chrysalidocarpus lutescens</i> , <i>Chamaedorea erumpens</i> , <i>Chamaedorea elagans</i> , <i>Howea forsteriana</i> , <i>Phoenix roebelenii</i>	10 to 21	50 to 70	65 to 75	10 days
Pereromia <i>Peperomia</i> spp.	16 to 24	60 to 75	65 to 85	7 days
Philodendron <i>Philodendron</i> spp.	16 to 24	60 to 75	65 to 85	7 days

Table 5: Continued

Plant Common name/ Scientific name(s)	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Poinsetta Euphorbia pulcherrima	10 to 12	50 to 54	—	4 days
Pothos Scindapsus aureus	16 to 24	60 to 75	65 to 85	7 days
Roses Rosa hybrida	1 to 3	34 to 37	—	5 days
Schefflera Brassaia actinophylla, Brassaia arboracola	13 to 18	55 to 65	—	7 days

Source: *Society of American Florists; McGregor.*

Table 6: Recommended Temperature and Approximate Transit and Storage Period for Cut Flowers and Florist Greens

Product	Temperature		Approximate Storage Life ¹
	%C	%F	
Cut flowers²			
Acacia	4	40	3 to 4 days
Alstroemeria	4	40	2 to 3 days
Allium	0 to 2	32 to 35	2 wk
Anemone	4 to 7	40 to 45	2 days
Anthurium ³	13	56	2 to 4 wk
Aster, China	0 to 4	32 to 40	1 to 3 wk
Bird-of-paradise	7 to 8	45 to 46	1 to 3 wk
Bouvardia	0 to 2	32 to 35	1 wk
Buddleia	4	40	1 to 2 days
Calendula	4	40	3 to 6 days
Calla	4	40	1 wk
Camellia ⁴	7	45	3 to 6 days
Candytuft	4	40	3 days
Carnation	-0.5 to 0.6	31 to 33	2 to 4 wk
Carnation buds	-0.5 to 0	31 to 32	4 to 12 wk
Carnation, miniature	-0.5 to 0	31 to 32	2 wk
Chrysanthemum	-0.5 to 0.6	31 to 33	2 to 4 wk
Clarkia	4	40	3 days
Columbine	4	40	2 days
Coreopsis	4	40	3 to 4 days
Cornflower	4	40	3 days
Cosmos	4	40	3 to 4 days
Crocus	0.5 to 2	33 to 36	1 to 2 wk
Dahlia	4	40	3 to 5 days
Daisy, English	4	40	3 days
Daisy, Marguerite	2	36	1 to 2 wk
Daisy, Shasta	4	40	1 wk
Delphinium	4	40	1 to 2 days
Eucharis ⁴	7 to 10	45 to 50	7 to 10 days
Feverfew	4	40	3 days
Forget-me-not	4	40	1 to 2 days
Foxglove	4	40	1 to 2 days
Freesia	0 to 0.5	32 to 33	10 to 14 days

Table 6: Continued

Product	Temperature		Approximate Storage Life ¹
	°C	°F	
Gaillardia	4	40	3 days
Gardenia ⁴	0 to 1	32 to 34	2 wk
Gerbera	1 to 4	34 to 40	1 to 2 wk
Ginger	13	55	4 to 7 days
Gladiolus, as buds	4 to 6	40 to 42	5 to 8 days
Gloriosa lily	4 to 7	40 to 45	1 wk
Godetia	10	50	1 wk
Gypsophila	4	40	1 to 3 wk
Heather	4	40	1 to 3 wk
Heliconia	12	54	10 days
Hyacinth	0 to 0.5	32 to 33	2 wk
Iris, bulbous	-0.5 to 0.6	31 to 33	1 to 2 wk
Laceflower	4	40	3 days
Lilac, forced	4	40	4 to 6 days
Lily, Easter	0 to 2	32 to 35	2 to 3 wk
Lily-of-the-valley	-0.5 to 0.6	31 to 33	2 to 3 wk
Lupine	4	40	3 days
Marigolds	4	40	1 to 2 wk
Mignonette	4	40	3 to 5 days
Narcissus (daffodils)	0 to 0.5	32 to 33	1 to 3 wk
Orchid, cattelya ^{3,4}	7 to 10	45 to 50	1 to 2 wk
Orchid, cymbidium	-0.5 to 4	31 to 40	2 wk
Orchid, vanda	13	55	5 days
Orinthogalum	4	40	4 to 6 wk
Poppy	4	40	3 to 5 days
Peony, tight buds	0 to 2	32 to 35	4 to 6 wk
Phlox	4	40	1 to 3 days
Poinsettia	10 to 15	50 to 60	4 to 7 days
Primrose	4	40	1 to 2 days
Protea	4	40	7 to 10 days
Ranunculus	0 to 5	32 to 41	7 to 10 days
Rose (in preservative)	0.5 to 2	33 to 35	4 to 5 days
Rose (dry pack)	0	32	1 to 2 wk
Snapdragon	4	40	1 to 2 wk

Table 6: Continued

Product	Temperature		Approximate Storage Life ¹
	°C	°F	
Snowdrop	4	40	2 to 4 days
Squill	0 to 0.6	32 to 33	2 wk
Statice	2	35	2 to 3 wk
Stephanotis ⁴	4	40	1 wk
Stevia	4	40	3 days
Stock	4	40	3 to 5 days
Strawflower, fresh	2	35	3 to 4 wk
Sweetpea	-0.5 to 0.6	31 to 33	2 wk
Sweet-william	7	45	3 to 4 days
Tulip	-0.5 to 0.6	31 to 33	2 to 3 wk
Violet	1 to 5	34 to 41	3 to 7 days
Zinnia	4	40	1 wk
Florist greens (decorative foliage)^{2,5}			
Adiantum (maidenhair)	0 to 4	32 to 40	—
Asparagus (plumosa) ⁶	2 to 4	35 to 40	2 to 3 wk
Asparagus (sprenger) ⁶	2 to 4	35 to 40	2 to 3 wk
Boxwood	2 to 4	35 to 40	1 to 2 mo
Camellia	4	40	—
Cedar	0	32	1 mo
Chamaedorea	7	45	2 to 3 wk
Cordyline (ti)	7 to 10	45 to 50	2 to 3 wk
Croton	2 to 4	35 to 40	—
Dieffenbachia	13	55	—
Dracaena	2 to 4	35 to 40	—
Dagger & wood ferns ⁶	0	32	2 to 3 mo
Eucalyptus	2 to 4	35 to 40	1 to 3 wk
Galax ⁶	0	32	—
Ground Pine ⁶	0	32	—
Hedera	2 to 4	35 to 40	2 to 3 wk
Holly ⁶	0 to 4	32 to 40	3 to 5 wk
Huckleberry	0	32	1 to 4 wk
Juniper	0	32	1 to 2 mo
Laurel, Mountain	0	32	2 to 4 wk
Leatherleaf (baker fern)	1 to 4	34 to 40	1 to 2 mo

Table 6: Continued

Product	Temperature		Approximate Storage Life ¹
	°C	°F	
Leucothoe, drooping	2 to 4	35 to 40	—
Magnolia	2 to 4	35 to 40	2 to 4 wk
Mistletoe	0	32	3 to 4 wk
Myrtus (myrtle)	2 to 4	35 to 40	—
Palm	7	45	—
Philodendron	2 to 4	35 to 40	—
Pittosporum	2 to 4	35 to 40	2 to 3 wk
Podocarpus	7	45	—
Pothos	2 to 4	35 to 40	—
Rhododendron	0	32	2 to 4 wk
Salal (lemon leaf) ⁶	0	32	2 to 3 wk
Scotch-broom	4	40	2 to 3 wk
Smilax, southern ⁶	4	40	—
Staghorn fern	13	55	—
Vaccinium (huckleberry) ⁶	0	32	1 to 4 wk
Woodwardia fern	0 to 4	32 to 40	—

¹ Storage periods given should allow satisfactory handling and keeping after removal from storage.

² High relative humidity of 90 to 95 percent recommended in refrigerated storage rooms for cut flowers and florist greens. Likely, some flowers for which temperature of 4° is recommended could be stored longer and safely at lower temperatures.

³ Stems of orchids and some anthuriums should be placed in vials of water. However, some orchids and anthuriums may be stored by dry-pack methods.

⁴ Not placed in water for handling or storage but may be misted.

⁵ At retail level, florist greens held at approximately 4° for only 1 or 2 wk. Most stored with stems in water, except where noted otherwise.

⁶ Usually held in moisture-retentive shipping cases.

Source: *The Refrigeration Research and Education Foundation, Hardenburg, Watada, and Wang.*

Table 7: Recommended Temperature and Relative Humidity, and Approximate Transit and Storage Life for Seafood, Meat, Dairy, and Egg Products

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Fish				
Haddock, Cod, Perch	-1 to 1	31 to 34	95 to 100	12 days
Hake, Whiting	0 to 1	32 to 34	95 to 100	10 days
Halibut	-1 to 4	31 to 34	95 to 100	18 days
Herring, kipperd, smkd	0 to 2	32 to 36	80 to 90	10 days
Mackerel	0 to 1	32 to 34	95 to 100	6 to 8 days
Menhaden	1 to 5	34 to 41	95 to 100	4 to 5 days
Salmon	-1 to 1	31 to 34	95 to 100	18 days
Tuna	0 to 2	32 to 36	95 to 100	14 days
Frozen fish	-29 to -23	-20 - -10	90 to 95	6 to 12 mo
Shellfish				
Clams (shucked meats)	-1.7	29	85-90	5 days
Crabmeat, pasteurized	0 to 1.1	32-34		6 mo
Crabs, King, Snow, ck, frz	-18	0		12 mo
Crabs, Dungeness, ck, frz	-18	0		3 to 6 mo
Scallop meat	0 to 1	32 to 34	95 to 100	12 days
Shrimp	-1 to 1	31 to 34	95 to 100	12 to 14 days
Lobster, American, live	5 to 10	41 to 50	in water	indefinite
Lobster, Amer fresh meat	-1.1 to 0	30 to 32	90 to 95	3 to 5 days
Lobster, Amer, froz, shell	0	-18		3 to 6 mo
Lobster, meat, ckd, frz	0	-18		6 to 9 mo
Lobster, Spiny, froz, shell	0	-18		10 to 12 mo
Oysters, meat, liq	0 to 2	32 to 36	100	5 to 8 days
Oysters, clams, in shell	5 to 10	41 to 50	95 to 100	5 days
Frozen shellfish	-29 to -20	-20 to -4	90 to 95	3 to 8 mo
Meat (beef)				
Beef, fresh, average	0 to 1	32 to 34	88 to 92	1 to 9 wk
Beef, carcass				
Choice, 60% lean	0 to 4	32 to 39	85 to 90	1 to 3 wk
Prime, 54% lean	0 to 1	32 to 34	85	1 to 3 wk
Sirloin, Round cut	0 to 1	32 to 34	85	1 to 9 wk
Dried, chipped	10 to 15	50 to 59	15	6 to 8 wk
Liver	0	32	90	1 to 7 days
Veal, 81% lean	0 to 1	32 to 34	90	1 to 7 days

Table 7: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Frozen beef cuts	-29 to -18	-20 to 0	90 to 95	12 to 18 mo
Meat (pork)				
Pork, fresh, average	0 to 1	32 to 34	85 to 90	3 to 7 days
Carcass, 47% lean	0 to 1	32 to 34	85 to 90	3 to 5 days
Bellies, 35% lean	0 to 1	32 to 34	85	3 to 5 days
Backfat, 100%lean	0 to 1	32 to 34	90 to 95	3 to 8 wk
Frozen pork	-29 to -18	-20 to 0	90 to 95	8 to 10 mo
Ham, cured				
20.5% protein fat free	-3	26		3 mo
18.5% protein fat free	-3	26		3 mo
17% protein fat free	-3	26		2 mo
Frozen	-23 to -18	-10 to 0		2 to 3 mo
Ham, fresh, frozen	-23 to -18	-10 to 0		6 mo
Bacon				
Medium fat class	3 to 5	37 to 41	80 to 85	2 to 3 wk
Cured, farm style	16 to 18	61 to 64	85	4 to 6 mo
Cured, packer style	1 to 4	34 to 39	85	2 to 6 wk
Frozen	-23 to -18	-10 to 0	90 to 95	2 to 4 mo
Sausage				
Links or bulk	0 to 1	32 to 34	85	1 to 7 days
Country, smoked	0	32	85	1 to 3 wk
Frankfurters, average	0	32	85	1 to 3 wk
Polish style	0	32	85	1 to 3 wk
Meat (lamb)				
Fresh, average	0 to 1	32 to 34	85 to 90	5 to 12 days
Choice, 67% lean	0	32	85	5 to 12 days
Leg, choice, 83% lean	0	32	95	5 to 12 days
Frozen	-29 to -18	-20 to 0	90 to 95	12 to 18 mo
Meat (poultry)				
Poultry, fresh, average	-2 to 0	28 to 32	95 to 100	1 to 4 wk
Chicken, all classes	-2 to 0	28 to 32	95 to 100	1 to 4 wk
Turkey, all classes	-2 to 0	28 to 32	95 to 100	1 to 4 wk
Duck	-2 to 0	28 to 32	95 to 100	1 to 4 wk
Poultry, frozen	-23 to -18	-10 to 0	90 to 95	12 mo

Table 7: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Rabbit meat, fresh	0 to 1	32 to 34	90 to 95	1 to 5 days
Meat (canned)				
Non-perishable	-1 to 15.5	30 to 50	70 or below	variable
Perishable	-3 to -1	26 to 30	70 or below	variable
Meat (mech. separated)	-29 to -18	-20 to 0		1 to 6 mo
Dairy products				
Butter	0	32	70 to 75	1 mo
Butter, frozen	-23	-10	70 to 75	12 mo
Cheese				
Cheddar	0 to 1	32 to 34	65	12 mo
Blue	0 to 1	32 to 34	65	2 to 3 mo
Brie	0 to 1	32 to 34	65	2 mo
Brick	0 to 1	32 to 34	65	2 to 3 mo
Camembert	0 to 1	32 to 34	65	2 mo
Colby	0 to 3	32 to 38	65	6 mo
Cottage	0 to 1	32 to 34	65	2 to 3 wk
Cream, hot pack	0 to 1	32 to 34	65	4 wk
Limburger	0 to 1	32 to 34	65	2 to 3 mo
Mozzarella	0 to 1	32 to 34	65	6 to 8 wk
Parmesan	0 to 4	32 to 40	65	10 to 24 mo
Past. Process Cheese	0 to 4	32 to 40	65	6 to 10 mo
Past. Proc Cheese Food	0 to 4	32 to 40	65	6 to 10 mo
Romano	0 to 4	32 to 40	65	5 to 12 mo
Roquefort	0 to 1	32 to 34 4034	65	2 to 3 mo
Swiss	0 to 4	32 to 34	65	—
Frozen Dairy Desserts	-32 to -26	-15 to -25	—	5 mo
Milk				
Whole, past, Gr. A	0 to 1	32 to 34	—	2 to 4 mo
Dried, whole	7 to 21	45 to 70	low	6 to 9 mo
Dried, non-fat	7 to 21	45 to 70	low	6 to 9 mo
Evaporated	4	40	—	24 mo
Evaporated, unsweetened	21	70	—	12 mo
Condensed, sweetened	7	40	—	15 mo

Table 7: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Cream, fresh, pasteurized	0 to 2.2	32 to 36		2 wk
Cream, sour	-2 to 0	28 to 32		3 mo
Cream, sweetened	-23	-10		several mo
Whey, dried	21	70	low	12 mo
Eggs				
Dried, white solids	21 to 27	70 to 80	75 max	Indefinite
Dried, whole or yolk solids	4 to 10	40 to 50	75 max	1 to 2 years
Shell	-2 to -0.6	29 to 31	85 to 92	5 to 6 mo
Frozen	0	32	—	1 year plus

Source: *The Refrigeration Research and Education Foundation, 1996; American Society of Heating, Refrigeration, and Air Conditioning Engineers, Inc., 1994.*

Table 8: Recommended Temperature and Relative Humidity, and Approximate Transit and Storage Life for Miscellaneous Products

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Candy				
Milk chocolate	-18 to 0	0 to 32	40	6 to 12 mo
Peanut brittle	-18 to 0	0 to 32	40	1 to 6 mo
Fudge	-18 to 0	0 to 32	65	12 mo
Marshmallows	-18 to 0	0 to 32	65	6 to 9 mo
Other Products				
Alfalfa meal	-18	0	70 to 75	1 year plus
Beer				
Keg	3.3	38	—	6 wk
Bottles, cans, pasteur	4	40	65 max	6 to 8 wk mo
Bottles, cans, non-past	3.3	38	65 max	12 wk
Bakery Products, frozen				
Breads, yeast, frz	-18	0	—	2 to 6 mo to 13 weeks
Breads, quick, frz	-18	0		2 to 6 mo
Cakes, frz	-18	0		2 to 6 mo
Cookies	-18	0		4 to 12 mo
Croissants	-18	0		2 to 4 mo
Dough	-18	0		3 mo
Doughnuts	-18	0		2 to 3 mo
Pastries	-18	0		2 to 3 mo
Pies	-18	0		3 to 12 mo
Canned goods	0 to 16	32 to 60	70	3 years
Cocoa	0 to 4	32 to 40	50 to 70	1 year plus
Coffee, green beans	1.7 to 4.4	35 to 40	40 to 60	2 to 3 mo
Flour	0 to 4.4	32 to 40	—	1 year
Fur and fabrics	1 to 4	34 to 40	45 to 55	several years
Hides	-1 to 2	30 to 36	80 to 90	several years
Honey, comb	5.6 to 6.7	42 to 44	85	1 to 3 mo
Honey, strained	0 to 4.4	32 to 40	85	6 mo
Honey, frozen	-18	0	40	several years
Hops	-4.4 to -2.2	24 to 28	70 to 85	12 mo
Lard, w/o antioxidant	7	45	90 to 95	4 to 8 mo
Maple syrup	-18	0	90 to 95	12 to 14 mo
Nuts	0 to 10	32 to 50	65 to 75	8 to 12 mo

Table 8: Continued

Product	Temperature		Relative Humidity (%)	Approximate Storage Life
	°C	°F		
Oil, vegetable, salad	21	70	—	1 year plus
Margarine	-12 to -8	10 to 18	40 to 60	6 mo
Orange Juice, frz	-18	0	—	1 year
Popcorn, unpopped	0 to 4	32 to 40	85	4 to 6 wk
Yeast, dry	3.9 max	39 max	60 to 70	6 to 12 mo
Yeast, fresh	-1.1 to 0	30 to 32	80 to 90	1 to 2 wk
Tobacco				
Hogshead	10 to 18	50 to 65	50 to 65	1 year
Bales	2 to 4	35 to 40	70 to 85	1 to 2 years
Cigarettes	2 to 8	35 to 46	50 to 55	6 mo
Cigars	2 to 10	35 to 50	60 to 65	2 mo

Source: *American Society of Heating, Refrigeration, and Air Conditioning Engineers, Inc.*

**Table 9: Products Sensitive to Chilling Injury
(when held below their recommended temperature)**

atemoya	grapefruit	plantain
avocados	guava	pomegranates
babaco	haricot vert	potatoes
bananas	jaboticaba	potted plants
beans	jackfruit	pummelo
bitter melon	jicama	pumpkins
black sapote	kiwano	rambutan
boniato	langsats	santol
breadfruit	lemons	sapodilla
calabaza	limes	soursop
calamondin	malanga	squash
canistel	mamey	sugar apple
cantaloup	mangoes	sweet potatoes
carambola	mangosteen	tamarillo
chayote	melons	tamarind
cherimoya	okra	taro root
cranberries	olive	tomatillo
cucumbers	oranges (CA & AZ)	tomatoes
custard apple	papaya	tropical flowers
eggplant	passion fruit	ugli™ tangelo
feijoa	pepino	watermelon
ginger root	peppers	yam
granadilla	pineapples	

Source: *Hardenburg, Watada, and Wang; McGregor.*

**Table 10: Products Susceptible to Freezing Injury
(from one or more light freezings)**

Most Susceptible

apricots	eggplant	peppers, sweet
asparagus	lemons	plums
avocados	lettuce	potatoes
bananas	limes	squash, summer
beans, snap	okra	sweetpotatoes
berries (except cranberries)	peaches	tomatoes
cucumbers		

Moderately Susceptible

apples	cranberries	pears
broccoli, sprouting	grapefruit	peas
cabbage, new	grapes	radishes, w/o tops
carrots w/o tops	onions (dry)	spinach
cauliflower	oranges	squash, winter
celery	parsley	

Least Susceptible

beets w/o tops	kale	rutabagas
brussels sprouts	kohlrabi	salsify
cabbage, mature or savory	parsnips	turnips w/o tops
dates		

The most susceptible products will be injured by one light freezing, moderately susceptible products will recover from one or two light freezings, while least susceptible products can be lightly frozen several times. Fresh products that are lightly frozen should not be handled. Thawing should be done at 4 °C (40 °F).

Source: *Hardenburg, Watada, and Wang.*

Table 11: Top-Icing of Products

(that have high respiration rates, need high relative humidity and benefit from top-ice on top of the load or within individual boxes)

Should Be Top-Iced

beets with tops
broccoli
carrots with tops
corn, sweet
endive
escarole
green onions
parsley
radishes with tops
turnips with tops
watercress
radish greens
spinach
turnip greens
turnips

Can Be Top-Iced

artichokes, globe
beet greens
beets, topped
brussels sprouts
cantaloups
carrots, topped
celeriac
chard
kohlrabi
leeks
mustard greens
parsnips
radishes
rutabagas

Source: *Safeway Stores, Inc.*

Table 12: Moisture Loss Rate of Products
(showing the need for high relative humidity and top-icing)

High Loss Rate

apricots	green onions ¹	peaches
blackberries	guavas	persimmons
broccoli ¹	kohlrabi	pineapples
cantaloups ¹	leafy greens ¹	plums and prunes
chard ¹	lychees	raspberries
cherries	mangoes	strawberries
Chinese vegetables	mushrooms	cut flowers
figs	papayas	vegetables with tops ¹
grapes	parsley ¹	

Medium Loss Rate

avocados	cranberries	pears
artichokes ¹	endive ¹	peas
asparagus	escarole ¹	peppers
bananas	grapefruit	pomegranates
beets ¹	green beans	quinces
brussels sprouts ¹	leeks ¹	radishes ¹
cabbage ¹	lemons	rhubarb
carrots, topped ¹	lettuce	rutabagas ¹
cauliflower, unwrapped	limes	sweet potatoes
celeriac ¹	nectarines	squash, summer (soft shell)
celery ¹	okra	tangerines
coconuts	oranges	tomatoes
corn, sweet ¹	parsnips ¹	yams

Low Loss Rate

apples	garlic	onions, dry
cauliflower, wrapped	ginger root	potatoes
cucumbers, waxed	kiwifruit	pumpkins
eggplant	melons	squash, winter (hard shell)

¹ Can be top-iced.

Source: *Safeway Stores, Inc.*

**Table 13: Products That Are Ethylene Producers or Ethylene-Sensitive
(and should not be mixed, to avoid premature ripening or injury)**

Ethylene Producers

apples	kiwifruit, ripe	persimmons
apricots	mamey	plantains
avocados	mangoes	plums
bananas, ripening	mangosteen	prunes
cantaloups	nectarines	quinces
cherimoya	papayas	rambutan
figs	passion fruit	tomatoes
guavas	peaches	
honeydew melons	pears	

Ethylene Sensitive

bananas, unripe	cut flowers	peas
Belgian endive	eggplant	peppers
broccoli	florist greens	potted plants
brussels sprouts	green beans	spinach
cabbage	kiwifruit, unripe	squash
carrots	leafy greens	sweet potatoes
cauliflower	lettuce	watercress
chard	okra	watermelon
cucumbers	parsley	yams

Source: *Safeway Stores, Inc.; McGregor; Sea-Land Service, Inc.*

**Table 14: Products Which Produce or Absorb Odors
(and should not be mixed)**

Odor produced by	Will be absorbed by
apples	cabbage, carrots, celery, figs, onions, meat, eggs, dairy products
avocados	pineapples
carrots	celery
citrus fruit	meat, eggs, dairy products
ginger root	eggplant
grapes fumigated with sulfur dioxide	other fruits and vegetables
leeks	figs, grapes
onions, dry	apples, celery, pears
onions, green	corn, figs, grapes, mushrooms, rhubarb
pears	cabbage, carrots, celery, onions, potatoes
potatoes	apples, pears
peppers, green	pineapples
"strongly scented vegetables"	citrus fruit

Source: *Hardenburg, Watada, and Wang.*

Table 15: Compatibility Groups

Group 1: Fruits and vegetables, 0 to 2 °C (32 to 36 °F), 90-95 percent relative humidity. Many products in this group produce ethylene.

apples	grapes (without sulfur dioxide)	parsnips
apricots	horseradish	peaches
Asian pears	kohlrabi	pears
Barbados cherry	leeks	persimmons
beets, topped	longan	plums
berries (except cranberries)	loquat	pomegranates
cashew apple	lychee	prunes
cherries	mushrooms	quinces
coconuts	nectarines	radishes
figs (not with apples)	oranges ¹ (FL & TX)	rutabagas
	turnips	

¹Citrus treated with biphenyl may give odors to other products.

Group 2: Fruits and vegetables, 0 to 2 °C (32 to 36 °F), 95-100 percent relative humidity. Many products in this group are sensitive to ethylene.

amaranth ¹	cherries	parsley ¹
anise ¹	corn, sweet ¹	parsnips ¹
artichokes ¹	diakon ¹	peas ¹
asparagus	endive ¹	pomegranate
bean sprouts	escarole ¹	raddichio
beets ¹	grapes (without sulfur dioxide)	radishes ¹
Belgian endive	horseradish	rhubarb
berries (except cranberries)	Jerusalem artichoke	rutabagas ¹
bok choy	kiwifruit	salsify
broccoli ¹	kohlrabi	scorzonera
brussels sprouts ¹	leafy greens	snow peas
cabbage ¹	leeks ¹ (not with figs or grapes)	spinach ¹
carrots ¹	lettuce	turnips ¹
cauliflower	lo bok	water chestnuts
celeriac ¹	mushrooms	watercress ¹
celery ¹	onions, green ¹ (not with figs, grapes, mushrooms, rhubarb, or corn)	

¹These products can be top-iced.

Group 3: Fruits and vegetables, 0 to 2 °C (32 to 36 °F), 65-75 percent relative humidity. Moisture will damage these products.

garlic	onions, dry
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Group 4: Fruits and vegetables, 4.5 °C (40 °F), 90-95 percent relative humidity.

cactus leaves	lemons ²	tamarillo
cactus pears	lychees	tangelos ²
caimito	kumquat	tangerines ²
cantaloups ¹	mandarin ²	Ugli™ tangelo ²
clementine	oranges ² (CA and AZ)	yucca root
cranberries	pepino	

¹Can be top-iced.

²Citrus treated with biphenyl may give odors to other products.

Group 5: Fruits and vegetables, 10 °C (50 °F), 85-90 percent relative humidity. Many of these products are sensitive to ethylene. These products also are sensitive to chilling injury.

beans	kiwano	potatoes, storage
calamondin	malanga	pummelo
chayote	okra	squash, summer (soft shell)
cucumber	olive	tamarind
eggplant	peppers	taro root
haricot vert		

Group 6: Fruits and vegetables, 13 to 15 °C (55 to 60 °F), 85-90 percent relative humidity. Many of these products produce ethylene. These products also are sensitive to chilling injury.

atemoya	ginger root	papayas
avocados	granadilla	passionfruit
babaco	grapefruit	pineapple
bananas	guava	plantain
bitter melon	jaboticaba	potatoes, new
black sapote	jackfruit	pumpkin
boniato	langsats	rambutan
breadfruit	lemons ¹	santol
canistel	limes ¹	soursop
carambola	mamey	sugar apple
cherimoya	mangoes	squash, winter (hard shell)
coconuts	mangosteen	tomatillos
feijoa	melons (except cantaloups)	tomatoes, ripe

¹Citrus treated with biphenyl may give odors to other products.

Group 7: Fruits and vegetables, 18 to 21 °C (65 to 70 °F), 85-90 percent relative humidity.

jicama	tomatoes, mature green	white sapote
pears (for ripening)	watermelon ¹	yams ¹
sweet potatoes ¹		

¹Separate from pears and tomatoes due to ethylene sensitivity.

Group 8: Flowers and florist greens, 0 to 2 °C (32 to 36 °F), 90-95 percent relative humidity.

Flowers

allium	freesia	peony, tight buds
aster, China	gardenia	ranunculus
bouvardia	hyacinth	rose
carnation	iris, bulbous	squill
chrysanthemum	lily	sweet pea
crocus	lily-of-the-valley	tulip
cymbidium orchid	narcissus	

Florist Greens

adiantum (maidenhair)	woodwardia fern	mountain-laurel
cedar	ground pine	rhododendren
dagger and wood	ilex (holly)	salal (lemon leaf)
ferns	juniper	vaccinium (huckleberry)
galax	mistletoe	

Group 9: Flowers and florist greens, 4.5 °C (40 °F), 90-95 percent relative humidity.

Flowers

acacia	feverfew	ornithogalum
alstromeria	forget-me-not	poppy
anemone	foxglove	phlox
aster, China	gaillardia	primrose
buddleia	gerbera	protea
calendula	gladiolus	ranunculus
calla	gloriosa	snapdragon
candytuft	gypsophilla	snowdrop
clarkia	heather	statice
columbine	laceflower	stephanotis
coreopsis	lilac, forced	stevia
cornflower	lupine	stock
cosmos	marigolds	strawflower
dahlia	mignonette	violet
daisies	orchid, cymbidium	zinnia
delphinium		

Florist Greens

adiantum (maidenhair)	hedera	philodendron
asparagus (plumosa, sprenger)	ilex (holly)	pittosporum
buxus (boxwood)	leatherleaf (baker fern)	pothos
camellia	leucothoe, drooping	scotch-broom
croton	magnolia	smilax, southern
dracaena	myrtus (myrtle)	woodwardia fern
eucalyptus		

Group 10: Flowers and florist greens, 7 to 10 °C (45 to 50 °F), 90-95 percent relative humidity.

Flowers

anemone	eucharis	orchid, cattleya
bird-of-paradise	gloriosa	sweet william
camellia	godetia	

Florist Greens

chamaedora	podocarpus	palm
cordyline (ti)		

Group 11: Flowers and florist greens, 13 to 15 °C (55 to 60 °F), 90-95 percent relative humidity.

Flowers

anthurium
ginger

heliconia
orchid, vanda

poinsettia

Florist Greens

dieffenbachia

staghorn fern

Source: *Lipton and Harvey; Hardenburg, Watada, and Wang; McGregor.*

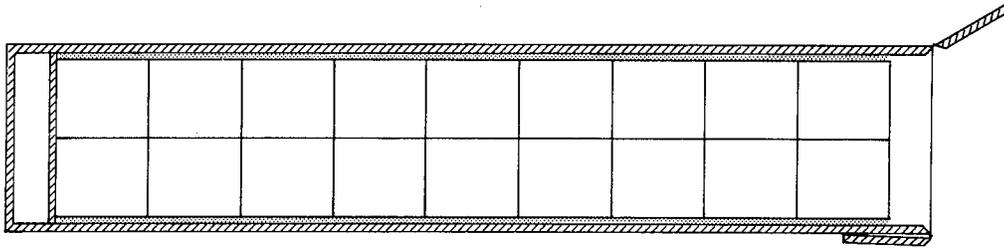


Figure 1: Top view of pattern for straight in-loading of palletized unit loads. Centerline loading of the pallets is recommended in equipment with flat side walls.

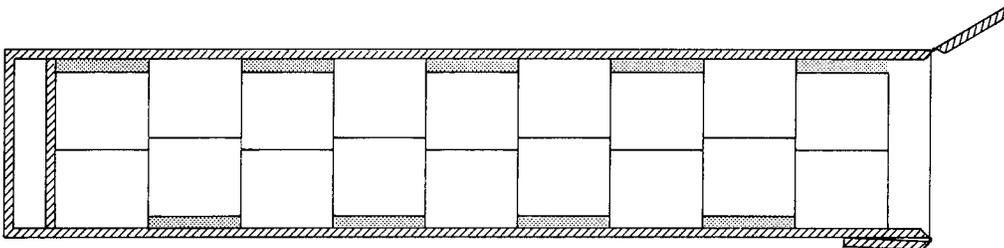


Figure 2: Top view of an offset loading pattern for straight in-loading of palletized unit loads to reduce wall contact in equipment with flat side walls. Centerline loading is preferred.

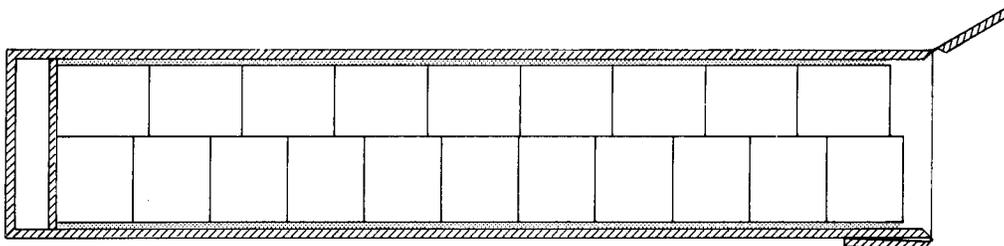


Figure 3: Top view of pattern for alternate loading of pallets used to increase the number of pallet loads when the weight of the product permits. In equipment with top-air delivery and shallow floors, it is necessary that the pallets have adequate openings along all four sides for air circulation and forklift and pallet jack entry. Double-faced block pallets should be used for this type of loading.

Header stack at front of trailer.

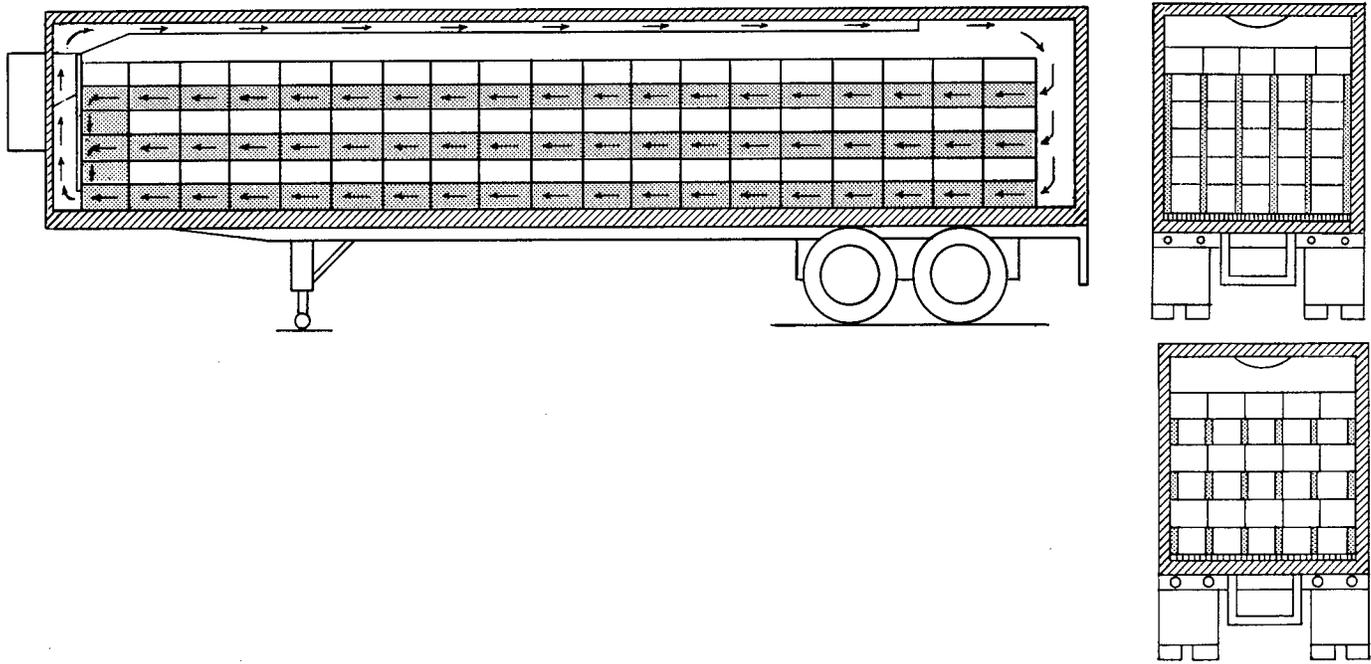


Figure 4: Side, end, and detail views of the recommended air-flow hand loading pattern for trailers or containers with top-air delivery. The boxes must be strong enough to permit offset stacking without crushing. A solid return air bulkhead must be installed at the front to prevent air from bypassing the load. A header stack is needed at the front of the trailer or container to connect the horizontal air channels and allow the air to return to the evaporator. Pallets should be used in equipment with shallow grooved floors.

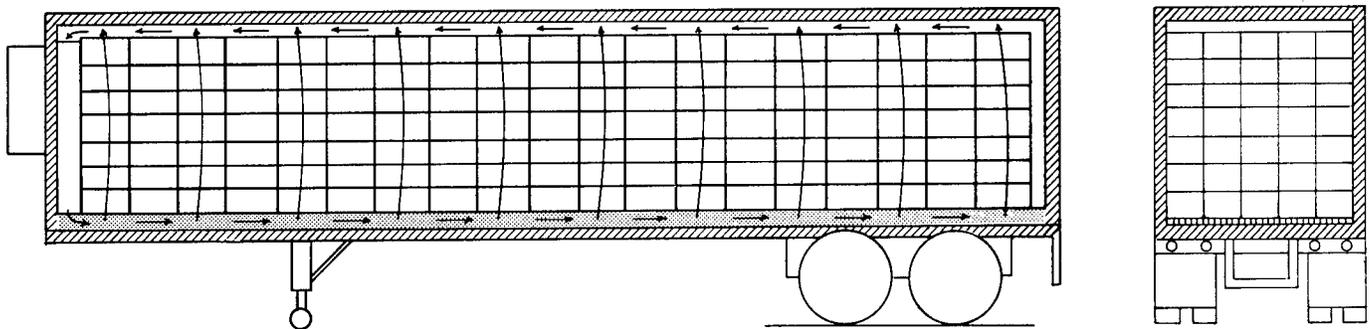


Figure 5: Side and end view of the recommended vertical air-flow hand loading pattern for bottom-air delivery trailers and containers. A solid return air bulkhead is a necessary feature of this system. The floor channels at the rear of the load must be blocked to force air through the load. Many researchers, shippers, and carriers feel that the bottom-air delivery system provides for easier loading and more even product temperatures.

Export Advice and Assistance

Whether a company is in the beginning stages of market research or an experienced exporter, information and assistance are available from a variety of sources. This section lists some of the State and Federal resources available to agricultural exporters by the type of assistance offered. Resources are broken down by State department of agriculture and associated organizations; general market research and market trends; foreign market information; export assistance programs and services; foreign country import requirements; U.S. export requirements; U.S. export inspection, grading, and certification; export transportation; export financing; trade policy; other; and the trade information center.

State Departments of Agriculture

The State Departments of Agriculture and associated organizations are listed first because they are an excellent starting point when looking for assistance on any agricultural trade-related question or issue.

ALABAMA

Department of Agriculture and Industries
Division of Marketing
P.O. Box 3336, Beard Building
Montgomery, AL 36109-0336
Phone: (205) 242-2571
FAX: (205) 240-3135

ALASKA

Department of Natural Resources
Division of Agriculture
P.O. Box 949
Palmer, AK 99645-0949
Phone: (907) 745-7200
FAX: (907) 745-7112

ARIZONA

Department of Agriculture
Office of Commodity Development and Promotion
1688 West Adams
Phoenix, AZ 85007
Phone: (602) 542-0978
FAX: (602) 542-0969

ARKANSAS

Industrial Development Commission
One State Capitol Mall
Little Rock, AR 72201
Phone: (501) 682-1121
FAX: (501) 682-7341
Trade and International Investment Division
Phone: (501) 682-3571
FAX: (501) 324-9856

CALIFORNIA

Department of Food and Agriculture
Agricultural Export Program
1220 N Street, Suite A-280
Sacramento, CA 95814
Phone: (916) 654-0389
FAX: (916) 653-2604

COLORADO

Department of Agriculture
Division of Markets
700 Kipling Street
Suite 4000
Lakewood, CO 80215-5894
Phone: (303) 239-4114
FAX: (303) 239-4125
Email: CdaJimR@aol.com
Web Site:
http://www.state.co.us/gov_dir/ag_dir/mkt_home.html

CONNECTICUT

Department of Agriculture
Marketing & Technology Bureau
165 Capitol Ave., Room 263
Hartford, CT 06106
Phone: (203) 566-4845
FAX: (203) 566-6094
Email: ctdeptag@pcnet.com
Web Site: <http://www.lib.uconn.edu/CDOA/>

DELAWARE

Department of Agriculture
Division of Information, Education & Marketing
2320 South Dupont Highway
Dover, DE 19901
Phone: (302) 739-4811
FAX: (302) 697-6287

FLORIDA

Department of Agriculture and Consumer Services
Division of Marketing and Development
Mayo Building, Room 435
Tallahassee, FL 32399-0800
Phone: (904) 488-4031
FAX: (904) 922-2861

GEORGIA

Department of Agriculture
International Trade Division
340 Agriculture Building, Capitol Square
Atlanta, GA 30334-2001
Phone: (404) 656-3740
FAX: (404) 656-9380

HAWAII

Department of Agriculture
Market Development Branch
1428 South King Street
Honolulu, HI 96814
Phone: (808) 973-9595
FAX: (808) 973-9590
Email: caolive@elele.peacesat.hawaii.edu
Web Site: <http://www.mic.hawaii.edu/hawaiiag>

IDAHO

Department of Agriculture
Division of Marketing & Administration
2270 Old Penitentiary Road
Boise, ID 83712
Phone: (208) 332-8530
FAX: (208) 334-2879
Web Site: <http://www.state.id.us/agri/>

ILLINOIS

Department of Agriculture
Marketing and Promotion
P.O. Box 19281
Springfield, IL 62794-9281
Phone: (217) 782-6675
FAX: (217) 524-5960
Web Site: <http://www.state.il.us/agr/agrhpage.htm>

INDIANA

Office of the Commissioner of Agriculture
150 West Market, Suite 414
Indianapolis, IN 46204
Phone: (317) 233-4459
FAX: (317) 232-4146
Email: cbeckwith@commerce.state.in.us

IOWA

Department of Economic Development
International Division
200 East Grand Ave.
Des Moines, IA 50319
Phone: (515) 242-4743
FAX: (515) 242-4918

KANSAS

Department of Commerce & Housing
Agriculture Products Development Division
700 SW Harrison, Suite 1300
Topeka, KS 66603
Phone: (913) 296-3736
FAX: (913) 296-3776

KENTUCKY

Department of Agriculture
Office for Agricultural Marketing and Product
Promotion
Seventh Floor Capital Plaza Tower
500 Mero Street
Frankfort, KY 40601
Phone: (502) 564-4696
FAX: (502) 564-6527

LOUISIANA

Department of Agriculture and Forestry
International Marketing Division
P.O. Box 3334
Baton Rouge, LA 70821-3334
Phone: (504) 922-1280
FAX: (504) 922-1289
Email: roy_j@ldaf.gen.la.us

MAINE

Department of Agriculture, Food and Rural Resource
Division of Development - Marketing
State House Station 28
Augusta, ME 04333-0028
Phone: (207) 287-3491
FAX: (207) 287-7548
Email: Judy.Powell@State.me.us
Web Site: <http://www.state.me.us/agriculture/home-page.htm>

MARYLAND

Department of Agriculture
Marketing Services
50 Harry S. Truman Parkway
Annapolis, MD 21401-8960
Phone: (410) 841-5770
FAX: (410) 841-5987
Web Site: [Http://www.mda.state.md.us/mda](http://www.mda.state.md.us/mda)

MASSACHUSETTS

Department of Food and Agriculture
Foreign Trade
100 Cambridge Street, 21st Floor
Boston, MA 02202
Phone: (617) 727-3018 ext. 172
FAX: (617) 727-7235
Email: boehlke@state.ma.us
Web Site: <http://www.massgrown.org>

MICHIGAN

Department of Agriculture
Market Development Division
P.O. Box 30017
611 West Ottawa, Fourth Floor
Lansing, MI 48909
Phone: (517) 373-1058
FAX: (517) 335-7071
Email: Yockey@STATE.MI.US

MINNESOTA

Trade Office
1000 World Trade Center
30 East Seventh Street
Saint Paul, MN 55101
Phone: (612) 297-4222
FAX: (612) 296-3555

-or-

Department of Agriculture
Marketing Division
90 West Plato Boulevard
Saint Paul, MN 55107
Phone: (612) 297-2301
FAX: (612) 296-6890
Web Site: <http://www.mda.state.mn.us>

MISSISSIPPI

Department of Agriculture and Commerce
International Trade
P.O. Box 1609
Jackson, MS 39215-1609
Phone: (601) 354-7097
FAX: (601) 354-6001

MISSOURI

Department of Agriculture
Market Development Division
International Marketing Program
P.O. Box 630
1616 Missouri Boulevard
Jefferson City, MO 65102
Phone: (573) 751-4338
FAX: (573) 751-2868

MONTANA

Department of Agriculture
Agricultural Development Division
P.O. Box 200201
Helena, MT 59620-0201
Phone: (406) 444-2402
FAX: (406) 444-5409

NEBRASKA

Department of Agriculture
Agricultural Promotion and Development Division
301 Centennial Mall South
P.O. Box 94947
Lincoln, NE 68509-4947
Phone: (402) 471-4876
FAX: (402) 471-2759

NEVADA

Department of Business and Industry
Division of Agriculture
Administrator
350 Capitol Hill Ave.
Reno, NV 89502
Phone: (702) 688-1180
FAX: (702) 688-1178

NEW HAMPSHIRE

Department of Agriculture
Division of Agricultural Development
P.O. Box 2042
Concord, NH 03302-2042
Phone: (603) 271-3788
FAX: (603) 271-1109

NEW JERSEY

Department of Agriculture
Division of Markets
CN 330
Trenton, NJ 08625
Phone: (609) 292-8856
FAX: (609) 984-2508

NEW MEXICO

Department of Agriculture
Marketing and Development Division
P.O. Box 30005, Department 5600
3190 South Espina - NMSU
Las Cruces, NM 88003-8005
Phone: (505) 646-4929
FAX: (505) 646-3303

NEW YORK

Department of Agriculture and Markets
Division of Agricultural Protection and Development
Services
1 Winners Circle
Albany, NY 12235-0001
Phone: (518) 457-7076
FAX: (518) 457-2716
Email: nysagmk@emi.com

NORTH CAROLINA

Department of Agriculture
Division of Marketing
P.O. Box 27647
Raleigh, NC 27611
Email: britt_cobb@ncdamail.agr.state.nc.us
Web Site: <http://www.agr.state.nc.us>

-or-

Division of Marketing
2 West Edenton Street
Raleigh, NC 27601
Phone: (919) 733-7912
FAX: (919) 733-0999

NORTH DAKOTA

Department of Agriculture
Marketing Division
600 East Boulevard, Sixth Floor
Bismarck, ND 58505-0020
Phone: (701) 328-2231
FAX: (701) 328-4567
Web Site: <http://www.state.nd.us/agr>

OHIO

Department of Agriculture
Division of Markets
8995 East Main Street
Columbus, OH 43068
Phone: (614) 466-6198
FAX: (614) 644-5017
Email: wwwagri@ohio.gov
Web Site: <http://www.agri.ohio.gov/agri/>

OKLAHOMA

Department of Agriculture
International Marketing Section
2800 North Lincoln Boulevard
Oklahoma City, OK 73105-4298
Phone: (405) 521-3864
FAX: (405) 521-4912
Email: okagmkt@icon.net
Web Site: <http://www.state.ok.us/~okag/aghom.html>

OREGON

Department of Agriculture
Agricultural Development and Marketing Division
121 SW Salmon Street, Suite 240
Portland, OR 97204-2987
Phone: (503) 229-6734
FAX: (503) 229-6113
Web Site: <http://www.oda.state.or.us>

PENNSYLVANIA

Department of Agriculture
Domestic and International Trade Division
2301 North Cameron Street, Room 310
Harrisburg, PA 17110-9408
Phone: (717) 783-3181
FAX: (717) 787-1858

PUERTO RICO

Department of Agriculture
Agricultural Services and Development Administration,
Marketing Program
Box 9200
Santurce, PR 00908-0200
Phone: (787) 722-5443
FAX: (787) 723-4751

RHODE ISLAND

Department of Environmental Management
Division of Agriculture
Roger Williams Building
22 Hayes Street
Providence, RI 02908-5025
Phone: (401) 277-2781
FAX: (401) 277-6047

SOUTH CAROLINA

Department of Agriculture
International Trade
Wade Hampton State Office Bldg.
P.O. Box 11280
Columbia, SC 29211
Phone: (803) 734-2200
FAX: (803) 734-2192

SOUTH DAKOTA

Department of Agriculture
Division of Agricultural Marketing
445 East Capitol
Pierre, SD 57501-3369
Phone: (605) 773-3375
FAX: (605) 773-3481

TENNESSEE

Department of Agriculture
Marketing Division
P.O. Box 40627, Melrose Station
Nashville, TN 37204
Phone: (615) 360-0160
FAX: (615) 360-0194

TEXAS

Department of Agriculture
Marketing and Agribusiness Development
P.O. Box 12847
Austin, TX 78711
Phone: (512) 463-7624
FAX: (512) 463-9968
Web Site: <http://www.agr.state.tx.us>

UTAH

Department of Agriculture
Marketing and Enhancement
350 North Redwood Road
Salt Lake City, UT 84114-6500
Phone: (801) 538-7108
FAX: (801) 538-7126

VERMONT

Department of Agriculture, Food, and Markets
Agricultural Development Division
116 State Street
Montpelier, VT 05620-2901
Phone: (802) 828-2416
FAX: (802) 828-2361
Email: stevej@agr.state.vt.us

VIRGIN ISLANDS

Department of Agriculture
7944 Estate Dorothea
St. Thomas, Virgin Islands 00802
Phone: (809) 774-5182
FAX: (809) 774-1823

VIRGINIA

Department of Agriculture and Consumer Services
Office of International Marketing
1100 Bank Street, Suite 915
Richmond, VA 23219
Phone: (804) 786-3953
FAX: (804) 225-4434

WASHINGTON STATE

Department of Agriculture
International Marketing
1111 South Washington Street
P.O. Box 42560
Olympia, WA 98504-2560
Phone: (360) 902-1915
FAX: (360) 902-2089

WEST VIRGINIA

Department of Agriculture
Marketing and Development Division
1900 Kanawha Boulevard East
Charleston, WV 25305-0178
Phone: (304) 558-2210
FAX: (304) 558-2270
Email: williams@wvlc.wvnet.edu

WISCONSIN

Department of Agriculture, Trade, and Consumer
Protection
Marketing Division
2811 Agriculture Drive
P.O. Box 8911
Madison, WI 53708-8911
Phone: (608) 224-5100
International Agribusiness Center
Phone: (608) 224-5117
FAX: (608) 224-5111

WYOMING

Department of Agriculture
Marketing Division
2219 Carey Ave.
Cheyenne, WY 82002-0100
Phone: (307) 777-6577
FAX: (307) 777-6593

National Association of State Departments of
Agriculture
1126 15th Street, N.W., Suite 1020
Washington, DC 20005
Phone: (202) 296-9680
Fax: (202) 296-9686
Email: nasda@patriot.net

Eastern U.S. Agricultural and Food Export Council,
Corp.
1007 Mumma Road
Wormleysburg, PA 17043
Phone: (717)731-6017
Fax: (717) 731-6019
Email: 75774.1341@compuserve.com

Mid-America International Agri-Trade Council
400 West Erie Street, Suite 100
Chicago, IL 60201
Phone: (312) 944-3030
Fax: (312) 944-1144
Email: 76035.3336@compuserve.com

Southern United States Trade Association
#2 Canal Street, Suite 1540
New Orleans, LA 70130-1408
Phone: (504) 568-5986
Fax (504) 568-6010
Email: susta@susta.org

Western U.S. Agricultural Trade Association
13101 N.E. Highway 99
Vancouver, WA 98686-2786
Phone: (360) 574-2627
Fax: (360) 574-7083
Email: 75321.3436@compuserve.com
Web Site: <http://www.wusata.org>

General Market Research and Market Trends

Agricultural publications, journals, maps, micro-forms, films, videocassettes, filmstrips, slides, microcomputer software, and computerized databases

USDA
National Agricultural Library
10301 Baltimore Boulevard
Beltsville, MD 20705
Phone: (301) 504-5479
FAX: (301) 504-6927
e-mail: agref@nal.usda.gov

USDA
Agricultural Trade and Marketing Information Center
National Agricultural Library
10301 Baltimore Boulevard, Room 304
Beltsville, MD 20705-2351
Phone: (301) 504-5509 or (301) 504-5414
FAX: (301) 504-5472

Foreign agriculture statistics and trade research

ERS-NASS
Information Division
341 Victory Drive
Herndon, VA 22070
Phone: (800) 999-6779 orders only
Phone: (703) 834-0125 customer service and foreign
addresses
FAX: (703) 834-0110

Foreign Market Information

General market overview

USDA
FAS, Trade Assistance and Promotion Office
1400 Independence Ave. SW
Room 4939, South Building or Stop 1052
Washington, DC 20250-1052
Phone: (202) 720-7420
FAX: (202) 690-4374

USDA
FAS, AgExport Services Division
AgExport Connections
1400 Independence Ave. SW
Room 4939, South Building or Stop 1052
Washington, DC 20250-1052
Phone: (202) 720-7420
FAX: (202) 690-4374

Commodity reports

USDA
FAS, Dairy, Livestock, and Poultry Division
1400 Independence Ave. SW
Room 5935, South Building, or Stop 1044
Washington, DC 20250-1044
Phone: (202) 720-8031
FAX: (202) 720-0617

USDA
FAS, Forest and Fishery Products Division
1400 Independence Ave. SW
Room 4647, South Building or Stop 1047
Washington, DC 20250-1047
Phone: (202) 720-0638
FAX: (202) 720-8461

USDA
FAS, Grain and Feed Division
1400 Independence Ave. SW
Room 5603, South Building or Stop 1048
Washington, DC 20250-1048
Phone: (202) 720-6219
FAX: (202) 720-0340

USDA
FAS, AgExport Services Division
1400 Independence Ave. SW
Room 4939, South Building or Stop 1052
Washington, DC 20250-1052
Phone: (202) 720-7420
FAX: (202) 690-4374

USDA
FAS, Horticultural and Tropical Products Division
1400 Independence Ave. SW
Stop 1049
Washington, DC 20250-1049
Phone: (202) 720-6590
FAX: (202) 720-3799

USDA
FAS, Marketing Operations Staff
1400 Independence Ave. SW
Room 4932, South Building or Stop 1042
Washington, DC 20250-1042
Phone: (202) 720-4327
FAX: (202) 720-8461

USDA
FAS, Cotton, Oilseeds, Tobacco and Seeds Division
1400 Independence Ave. SW
Room 5932, South Building
Washington, DC 20250-1000
Phone: (202) 720-9516
FAX: (202) 720-0965

USDA
FAS, Productions Estimates and Crop Assessment
Division
1400 Independence Ave. SW
Room 6053, South Building or Stop 1045
Washington, DC 20250-1045
Phone: (202) 720-0888
FAX: (202) 720-8880

Export Assistance Programs and Services

Export assistance high-value consumer food products

USDA
FAS, Trade Assistance and Promotion Office
1400 Independence Ave. SW
Room 4939, South Building or Stop 1052
Washington, DC 20250-1052
Phone: (202) 720-7420
FAX: (202) 690-4374

Information services—"AgExport Action Kit," trade leads, buyer alert, foreign buyer lists

USDA
FAS, AgExport Services Division
AgExport Connections
1400 Independence Ave. SW
Room 4939, South Building or Stop 1052
Washington, DC 20250-1052
Phone: (202) 720-7420
FAX: (202) 690-4374

International trade shows

USDA
FAS, International Trade Shows
1400 Independence Ave. SW
Room 4939, South Building or Stop 1052
Washington, DC 20250-1052
Phone: (202) 720-7420
FAX: (202) 690-4374

Commodity marketing programs

USDA
FAS, Dairy, Livestock, and Poultry Division
1400 Independence Ave. SW
Room 5935, South Building or Stop 1044
Washington, DC 20250-1044
Phone: (202) 720-8031
FAX: (202) 720-0617

USDA
FAS, Forest and Fishery Products Division
1400 Independence Ave. SW
Room 4647, South Building or Stop 1047
Washington, DC 20250-1047
Phone: (202) 720-0638
FAX: (202) 720-8461

USDA

FAS, Grain and Feed Division
1400 Independence Ave. SW
Room 5603, South Building or Stop 1048
Washington, DC 20250-1048
Phone: (202) 720-6219
FAX: (202) 720-0340

USDA

FAS, AgExport Services Division
1400 Independence Ave. SW
Room 4939, South Building or Stop 1052
Washington, DC 20250-1052
Phone: (202) 720-7402
FAX: (202) 690-4374

USDA

FAS, Horticultural and Tropical Products Division
1400 Independence Ave. SW
Stop 1049
Washington, DC 20250-1049
Phone: (202) 720-6590
FAX: (202) 720-3799

USDA

FAS, Marketing Operations Staff
1400 Independence Ave. SW
Room 4932, South Building or Stop 1042
Washington, DC 20250-1042
Phone: (202) 720-4327
FAX: (202) 720-8461

USDA

FAS, Cotton, Oilseeds, Tobacco and Seeds Division
1400 Independence Ave. SW
Room 5932, South Building
Washington, DC 20250-1000
Phone: (202) 720-9516
FAX: (202) 720-0965

USDA

FAS, Productions Estimates and Crop Assessment
Division
1400 Independence Ave. SW
Room 6053, South Building or Stop 1045
Washington, DC 20250-1045
Phone: (202) 720-0888
FAX: (202) 720-8880

Foreign Country Import Requirements

Plant import requirements—EXCERPT (includes endangered and threatened plants protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES))

EXCERPT subscription
Purdue University
CERIS/EXCERPT
1231 Cumberland Ave., Suite A
West Lafayette, IN 47906-1317
Phone: (317) 494-6616
Fax: (317) 494-9727
e-mail: cerisnet@ceris.purdue.edu

USDA

APHIS, Export Certification Unit
4700 River Road, Unit 139
Riverdale, MD 20737
Phone: (301) 734-8537
Fax: (301) 734-5786
Web site: <http://www.aphis.usda.gov/export/>

APHIS Contact Point Officers (CPO's) (organized by States and then by areas if appropriate). Those CPO's who are asterisked (*) can also be contacted for questions relating to the export of protected plants.

ALABAMA

A designated port for exporting logs and lumber from trees listed in 50 CFR 17.12 or 23.23

Contact Point Officer
Alabama State Docks, Bldg. 50 Rm. 109
P.O. Box 1413
Mobile, AL 36633
Phone: (205) 441-6185
FAX: (205) 441-6181

ALASKA

Contact Point Officer
P.O. Box 190191
Anchorage, AK 99519-0191
Phone: (907) 243-1496
FAX: (907) 243-7203

ARIZONA

*Ports of Nogales, Douglas, and Tucson; Counties of Cochise, Graham, Pima, and Santa Cruz; and a designated port for exporting all ESA and CITES plants.

*Contact Point Officer
9 North Grand Ave., Room 2214
Nogales, AZ 85621
Phone: (520) 287-4783, 84
FAX: (520) 287-6941

*Port of San Luis and Counties of LaPaz, Mohave, and Yuma

Contact Point Officer
U.S. Border Station
P.O. Box 37
San Luis, AZ 85349
Phone: (520) 627-2836
FAX: (520) 627-3613

*Port of Phoenix; Counties of Gila, Maricopa, Navaho, Pinal, and Yavapai; and first contact for State cooper-
aters

Contact Point Officer
3300 Sky Harbor Boulevard
Sky Harbor Airport
Phoenix, AZ 85034
Phone: (602) 379-4028
FAX: (602) 379-6007

ARKANSAS

Contact Point Officer
Three Financial Center
Suite 100A, 900 S. Shackelford Rd.
Little Rock, AR 72211-3861
Phone: (501) 324-5258
FAX: (501) 225-5823

CALIFORNIA

*All Northern and Central Counties in CA, including Kern Co., a designated port (San Francisco) for exporting all ESA and CITES plants

*Contact Point Officer
389 Oyster Point Blvd. Suite 2
South San Francisco, CA 94080
Phone: (415) 876-9093
FAX: (415) 876-9008

*Long Beach, plus Orange County

Contact Point Officer
11 Golden Shore, Suite 460
Long Beach, CA 90802
Phone: (310) 980-4216

*Southern California Counties of San Luis Obispo, Santa Barbara, Ventura, and Los Angeles; a designat-
ed port (Los Angeles) for exporting all ESA and CITES
plants

Contact Point Officer
9650 S. La Cienega Blvd.
Inglewood, CA 90301
Phone: (310) 215-2120, 2148
FAX: (310) 215-2163

*Southeastern Counties of Mono, Inyo, San Bernadino, Riverside, Imperial, and San Diego; a designated port
(San Diego) for exporting all ESA and CITES plants

*Contact Point Officer
P.O. Box 434419
San Diego, CA 92143-4419
Phone: (619) 661-3316
FAX: (619) 661-3047

COLORADO

Contact Point Officer
555 S. Howes, Suite 200
Ft. Collins, CO 80521
Phone: (970)490-7888
FAX: (970) 490-7899

CONNECTICUT

Contact Point Officer
308 Highlander Way
Manchester, NH 03103
Phone: (603) 666-7445
FAX: (603) 644-2689

DELAWARE

Contact Point Officer
Building 500
Dover AFB, DE 19902-5000
Phone: (302) 677-4093
FAX: (302) 734-7814

FLORIDA

*Counties of Alachua, Baker, Bay, Bradford, Calhoun, Clay, Columbia, Duval, Escambia, Flagler, Franklin, Gadsden, Gilchrist, Gulf, Hamilton, Homes, Jacson, Jefferson, Lafayette, Leon, Liberty, Madison, Nassau, Okaloosa, Putnam, St. John's, Santa Rosa, Suwannee, Taylor, Union, Wakulla, Walton, and Washington

Contact Point Officer
4080 Woodcock Drive, Suite 109
Jacksonville, FL 32207
Phone: (904) 396-2363
FAX: (904) 396-1741

*Counties of Charlotte, Citrus, Collier, De Soto, Dixie, Blades, Hardee, Hendry, Hernando, Highlands, Lee, Levy, Manatee, Marion, Okeechobee, Osceola, Paco, Polk, Sarasota, and Sumpter

Contact Point Officer
1015 17th Street
Palmetto, FL 34221
Phone: (813) 722-7307
FAX: (813) 722-7797

*County of Brevard

Contact Point Officer
9012 Herring Street
Mid-Florida Freezer Complex
Cape Canaveral, FL 32920
Phone: (407) 648-6856
FAX: (407) 783-3766

*Counties of Hillsborough and Pinellas

Contact Point Officer
4951-B East Adamo Drive Suite 220
Tampa, FL 33605
Phone: (813) 228-2121
FAX: (813) 288-2441

*County of Palm Beach

Contact Point Officer
4 East Port Road, Suite 112
Riviera Beach, FL 33404
Phone: (407) 844-9935
FAX: (407) 845-9110

*Counties of Indian River and St. Lucie

Contact Point Officer
St. Lucie County International Airport
2994 Aviation Way
Ft. Pierce, FL 34946
Phone: (407) 464-1038
FAX: (407) 464-1126

*Counties of Broward, Dade (except the Port of Miami), and Monroe

Contact Point Officer
1800 Eller Drive, Suite 220
Ft. Lauderdale, FL 33316
Phone: (305) 765-1432
FAX: (305) 763-3929

*Counties of Lake, Orange, Seminole, and Volusia

Contact Point Officer
9317 Tradesport Drive
Orlando, FL 32827
Phone: (407) 648-6860
FAX: (407) 648-6859

*Port of Miami and a designated port for exporting all ESA and CITES plants

*Contact Point Officer
3500 N.W. 62nd Ave.
Miami, FL 33159
Phone: (305) 526-2825
FAX: (305) 871-4205

GEORGIA

*All the northern counties including Burke, Crisp, Dodge, Emanuel, Jenkins, Laurens, Steward, Sumter, Treutlen, Webster, Wilcox, and a designated port (Atlanta) for exporting American gingseng

Contact Point Officer
Atlanta Perishables Building
1270 Woolman Place
Atlanta, GA 30320
FAX: (404) 763-7108

*Southern counties including Ben Hill, Bullock, Candler, Lee, Montgomery, Quitman, Randolph, Screven, Telfair, Tattnall, Terrell, Toombs, Turner, Wheeler, and Worth. A designated port for exporting logs and lumber from trees listed in 50 CFR 17.12 or 23.23

Contact Point Officer
210 Barnard St., Room A-311
Savannah, GA 31401
Phone: (912) 652-4366
FAX: (912) 652-4086

GUAM

Contact Point Officer
P.O. Box 8769
Tamuning, GU 96911-2769
Phone: (671) 472-7480
FAX: (671) 747-6029

HAWAII

*Island of Oahu a designated port for exporting all ESA and CITES plants.

*Contact Point Officer
300 Rodgers Blvd., #57
Honolulu, HI 96819-1897
Phone: (808) 861-8490
FAX: (808) 861-8499

*Eastern half of the Island of Hawaii—divided by a diagonal line from Honokaa to Kau. The Hilo work unit covers the east, and Kona work unit covers the west. Also Hilo is a designated port for exporting Orchidaceae

Contact Point Officer
Hilo International Airport
Hilo, HI 96720
Phone: (808) 935-1049
FAX: (808) 935-7331

*Islands of Maui, Molokai, and Lanai

Contact Point Officer
Kahului Airport, Box 11
Kahului, HI 96732
Phone: (808) 877-8757
FAX: (808) 877-9086

*Western half of the Island of Hawaii—divided by a diagonal line from Honokaa to Kau. The Hilo work unit covers the east, and the Kona work unit covers the west.

Contact Point Officer
P.O. Box 2549
Kailua-Kona, HI 96740
Phone: (808) 326-1252
FAX: (808) 329-3756

*Island of Kauai

Contact Point Officer
3901 Mokulele Loop
Lihue Airport
Lihue, HI 96766
Phone: (808) 245-2977, 2831
FAX: (808) 246-9464

IDAHO

Contact Point Officer
1830 Airport Way
Boise, ID 83707
Phone: (208) 334-9441
FAX: (208) 334-9069

ILLINOIS

A designated port (Chicago) for exporting Orchidaceae and American ginseng

*Contact Point Officer
O'Hare Int'l Arrivals Bldg., T.5
Chicago, IL 60666-0192
Phone: (312) 894-2920
FAX: (312) 894-2927

INDIANA

Contact Point Officer
200-B West Washington
P.O. Box 113
Frankfort, IN 46041-0113
Phone: (317) 654-7792
FAX: (317) 654-8236

IOWA

Contact Point Officer
Des Moines Municipal Airport
Terminal Building, Room 202
Des Moines, IA 50321
Phone: (515) 285-7044
FAX: (515) 285-7524

KANSAS

Contact Point Officer
444 S. E. Quincy rm. 136
Topeka, KS 66683
Phone: (913) 295-2840

KENTUCKY

Contact Point Officer
P.O. Box 18402
Erlanger, KY 41018
Phone: (606) 767-7076
FAX: (606) 767-7074

LOUISIANA

*Port of New Orleans (Federal) and a designated port
for exporting all ESA and CITES plants

Contact Point Officer
501 Magazine St. Rm. 1047
New Orleans, LA 70130
Phone: (504) 589-6731
FAX: (504) 589-4111

*Contact Point Officer
777 Florida St., Rm. 175
Baton Rouge, LA 70801
Phone: (504) 389-0201
FAX: (504) 382-2046

MAINE

Contact Point Officer
308 Highlander Way
Manchester, NH 03103
Phone: (603) 666-7445
FAX: (603) 644-2689

MARYLAND

A designated port (Baltimore) for exporting American
ginseng and for exporting logs and lumber from trees
listed in 50 CFR 17.12 or 23.23

*Contact Point Officer
2200 Borening Highway, Room 140
Baltimore, MD 2124
Phone: (410) 631-0075
FAX: (410) 631-0083

MASSACHUSETTS

Contact Point Officer
308 Highlander Way
Manchester, NH 03103
Phone: (603) 666-7445
FAX: (603) 644-2689

MICHIGAN

A designated port (Detroit) for exporting ESA and
CITES plants to Canada

Contact Point Officer
International Terminal, Room 228
Metropolitan Airport
Romulus, MI 48242
Phone: (313) 942-9005
FAX: (313) 942-7691

MINNESOTA

Contact Point Officer
Federal Building, Room 156
212 Third Ave., South
Minneapolis, MN 55401-2556
Phone: (612) 334-4194
FAX: (612) 334-4196

MISSISSIPPI

A designated port for exporting logs and lumber from
trees listed in 50 CFR 17.12 or 23.23

Contact Point Officer
One Government Plaza
2909 13th Street, Suite 314
Gulfport, MS 39501
Phone: (601) 868-1170
FAX: (601) 868-1215

MISSOURI

State and Federal

Contact Point Officer
P.O. Box 20085
Kansas City, MO 64195
Phone: (816) 243-5998
FAX: (816) 243-5538

MONTANA

Contact Point Officer
Plaza Office Building, A-5
1629 Ave. D
Billings, MT 59102
Phone: (406) 657-6282
FAX: (406) 657-6293

NEBRASKA

State and Federal

Contact Point Officer
5940 S. 58th Street
P.O. Box 81866
Lincoln, NE 68501
Phone: (402) 434-2345
FAX: (402) 434-2330

NEVADA

Contact Point Officer
1550 S. Wells Ave., Rm. 204
Reno, NV 89502
Phone: (702) 784-5701
FAX: (702) 784-5468

NEW HAMPSHIRE

Contact Point Officer
308 Highlander Way
Manchester, NH 03103
Phone: (603) 666-7445
FAX: 603) 644-2689

NEW JERSEY

Contact Point Officer
Mercer Corporate Park
320 Corporate Blvd.
Robbinsville, NJ 08691
Phone: (609) 259-8649
FAX: (609) 259-8651
NEW MEXICO

State and Federal

Contact Point Officer
P.O. Box 630
Columbus, NM 88029
Phone: (505) 531-2714
FAX: (505) 531-2758

NEW YORK

*Except New York City A designated port (Rouses Point) for exporting ESA and CITES plants to Canada

Contact Point Officer
P.O. Box 278
Deliveries: St. John's Border
Station, Route 9B, Rm. 118
Rouses Point, NY 12979-0278
Phone: (518) 297-5391
FAX: (518) 297-2070

*J. F. Kennedy International Airport and a designated port for exporting all ESA and CITES plants

Contact Point Officer
Plant Inspection Station
J.F. Kennedy International Airport
Bldg. 77, Room 1-27
Jamaica, NY 11430
Phone: (718) 553-1732
FAX: (718) 553-0060

*Contact Point Officer
J.F. Kennedy International Airport
Cargo Operations, Bldg. 77, Rm. M-46
Jamaica, NY 11430
Phone: (718) 553-1734
FAX: (718) 553-0048

*Port of New York and a designated port for exporting all ESA and CITES plants

*Contact Point Officer
Federal Building, Section 121
850 Third Ave.
Brooklyn, NY 11232-1507
Phone: (718) 965-5640
FAX: (718) 965-5556

NORTH CAROLINA

Contact Point Officer
Federal Building, Room 316
P.O. Box 28
Goldsboro, NC 27533
Phone: (919) 735-1941
FAX: (919) 735-0819

NORTH DAKOTA

Contact Point Officer
P.O. Box 2157
220 E. Rosser Ave., Room 321
Bismarck, ND 58502
Phone: (701) 250-4473
FAX: (701) 250-4640

OHIO

Contact Point Officer
Atrium Office Plaza, Suite 516A
668 Euclid Ave.
Cleveland, OH 44114-3004
Phone: (216) 522-4869
FAX: (216) 522-4863

OKLAHOMA

State and Federal

Contact Point Officer
6501 E. Apache Rm 206A
Tulsa, OK 74115
Phone: (918) 832-4130
FAX: (918) 832-4131

Mailing address
P.O. Box 580776
Tulsa, OK 74158

OREGON

A designated port for exporting logs and lumber from
trees listed in 50 CFR 17.12 or 23.23
Contact Point Officer
Airport Business Center
6135 NE 80th Ave., Suite A-5
Portland, OR 97218-4033
Phone: (503) 326-2814
FAX: (503) 326-2969

PENNSYLVANIA

Contact Point Officer
Pittsburgh International Airport
P.O. Box 12406
Int'l Arrivals Area
Pittsburgh, PA 15231
Phone: (412) 355-2566
FAX: (412) 355-2568

PUERTO RICO

*All PPQ offices of Puerto Rico and U.S. Virgin Islands
and a designated port for exporting all ESA and CITES
plants

*Contact Point Officer
Luis Munoz Marin Inter. Airport
San Juan, PR 00937
Phone: (809) 253-4505
FAX: (809) 253-4514

RHODE ISLAND

Contact Point Officer
308 Highlander Way
Manchester, NH 03103
Phone: (603) 666-7445
FAX: (603) 644-2689

SOUTH CAROLINA

A designated port for exporting logs and lumber from
trees listed in 50 CFR 17.12 or 23.23

Contact Point Officer
334 Meeting Street, Room 513
Charleston, SC 29403
Phone: (803) 727-4521
FAX: (803) 727-4111

SOUTH DAKOTA
Contact Point Officer
314 S. Henry Street, Suite 200
Pierre, SD 57501
Phone: (605) 224-1713, 6316
FAX: (605) 224-0172

TENNESSEE

Contact Point Officer
Harvey P. Gasaway Building
322 Knapp Boulevard, Suite 101
P.O. Box 270097
Brentwood, TN 37227
Phone: (615) 781-5087
FAX: (615) 275-1904

TEXAS

*Austin, Waco, College Station, Victoria and Texas
Department of Agriculture (TDA) North Regional Office
Dallas TX, and TDA South Central Regional Office San
Antonio, TX

Contact Point Officer
903 San Jacinto Blvd. Suite 270
Austin, TX 78701
Phone: (512) 916-5241
FAX: (512) 916-5243

*Ports of Brownsville and Hidalgo

Contact Point Officer
1500 E. Elizabeth & Int'l. Blvd.
Room 224, Border Services Bldg.
Brownsville, TX 78520
Phone: (512) 548-2543
FAX: (512) 548-2724

*Harlingen and TDA Valley Regional Office San Juan,
TX

Contact Point Officer
213 South H Street
P.O. Box 531539
Harlingen, TX 78553-1539
Phone: (210) 427-8527
FAX: (210) 427-8528

*Lubbock, and TDA West Texas Regional Office
Lubbock TX

Contact Point Officer
Federal Building Rm 122
P.O. Box 216
Lubbock, TX 79401
Phone: (806) 743-7633
FAX: (806) 742-7663

*Laredo and San Antonio
Contact Point Officer
New Border Station, Rm. 505
Lincoln-Juarez Bridge Bldg. 5
P.O. Box 277
Laredo, TX 78042-0277
Phone: (210) 726-2225
FAX: (210) 726-2322

*El Paso and Eagle Pass

Contact Point Officer
P.O. Box 1497
Santa Teresa, NM 88008
Phone: (505) 589-2355
FAX: (505) 589-0332

*Houston, Galveston, Dallas and TDA Gulf Coast
Regional Office Houston, TX

Contact Point Officer
1717 E. Loop, 610 N. Suite 140
Houston, TX 77029
Phone: (713) 653-3131
FAX: (713) 671-0601

UTAH

Contact Point Officer
1860 W. Alexander, Suite B
West Valley City, UT 84119
Phone: (801) 975-3310
FAX: (801) 975-3313

VERMONT

Contact Point Officer
308 Highlander Way
Manchester, NH 03103
Phone: (603) 666-7445
FAX: (603) 644-2689

VIRGINIA

A designated port for exporting logs and lumber from trees listed in 50 CFR 17.12 or 23.23

Contact Point Officer
Federal Building, Room 331
200 Granby Mall
Norfolk, VA 23510-0811
Phone: (804) 441-3211
FAX: (804) 441-6247
WASHINGTON

*A designated port for exporting all ESA and CITES plants

*Contact Point Officer
16215 Air Cargo Road, Suite 112
Sea-Tac International Airport
Seattle, WA 98158-1301
Phone: (206) 764-6547, 6548
FAX: (206) 764-3825

WEST VIRGINIA

Contact Point Officer
Route 1, Box 142
Ripley, WV 25271-9724
Phone: (304) 372-8590
FAX: (304) 372-8592

WISCONSIN

A designated port (Milwaukee) for exporting American ginseng

*Contact Point Officer
Airport Systems
201 Air Cargo Way
Milwaukee, WI 53207
Phone: (414) 744-6601
FAX: (414) 744-6662

WYOMING

Contact Point Officer
504 West 17th Street, Suite 200
Cheyenne, WY 82001
Phone: (307) 772-2323
FAX: (307) 772-2780

Animal health requirements

USDA
APHIS, Veterinary Services
National Center for Import and Export
4700 River Road, Unit 38
Riverdale, MD 20737
Phone: (301) 734-3294
Fax: (301) 734-6402
Email: vsncie@aphis.usda.gov
Web site: <http://www.aphis.usda.gov/export/>

Meat and poultry foreign import requirements

USDA
FSIS, International Programs
Export Coordination Division
1400 Independence Ave. SW
Room 0114, South Building
Washington, DC 20250
Phone: (202) 501-6022
Fax: (202) 501-6929

Foreign import technical requirements-food additives, labels, pesticide residues, and food sanitation

USDA
FAS, International Trade Policy
Office of Food Safety and Technical Services
1400 Independence Ave. SW
Room 5545, South Building
Washington, DC 20550-1000
Phone: (202) 720-1301
FAX: (202) 690-0677

Seafood and aquaculture

U.S. Department of Commerce
Inspection Services Division
National Marine Fisheries Service (NMFS)
1315 East-West Highway
Silver Spring, MD 20910
Phone: (301) 713-2355
Fax: (301) 713-1081
Web Site: <http://kingfish.ssp.nmfs.gov/iss/issue.html>

Foreign tariff rates and import quotas

USDA
FAS, International Trade Policy
Europe, Africa and Middle East Division
1400 Independence Ave. SW
Room 5514, South Building, or Stop 1024
Washington, DC 20250
Phone: (202) 720-1340
Fax: (202) 690-2079

USDA
FAS, International Trade Policy
Asia Americas Division
1400 Independence Ave. SW
Room 5509, South Building, or Stop 1023
Washington, DC 20250
Phone: (202) 720-1289
Fax: (202) 690-1093

U.S. Export Requirements

Export Apple and Pear Act and Export Grape and Plum Act

USDA
Fruit and Vegetable Division
P.O. Box 96456
Washington, DC 20090-6456
Phone: (202) 720-5053
FAX: (202) 720-5698

USDA
Fruit and Vegetable Division
1220 S.W. Third Ave., Room 369
Portland, OR 97204
Phone: (503) 326-2724
Fax: (503) 326-7440

USDA
Fruit and Vegetable Division
2202 Monterey Street, Suite 102B
Fresno, CA 93721
Phone: (209) 487-5901
Fax: (209) 487-5906

Export regulations for alcoholic beverages

U.S. Department of the Treasury
Bureau of Alcohol, Tobacco, and Firearms
Alcohol Import/Export Branch
Room 5200
650 Massachusetts Ave. NW
Washington, DC 20226
Phone: (202) 927-8110
FAX: (202) 927-8605
Web Site: <http://WWW.ATF.USTREAS.GOV>

U.S. trade embargoes or restrictions for a given country

U.S. Department of the Treasury
Office of Foreign Assets Control
1500 Pennsylvania Ave. NW
Washington, DC 20220
Phone: (202) 622-2500
FAX: (202) 622-1657

Export licensing and antiboycott compliance

U.S. Department of Commerce
Bureau of Export Administration
Washington, DC 20233
Export Licensing Room 1099
Phone: (202) 482-4811
Office of Antiboycott Compliance Room 3886
Phone: (202) 482-2381

Export permit for CITES listed plants

USDA
APHIS, Plant Protection and Quarantine
Permit Unit
4700 River Road, Unit 136
Riverdale, MD 20737-1231
Phone: (301) 734-3294
Fax: (301) 734-6402
Web site: <http://www.aphis.usda.gov/export/>

Export permit for CITES listed plants and animals

U.S. Department of the Interior
U.S. Fish and Wildlife Service
Office of Management Authority
4401 N. Fairfax Drive, Room 432
Arlington, VA 22203
Phone: (800) 358-2104
Fax: (703) 358-2281

U.S. Export Inspection, Grading, and Certification

Grade and quality certification

USDA
AMS, Dairy Division
Dairy Grading Branch
1400 Independence Ave. SW
Room 2750, South Building
Washington, DC 20250-6456
Phone: (202) 720-3171
FAX: (202) 720- 2643

USDA
AMS, Fruit and Vegetable Division
Fresh Products Branch
1400 Independence Ave. SW
Room 2056, South Building
Washington, DC 20250-6456
Phone: (202) 720-5870
FAX: (202) 720-0393

USDA
AMS, Fruit and Vegetable Division
Processed Products Branch
1400 Independence Ave. SW
Room 0709, South Building
Washington, DC 20250-6456
Phone: (202) 720-4693
FAX: (202) 690-1527

USDA
AMS, Livestock and Seed Division
Meat Grading and Certification Branch
1400 Independence Ave. SW
Room 2628, South Building
Washington, DC 20250-6456
Phone: (202) 720-1246
FAX: (202) 690-4119

USDA
AMS, Poultry Division
Poultry Grading Branch
1400 Independence Ave. SW
Room 3938, South Building
Washington, DC 20250-6456
Phone: (202) 720-3271
FAX: (202) 690-3165

USDA
AMS, Science and Technology Division
Technical Services Branch
Room 3517, South Building
Box 96456
Washington, DC 20090-6456
Phone: (202) 690-0621
FAX: (202) 720-6496

USDA
AMS, Transportation and Marketing Division
National Organic Program
1400 Independence Ave. SW
Room 2510, South Building
Washington, DC 20250
Phone: (202) 720-3252
Fax: (202) 690-4948

Seafood and aquaculture

U.S. Department of Commerce
National Marine Fisheries Service (NMFS)
Inspection Services Division
1315 East-West Highway
Silver Spring, MD 20910
Phone: (301) 713-2355
Fax: (301) 713-1081
Web Site: <http://kingfish.ssp.nmfs.gov/iss/issue.html>

Inspection certificates

Phytosanitary—plants and plant products.

For information on obtaining phytosanitary certificates contact the Export Certification Unit listed below, the APHIS contact point officer nearest you (listed on page 114), your State Department of Agriculture, or your local county Agricultural Commissioner's Office.

USDA
APHIS, Plant Protection and Quarantine
Export Certification Unit
4700 River Road, Unit 139
Riverdale, MD 20737
Phone: (301) 734-8537
FAX: (301) 734-5786
Web site: <http://www.aphis.usda.gov/export/>

Live animals

USDA
APHIS, Veterinary Services
National Center for Import and Export
4700 River Road, Unit 148
Riverdale, MD 20737-123
Phone: (301) 734-3294
FAX: (301) 734-6402
Email: vsncie@aphis.usda.gov
Web site: <http://www.aphis.usda.gov/export/>

Veterinary biological products—Vaccines, bacterins, antiserums, diagnostics, toxoids, immunostimulants, etc.

USDA
APHIS, CVBLPD
4700 River Road, Unit 148
Riverdale, MD 20737
Phone: (301) 734-8245
FAX: (301) 734-8910
Web Site: <http://www.aphis.usda.gov/vs/cvb/index.html>

Grain

USDA
Federal Grain Inspection Service
Room 1627, South Building
P.O. Box 96454
Washington, DC 20090-6454
Phone: (202) 720-0226
FAX: (202) 720-1015

Meat and poultry products

USDA
FSIS, Field Operations
300 7th Street SW
Washington, DC 20024
Phone: (202) 690-3752
FAX: (202) 690-4633

Honey, equine products, fresh pork, poultry, butter, dry whole milk, butteroil, oilseed, and soybeans

USDA
AMS, Science and Technology Division
Technical Services Branch
Room 3517, South Building
Box 96456
Washington, DC 20090-6456
Phone: (202) 690-0621
FAX: (202) 720-6496

Aquatic animal health

USDA
APHIS, Veterinary Services
National Animal Health Program
4700 River Road, Unit 43
Riverdale, MD 20737
Phone: (301) 734-4914 or -4363
FAX: (301) 734-7964
Web Site: <http://www.aphis.usda.gov/oa/aquaphis.html>

Seafood and aquaculture

U.S. Department of Commerce
National Marine Fisheries Service (NMFS)
Inspection Services Division
1315 East-West Highway
Silver Spring, MD 20910
Phone: (301) 713-2355
Fax: (301) 713-1081
Web Site: <http://kingfish.ssp.nmfs.gov/iss/issue.html>

Food and Drug Administration (FDA) Issued Export Certificates—FDA accepts requests for export certificates in writing only.**Seafood**

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
Office of Seafood, HFS-450
200 C Street S.W.
Washington, DC 20204
Web Site: <http://vm.cfsan.fda.gov/~lrd/certific.txt>

Cosmetics

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
Office of Cosmetics and Colors, HFS-105
200 C Street, S.W.
Washington, DC 20204
Web Site: <http://vm.cfsan.fda.gov/~lrd/certific.txt>

Food grade chemicals and food additives

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
Office of Premarket Approval, HFS-200
200 C Street, S.W.
Washington, DC 20204
Web Site: <http://vm.cfsan.fda.gov/~lrd/certific.txt>

Standardized and related foods excluding seafood

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
Office of Plant and Dairy Foods and Beverages, HFS-300
200 C Street, S.W.
Washington, DC 20204
Web Site: <http://vm.cfsan.fda.gov/~lrd/certific.txt>

Dietary supplements, vitamins, minerals, herbal preparations, infant formulas, and medical foods

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
Office of Special Nutritionals, HFS-450
200 C Street, S.W.
Washington, DC 20204
Web Site: <http://vm.cfsan.fda.gov/~lrd/certific.txt>

Veterinary products—Animal drugs, feeds, feed additives, etc.

U.S. Food and Drug Administration
Center for Veterinary Medicine, Office of Compliance
7500 Standish Place
Rockville, MD 20855
Phone: (301) 594-1785
Voice-mail: (301) 827-0153
FAX: (301) 594-1812

Export Transportation

Agricultural export transportation information—general “how to transport” information, educational programs, market news, regulatory representation, and special reports

USDA
AMS, Transportation and Marketing Division
Shipper and Exporter Assistance
1400 Independence Ave. SW
Room 1217, South Building or Stop 0267
Washington, DC 20250-0267
Phone: (202) 690-1304
FAX: (202) 690-1340
Web Site: <http://www.usda.gov/ams/tmdsea.htm>

Ocean liner carrier regulation, both American and foreign

Federal Maritime Commission
Bureau of Tariffs, Certification, and Licensing
800 North Capitol Street NW
Washington, DC 20573
Phone: (202) 523-5796
FAX: (202) 523-5830

Federal Maritime Commission
Office of Freight Forwarders
800 North Capitol Street NW
Washington, DC 20573
Phone: (202) 523-5843
FAX: (202) 523-5830

Export Financing and Insurance

Agricultural export credits—Export Credit Guarantee Program (GSM-102), Intermediate Export Credit Guarantee Program (GSM-103), Supplier Credit Guarantee Program (SCGP), Facility Guarantee Program (FGP), Export Enhancement Program (EEP), Dairy Export Incentive Program (DEIP)

USDA
FAS, Commodity Credit Corporation (CCC)
Operations Division
1400 Independence Ave. SW
Room 4521, South Building
Washington, DC 20250-1000
Phone: (202) 720-6211
FAX: (202) 720-0938

Loans, loan guarantees, working capital guarantees, and export credit insurance

Export-Import Bank of the United States
Business Development Office
811 Vermont Ave. NW.
Washington, DC 20571
Phone: (202) 565-3900
U.S. Toll-Free Number (800) 565-EXIM
FAX: (202) 565-3931
Bulletin Board: (202) 565-3835
Web Site: www.exim.gov

Economic development investment projects—finding investment opportunities, insurance, loans, and loan guarantees

Overseas Private Investment Corporation
1100 New York Ave. NW
Washington, DC 20527
Phone: (202) 336-8400
FAX: (202) 408-5145

Financial assistance programs

U.S. Small Business Administration
Office of International Trade
Room 8100
409 Third Street SW, Eighth Floor
Washington, DC 20416
Phone: (202) 205-6720 or (800) 827-5722
FAX: (202) 205-7272
Financial Assistance, Office of Business Loans: (202) 205-6490
Web Site: <http://www.sbaonline.sba.gov>

Trade Policy

Plant and animal health technical barriers to trade

USDA
APHIS, International Services
Trade Support Team
1400 Independence Ave. SW
Room 1128, South Building
Washington, DC 20250
Phone: (202) 720-7677
FAX: (202) 690-2861
Web site: <http://www.aphis.usda.gov/export/>

Meat and poultry products technical barriers to trade

USDA
FSIS, Office of Policy, Program Development,
and Evaluation
1400 Independence Ave. SW
Room 4434, South Building
Washington, DC 20250
Phone: (202) 720-6427
FAX: (202) 720-7990

Food safety regulations and barriers

USDA
FAS, International Trade Policy
Office of Food Safety and Technical Services
1400 Independence Ave. SW
Room 5547, South Building
Washington, DC 20550-1000
Phone: (202) 720-1301
FAX: (202) 690-0677

Multilateral trade policy affairs

USDA
FAS, International Trade Policy
Multilateral Trade Negotiations Division
1400 Independence Ave. SW
Room 5534, South Building or Stop 1022
Washington, DC 20250-1022
Phone: (202) 720-1312
Fax: (202) 720-1139

Import policies and trade analysis

USDA
FAS, International Trade Policy
Import Policies and Programs Division
1400 Independence Ave. SW
Room 5531, South Building or Stop 1021
Washington, DC 20250-1021
Phone: (202) 720-2916
Fax: (202) 720-0876

Other

Global market development and education programs

USDA

Cooperative State Research, Education, and Extension Service

1400 Independence Ave. SW

Room 3871, South Building

Washington, DC 20250

Phone: (202) 720-2506

FAX: (202) 690-2975

Business development, information clearinghouse for U.S. businesses, organizations, and institutions interested in providing Agency for International Development-financed goods and services

U.S. Small Business Administration

Office of International Trade

Room 600

409 Third Street SW, Sixth Floor

Washington, DC 20416

Phone: (202) 205-6720 or (800) 827-5722

FAX: (202) 205-7272

Business Development Assistance: (202) 205-6665

Small Business Innovation Research Program: (202) 205-6450

Office of Advocacy: (202) 205-6531

International Trade Assistance: (202) 205-6720

International trade development—agricultural specific market development and promotion programs, research, market information, and export conferences and seminars

Oklahoma State University

Center for International Trade Development

204 CITD

Stillwater, OK 74078-8084

Phone: (405) 744-7693

FAX: (405) 744-8973

Email: zgn5921@okway.okstate.edu

University of Washington

Center for International Trade in Forest Products

College of Forest Resources

123 Anderson Hall Box 352100

Seattle, WA 98195

Phone: (206) 543-8684

FAX: (206) 685-0790

Web Site: <http://weber.u.washington.edu/~blippke/cintrafor.html>

University of Florida

International Agricultural Trade and Development Center

Food and Resource Economics Department

P.O. Box 110240

Gainesville, FL 32611-0240

Phone: (352) 392-5069

FAX: (352) 392-9898

Washington State University

International Marketing Program for

Agricultural Commodities and Trade

P.O. Box 646214

Pullman, WA 99164-6214

Phone: (509) 335-6653

FAX: (509) 335-3598

Web Site: <http://coopext.cahe.wsu.edu/~impact>

University of Georgia

International Trade Development Center

International Trade Division

Small Business Development Center

Chicopee Complex

1180 East Broad Street

Athens, GA 30602

Phone: (706) 542-5760

FAX: (706) 542-6776

Kansas World Trade Center

350 West Douglas Ave.

Wichita, KS 67202-2970

Phone: (316) 262-3232

FAX: (316) 262-3585

Email: pam@wacc.org or karyn@wacc.org

Iowa State University
Midwest Agribusiness Trade Research And Information
Center (MATRIC)
578 Heady Hall
Ames, IA 50011-1070
Phone: (515) 294-1184
FAX: (515) 294-6336
Email: matric@card.iastate.edu
Web Site: <http://www.ag.iastate.edu/card/matric>

North Dakota State University
Northern Crops Institute
Box 5183, SU Station
Fargo, ND 58105
Phone: (701) 237-7736
FAX: (701) 237-7235
Email: NCI@NDSUExt.NoDak.EDU
Web Site: <http://www.northern-crops.com>

Wheat Marketing Center
Albers Mill Building
1200 NW. Front Ave., Suite 230
Portland, OR 97209-2800
Phone: (503) 295-0823
FAX: (503) 295-2735

Small business counseling—SCORE (Service Corps of Retired Executives)

National SCORE Office
Phone: (202) 205-6200
Phone: (800) 827-5722

“One-stop” assistance to small businesses—Export
SBDC’s

***Minority business management—proposal writing,
financial planning, capital acquisition, business
and market plan development, market identifica-
tion, trade missions, trade fairs, and training semi-
nars***

U.S. Department of Commerce
Minority Business Development Agency
Room 5096
Washington, DC 20233
Phone: (202) 377-3237
FAX: (202) 377-5117

Trade Information Center

A complete listing of Federal trade assistance
resources is beyond the scope of this publication.

However, the U.S. Government has established a com-
prehensive “one-stop” information center for U.S. com-
panies seeking information on Federal programs and
activities that support U.S. non-agricultural exports.
The Trade Information Center advises exporters on
how to locate and utilize government programs and
guides them through the export process.

U.S. Department of Commerce
International Trade Administration
Trade Information Center
Room 7424
14th and Constitution Ave. NW
Washington, DC 20230
Phone: (800) USA-TRAD(E)/(800) 872-8723
FAX: (202) 482-4473
TDD: (800) 833-8723
Email: TIC@ita.doc.gov
Web Site: <http://www.ita.doc.gov/tic>

Many USDA programs and services were listed in this
section. To find any USDA telephone number not list-
ed here, contact the USDA Locator Service (202) 720-
USDA.

Publications

Exporters can obtain valuable information on export transportation, marketing strategies, financing, and other export-related issues from myriad publications. This section lists a few of the publications available to exporters.

Publications by the Transportation and Marketing Division (TMD) of USDA's Agricultural Marketing Service (AMS) are available free of charge. For price information on other listed publications, or to order, contact the publisher directly. Contact information for publishers is listed with the publication or on page 132 of this section for publishers with multiple publications listed. Also, many of these publications are available for loan from the National Agricultural Library. Check with your local library to request an inter-library loan.

A Basic Guide to Exporting—U.S. Department of Commerce. 1992 Government Printing Office. Designed to help U.S. firms learn the costs and risks associated with exporting and develop a strategy for exporting.

A Business of Details—Exporting High Value U.S. Agricultural Products—(video and publication). USDA, AMS, TMD. 1995 Follows a shipment from farm to overseas market. Assists new exporters with identifying the questions that must be answered for each export transaction and identifies sources that can help answer these questions.

A Guide for Livestock Exporters—USDA, AMS, TMD. 1995 Information on planning and implementing the transportation of livestock to foreign markets.

Breaking Into The Trade Game-A Small Business Guide to Exporting—U.S. Small Business Administration and AT&T. Government Printing Office. 1995. A guide for developing an international marketing plan. This publication also covers export financing options for small businesses.

The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks—USDA, Agricultural Research Service. Handbook 66. Government Printing Office. 1986 Storage recommendations for horticultural crops.

Export Directory of Refrigerated Carriers Serving Agriculture—USDA, AMS, TMD. 1997 This reference guide was developed to help shippers locate carriers that transport perishable agricultural products in international trade.

Exporters Encyclopaedia 1994-95—Dun's Marketing Services, 3 Sylvan Way, Parsippany, NJ 07054. Phone: (800) 526-0651, FAX: (201) 605-6911. This is an annual publication with twice-monthly updates. This export reference has information on the export order; export markets; export know-how; communications data; and transportation data.

Food and Agricultural Export Directory 1995—USDA, FAS. (Report No.: Miscellaneous 1509.) Distributed by National Technical Information Service (NTIS). Provides listing and brief descriptions of Federal and State agencies, trade associations, and other organizations that offer advice and services in exporting agricultural and food products.

Foreign Agricultural Trade of the United States (FATUS)—USDA, Economic Research Service (ERS), National Agricultural Statistics Service (NASS). Annual report with monthly supplements. Current and historical data on U.S. foreign trade in agricultural products.

Guide to Incoterms 1990—International Chamber of Commerce (ICC) Publishing Corp. (No. 461/90.) Incoterms stands for international commercial terms. This publication explains the function, cost and risk in transferring goods from seller to buyer for each trade term.

Guidelines For the Air Shipment of Seafood—(English or Spanish) Air Transport Association of America, 1709 New York Avenue NW, Washington, DC 20006-5206, Phone: (202) 626-4000, FAS: (202)

Incoterms 1990—ICC Publishing Corp. (No. 460.) This publication defines international trade terms.

International Agriculture and Trade Reports-Situation and Outlook Series—USDA, ERS. A four-report series includes China, Europe, Former USSR, and NAFTA. Drawn from original foreign source materials these reports explain how basic forces are changing agriculture and agricultural trade.

International Trade Reporter, Export Reference Manual—Binders with weekly updates. The Bureau of National Affairs, 1231 25th Street NW, Washington, DC 20037. Phone: (800) 372-1033, FAX: (800) 253-0332. This publication includes information on regulations, basic exporting information, country reference information, and information on mail shipments.

Official Export Guide 1996—Annual publication. K-III Directory Corporation. The export reference has information on export how-to; country profiles; information sources; service directories; terms and symbols; schedule B; export administration regulations; hazardous materials; and export documents.

Principles of Cargo Handling and Perishable Cargo Handling Guide—International Air Transport Association (IATA), 2000 Peel Street, Montreal, Quebec, Canada H3A 2R4, Phone: (514) 844-6311, Fax: (514) 844-3788. 1992 A general guide to air transport of perishable cargo.

Protecting Perishable Foods During Transport by Truck—USDA, AMS, TMD. Handbook 669. 1995 This handbook is a compilation of best industry practices on handling and transportation of perishable foods.

Tropical Products Transport Handbook—(English or Spanish) USDA, AMS, TMD. Handbook 668. 1989 The purpose of this handbook is to provide transportation recommendations for fruits and vegetables, live plants, and cut flowers.

Uniform Customs and Practice for Documentary Credits—ICC Publishing Corporation. No. 500. 1993 This publication provides the rules governing letters of credit in about 200 countries world-wide.

The World is Your Market - An Export Guide for Small Business—U.S. Department of Commerce, Braddock Communications, Inc., 11201 Sunset Hills Road, Suite 200, Reston, VA 22090-4704. Phone: (703) 471-6543, Fax: (703) 709-7095. 1990. This publication provides the mechanics of exporting, export assistance resources, and phone directory.

Journals

Agricultural Trade Highlights—Monthly report. USDA, FAS. Contains information on U.S. agricultural exports, as well as specialized coverage of trade topics. Distributed by NTIS.

Ag Exporter—Monthly magazine. USDA, FAS. Distributed by NTIS. Contains information on overseas markets, buying trends, trade policy developments, country briefs, marketing news, overseas promotional activities, and export services.

Export Today—Monthly magazine. Trade Communications, Inc., P.O. Box 28189, Washington, DC 20038, Phone: (800) 824-9785; FAX: (202) 783-5966.

Official Airline Guides (OAG)-Air Cargo Guide—Monthly publication. OAG Air Cargo Guide, Reed Travel Group, 2000 Clearwater Drive, Oak Brook, IL 60521. Phone: (800) 323-3537 ext. 5AG22, FAX: (708) 574-6565. Directory of cargo flight schedules; foreign trade zones; documentary requirements; air freight forwarders; and customs house brokers.

Outlook for U.S. Agricultural Exports—Quarterly publication. USDA, ERS and FAS.

Pacific Shipper—Weekly publication. K-III Directory Corporation. A directory of steamship companies, their routes, departure dates, and estimated arrival dates.

The Journal of Commerce—Daily publication. The Journal of Commerce, 110 Wall Street, New York, NY 10005. Phone: (800) 221-3777. Lists current foreign requests to represent, distribute, or purchase a product. (This information also can be found in AgExport Connections published by the USDA). Also includes "Shipcards," a listing of steamship companies, their routes, departure dates, and estimated arrival dates.

OCEAN Carrier Freight Rate Bulletin—Monthly. USDA, AMS, TMD. Provides a side-by-side comparison of ocean freight rates and services for selected high-value agricultural products shipped to Asia.

U.S. Export Sales—Weekly publication. USDA, FAS. Report of outstanding export sales of commodities.

World Markets and Trade Reports—Monthly reports.
USDA, FAS. Overview of U.S. agricultural exports, as
well as specialized coverage of trade topics.
Distributed by NTIS.

Publishers

ICC Publishing Corp.
156 Fifth Avenue, Suite 308
New York, NY 10010
Phone: (212) 206-1150
FAX: (212) 633-6025

K-III Directory Corporation
10 Lake Drive
Hightstown, NJ 08520
Phone: (800) 547-8753
FAX: (408) 467-6795

U.S. Department of Commerce
National Technical Information Service (NTIS)
Technology Administration
Springfield, VA 22161
Phone: (703) 487-4630
FAX: (703) 487-4639

U.S. Department of Agriculture
AMS, Transportation and Marketing Division
Shipper and Exporter Assistance Publications
1400 Independence Ave. SW
Room 1217, South Building, or Stop 0267
Washington, DC 20250-0267
Phone: (202) 690-1304
FAX: (202) 690-1340

U.S. Department of Agriculture
ERS-NASS
341 Victory Drive
Herndon, VA 22070
Phone: (800) 999-6779
FAX: (703) 834-0110

U.S. Department of Agriculture
Foreign Agricultural Service
Information Division
Room 5074, South Building, or Stop 1004
Washington, DC 20250-1004
Phone: (202) 720-7115
FAX: (202) 720-3229

U.S. Government Printing Office
Superintendent of Documents
P.O. Box 371954
Pittsburgh, PA 15250
Washington, DC 20402
Phone: (202) 512-1800
FAX: (202) 512-2250

Glossary

Ad Valorem—According to value.

Air waybill—A bill of lading that covers both domestic and international air transport of goods to a specified destination. This is a non-negotiable instrument of air transport that serves as a receipt for the shipper, indicating that the carrier has accepted the goods listed and obligates itself to carry the consignment to the airport of destination according to specified conditions.

Alongside—A phrase referring to the side of a ship. Goods to be delivered “alongside” are to be placed on the dock or barge within reach of the transport ship’s tackle so that they can be loaded aboard the ship.

BAF (bunker adjustment factor)—An ancillary charge assessed by carriers on some ocean container freight shipments to account for fluctuation in fuel cost.

Barratry—An act committed by the master or mariners of a vessel, for some unlawful or fraudulent purpose, contrary to their duty to the owners, whereby the latter sustain injury. It may include negligence, if so gross as to evidence fraud.

Bill of lading—A document that establishes the terms of a contract between a shipper and a transportation company under which freight is to be moved between specified points for a specified charge. Usually prepared by the shipper on forms issued by the carrier, it serves as a document of title, a contract of carriage, and a receipt for goods.

Bonded warehouse—A warehouse authorized by Customs authorities for storage of goods on which payment of duties is deferred until the goods are removed.

Booking—An arrangement with a steamship company for the acceptance and carriage of freight.

Cabotage—Refers to the required use of domestic carriers for shipments in U.S. coastal waters.

CAF (currency adjustment factor)—An ancillary charge on some ocean freight shipments, expressed as a percentage of a base rate, to compensate ocean carriers for fluctuations in the value of the U.S. dollar against foreign currencies.

Carrier—The company that transports goods from one point to another. May be a vessel, airline, trucking company, or railroad.

Certificate of inspection—A document certifying that merchandise (such as perishable goods) was in good condition immediately prior to its shipment.

Certificate of insurance—A document stating that insurance is in effect.

Certificate of origin—A document, required by certain foreign countries for tariff purposes, certifying the country of origin of specified goods.

CFR (cost and freight)—A pricing term indicating that the cost of the goods and freight charges are included in the quoted price. The buyer arranges for and pays insurance.

CFS (container freight station)—A carrier facility where less-than-containerload shipments are consolidated for shipment or unloaded for final delivery.

Chargeable weight—The weight used to determine air-freight charges. The chargeable weight may be the dimensional weight, or for container shipments, the gross weight of the shipment less the tare weight of the container.

C & I (cost and insurance)—A pricing term indicating that the cost of the product and insurance is included in the quoted price. The buyer is responsible for freight to the named port of destination.

CIF (cost, insurance, and freight)—A pricing term indicating that the cost of the goods, insurance, and freight is included in the quoted price.

Claim agent—An overseas representative of the insurance company.

Commercial invoice—An itemized list of goods shipped, usually included among an exporter’s collection papers.

Common carrier—An individual, partnership, or corporation that transports persons or goods for compensation.

Confirmed letter of credit—A letter of credit, issued by a foreign bank, with validity confirmed by a U.S. bank. When confirmed, the U.S. bank undertakes responsibility for payment even if the foreign buyer or bank defaults.

Contingency Insurance—When a product is sold under terms that require the buyer to provide insurance coverage, the seller may elect to purchase “back-up insurance” in case the coverage provided by the buyer is not sufficient to cover the value of the shipment.

Consignee—The person or firm to whom something is sold or shipped. Buyer or importer.

Consignor—The person or firm from whom the goods have been received for shipment, the seller, shipper, or exporter.

Consular invoice—A document, required by some foreign countries, describing a shipment of goods and showing information, such as the consignor, consignee, and value of the shipment. Certified by a consular official of the foreign country, it is used by the country’s customs officials to verify the value, quantity, and nature of the shipment.

Container—A uniform, sealed, reusable metal “box” (generally 40 feet in length, able to hold about 40,000 pounds) in which goods are shipped by vessel or rail. The use of containers (or containerization) in trade is generally thought to require less labor and reduce losses due to breakage, spoilage, and pilferage than more traditional shipment methods.

Container ship—A ship specially constructed to handle containerized cargo.

Credit risk insurance—Insurance designed to cover risks of nonpayment for delivered goods.

Customs—The authorities designated to collect duties levied by a country on imports and exports. The term also applies to the procedures involved in such collection.

Customhouse broker—An individual or firm licensed to enter and clear goods through Customs.

CY (container yard)—A carrier facility where full containers are held.

Demurrage—A surcharge assessed by steamship lines and railroads for storage at their port facility longer than the allotted “free time.”

Destination control statement—Any of various statements that the U.S. Government requires to be displayed on export shipments and that specify the destinations for which export of the shipment has been authorized.

Dock receipt—A receipt issued by an ocean carrier to acknowledge receipt of a shipment at the carrier’s dock or warehouse facilities.

Export license—A Government document that permits the “licensee” to engage in the export of designated goods to certain destinations.

FAF (fuel adjustment factor)—An ancillary charge on some ocean freight shipments to account for fluctuation in fuel costs. Also referred to as BAF or bunker adjustment factor.

FAS (free alongside)—A pricing term indicating that the quoted price includes the cost of delivering the goods alongside a designated vessel.

FCL (full container load)—Shipment of a full container.

FEU (40-foot-equivalent unit)—Commonly describes a 40-foot container.

FOB (free on board)—A pricing term indicating that the quoted price includes the cost of loading the goods into transport vessels at the specified place.

Force majeure—The title of a standard clause in marine contracts exempting the parties for nonfulfillment of their obligations as a result of conditions beyond their control, such as earthquakes, floods, or war.

Freight forwarder—An independent business that handles export shipments for compensation.

General export license—Any of various export licenses covering export commodities for which validated export licenses are not required. No formal application or written authorization is needed to ship exports under a general export license.

Gross weight—The full weight of a shipment, including goods and packaging.

Harbor tax—A tax paid quarterly by exporters to U.S. customs based on a percentage of their total value of exports.

Import license—A document required and issued by some national governments for the importation of goods into their country.

Independent action—When an ocean shipping conference member carrier sets a tariff for a rate or service that is different from the established conference tariff.

Inland bill of lading—A bill of lading used in transporting goods overland to the exporter's international carrier. Although a through bill of lading can sometimes be used, it is usually necessary to prepare both an inland bill of lading and an ocean bill of lading for export shipments.

Inward charges—Charges incurred by a ship or cargo when entering a port.

IPI (interior points intermodal)—A term used by ocean carriers to describe door to door delivery service. Ocean carriers frequently quote rates on an IPI basis.

Keelage—A duty charged for permitting a ship to enter and anchor in a port or harbor.

Landing charges—The initial charges for landing imported goods, such as those for receiving goods from dockside vessels or from barges to lighters. They may also cover wharfage or delivery from the dock to land conveyance or warehouse.

Less than containerload (LCL)—A quantity of product/commodity less than the amount needed to completely fill a container.

Liner conference—An agreement among carriers that regularly serve a particular trade route to establish freight rates and service levels.

Liner discharge—Payment by the shipowner for unloading of cargo, including stevedore wages.

Manifest—A list of passengers or an invoice of cargo.

Marine insurance—Insurance that compensates the owner of goods transported overseas in the event of loss that cannot be legally recovered from the carrier. Also covers air shipments.

Marking—Letters, numbers, and other symbols placed on cargo packages to facilitate identification.

NVOCC (non-vessel operating common carrier)—Cargo consolidator of small shipments in ocean trade, generally arranging for, or performing, containerization functions at the port.

Open insurance policy—A marine insurance policy that applies to all shipments made by an exporter over a period of time rather than to one shipment only.

Package cargo—Cargo in boxes, barrels, crates, bales, or other containers, as opposed to bulk or loose cargo.

Pallet—A small wooden platform on which cargo is stored for ease of loading and unloading. Cargo shipped on pallets is referred to as palletized cargo.

Perils of the sea—A marine insurance term used to designate heavy weather, stranding, lightning, collision, and sea water damage.

Phyosanitary inspection certificate—A certificate, issued by the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, to satisfy import regulations for foreign countries, indicating that a U.S. shipment has been inspected and is free from harmful pests and plant diseases.

Port authority—The entity whose duty is to construct, manage, maintain, and improve a port. Ports may be administered by States, municipalities, statutory trusts, or private or corporate entities. Also known as harbor authority, harbor board, port trust, or port commission.

Port charges—Fees assessed against a vessel, cargo, and passengers while in port, including harbor dues, tariff charges, wharfage, towage, etc.

Pro forma invoice—An invoice provided by a supplier prior to the shipment of merchandise, informing the buyer of the kinds and quantities of goods to be sent, their value, and important specifications (weight, size, etc.).

Quotation—An offer to sell goods at a stated price and under specified conditions.

Roll-on/Roll-off (Ro/Ro)—A term applied to ships that are outfitted so that vehicles or heavy machinery can be driven on or off without the use of special cranes.

Schedule B—Refers to “Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.” All commodities exported from the United States must be assigned a ten-digit Schedule B number.

Shipment—Freight tendered to a carrier by one consignor at one place for delivery to one consignee at one place on one bill of lading.

Shipper’s export declaration—A form required by the U.S. Department of Commerce and the U.S. Customs Service for all shipments and prepared by a shipper, indicating the value, weight, destination, and other basic information about an export shipment.

Shipper’s letter of instruction—Shipper’s communication to their freight forwarder or carrier including all the detail of the shipment. This communication is used by the forwarder or carrier to complete the bill of lading and other shipping documents.

Ship’s manifest—An instrument in writing, signed by the captain of a ship, that lists the individual shipments constituting the ship’s cargo.

Steamship conference—A group of steamship operators that collectively set rate and service levels in a specific geographic trade route.

Stowage—The loading of a vessel by handling and placing goods within the container so as to ensure stability of the container, maximum use of space, safety of cargo, and efficient loading and unloading. A description of each item and its disposition in the vessel after loading is contained in the ship’s stowage plan.

Tare weight—The weight of a container and packing materials without the weight of the goods it contains.

Tariff—A document issued by carriers or conferences that establish all rules, rates, and charges for the movement of goods.

TEU (20-foot-equivalent unit)—Commonly describes a 20-foot container.

Terminal handling charges—An ancillary charge on some ocean freight shipments to cover the cost of moving the container from the container yard to ocean vessel.

Tramp steamer—A ship not operating on regular routes or schedules.

TVA (time volume agreement)—A contract between a carrier and shipper that usually specifies the movement of a certain number of containers over a period of time, usually 12 months.

U.S. flag vessel—A merchant ship under U.S. registry.

Validated export license—A required document issued by the U.S. Government authorizing the export of specific commodities. This license is for a specific transaction or time period in which the exporting is to take place.

Warehouse receipt—A receipt issued by a warehouse listing goods received for storage.

Wharfage—A charge assessed by a pier or dock owner for handling incoming or outgoing cargo.

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