

Program Handbook: Exportation of Live Animals, Hatching Eggs, and Animal Germplasm from the United States

Introduction

The Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture (USDA) regulates the exportation of live animals, hatching eggs, and animal germplasm. The regulations are codified in Title 9 of the Code of Regulations (CFR), part 91, “Exportation of Live Animals, Hatching Eggs or Other Embryonated Eggs, Animal Semen, Animal Embryos, and Gametes from the United States.”

These export regulations, which are referred to below as “the regulations,” require use of disinfectants approved by the Administrator of APHIS. As provided in the regulations, the Administrator will approve a disinfectant for the specified use upon determining that it is effective against the pathogens that may be spread by the animals and, if the disinfectant is a chemical disinfectant, that it is registered or exempted for the specified use by the U.S. Environmental Protection Agency (EPA). This handbook discusses disinfectants approved by the Administrator for use under §§ 91.6, 91.12, and 91.13. Other disinfectants may also be approved by the Administrator in accordance with the regulations.

The regulations also contain requirements for export inspection facilities, export isolation facilities, and ocean vessels. This handbook includes guidance on how to comply with these requirements. The guidance is intended to assist owners and operators by describing acceptable ways to meet the requirements. The methods described in this handbook are one way, but not the only way, to comply with the requirements. Owners and operators may submit alternative plans for complying with the requirements to APHIS for evaluation and approval. Alternatives must be at least as effective in meeting the requirements of the regulations as the methods described in this handbook. We must approve an alternate plan before it can be used. For this reason, plans should be submitted well in advance of when approval is needed to allow time for APHIS review and to avoid unnecessary or wasteful expenditures. For additional information and to discuss how much time may be needed for APHIS review of a plan, contact APHIS VS, National Import Export Services, (301) 851-3300.

The regulations also contain reporting requirements for ocean vessels. This handbook contains contact numbers and addresses for submitting reports, as well as an optional template that may be used for the operator’s report required by § 91.12(f).

The most recent edition of this handbook is available for viewing and downloading at the following address: http://www.aphis.usda.gov/import_export/index.shtml.

APHIS will notify the public of changes to the handbook via announcements on its Web site. Any substantive changes to guidance will also be made available for public comment through a notice in the *Federal Register*.

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1. Approved Disinfectants

Regulatory authority: 9 CFR 91.6, 91.12(b), and 91.13(a).

Background:

The regulations require use of disinfectants approved by the Administrator for:

- Conveyances or containers in which livestock are moved from the premises of export and any facilities into which such livestock are unloaded;
- All fittings, utensils, containers, and equipment, including halters, ropes, and similar equipment (unless new) to be used in the loading, stowing, or other handling of livestock aboard ocean vessels; and
- The stowage area of any aircraft to be used for the export of livestock and any loading ramps, fittings, and equipment to be used in loading the livestock.

The disinfectants listed below have been approved by the Administrator for the purposes listed. The Administrator may approve other disinfectants for use as required by the regulations upon determining that the disinfectant is effective against the pathogens that may be spread by the animals and, if the disinfectant is a chemical disinfectant, that it is registered or exempted for the specified use by EPA. Disinfectants must be approved by the Administrator before they may be used to meet the requirements of the regulations.

Approved disinfectants:

1.1 For use on conveyances, containers, and facilities under § 91.6, “Cleaning and disinfection of means of conveyance, containers, and facilities used during movement; approved disinfectants.”

Chemical disinfectants registered with or exempted by EPA for this specified use. A list of general antimicrobial disinfectants is available at

http://www.epa.gov/sites/production/files/2015-09/documents/list_a_sterilizer.pdf.

Pathogen-specific disinfectants are found here: <http://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>

1.2 For use on fittings, utensils, and equipment on ocean vessels under § 91.12, “Ocean vessels.”

1.2.1 On ocean vessels last used to carry livestock to or from a region affected with foot-and-mouth disease:

- Sodium carbonate (4 percent) in the proportion of 1 pound to 3 gallons of water.
- 4 percent sodium carbonate plus 0.1 percent sodium silicate.
- Sodium hydroxide (Lye) prepared in a fresh solution in the proportion of not less than 1 pound avoirdupois of sodium hydroxide of not less than 95 percent purity to 6 gallons of water, or one 13¹/₂ –ounce can to 5 gallons of water. (Due to the extremely caustic nature of sodium hydroxide solution, precautionary measures such as the wearing of rubber gloves, boots, raincoat, and goggles should be observed. An acid solution such as vinegar should be kept readily available in case any of the sodium hydroxide solution should come in contact with the body.)

1.2.2 On ocean vessels returning from other foreign countries:

- Disinfectants listed in 9 CFR 71.10 (see section 1.4 of this Handbook).

1.3 For use on aircraft and associated loading ramps, fittings, and equipment under § 91.13, “Aircraft.”

1.3.1 For use in stowage areas:

- A freshly prepared solution of 4 percent sodium carbonate plus 0.1 percent sodium silicate.

1.3.2 For use on loading ramps, fittings, and equipment:

- Chemical disinfectants registered with or exempted by EPA for this specified use. A list of general antimicrobial disinfectants is available at: http://www.epa.gov/sites/production/files/2015-09/documents/list_a_sterilizer.pdf. Pathogen-specific disinfectants are found here: <http://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>

1.4 Disinfectants permitted under 9 CFR 71.10, “Permitted disinfectants.”

These disinfectants are set out here for the convenience of Handbook users.

- “Cresylic disinfectant”* in the proportion of at least 4 fluid ounces to 1 gallon of water.
- Liquefied phenol (U.S.P. strength 87 percent phenol) in the proportion of at least 6 fluid ounces to 1 gallon of water.
- Chlorinated lime (U.S.P. strength, 30 percent available chlorine) in the proportion of 1 pound to 3 gallons of water.
- Sodium hydroxide (Lye) prepared in a fresh solution in the proportion of not less than 1 pound avoirdupois of sodium hydroxide of not less than 95 percent purity to 6 gallons of water, or one 13-1/2 ounce can to 5 gallons of water. Due to the extremely caustic nature of sodium hydroxide solution, precautionary measures such as the wearing of rubber gloves, boots, raincoat, and goggles should be observed. An acid solution such as vinegar shall be kept readily available in case any of the sodium hydroxide solution should come in contact with the body.
- Disinfectants which are registered with EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135 et seq.), with tuberculocidal claims, as disinfectants for general use, may be used in accordance with directions on the labels accepted in connection with their registration. However, disinfectants which fall in this category are not permitted for use in outbreaks of foreign animal diseases unless in specific cases such use is approved in advance by the Administrator.

*As provided in 9 CFR 71.10, the use of “cresylic disinfectant” is permitted subject to the following conditions:

- The manufacturer has obtained specific permission from APHIS for the use of the products in official disinfection. To obtain such permission, manufacturers must first submit a sample of at least 8 ounces for examination, together with a statement of the formula employed and a guarantee that the product will be maintained of a quality uniform with the sample submitted.
- To prevent confusion, the product of each manufacturer and distributor must bear a distinctive trade name or brand, together with the name of the manufacturer or distributor.

- The product must at all times conform to specifications for composition and performance issued by the Administrator.

2. Approval of Export Inspection Facilities

Regulatory authority: 9 CFR 91.7(a) and (b), 91.10.

Background:

All livestock intended for export by sea or air must receive a visual health inspection from an APHIS veterinarian within 48 hours prior to embarkation. Unless otherwise authorized by the Administrator, the inspection must be done at the export inspection facility affiliated with the port of embarkation. Such facilities must be approved in advance by the Administrator as a location where APHIS will conduct pre-export inspections of livestock.

In order to be approved, facilities must be constructed, equipped, and managed in a manner that prevents transmission of disease to and from livestock in the facility, provides for the safe and humane handling and restraint of livestock, and provides sufficient offices, space, and lighting, for APHIS veterinarians to safely conduct required inspections of livestock and related business.

Following approval, if the owner of the facility changes or significant structural changes are made to the facility, the facility will need to be reappraised.

Guidance:

This section of the Handbook describes how facilities can meet the requirements for approval. Owners and operators may submit alternative plans for meeting the requirements to APHIS for evaluation and approval. Alternatives must be at least as effective in meeting the requirements as those described below in order to be approved, and must be approved by APHIS before being used. Facilities must be approved prior to receiving any livestock for exportation from the United States. Approval may be sought by contacting the APHIS-VS Air and Sea Port Director.

2.1 Isolation of animals.

The facility is arranged and located to isolate all animals in the facility from all other animals.

2.2 Space to accommodate animals.

The facility has adequate space and/or scheduling to accommodate the animals in a single export shipment. A minimum space twice the size contained in the guidelines for space per animal on ocean vessels is acceptable. (See section 8 of this Handbook.)

2.3 Protection from inclement weather.

The facility has a roof adequate to protect the animals from inclement weather over at least three-fourths of the pens and alleys and over all of the inspection area.

2.4 Floors.

The floors of pens, alleys, and chutes are disinfectable and skid resistant, or are cleaned on a regular basis to remove effluent and feces. Disinfectable materials are those which resist the absorption of fluids, such as concrete, asphalt, brick, and metal.

2.5 Fences, gates, and other parts of the facility used for animals.

Fences, gates, and other parts of the facility used for animals are constructed of material, such as wood or metal, that can securely restrain the animals in a safe and humane manner.

2.6 Cleaning and disinfection.

The facility has running water available to wash the facility. The facility and all equipment used with animals are cleaned and disinfected with a chemical disinfectant registered with or exempted by EPA for this specified use. A list of these is available at:
http://www.aphis.usda.gov/import_export/index.shtml

2.7 Drainage system.

The facility has a drainage system that controls surface drainage into and from the facility in a manner that prevents any significant risk of livestock diseases being spread into or from the facility.

2.8 Inspection space.

The facility has a separate area for inspection of animals that is equipped with animal restraining devices that allow for the safe and humane handling of animals during inspection.

If horses will be inspected at the facility, areas where horses are inspected have ceilings at least 12-feet high and there are walkways in front of horse stalls wide enough to allow APHIS personnel to safely remove horses from the stalls for inspection if necessary.

2.9 Animals of questionable health status.

Separate pens or yards are provided for segregation and/or treatment of animals of questionable health status apart from animals qualified for export.

2.10 Personnel tending the animals.

Personnel tending the animals who have had contact with animals outside the facility are required to change or sanitize their outer clothing and footwear before entering areas used for animals.

2.11 Water for the animals.

The facility has an ample supply of potable running water that is made available to the livestock. In cold weather, the water is kept free from ice.

2.12 Lighting.

The facility is equipped with artificial lighting that provides sufficient lighting in the inspection area for inspectors to conduct inspections.

2.13 Office and restrooms.

A suitable office and restroom facilities are provided for use of APHIS representatives.

Approval for Pre-export Inspection of Livestock at Export Isolation Facilities

Regulatory authority: 9 CFR 91.7(b) and (c).

Background:

Livestock may be isolated for a period of time prior to export in order to meet the health requirements of the country to which they will be shipped. The Administrator may allow pre-export health inspection of livestock to be conducted at an export isolation facility, rather than at the export inspection facility associated with the port of embarkation, when the exporter can show to the satisfaction of the Administrator that the livestock would suffer undue hardship if they had to be inspected at the export inspection facility, when the distance from the export isolation facility to the port of embarkation is significantly less than the distance from the export isolation facility to the export inspection facility associated with the port of embarkation, when inspection at the export isolation facility would be a more efficient use of APHIS resources, or for other reasons acceptable to the Administrator. Approval is contingent upon APHIS having personnel available to provide services at that location. The export isolation facility must also have space, and lighting, and humane means of handling livestock sufficient for APHIS veterinarians to safely conduct required inspections. Requests to use an export isolation facility in order to conduct pre-export inspection should be submitted to the Service Center Director for the State in which the inspection would occur (see https://www.aphis.usda.gov/animal_health/downloads/nies_contacts/sc.pdf for State-by-State contact information.)

Guidance:

This section of the Handbook describes how export isolation facilities can meet the requirements for approval as locations for pre-export inspection of livestock. Owners and operators may submit alternative plans for meeting the requirements to APHIS for evaluation and approval. Alternatives must be at least as effective in meeting the requirements as those described below in order for the facility to be approved as a location for pre-export inspections. Alternate plans must be approved by APHIS before the facility may be used for purposes of the regulations.

3.1 Space

- The export isolation facility has a designated area for inspection of livestock.
- The designated inspection area is wide enough to allow easy movement of livestock through the area during inspections.
- The designated inspection area is of sound construction and sturdy enough to accommodate large numbers of large/heavy livestock.
- The sides of the designated inspection area are high enough to preclude livestock from jumping over them during inspection.
- Any ceilings of the designated inspection area are high enough to safely allow ingress and egress of livestock. In any area where horses will be inspected, the ceilings are at least 12-feet high, and walkways in front of horse stalls are wide enough to allow APHIS personnel to safely remove horses from the stall for inspection, if necessary.
- The designated inspection area is sheltered from inclement weather.
- The facility has the ability to restrict access to the inspection area during inspections to authorized personnel involved in the inspection itself.

3.2 Lighting

- Lighting in the inspection area provides sufficient lighting for inspectors to conduct inspections.
- The facility maintains at least temporary artificial lighting in order to inspect animals during periods of low light or night operations.

3.3 Handling

- All animals that will be inspected at the facility will be identified prior to inspection.
- The facility has sufficient personnel to ensure that animals can be unloaded and moved into the inspection area in a safe and humane manner.
- The fences, gates, and other parts of the designated inspection area are constructed of material that can securely restrain animals in a safe and humane manner during inspection.
- The inspection area is equipped with animal restraining devices that allow for the safe and humane handling of animals during inspection.

4. Approval for Pre-export Inspection of Livestock at Export Inspection Facilities Other Than the Export Inspection Facilities Associated with the Port of Embarkation

Regulatory authority: 9 CFR 91.7(b) and (d)

Background:

The Administrator may allow pre-export inspection of livestock to be conducted at an export inspection facility other than the export inspection facilities associated with the port of embarkation, when the exporter can show to the satisfaction of the Administrator that the livestock would suffer undue hardship if they had to be inspected at the export inspection facility associated with the port of embarkation, when inspection at this different export inspection facility would be a more efficient use of APHIS resources, or for other reasons acceptable to the Administrator. Requests to use an export inspection facility other than the facilities associated with the port of embarkation in order to conduct pre-export inspection should be submitted to the APHIS-VS Air and Sea Port Director.

5. Ocean Vessels: Cleaning and Disinfection

Regulatory authority: 9 CFR 91.12(b).

Background:

Any vessel intended for use in exporting livestock, and all fittings, utensils, containers, and equipment (unless new) used for loading, stowing, or other handling of livestock aboard the vessel, must be thoroughly cleaned and disinfected to the satisfaction of an APHIS representative prior to any livestock being loaded.

Guidance:

After all traces of manure have been removed, disinfectant (see 1.2.1 and 1.2.2 of this Handbook) should be applied to all surfaces of the livestock cargo areas, including floors, ceilings, walls, rails, and gates, and to all equipment and utensils that have been used in the livestock cargo areas, including automatic water cups, feed and water troughs, wheelbarrows, shovels, rakes, pitchforks, ropes, and boots. Any surface of the ocean vessel on which the crew walks with the same footwear worn in the livestock cargo areas should also be cleaned and disinfected.

6. Ocean Vessels: Determining Sufficient Amounts of Feed and Water

Regulatory authority: 9 CFR 91.12(c).

Background:

The owner or operator of an ocean vessel carrying livestock from the United States to a foreign country must provide the livestock with sufficient feed and water after the animals are loaded onto the vessel, taking into consideration the livestock's species, body weight, the expected duration of the voyage, and the likelihood of adverse climatic conditions during transport.

Guidance:

This section of the Handbook describes how ocean vessels can meet the requirement for having sufficient amounts of water and feed. Owners and operators may submit alternative plans for meeting the requirement to APHIS for evaluation and approval. Alternative plans must show that the livestock will receive at least an equivalent level of hydration and nutrition in order to be approved.

Determining Sufficient Water

The vessel has an ample supply of potable running water that is made available to the livestock. Watering devices are in good working function and "deiced" in cold weather. If not automatically refilled, drinking water devices or troughs are filled *ad libitum* during transport.

Determining Sufficient Feed

The minimum amount of feed needed for a voyage is 2.25 percent of the body weight of all livestock on board, multiplied by the number of days estimated for the voyage, plus 15 percent of that amount for unforeseen circumstances. The number of days estimated for the voyage should include the time from completion of loading to the time of arrival at the port of discharge.

7. Ocean Vessels: Accommodations for the Humane Transport of Livestock

Regulatory authority: 9 CFR 91.12 (a) and (d).

Background:

Ocean vessels used to transport livestock intended for export must be designed, constructed, and managed to reasonably assure the livestock are protected from injury and remain healthy during loading and transport to the importing country. To meet these expectations, ocean vessels must comply with standards in the regulations for the humane transport of livestock. No livestock may be loaded onto an ocean vessel unless an APHIS representative has determined that the vessel meets those standards.

The vessel must be inspected for compliance with the standards prior to initial use to transport any livestock from the United States. APHIS will issue a certificate to vessels deemed to be compliant. Subsequently, prior to each voyage, a certified vessel will be evaluated for ongoing compliance with the standards, as well as the vessel's suitability to transport that particular shipment of livestock.

To schedule an inspection for certification, contact APHIS-VS' Air and Sea Port Director.

Guidance:

This section of the Handbook describes how ocean vessels can comply with the standards in the regulations for the humane transport of livestock. Owners and operators may submit alternative plans for complying with the standards to APHIS for evaluation and approval. Alternatives must be at least as effective in meeting the requirements as those described below in order for the ocean vessel to be approved by APHIS for the transport of livestock.

Standards below that pertain to the construction of the vessel and its overall suitability to transport livestock (e.g., 7.1 and its subsections, 7.5, 7.6) will be evaluated at the initial inspection for certification and will be reevaluated for ongoing suitability prior to each voyage to export livestock. Standards below that pertain to the vessel's suitability to transport a particular shipment of livestock (e.g., 7.2, 7.4) will be evaluated prior to the voyage containing that shipment.

7.1 Pens¹.

7.1.1 Stanchions, rails, and gates; general construction:

All pens, including gates and portable rails used to close access ways, are designed and constructed of material of sufficient strength to securely contain the livestock. They are properly formed, closely fitted, and rigidly secured in place. They have smooth finished surfaces free from sharp protrusions. They have no worn, decayed, unsound, or otherwise defective parts.

7.1.2 Stanchions, rails and gates; materials:

A variety of construction materials, such as wood, metal plate, or pipe, including a combination of materials, may be used for pens aboard ocean vessels. Pipe fittings have the advantage of smooth surfaces, easy maintenance, long range economy and spaces between pipe rails to allow for feeding, watering, cleaning and better ventilation. The nonporous surfaces of pipe area also easy to disinfect. Special care should be taken to design and finish all edges, welds, and hardware that are accessible to animals.

Stanchions, rails, and gates made of pipe:

- Pipes are made of extra strong, medium carbon steel and are either galvanized (coated with zinc) or painted.
- All parts are cut from seamless pipe with no threaded pipe connections.
- Rails and gates use at least 4 pipes, with the top one having a diameter of at least 3 inches (7.62 cm) and the others a diameter of at least 2-1/2 inches (6.35 cm).
- Stanchions are at least 3-1/2 inches (8.89 cm) in diameter, at least 5/16 inches (0.79 cm) thick, and placed no more than 8 feet (2.438 m) apart center to center.
- Bolt and pin holes are properly located and centered on the pipe and are not more than 1/32 inch (0.08 cm) oversize.
- Pipes are not deformed or weakened by welding of such items as reinforcing rods or hinges onto them. Welding is exposed in the finished work. Pins, plates, and parts other than pipe are made of galvanized steel.
- All areas where galvanizing of the steel has eroded or has been damaged have been finished with a rust preventative.
- Pipe rails are aligned with the tops of all gates at the same height.

¹ As used in this Handbook, pen may mean the space for one animal (often referred to as a stall) or the space for more than one animal.

- If feed or water dispensers are mounted externally, or if feed will be placed on the floor outside pens, pipe rails are arranged to allow livestock access to the feed and water.

Stanchions, rails, and gates made of wood:

Although acceptable, lumber is rarely used for pen construction on modern ocean vessels used to transport livestock. For this reason, and because descriptions of acceptable construction for wooden pens are quite lengthy, they are located in Appendix I, rather than in this section of the Handbook.

7.1.3 Flooring.

Flooring must be strong enough to support the weight of the livestock to be transported and must provide a non-slip foothold.

Acceptable surfaces include epoxy and concrete flooring with roughened texture (taking care to ensure the surface is not so sharp it will hurt the animals' feet). Footlocks may also be used to prevent the animals from slipping. Flooring made of 3-inch (7.62-cm) concrete pavement, proportioned and mixed to give 2000 psi. compressive strength in 28 days, or material of equivalent strength, is acceptable.

Although acceptable, lumber is rarely used for flooring on modern ocean vessels used to transport livestock. For this reason, and because descriptions of acceptable construction for wooden flooring are quite lengthy, they are located in Appendix I, rather than in this section of the Handbook.

7.1.4 Pens adjacent to ship's sides:

Any fittings or protrusions from ships' sides that abut pens are covered to protect livestock from injury.

If the sides of pens are adjacent to ship's sides that have steel casings, frames, stays, or similar fittings, these profiles are covered or the sides of pens are fitted with rump boards to protect the livestock from injury. The coverings or rump boards are of sufficient dimensions and strength to protect animals from injury. Acceptable coverings include wooden battens made of at least 2-inch (5.08 cm) thick lumber or plywood of similar strength. Rump boards may be made of tongue and groove lumber at least 1-1/2 inches (3.81 cm) thick or square

edged lumber at least 2 inches (5.08 cm) thick or plywood of similar strength. Rump boards should form a solid wall at least 4-1/2 feet (1.372 m) high for horses, 4-feet (1.219 m) high for cattle, and 2-1/2 feet (0.76 m) high for sheep, goats, and swine.

7.1.5 Pens adjacent to engine or boiler rooms or other sources of heat:

Boiler rooms or similar sources of heat are fitted to protect livestock in nearby pens from injury due to transfer of heat.

The sides of engine or boiler rooms or other sources of heats are covered with a tongue and groove tight sheathing producing a 3-inch wide air space. On ships powered with internal combustion engines, this sheathing may not be required at the discretion of the APHIS representative.

7.1.6 Pens on exposed upper decks:

Pens on exposed upper decks protect livestock from the weather.

If animals will be transported on exposed upper decks in space abutting the outside rails or ship's sides, the rails or sides are at least 4 feet (1.219 m) high from the deck, and barriers are erected at all unprotected ends of pens to prevent animals from being lost overboard. Additionally, the rails or sides are of sufficient strength to securely hold any pen fittings attached to them.

All pens on exposed upper decks are covered securely with watertight roofing that extends at least 2 feet (0.610 m) beyond the pens.

All open spaces on the sides of exposed decks used to carry livestock are covered with planking, except that the top course planking may be left off in warm weather to allow a free circulation of air.

7.1.7 Pens on hatches:

No pen is positioned where the pen or livestock in the pen can damage or obstruct hatches or hatch covers, or where the hatches or hatch covers can result in injury to the livestock.

7.1.8 Size of transport spaces.

Pens are of an appropriate size for the species, size, weight, and condition of the livestock being transported, as well as the ship's route.

7.1.8.1 General:

Generally, any individual animal should have pen space 6 inches (15.24 cm) more in height, depth, and width than the measurements of the animal concerned.

Space should be arranged so that an animal handler can observe each animal regularly and clearly.

Guidelines on pen size are set out below.

- If the vessel will be moving into or through a tropical area (the area of the world situated between the Tropic of Cancer and the Tropic of Capricorn), increase the space for each animal by 10 percent or more (e.g., more for unshorn sheep).
- If any animal to be loaded is in the third trimester of pregnancy, increase the space by at least 10 percent for cattle and horses and at least 50 percent for sheep, goats, and swine. This increase is in addition to any increase due to movement into or through a tropical area (e.g., increase size by 20 percent for cattle that are in the third trimester of pregnancy and will be moving into or through a tropical area).

An APHIS representative will make the final determination of space needed for each animal at the port of embarkation based upon the size and type of livestock presented, weather, destination, route, cubic inches of air available to each animal, and the ventilation capability of the vessel. Irregularly shaped pens may be used only if the APHIS representative determines they will be safe for the livestock and allow all livestock in the pen adequate access to feed and water.

7.1.8.2 Horses²:

Horses have at least 6 feet 6 inches (1.981 m) of space from roof or beams overhead to floor under foot.

² Please note: 15 U.S.C. 1824(a) prohibits the export of horses destined for slaughter by means of ocean vessels.

Pens for horses are no larger than 120 square feet (11.155 square meters) and are between 8 feet (2.438 m) and 9 feet (2.743 m) wide measured across the ship from side to side, except that an APHIS representative may allow pens 7 feet (2.134 m) wide for medium-sized horses.

Single stalls for horses are at least 8 feet (2.438 m) long by 2-1/2 feet (0.762 m) wide. Mares in foal are shipped in single stalls that are at least 8 feet (2.438 m) long by 3 feet (0.914 m) wide. Stalls for stallions are at least 8 feet (2.438 m) long by 5 feet (1.524 m) wide. Stalls for mares in foal and stallions are readily accessible to ship personnel.

7.1.8.3 Cattle:

Except in containers, space for cattle weighing 1,000 pounds or more is at least 8 feet (2.438 m) wide and 6 feet 3 inches (1.911 m) from roof or beams overhead to flooring under foot, except that the height may be 6 feet (1.829 m) or more, at the discretion of the APHIS representative, when floors are raised over pipes and similar obstructions. Pens for cattle weighing less than 1,100 pounds are no more than 226 square feet (20.996 square meters). When pens include stanchions, sounding tubes, ventilators, or other obstructions, 20 percent more space for each animal is provided. Single stalls for cattle weighing 1,000 pounds or more are at least 8 feet (2.438 m) long by 3 feet (0.914 m) wide.

7.1.8.4 Calves and yearlings:

Calves and yearlings may be stowed in pens or stalls at the discretion of the APHIS representative at the port of embarkation.

7.1.8.5 Sheep, goats, and swine:

Space for sheep, goats, and swine is at least 3 feet (0.914 m) in height. The length and width of pens do not exceed 15 feet (4.572 m) × 8 feet (2.438 m).

7.1.8.6 Space guidelines:

The following space guidelines apply to livestock other than as described in section 8.1.8.5 of this Handbook.

Space per head:

Live weight (lb./kg)	Minimum pen area (ft²/m²/head)	Live weight (lb/kg)	Minimum pen area (ft²/m²/head)	Live weight (lb/kg)	Minimum pen area (ft²/m²/head)
88/40	2.36/0.226		9.39/0.872	924/420	16.34/1.518
110/50	2.73/0.260		9.76/0.906	946/430	16.70/1.552
132/60	3.10/0.294		10.13/0.940	968/440	17.07/1.586
154/70	3.47/0.328		10.50/0.974	990/450	17.44/1.620
176/80	3.84/0.362		10.85/1.008	1012/460	17.80/1.654
198/90	4.21/0.396		11.22/1.042	1034/470	17.80/1.688
220/100	4.58/0.430		11.58/1.076	1056/480	18.53/1.722
242/110	4.95/0.464		12.95/1.110	1078/490	18.90/1.756
264/120	5.32/0.498		12.31/1.144	1100/500	19.27/1.790
286/130	5.69/0.532		12.68/1.178	1122/510	19.63/1.824
308/140	6.06/0.566		13.05/1.212	1144/520	20.00/1.858
330/150	6.43/0.600		13.41/1.246	1166/530	20.37/1.892
352/160	6.80/0.634		13.78/1.280	1188/540	20.73/1.926
374/170	7.17/0.668		14.147/1.314	1210/550	21.10/1.960
396/180	7.54/0.702		14.51/1.348	1232/560	21.46/1.994
418/190	7.91/0.736		15.88/1.382	1254/570	21.83/2.028
440/200	8.28/0.770		15.24/1.416	1276/580	22.20/2.062
462/210	8.65/0.804		15.60/1.450	1298/590	22.56/2.096
	9.02/0.838		15.97/1.484	1320/600	22.92/2.130

- (1) Pen-group live weight range: the live weight range in each pen of cattle should not exceed the pen average plus or minus 110/50 lb. /kg.
- (2) For animals weighing between 88/40lb. /kg and 1320/600 lb. /kg, for weights between those shown in the table, the minimum pen area per head should be calculated by linear interpolation.
- (3) The time for a voyage is calculated from completion of loading in United States until anticipated arrival at the port of discharge overseas.
- (4) For animals weighing more than 1320/600 lb. /kg, the minimum pen area per head is 22.92/2.13ft²/m² plus 0.37/0.034 ft²/m² for each 22/10 lb. /kg above 600 kg.

7.1.8.7 Space guidelines for large animals transported in containers:

The following space guidelines apply to livestock that are transported in containers and whose length exceeds the width of the container.

Containers used aboard containerized ocean vessels measure 8 feet (2.438 m) in width outside but vary from 7 feet 3 inches (2.210 m) to 7 feet 9 inches (2.362 m) in width inside and from 17 feet (5.182 m) to 40 feet (12.192 m) in length. The following chart provides space guidelines for livestock whose length exceeds the inside width of the container. For ready measurement of dairy cattle only, the distance from the withers to the pin bone multiplied by 1.65 gives the approximate total length. Other cattle and large animals must be measured to determine their total length. Animals weighing more than shown in the following charts shall be stowed subject to the approval of the APHIS representative at the port of embarkation.

The maximum inside length of container pens is 12 feet 9 inches (3.886 m).

Animal weight, pounds			3 head				4 head			
	Minimum space per head		Minimum pen size		Minimum pen width		Minimum pen size		Minimum pen width	
	Square feet	Square meters	Square feet	Square meters	Feet	Meters	Square feet	Square meters	Feet	Meters
Containers 7 feet 9" wide										
800	18.5	1.719	----	----	----	----	74.0	6.875	9' 7"	2.921
850	19.5	1.812	----	----	----	----	78.0	7.246	10' 1"	3.073
900	20.4	1.895	61.2	5.686	7' 11"	2.413	81.6	7.581	10' 6"	3.200
950	21.4	1.988	64.2	5.964	8' 4"	2.540	85.6	7.953	11' 1"	3.378
1,000	22.4	2.081	67.5	6.271	8' 9"	2.667	90.6	8.417	11' 7"	3.531
1,050	23.4	2.174	70.2	6.522	9' 1"	2.769	93.6	8.696	12' 1"	3.683
1,100	24.5	2.276	73.5	6.828	9' 6"	2.896	98.0	9.105	12' 8"	3.861
1,150	25.5	2.369	76.2	7.079	9' 10"	2.997	----	----	----	----

1,200	26.5	2.462	79.5	7.386	10' 3"	3.124	----	----	----	----
1,250	27.4	2.546	82.2	7.637	10' 6"	3.200	----	----	----	----
1,300	28.4	2.638	85.2	7.915	11' 0"	3.353	----	----	----	----
1,350	29.6	2.750	88.8	8.250	11' 6"	3.505	----	----	----	----
1,400	30.8	2.861	92.4	8.584	12' 0"	3.658	----	----	----	----
1,450	31.9	2.964	95.7	8.891	12' 4"	3.759	----	----	----	----
1,500	32.9	3.057	98.7	9.170	12' 9"	3.886	----	----	----	----
Containers 7 feet 3 inches wide										
700	16.3	1.514					65.2	6.057	9' 9"	2.972
750	17.5	1.626	52.2	4.850	7' 3"	2.210	70.0	6.503	9' 8"	2.946
800	18.9	1.756	56.7	5.268	7' 9"	2.362	75.6	7.024	10' 5"	3.175
850	20.1	1.867	60.3	5.602	8' 3"	2.515	80.4	7.469	11' 1"	3.378
900	21.3	1.979	63.9	5.937	8' 9"	2.667	85.2	7.915	11' 9"	3.581

950	22.3	2.072	66.9	6.215	9' 2"	2.794	89.2	8.287	12' 4"	3.759
1,000	23.7	2.202	71.1	6.605	9' 8"	2.946	----	----	----	----
1,050	24.8	2.304	74.1	6.884	10' 1"	3.073	----	----	----	----
1,100	26.0	2.416	78.6	7.302	10' 9"	3.277	----	----	----	----
1,150	27.1	2.518	81.3	7.553	11' 3"	3.429	----	----	----	----
1,200	28.4	2.638	85.5	7.943	11' 10"	3.607	----	----	----	----
1,250	29.6	2.750	88.8	8.250	12' 3"	3.734	----	----	----	----
1,300	30.9	2.871	92.7	8.612	12' 9"	3.886	----	----	----	----

7.1.9 Hospital pens:

The ocean vessel has an appropriate number of appropriately sized and located pens set aside to segregate livestock that become sick or injured from other animals.

At least 1 percent of the pen space in each compartment or deck where livestock area loaded is set aside to be used as hospital pens for any animals that become sick or disabled aboard ship.

Hospital pens provide at least 3 feet x 8 feet (0.914 m x 2.438 m) for each animal.

7.2 Ramps, doors, and alleyways used for livestock.

Ramps, doors, and passageways used for livestock are of sufficient width and height for their use and allow the safe passage of the species transported. Ramps may not have an incline that is excessive for the species of livestock transported and have to be fitted with foot battens at intervals suitable for the species. They also must have a non-slip surface. Acceptable surfaces include epoxy and concrete flooring with roughened texture (taking care to ensure the surface is not so sharp it will hurt the animals' feet). The sides of ramps have to be of sufficient height and strength to prevent escape of the species of livestock that is transported.

Ramps connecting one deck of a ship to another have a clear width of 2-1/2 to 3 feet (0.762 x 0.914 m) and a clear height of not less than 6 feet 6 inches (1.981 m). The incline of the ramps does not exceed 1:2 (26¹/₂ degrees) between the ramps and the horizontal plane. The ramps are fitted with foot battens of approximately 2 x 2 inches (5.08 x 5.08 cm) spaced no more than 1 foot (0.305 m) apart. The ramps have side fencing not less than 5 feet (1.524 m) high. Side doors in ship's shell plating through which livestock are to be loaded are not less than 6 feet (1.829 m) high for cattle and 6 feet 6 inches (1.981 m) high for horses.

Alleyways running fore and aft on the ocean vessel that are used for feeding, watering, and loading animals, including horses in box stalls, are at least 3 feet wide and have non-slip flooring. Acceptable surfaces include epoxy and concrete flooring with roughened texture (taking care to ensure the surface is not so sharp it will hurt the animals' feet). If the alleyways are used for feeding or watering livestock, but not for loading or unloading of livestock, they may be at least 28 inches (0.711 m) wide. However, for a distance not to exceed 8 feet (2.438 m) at the end of alleyways in the bow and the stern of ship, and where obstructions of less than 3 feet (0.914 m) in length occur, the width may be reduced to a minimum of 24 inches (0.610 m). A sufficient number of alleyways at least 24 inches (0.610 m) wide running across the ship afford ready access to deck drains and to ends of alleyways running fore and aft. However, on

exposed decks where deck drains and the ends of fore and aft alleyways are readily accessible across the ship, alleyways across the ship are not required.

7.3 Feed, water, and bedding.

The feeding and watering system is designed to permit all livestock in each pen adequate access to feed and water. The system is designed to minimize soiling of pens and to prevent animal waste from contaminating feed and water.

7.3.1 Dispensers:

All stalls and pens are equipped with proper troughs for feeding the livestock and with proper troughs, containers, or other dispensers for watering animals.

The troughs/dispensers are made of sturdy material that is easy to disinfect, such as metal or plastic, and may be either removable or fixed.

The troughs/dispensers are arranged to ensure that all livestock in each pen have adequate access to the feed and water.

The troughs/dispensers are arranged to minimize soiling of pens and prevent animal waste from contaminating feed and water.

Hay is dispensed from racks or nets of a type acceptable to the APHIS representative or by placing the hay on the floor of the pens in which the animals are confined.

7.3.2 Storage:

Hay, feed, and bedding are stored below deck or otherwise covered to protect them from weather at sea.

If kept under livestock transport spaces, hay, feed, and bedding are protected from spillage from animal watering and feeding and animal waste.

7.4 Ventilation.

Ventilation is adequate for variations in climate and weather and meets the needs of the livestock being transported.

Under-deck compartments are equipped with a system of mechanical ventilation, including a backup system or equipment in working order, that furnishes a complete change of air in each compartment every 2 minutes when the deck height (height from floor to ceiling) is less than 8 feet (2.438 m), and every 2-1/2 minutes when the deck height is 8 feet (2.438 m) or more.

A spare motor and fan of an approved type in working order is aboard the vessel for each type of motor or fan used.

Net pen space in any compartment does not exceed 80 percent of the deck area.

The adequacy of any mechanical ventilation will be evaluated using the engineering report.

7.5 Waste management.

The vessel has a system or arrangements for managing waste to prevent excessive buildup in livestock transport spaces during the voyage. This includes a backup system or alternate arrangements.

There is adequate drainage away from all areas used for livestock, including sufficient deck drains. A walkway provides easy access to the deck drains. The vessel has adequate arrangements for the removal of feces and other waste from animal transport spaces. APHIS recognizes that laws exist that prevent the discharge of waste from ships in certain locations. However, to the extent possible, the route should be managed to avoid excessive buildup of waste in animal transport spaces.

Livestock on lower decks and their feed and water are protected from being soiled by feces and urine from livestock on upper decks.

7.6 Lighting.

The vessel has adequate illumination to allow clear observation of livestock during loading, transport, and unloading.

8. Ocean Vessels Using Shipping Containers

Regulatory authority: 9 CFR 91.12(e)

Background:

An inspector may exempt an ocean vessel that uses shipping containers to transport livestock to an importing country from any of the accommodation standards for ocean vessels that he or she specifies, if the inspector determines that the containers themselves are designed, constructed, and managed in a manner to reasonably assure the livestock are protected from injury and remain healthy during loading, unloading, and transport to the importing country.

Guidance:

This section of the handbook provides guidance regarding how inspectors will evaluate containers on container vessels. While APHIS will make determinations regarding the suitability of container vessels on a case-by-case basis, vessels that use containers that follow the guidance in this section are more likely to be exempted from the standards for ocean vessels.

8.1. Size.

Shipping containers should meet the size standards specified in 7.1.8.7 of the Handbook.

8.2 Construction materials.

Shipping containers must be constructed of materials able to support livestock weight, and durable enough to withstand normal shocks and climatic conditions incidental to transit. Flooring must provide a non-slip foothold and support the weight of the livestock to be transported. Acceptable surfaces include wood, epoxy, and concrete flooring with roughened texture (taking care to ensure the surface is not so sharp it will hurt the animals' feet). Footlocks may also be used to prevent the animals from slipping.

8.3 Water.

The container has access to a supply of fresh potable water that will be made available to the livestock. It is preferred, although not required, that shipping containers be able to connect to the ocean vessel's water supply system. All watering devices are in good working function and "deiced" in cold weather.

8.4 Waste management.

Shipping containers must ensure that there is not significant, prolonged contact between livestock and their effluent, or must otherwise ensure that all effluent is removed or absorbed so that it does not become an irritant for the animal.

8.5 Ventilation.

Ventilation is adequate for variations in climate and weather and meets the needs of the livestock being transported. A spare motor and fan of an approved type in working order is aboard the vessel for each type of motor or fan used.

9. Contact Information and an Optional Form for Ocean Vessel Reports Required under § 91.12(f).

Regulatory authority: 9 CFR 91.12(f).

Background:

The owner or operator of any ocean vessel used to transport livestock from the United States must submit a written report to APHIS within 5 business days after completing a voyage. The report must include information required by 9 CFR 91.12(f). Additionally, if an ocean vessel used to export livestock experiences any failure of a major life support system for livestock during the voyage, the owner or operator must notify APHIS immediately by telephone, facsimile, or other electronic means.

Owners and operators should contact their port VMO for the contact information of the person to whom to send the report; in general, this will be the APHIS-VS Sea Port Director, although other APHIS-VS personnel may also be specified. The report may be sent by email or fax.

This section of the Handbook contains a form that may be used for the required reports.

OPERATOR'S REPORT

Required by 9 CFR 91.12(f).

Operator's name:
 Telephone number:
 E-mail address:

Date:

SHIP DETAILS	
Name of ship:	Names and addresses of all livestock exporters:
Duration of voyage:	

LOADING DETAILS			
Port	Type of livestock	Number loaded	Date loading completed

DISCHARGE DETAILS					
Port	Type of livestock	Number discharged	Date discharge completed	Number of deaths	Explanation of deaths

FAILURE OF ANY LIFE SUPPORT SYSTEMS* FOR LIVESTOCK (if applicable)
(including, but not limited to, systems for providing feed and water, ventilation systems, and systems for removing livestock waste)

System that failed:	
Description of failure, including time and duration, effects on livestock, and any alternative measures implemented or other resolution.	

10. Laboratories Approved to Conduct Tests for Program Diseases

Regulatory authority: 9 CFR 91.3(d).

Background:

All tests required by an importing country for Program diseases must be conducted in laboratories approved by the Administrator.

Guidance:

Lists of laboratories approved by APHIS to conduct testing for specific diseases may be found at the following Web site:

http://www.aphis.usda.gov/animal_health/lab_info_services/approved_labs.shtml

11. Designated Ports of Embarkation

Regulatory authority: 9 CFR 91.9(a).

Background:

Livestock exported by air or sea may be exported only through ports designated as ports of embarkation by the Administrator.

Guidance:

The following ports that have export inspection facilities which the Administrator has determined satisfy the requirements of 9 CFR 91.9(a) and are designated as ports of embarkation:

(1) California.

- Los Angeles—airport and sea port.
 - o Jet Pets, Inc., 9014 Pershing Drive, Plaza del Rey, CA 90291, (213) 823–8901.
 - o Valley Livestock, 14380 South Euclid Avenue, Chino, CA 91710, (909) 597–1756.
- San Francisco—airport and sea port.
 - o Cow Palace, P.O. Box 34206, San Francisco, CA 94134, (415) 469–6000.
 - o Petair, 145 Bel Air Road, P.O. Box 2431, South San Francisco, CA 94080, (415) 877-0200.

(2) Delaware.

- Wilmington – sea port.
 - o Pennsylvania Holstein Association Export Inspection Facility, 1806 River Road, Middletown, PA 17057, (814) 234-0364.
 - o McCartney, Inc., 18537 Dry Run Rd .S, Dry Run , PA 17220 (717) 349-7752
 - o Wilkinson Farm, 1020 Broad Run Road, Landenburg, PA 19350 (610) 274-8670.

(3) Florida.

- Miami – airport and sea port.
 - o Horse Country Club, 6610 SW 123 Avenue, Miami, FL 33183, (305) 273-1075.
 - o Jacaranda Farms (horses only) 15460 SW 256 St ,Homestead FL 33032 (305) 510-2999.
 - o Sagamore Farm, 6375 SW 125th Ave, Miami, FL 33183, (305) 270-1928.
 - o Thebas Farms, 12401 SW 51 Street, Miami, FL 33175, (305) 381-0222.
 - o Blue Sky Farms, 12325 SW 51 Street, Miami, FL 33175 (786)301-0464.
- Port Everglades – sea port.
 - o Horse Country Club, 6610 SW 123 Avenue, Miami, FL 33183, 305- 273-1075.
 - o Sagamore Farm, 6375 SW 125th Ave, Miami, FL 33183. 305 270-1928.
 - o Thebas Farms, 12401 SW 51 Street, Miami, FL 33175, 305-381-0222. o
 - Blue Sky Farms, 12325 SW 51 Street, Miami, FL 33175(786) 301-0464.
- Jacksonville– sea port.
 - o Victoria Farms (cattle), 23011 NW 78th Ave., Alachua, FL 32615 352 274-5481.
- Tampa – airport and sea port.
 - o Blue Rein Ranch (horses), 5651 NW 165th Street, Reddick, FL 32686 352 274-5481.
 - o Victoria Farms (cattle), 23011 NW 78th Ave., Alachua, FL 32615 352 274-5481.
 - o Port of Tampa (cattle), 2002 Maritime Blvd., Dock 201, Tampa, FL 33605 352 274-5481.

(4) Georgia.

- Atlanta Hartsfield International Airport – airport.
 - o Cartersville (horses only), 118 Old Mill Road, Cartersville, GA 30120 770 547-8916.
 - o Legends Barn (horses only), 3139 Smokey Road, Newnan, GA 30263 678 378-3268.
 - o Big Sky Farm (horsesonly), 2625 Jones Phillips Road, Dacula, GA 30019, 770 307-6057.

(5) Hawaii.

- Honolulu—airport and sea port.
 - o Hawaii State Quarantine Station, 99–762 Moanalua Road, Aiea, Hawaii 96701, (808) 487–5351.

(6) Illinois.

- Chicago—airport.
 - o C&R Midwest Quarantine Facilities, Ltd., Box 470, Route 31, Dundee, IL 60118, (312) 426–5009.
 - o Chicago Equine Export Center (horses only), 8600 N. North Avenue, Melrose Park, IL 60160, 708-615-0700.
 - o Chicago Import Quarantine , 2200 Euclid Ave P.O Box 7 ,Arlington Heights , IL 60006 (847) 385-7609.

(7) Louisiana.

- New Iberia—airport.
 - o Acadiana Regional Airport, Star R–3, Box 390–H (ARA), New Iberia, LA 70560, (318) 365–7204.

(8) Missouri.

- Kansas City—airport.
 - o KCI Multipurpose Export Facility, 12600 NW Prairie View Road, Kansas City, MO 64195, (314) 751–4338 (mailing address: P.O. Box 20462, Kansas City, MO 64195-0462).

(9) New Jersey.

- Elizabeth – sea port.
 - o Boxwood Farms (horses only) 135 Iron Ore Road, Englishtown, NJ 07726 (732) 446-7309.
 - o Mannington Meadows Farm, 60 Oechsle Road, Woodstown, NJ 08098, (609) 769-2009.
 - o The U.S. Equestrian Team's headquarters (horses only), Pottersville Road, Gladstone, NJ 07934, (908) 234-1251.
 - o Redfield Farm (horses only), 35 Salters Farm Rd, Califon, NJ 07830, 908-832-5848.
 - o Cooper Farm (horses only), 19 Lot Road , Sussex NJ 07461, 973-875-5569.
- Newark International Airport – airport.
 - o Mannington Meadows Farm, 60 Oechsle Road, Woodstown, NJ 08098, (609) 769-2009.
 - o The U.S. Equestrian Team's headquarters (horses only) Pottersville Road, Gladstone, NJ 07934, (908) 234-1251.
 - o Redfield Farm (horses only), 35 Salters Farm Rd, Califon, NJ 07830, 908-832-5848.
 - o Cooper Farm (horses only), 19 Lot Road , Sussex NJ 07461, 973-875-5569.
 - o Boxwood Farms (horses only) 135 Iron Ore Road, Englishtown, NJ 07726 (732) 446-7309.
- Salem— sea port.
 - o Mannington Meadows Farm (horses and ruminants only), 60 Oechsle Road, Woodstown, NJ 08098, (609) 769-2009.
 - o Boxwood Farms (horses only) 135 Iron Ore Road, Englishtown, NJ 07726 (732) 446-7309.

(10) New York.

- New York—airport and sea port.
 - o The Ark The Ark at JFK Cargo Building 78A , 78A N. Boundary Road ,Jamaica, New York 11430 Phone: 212-532-0084 info@ARKJFK.com
 - o Boxwood Farms (horses only) 135 Iron Ore Road, Englishtown, NJ 07726 (732) 446-7309.
 - o Hunters Moon (Equine)6080 Northern Blvd East Norwich/ Muttontown NY, 11732 (516)628-8300.
 - o Cooper Farm (horses only), 19 Lot Road , Sussex NJ 07461, 973-875-5569.

(11) North Dakota.

- Fargo — Hector International Airport.
 - o Global Beef Consultants Export Inspection Facility; 3155 44th Ave., Fargo, ND 58102; 701-541-3834.

(12) Ohio.

- Rickenbacker International Airport
 - o FTW LLC (cattle, small ruminants, and swine), 197 North Jefferson Street, Sabina, OH 45169, (740) 572-2888.
 - o FTW LLC (Swine Only) 653 Reed Road Sabina, OH 45169 (740)572-2888.
- Roslyn Manor 4575 Grandview Road Granville, OH 43203 (740) 975-7843.
- Wilmington – airport.
 - o FTW LLC (cattle, small ruminants, and swine), 197 North Jefferson Street, Sabina, OH 45169, (740) 572-2888.
 - o FTW Reed Road Barn,(Swine only) 653 Reed Road , Sabina , Ohio (937)402-0466

(13) Pennsylvania.

- Harrisburg—airport.
 - o Pennsylvania Holstein Association Export Inspection Facility, 1806 River Road, Middletown, PA 17057, (717) 944–1374.

(14) Puerto Rico.

- San Juan—airport.

- o El Commandante Race Track (Horses Only), P.O. Box 1304, Rio Piedras, PR 00929,

(809) 724-6060.

(15) Texas.

- Brownsville—airport, sea port, and border port.
 - o Texas Department of Agriculture, Livestock Inspection Facility, International Airport, Brownsville, TX 78520, (512) 546–5135.
- Dallas/Fort Worth International Airport – airport.
 - o DFW Quarantine (horses only), 1010 A Chinn Chapel Road, Lewisville, TX 75067, (214) 317–6861.
- Del Rio—border port.
 - o Texas Department of Agriculture, Livestock Export Facility, Box 1046, Del Rio, TX 78840, (512) 775–1518.
- Eagle Pass—border port.
 - o Texas Department of Agriculture, Livestock Export Facility, Box 1164, Eagle Pass, TX 78852, (512) 773–2359.
- El Paso—border port.
 - o Texas Department of Agriculture, Livestock Export Facility, 10800 Socorro Drive, El Paso, TX 79927, (915) 543–7419.
- Houston—airport and sea port.
 - o Texas Department of Agriculture, Livestock Export Facility, Box 60107, AMF, Houston, TX 77205, (713) 443–2447.
- Laredo—airport and border port.
 - o El Primero Equine Export Facility (horses only), Route 7, Box 305, Laredo, TX 78041, (512) 723–5436.
 - o Texas Department of Agriculture, Livestock Export Facility, Route 1, Box 67–P, Laredo, TX 78040, (512) 722–6308.

(16) Washington.

- Moses Lake—airport.
 - o Port of Moses Lake, Grant County Airport, Terminal Bldg., Moses Lake, WA 98837, (509) 762–5363.
- Seattle—airport and sea port.
 - o Stevedoring Service of America, 3415 11th Avenue SW., Seattle, WA 98134, (800) 422–3505.
- Olympia—sea port.
 - o Port of Olympia Animal Export Facility, 915 Washington Street NE., Olympia, WA 98507–0827, (206) 586–6150.
- Tacoma—airport and sea port.
 - o Pacific Rim Livestock Quarantine, 17835 Highway 507 SE., Yelm, WA 98507, (206) 458–1762.

Appendix I – Ocean Vessels: Use of Wood for Pen Construction

The following construction is acceptable when wood is used for stanchions, rails, gates, or flooring:

1. Stanchions, rails, and gates.

1.1 General construction:

All pens³, including gates and portable rails used to close access ways, are designed and constructed of material of sufficient strength to securely contain the livestock. They are properly formed, closely fitted, and rigidly secured in place. They have smooth finished surfaces free from sharp protrusions. They have no worn, decayed, unsound, or otherwise defective parts.

1.2 For cattle and horses:

- Rail stanchions are constructed of at least 4 x 6-inch (10.16 x 15.24 cm) lumber set no more than 5 feet (1.524 m) apart from center to center and secured to the ship's rails or sides with 5/8-inch (1.59 cm) or larger bolts or collars and with heels braced to the side of the hull or waterway (narrow passage along the edge of a deck for drainage). Inboard stanchions are constructed of at least 4 x 6-inch (10.16 x 15.24 cm) lumber set in line with the rail stanchions and properly braced. (The method of securing and bracing stanchions may be modified as approved by the underwriter of the cargo bureau and the APHIS representative.)
- On open rail ships, spaces between the rails are blocked out to permit the affixing of outside planking.
- If supplementary stanchions are required for rump boards, these are at least 3 x 4 inches (7.62 x 10.16 cm) in size and are secured to beams and decks as provided above.
- On upper deck fittings at ends of unprotected stalls, a stanchion not less than 3 x 4 inches (7.62 x 10.16 cm) in size is similarly spaced and secured to beams and decks and properly braced.
- Stanchions on under decks are constructed, spaced, and secured in the same manner as upper deck fittings.

³ As used in this Handbook, pen may mean the space for one animal (often referred to as a stall) or the space for more than one animal.

1.3 For sheep, goats, and swine:

Stanchions for single or double tier pens are constructed of lumber at least 3 × 4 inches (7.62 x 10.16 cm) set no more than 5 feet (1.524 m) apart center to center and secured as provided under 1.2 above for cattle and horses.

1.4 For all species:

- Two beams of at least 2 × 6-inch (5.08 x 15.24 cm) lumber are bolted on each side of the stanchions using 5/8-inch (1.59 cm) or larger bolts, nuts, and washers. The beams extend from outside planking to at least 2 feet (.610 m) beyond the line of the breast boards unless the beams butt on the ship's deck fittings. Two beams of at least 2 × 6-inch (5.08 x 15.24 cm) lumber are used to support the roof of single tier pens on exposed decks and the floor of double tier pens on all decks.
- All gates have pivot pins at least 3/4 inch (1.91 cm) in diameter.

2. Breast or front boards, rump boards, division boards, and foot boards.

2.1 General construction:

Pens are fitted with breast boards, rump boards, and division boards between pens at a height suitable for the species in order to provide support for the animals. If feed and water dispensers are mounted externally to the stalls or pens, breast boards are arranged as necessary (including through use of removable boards) to allow livestock access to the feed and water.

2.2 For horses:

- Breast boards: All pens are equipped with breast boards of not less than 2 × 10-inch (5.08 x 25.4 cm) dressed lumber with the top edge placed 3 feet 10 inches (1.168 m) from the floor and securely nailed to the stanchions. Where butting occurs, the joints are on the stanchions and are covered with metal plates 3 inches (7.62 cm) square or 5 inches (12.7 cm) in diameter and not less than 1/4 inch (.64 cm) thick. A 5/8-inch (1.59 cm) or larger bolt passes through the plate, joint, and stanchion and is securely fastened with a nut. All breast boards have 1-inch (2.54 cm) holes bored through them at proper distances for tying animals. An occasional pen may have a removable breast board so that animals may be loaded into and removed from the pen.
- Foot boards: All pens have foot boards of not less than 2 × 10-inch (5.08 x 25.4 cm) lumber securely nailed or bolted to the stanchions. At the discretion of the APHIS representative, small ponies, asses, small mules, mares with foal at foot, young

unbroken horses or gentle horses of any size may be stowed loose in pens. In these cases, a sufficient number of finished lumber at least 2 × 10 inches (5.08 x 25.4 cm) are placed between the breast and foot boards to effectively contain the animals.

- Rump boards: All pens have rump boards that form a solid wall at least 4 feet 6 inches (1.372 m) high and made of lumber not less than 1-1/2 inch (3.8 cm) thick if tongued and grooved or 2 inches (5.08 cm) thick if square edged or of plywood of the same strength. Where the deck is clear of obstructions, rump boards may be set on the inside of the rail stanchions. Otherwise, sections affected are brought forward to clear such obstructions and are fastened by stanchions provided for this purpose. On lower decks where the ship's construction so justifies, rump boards may be affixed to wooden pieces at least 2 x 6 inches (5.08 x 15.24 cm) set the same as described for stanchions. Rump boards may be formed by filling spaces between cargo battens. Rump boards in pens built alongside hatches need be carried down only to the coaming line (vertical boundary of a hatch).
- Division boards: Division boards are used to separate all pens and to close the sides of pens at the ends of rows. They are used in sets of four boards of 2 × 10-inch (5.08 x 25.4 cm) dressed lumber separated by 3-inch (7.62 cm) spacers, extend from the rump boards to the inboard stanchions, and are fitted into appropriate channels or slots at both ends in a manner that permits their ready removal.

2.3 For cattle:

- Breast or front boards and foot boards: All pens have breast or front boards and foot boards as described above for horses, except that the breast or front boards are constructed in sets of three or more boards of dressed lumber at least 2 x 10 inches (5.08 x 25.4 cm) separated by 3-inch (7.62 cm) spacers and placed on the foot board so that the front of the pen extends 48 inches (1.219 m) or more in height from the floor. One or more of the breast boards may be left off if feed or water troughs are to be mounted externally.
- Rump boards: All pens have rump boards as described above for horses, except that the rump boards for cattle form a solid wall at least 4 feet (1.219 m) high.
- Division boards: Division boards as described above for horses are used to separate all pens and to close the sides of pens at the ends of rows.

2.4 For sheep, goats, and swine:

- Front boards: All pens are fitted with front boards of not less than 1 × 6-inch (2.54 x 15.24 cm) lumber approximately spaced and extending to the proper height for these species. A section of front boards may be removable to allow animals to be moved into or out of pens and for feeding or watering.
- Rump boards: All pens on exposed decks have rump boards as described above for horses, except that the rump boards for sheep, goats, and swine form a solid wall 2-1/2 feet (0.762 m) high.
- Division boards: Division boards and boards forming the ends of pens are as described for rump boards for these animals.

3. Wooden flooring.

3.1 For cattle and horses:

- Flooring is laid athwartship and secured by placing ends beneath the underside of foot and rump boards or under a 2 × 4-inch (5.08 x 10.16 cm) strip nailed along these boards. Floors may be either of two types, flush or raised. The flush type is constructed of not less than 1-inch (2.54 cm) thick lumber laid flat on the deck. The raised type is constructed of not less than 2-inch (5.08 cm) thick lumber nailed to scantlings of at least 2 × 3-inch (5.08 x 7.62 cm) dimensions laid 2 feet 6 inches (0.762 m) apart. If desired, flooring may be laid in portable sections. Flooring is not necessary on ships with wooden decks provided foot locks are secured to the decks.
- Floors have four foot locks of 1 × 4-inch (2.54 x 10.16 cm) lumber laid fore and aft with flat side down, and so placed as to provide in-between spaces of 12, 14, 26, and 14 inches (30.48, 35.56, 66.04, and 35.56 cm), beginning at inside of the footboard. Additional foot locks are placed at 14-inch (35.56 cm) intervals in pens having a depth of 9 feet (2.743 m) or more. They are well secured with nails of a length that will permit 1-inch (2.54 cm) clinch in 1-inch (2.54 cm) flooring and 2-inch (5.08 cm) penetration in 2-inch (5.08 cm) flooring.

3.2 For sheep, goats, and swine:

- Flooring is laid as described above for horses and cattle, except that the raised flooring need not be greater than 12 inches (30.48 cm) thick.
- Floors have foot locks of not less than 1 × 2-inch (2.54 x 5.08 cm) lumber, four to each pen, equally distributed and laid as described above for horses and cattle.

Appendix II – Cargo Containers for Livestock Shipped by Air

APHIS does not require the use of any particular material for cargo containers used for livestock shipped for export by air. However, any such materials must be of sufficient strength to securely contain the animals shipped. The *Live Animal Regulations* (LAR) of the International Air Transport Association (IATA) provides a useful guidance regarding suitable materials. The IATA guide is available at <http://www.iata.org/publications/Pages/live-animals.aspx>. (Please note: IATA charges a fee for the LAR.)

Additionally, APHIS inspectors using the following standards as guidelines in determining whether a cargo container has sufficient space for animals destined for export:

Table 1: Calves, Cattle, Pigs, and Sheep

Species	Weight (lb)	Density (lb/m ²)	Space per Animal (ft ²)	No. of Animals per 100 ft ²	Animals per single tier pallet		
					88 X 108"	88 X 125"	96 X 125"
Calves	110	45	2.45	40	24	28	31
	154	50	3.10	32	20	23	25
	176	54	3.25	30	18	21	24
	198	56	3.50	28	17	20	22
Cattle	660	70	9.00	11	6	7	8
	1100	80	13.75	7	4	5	5
	1320	84	15.66	6	3-4	4	4-5
	1540	87	17.60	5	3	3-4	4
Pigs	55	35	1.60	64	37	44	48
	220	40	5.50	18	10	12	14
Sheep	55	30	1.80	55	32	37	42
	154	40	3.85	26	15	18	20

Table 2: Horses

Weight (lbs)	Space per horse (ft ²)
0-220	4.52
221-440	7.10
441-680	9.36
661-880	11.19
881-1000	12.81
1101-1320	14.42
1321-1540	16.25
1541-1760	18.62

Appendix 3: Recommendations for Export Isolation Facilities

Background:

Livestock may have to be isolated for a period of time prior to export in order to meet the health requirements of the country to which they will be shipped. While these requirements differ from country to country and even among classes of livestock destined for export, and APHIS recommends that exporters contact the importing country directly regarding the requirements, there are certain generally applicable standards that, in our experience, apply to the import requirements for many countries and classes of animals. These are:

1.1 Cleaning and disinfection.

- Pastures and exercise areas included in the export isolation facility are clean.
- All stables, barns, walkways, and equipment to be used in the export isolation facility have been cleaned prior to use for isolation.
- During the isolation period, the export isolation facility requires all protective outer clothing for personnel and all feeding, grooming, and cleaning equipment to be used exclusively within the export isolation facility or to be properly cleaned and disinfected between uses if used with animals outside the export isolation facility.

1.2 Water supply.

The export isolation facility has an adequate supply of water available at all times for the isolated animals to drink and for cleaning purposes.

1.3 Feed, bedding, and other essential items.

Supplies of feed, bedding material, and other essential items are delivered and stored in a manner that prevents contact with animals not intended for export.

1.4 Drainage.

Drainage is channeled away from areas in the export isolation facility.

1.5 Isolation.

- The isolation period starts when the last animal to be exported enters the export isolation facility, at which time the supervising accredited veterinarian (or, if requested by the importing country, APHIS veterinarian) completes and signs an inventory of all livestock in the export isolation facility.
- All isolated animals are confined within the export isolation facility.
- Measures are taken to prevent other animals from approaching within 30 feet of the isolated livestock (including in any outdoor facilities, pastures, tracks, paddocks, or fields that are part of the export isolation facility).

1.6 Personnel authorized entry.

- Only personnel authorized by the supervising accredited veterinarian or APHIS veterinarian may enter the export isolation facility. The export isolation facility maintains an entry/exit log and/or a list of authorized personnel.

1.7 Unannounced inspections.

The export isolation facility is available during the isolation period for unannounced inspections by an accredited veterinarian or APHIS representative.

1.8 Removal of livestock from the export isolation facility.

- No animal is removed from the export isolation facility until testing for Program diseases (e.g., tuberculosis, brucellosis, pseudorabies) is completed and the isolated herd is found negative.
- Animals may be removed from the export isolation facility only with the approval of the supervising accredited veterinarian or APHIS veterinarian.
- The export isolation facility keeps records of all removed animals and the reason for the removal (e.g., calving, no longer wanted by buyer).