

§ 91.21 Ventilation.

Each underdeck compartment on which animals are being transported aboard an ocean vessel shall be equipped with a system of mechanical ventilation that will furnish a complete change of air in each compartment every 2 minutes when deck height⁸ is less than 8 feet and every 2½ minutes when the deck height⁸ exceeds 8 feet. Spare motors and fans shall be available on board, for replacement or repair of the ventilation system during the voyage. A spare motor and fan of an approved type in working order shall be aboard the vessel for each type of motor or fan used. Net pen space in any compartment shall not exceed 80 percent of the deck area.

[42 FR 28990, June 7, 1977. Redesignated at 45 FR 86413, Dec 31, 1980]

§ 91.22 Protection from heat of boilers and engines.

No animals shall be stowed along the alleyways leading to the engine or boiler rooms unless the sides of said engine or boiler rooms are covered by a tongue and groove tight sheathing producing a 3-inch-wide air space except that on ships powered with internal combustion engines this sheathing may not be required at the discretion of the inspector.

[42 FR 28990, June 7, 1977. Redesignated at 45 FR 86413, Dec. 31, 1980]

§ 91.23 Loading ramps and doors.

(a) Ramps connecting one deck of a ship to another shall have a clear width of 3 feet and a clear height of not less than 6 feet 6 inches. The incline of the ramps shall not exceed 1:2 (26½°) between the ramps and the horizontal plane. The ramps shall be fitted with footlocks of approximately 2" x 2" lumber and spaced no more than one foot apart. The ramps shall have side fencing not less than 5 feet in height. Side doors in ship's shell plating through which livestock are to be loaded shall have a height of not less than 6 feet for cattle and 6 feet 6 inches for horses.

(b) Alleyways running fore and aft on the ocean vessel that are used for feed-

ing, watering, and loading animals, including horses in box stalls, shall have a minimum width of 3 feet. However, for a distance not to exceed 8 feet at the end of alleyways in the bow and the stern of ship, and where obstructions of less than 3 feet in length occur, the width may be reduced to a minimum of 24 inches. A sufficient number of athwartship alleyways at least 24 inches in width shall be provided to afford ready access to scuppers and to ends of alleyways running fore and aft. However, on exposed decks where scuppers and the end of fore and aft alleyways are readily accessible athwartship alleyways are not required and if the alleyways are to be used for feeding or watering livestock, but not for loading or unloading of livestock, such alleyways shall have a minimum width of 28 inches.

[42 FR 28990, June 7, 1977. Redesignated at 45 FR 86413, Dec. 31, 1980]

§ 91.24 Attendants.

It shall be the responsibility of the captain of the ocean vessel to carry at least three men on board the vessel who are experienced in the handling of the kind/kinds of livestock to be carried, and a sufficient number of attendants, satisfactory to the inspector or the APHIS veterinarian at the port embarkation to insure proper care of the animals: *Provided, however,* That only one person experienced in the handling of the kind/kinds of livestock to be carried and a sufficient number of attendants, satisfactory to the APHIS veterinarian at the port of embarkation, to insure proper care of the animals must be carried on board the ocean vessel if less than 800 head of livestock are carried.

[42 FR 28990, June 7, 1977, as amended at 43 FR 27171, June 23, 1978. Redesignated at 45 FR 86413, Dec. 31, 1980, and amended at 57 FR 23047, June 1, 1992]

§ 91.25 Space requirements for animals on ocean vessels.

(a) *General requirements.* A general space requirement for any individual animal in stalls or crates on ocean vessels shall be six inches more in height, depth, and width than the measurements of the animal concerned. The number of animals in each stall, pen or

⁸Deck height is the height from the ceiling to the floor.

§91.25

9 CFR Ch. I (1-1-01 Edition)

other container, the cubic inches of air available for each animal, and the ventilation capability of the transporting carrier are other criteria used to determine final space requirements for each animal. Guidelines of space requirements for storage of animals in pens are listed in paragraphs (b) and (c) of this section. Final determination of space needed and manner of loading of animals for export shipment will be made by the inspector or the APHIS veterinarian at the port of embarkation, based upon the size and type of animals presented, weather, destination, route, and means of transportation employed for the export shipment.

(b) *Space guidelines:*

	Space in square feet allowed per animal—
Animal weight, pounds:	
100	4.0
150	5.0
200	6.0
250	6.9
300	7.9
350	8.9
400	9.9
450	10.9
500	11.8
550	12.5
600	13.2
650	13.9
700	14.6
750	15.3
800	15.9
850	16.6
900	17.3
950	17.8
1,000	18.4
1,050	18.9
1,100	19.4

	Space in square feet allowed per animal—
1,150	19.9
1,200	20.4
1,250	21.0
1,300	21.5
1,350	22.0
1,400	22.7
1,450	23.3
1,500	24.0
1,550	24.6
1,600	25.3
1,650	25.9
1,700	26.6
1,750	27.2
1,800	27.8

(c) *Space guidelines for containers.* Containers used aboard containerized ocean vessels measure 8 feet in width outside but vary from 7 feet 3 inches to 7 feet 9 inches in width inside and from 17 feet to 40 feet in length. For such containers the space requirements and minimum pen widths shown in the following charts shall be used whenever the length of the animal exceeds the 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. Length of other cattle and large animals will require measurement of their total length. Other animals larger than those shown in the following charts shall be stowed subject to the approval of the inspector or the APHIS veterinarian at the port of embarkation. Maximum inside length of container pens shall be 12 feet 9 inches.

Weight	Square feet per head	3 head		4 head	
		Square feet	Width	Square feet	Width
CONTAINERS 7'9" IN WIDTH					
800	18.5	.....	.....	74.0	9'7"
850	19.5	.....	.....	78.0	10'1"
900	20.4	61.2	7'11"	81.6	10'6"
950	21.4	64.2	8'4"	85.6	11'1"
1,000	22.4	67.5	8'9"	90.6	11'7"
1,050	23.4	70.2	9'1"	93.6	12'1"
1,100	24.5	73.5	9'6"	98.0	12'8"
1,150	25.5	76.2	9'10"	.....	.....
1,200	26.5	79.5	10'3"	.....	.....
1,250	27.4	82.2	10'6"	.....	.....
1,300	28.4	85.2	11'0"	.....	.....
1,350	29.6	88.8	11'6"	.....	.....
1,400	30.8	92.4	12'0"	.....	.....
1,450	31.9	95.7	12'4"	.....	.....
1,500	32.9	98.7	12'9"	.....	.....

Weight	Square feet per head	3 head		4 head	
		Square feet	Width	Square feet	Width
CONTAINERS 7'3" IN WIDTH					
700	16.3	.....	.....	65.2	9'9"
750	17.5	52.2	7'3"	70.0	9'8"
800	18.9	56.7	7'9"	75.6	10'5"
850	20.1	60.3	8'3"	80.4	11'1"
900	21.3	63.9	8'9"	85.2	11'9"
950	22.3	66.9	9'2"	89.2	12'4"
1,000	23.7	71.1	9'8"	.....	.....
1,050	24.8	74.1	10'1"	.....	.....
1,100	26.0	78.6	10'9"	.....	.....
1,150	27.1	81.3	11'3"	.....	.....
1,200	28.4	85.5	11'10"	.....	.....
1,250	29.6	88.8	12'3"	.....	.....
1,300	30.9	92.7	12'9"	.....	.....

(d) *Special requirements.* If an animal to be loaded on an ocean vessel is in the third trimester of pregnancy or the route of the carrier will be into or through a tropical area,⁹ the space required for each animal shall be increased by 10 percent. If the animal to be exported is in the third trimester of pregnancy and the route of the vessel will be into or through such area, the space required for such animal shall be increased by 20 percent. (See also paragraph (g). In addition, hospital pens measuring not less than 3 feet by 8 feet for each animal shall be provided at the rate of 3 such pens for each 100 head loaded, except as provided for horses in paragraph (e) of this section.

(e) *Size of stalls or pens for horses on ocean vessels.* Space for horses in pens on ocean vessels shall not be less than 6 feet 6 inches from roof or beams overhead to floor underfoot. Space containing up to 120 square feet may be used for stowage of horses and shall be at least 8 feet but not more than 9 feet in width (thwartship) except that upon approval of the inspector or the APHIS veterinarian at the port of embarkation, pens 7 feet wide may be allowed for medium-sized horses. Single stalls shall be not less than 2½ feet wide. Mares in foal shall be shipped only in separate stalls which shall be not less than 8 feet long by 3 feet wide and for mares due to foal en route and for stallions, stalls shall not be less than 8 feet long by 5 feet wide and shall be readily accessible to ship personnel. Extra

stalls suitably located shall be provided in each compartment or on decks where horses are carried so that adequate hospital space can be made available for any horses that become sick or disabled aboard ship. The number of such stalls shall be as follows: One for the first 4 to 10 horses shipped, another for any number in excess of 10 up to and including 25, and still another for each additional 25 horses or fraction thereof.

(f)(1) Except as provided in paragraph (c) of this section, space in pens on ocean vessels for cattle weighing 1000 pounds or more shall be no less than 8 feet in width and 6 feet 3 inches from roof or beams overhead to flooring underfoot, except that when floors are raised over pipes and similar obstructions, a height of not less than 6 feet may be permitted at the discretion of the inspector. Pens for cattle weighing less than 1,100 pounds may not exceed 226 square feet. Pens for cattle weighing 1,100 pounds or more may not exceed 610 square feet. When any such pen includes stanchions, sounding tubes, ventilators, and other obstructions, 20 percent more space for each animal shall be required.

(2) Single stalls in ocean vessels for cattle weighing 1000 pounds or more shall be not less than 8 feet in length by 3 feet in width.

(3) Calves and yearlings may be stowed in pens or stalls at the discretion of the inspector or the APHIS veterinarian at the port of embarkation.

(g) *Space for sheep, goats, and swine on ocean vessels.* Space for sheep, goats, and swine on ocean vessels shall not be

⁹The area situated between the Tropic of Cancer and the Tropic of Capricorn.

§91.26

less than 3 feet in height and the length and width of pens shall not exceed 15 x 8 feet. An increase of 50 percent square footage shall be required for animals in the third trimester of pregnancy, notwithstanding other provisions in paragraph (d).

[42 FR 28990, June 7, 1977. Redesignated and amended at 45 FR 86413, Dec. 31, 1980; 53 FR 40407, Oct. 17, 1988; 57 FR 23047, June 1, 1992]

§91.26 Concrete flooring.

(a) Pens aboard an ocean vessel shall have a 3 inch concrete pavement, proportioned and mixed to give 2000 psi. compressive strength in 28 days. The pavement shall have a broom or rough finish. Steel angle bars may be used for footlocks if they are mounted into the flooring in such a way that, at the same time, the bars serve as gutterways. The angle bars shall not be less than 2 inches by 2 inches and $\frac{5}{16}$ inches in thickness, and spaced on 12 inch centers running for and aft on the vessel.

(b)(1) *Horses and cattle.* Flooring shall be laid athwartship and secured by placing ends beneath the under side of foot and rump boards or under a 2" x 4" strip nailed along these boards. Floors may be either of two types, flush or raised. The flush type shall be constructed of not less than 1" thick lumber laid flat on the deck. The raised type shall be constructed of not less than 2" thick lumber nailed to scantlings of at least 2" x 3" dimensions laid 2 feet 6 inches apart. If desired, flooring may be laid in portable sections. Flooring will not be required on ships with wooden decks provided footlocks are secured to the decks. Cement or composite material diagonally scored one-half inch deep may be used on iron decks instead of wooden flooring if the footlocks are molded in the same and bolted to the deck.

(2) *Sheep, goats, and swine.* Flooring for sheep, goats, and swine shall be the same as prescribed in this section for horses and cattle, except that the raised flooring need not be greater than 12 inch in thickness.

(3) *Drainage.* Provisions shall be made for drainage of urine and surface water from all parts of the vessel used for carriage of animals including sufficient

9 CFR Ch. I (1-1-01 Edition)

scuppers. A walkway shall provide easy access to the scuppers.

(c)(1) *Horses and cattle.* In pens for horses or cattle, there shall be four footlocks of 1" x 4" 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, beginning at inside of the footboard. Additional footlocks shall be added at 14 inch intervals in pens having a depth of 9 feet or more. They shall be well secured with nails of a length that will permit 1 inch clinch in 1 inch flooring and 2 inch penetration in 2 inch flooring.

(2) *Sheep, goats, and swine.* Footlocks in pens for sheep, goats, and swine shall be of not less than 1" x 2" lumber, four to each pen, equally distributed and laid in the manner prescribed in paragraph (c)(1) of this section for horses and cattle.

[42 FR 28990, June 7, 1977. Redesignated at 45 FR 86413, Dec. 31, 1980, and amended at 57 FR 23047, June 1, 1992]

§91.27 Troughs and hayracks.

All stalls and pens aboard an ocean vessel shall be equipped with proper troughs for feeding and watering animals as provided in this section. Racks or nets furnished for feeding hay shall be of a type acceptable to the inspector. The feeding of hay to the animals on ocean vessels may be by means of dispensing the hay from racks or nets or by placing the hay on the floor of the pens in which the animals are confined.

(a) *Horses and cattle.* Troughs may be constructed of metal or wood and may be either removable or fixed. The space between the first footlock and footboard may be utilized for feeding cattle, provided a 2" x 4" piece of lumber is affixed along the top surface of said footlock so that it, together with the footboard and the battens, will form an enclosure. If wooden troughs are used for feeding, an adequate supply of buckets or other metal containers shall be provided for the proper watering of the animals.

(b) *Sheep, goats, and swine.* Pens for these animals shall have feed troughs not less than 8 inches wide and shall be equipped with proper receptacles for watering. Pens for sheep and goats