CCS Rule Change Notice For:

Rules for Classification of Sea-Going Steel Ships, 2012

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Contents

PART TWO HULL

CHAPTER 3 EQUIPMENT AND OUTFITS

Section 1 RUDDERS

Add new paragraph 3.1.1.9:

"3.1.1.9 The design of rudders of CSR bulk carriers contracted for construction between 1 July 2015 and 30 June 2016 should follow the relevant requirements of section 1 of Chapter 10, PART TEN of CCS Rules for Classification of Sea-Going Steel Ships (2012&2013,2014Amd)."

PART EIGHT ADDITIONAL REQUIREMENTS

CHAPTER 2 ADDITIONAL REQUIREMENTS FOR LIVESTOCK CARRIERS

Section 1 GENERAL PROVISIONS

2.1.1 Application

2.1.1.1 This Chapter applies to livestock carriers.

2.1.1.2 Livestock carriers complying with the requirements of this Chapter are eligible for the assignment of the notation Livestock Carrier.

2.1.1.3 In addition to the provisions of this Chapter, livestock carriers are to comply with applicable requirements for livestock carriers in other chapters of the Rules, CCS Rules for Materials and Welding and relevant provisions of the flag State Administration (if any).

2.1.2 Definitions

2.1.2.1 Livestock carrier refers to a sea-going steel ship constructed or adapted and used solely for the carriage of livestock cargoes. Livestock includes sheep, cattle, horses and pigs, etc..

2.1.2.2 Secondary power source refers to the source of power which may supply independent power for livestock service systems if the main source of power is out of action.

2.1.3 Plans and documents

2.1.3.1 In addition to the plans and documents as specified by relevant chapters of the Rules, the following plans and documents are to be submitted for review:

(1) Arrangement of livestock pens and passageways;

(2) Constructions of livestock pens and passageways;

(3) Diagram of the ventilation system, with indication of the gross volume and calculations of air change rates of the enclosed spaces;

(4) Diagram of storage and distribution systems for fodder and water;

(5) Diagram of the water washing system;

(6) Diagram of the sewage drainage and discharge system;

(7) Arrangement of fire-fighting appliances in livestock spaces;

(8) Specifications of fire-fighting appliances;

(9) Diagram of secondary power source system;

(10) Arrangement of secondary power sources spaces;

(11) Diagram of secondary power sources related piping systems;

(12) Estimation of fuel consumption of secondary source of power and estimation of time for restarting (restoration) of secondary source of power (if applicable).

Section 2 HULL STRUCTURE AND ARRANGEMENT

2.2.1 Hull structure

2.2.1.1 The structure of livestock carriers is to comply with relevant requirements of Chapter 2 of PART TWO of the Rules.

2.2.1.2 Where superstructure deck is strength deck (contributing to the longitudinal strength), the thickness of deck plating, excluding that of the forecastle, is to comply with the requirements of 2.17.5.4 in Chapter 2 of PART TWO and the buckling strength requirements in respect to longitudinal strength in Section 2, Chapter 2 of PART TWO, but not less than 6 mm.

2.2.1.3 Where superstructure deck is strength deck (contributing to the longitudinal strength), the framing of superstructure deck is to comply with the relevant requirements in Section 8, Chapter 2 of PART TWO and the buckling strength requirements in respect to longitudinal strength in Section 2, Chapter 2 of PART TWO.

2.2.2 Livestock arrangement and protection of livestock

2.2.2.1 The livestock is to be kept in pens. The dimensions of these pens are to be suitable for the livestock carried and are to comply with the requirements in Table 2.2.3.5.

2.2.2.2 Arrangements for protecting the livestock from injury, avoidable suffering and exposure to weather, sea or heat source are to be provided.

2.2.2.3 Livestock may not be carried or loaded for carriage on or in any part of a ship where the livestock, livestock fittings, livestock equipment or arrangements may:
(1) obstruct access to any accommodation space or working space necessary for the safe running of the ship, or the means of egress from any hold or underdeck space;
(2) interfere with life-saving or fire-fighting appliances;
(3) interfere with the tank sounding equipment or bilge pumping;
(4) interfere with the operation of closing appliances;
(5) interfere with the operation of freeing ports;
(6) interfere with the lighting or ventilation of other parts of the ships;
(7) interfere with the proper navigation of the ship.
2.2.2.4 If the casing or bulkhead of an engine room, boiler room or heated fuel tank forms the boundary of a space in which livestock is to be carried, appropriate heat insulation is to be provided.
2.2.2.5 The following measures are to be taken to avoid hurt to livestock from exposed steel structure during the movement of livestock:
(1) protective boards are to be fitted on both sides of upper and lower passageways;
(2) protective boards are to be fitted on pens adjacent to the bulkhead with stiffeners or similar structures.

2.2.3 Livestock pen, means of access for livestock and livestock deck

2.2.3.1 A ramp or other suitable means of access appropriate to the species, is to be provided for the loading or unloading of livestock. It is to be so erected as to prevent any gap occurring between it and the ship and is to be set at a gradient suitable for the species to be loaded or unloaded.
2.2.3.2 A means of access is to be fitted with:
(a) side panels free of protrusions and of sufficient strength and height to prevent escape of livestock;
(b) a walking surface of battens suitable for the species; and
(c) a closing arrangement.
2.2.3.3 If a means of access is part of the ship's equipment, it is to be designed to support a uniformly distributed load over the walking surface not less than the values specified in Table 2.2.4.3.

Table 2.2.4.3

Species	Load (N/m^2)
Cattle and horses	4700
Sheep, goats and pigs	2400

2.2.3.4 The permissible tensile stress for material used in the construction of a means of access is specified in Table 2.2.4.4.

Table 2.2.4.4

Material	Permissible tensile strength
Steel	$R_{eH}/2$
Aluminum	$R_{p0.2}/2$
Other	As specified by the classification society

2.2.3.5 Livestock pen and means of access for livestock are to comply with the requirements of Table 2.2.3.5.

Limits for pens and passageways of sheep and pigs **Table 2.2.3.5(1)**

Maximum breadth	4.5 m
Minimum breadth	2.0 m
Maximum length	Not more than twice the breadth
Minimum length	Not less than the breadth
Maximum clear floor area within pen	40.5 m^2
Minimum clear height within pen	1.1 m
Maximum clear vertical distance between rails	0.3 m
Maximum clear vertical distance below bottom edge of lowest rail of pen installed at deck level	0.2 m
Maximum clear vertical distance below bottom edge of lowest rail of pen not	0.05 m

installed at deck level	
Minimum height of top edge of uppermost rail above pen floor	0.9 m
Minimum width of adjacent passageway clear of receptacles and any other obstructions	0.55 m

Limits for pens and passageways of cattle **Table 2.2.3.5(2)**

Maximum breadth	4.5 m
Minimum breadth	2.1 m
Minimum length	2.3 m
Maximum clear floor area within pen	21 m^2
Maximum height of top edge of lowest rail above pen floor between pens	0.6 m
Minimum clear height within pen	1.8 m if a mechanical ventilation system is provided 2.3 m in any other case
Minimum width of adjacent passageway, measured clear between rails, when pens are on both sides of the passageway and cattle are loaded and discharged through the pens	1.0 m
Minimum width of adjacent passageway, measured clear of any fixed structure, fittings, receptacles or obstruction (eg pillars, feed chutes, fixed fodder or water troughs), when pens are on both sides of the passageway and cattle are loaded and discharged through the pens	0.7 m
Minimum width of adjacent passageway, measured clear of any fixed obstructions, when pens are on both sides of the passageway and cattle are loaded and discharged through the passageway	1.0 m
Minimum width of adjacent passageway measured clear from rails, when pens are on one side only of the passageway	0.75 m

Limits for stalls, pens and passageways of horses **Table 2.2.3.5(3)**

Maximum clear length within stall		2.5 m
Minimum clear length within stall		2.3 m
Minimum clear passage:	(1) between 2 rows of stalls and bounded by the front rails	1.7 m
	(2) between 2 rows of stalls and bounded by front and back rails	1.2 m
	(3) in any other case	1.0 m
Minimum clear breadth within stall	(1) if the stall is aligned athwartships	0.7 m
	(2) if the stall is aligned fore and aft	0.9 m
Height of uppermost front, back and side rail from floor to top edge		1.15 m
Height of lowest front, back and side rail from floor to top edge		0.75 m

Note: Pens dedicated for the carriage of other livestock are to be submitted to CCS for special consideration.

2.2.3.6 Livestock pens are to be designed based on the load determined by the application of the following formula:

$$F = \alpha \mathrm{b}\left(0.574 + 0.0252\left(\mathrm{Z} + \gamma\right)\right) \quad \text{N/m}$$

where: α — coefficient, taken as 1668 for sheep or pigs and 3336 for cattle or horses;
b — maximum breadth of pen, in m;
Z — the vertical distance from the ship's minimum draught water-line to the pen floor;
γ — coefficient, taken as 0.5 for sheep or pigs and 0.75 for cattle or horses.
uniformly distributed up to the Load bearing areas:

For sheep and pigs: uniformly distributed up to the rail the centre of which is at a height of not more than 0.9 m above the pen floor;

For cattle and horses: uniformly distributed up to the rail the centre of which is at a height of not more than 1.40 m above the pen floor.

2.2.3.7 Livestock pen floors or platforms are to be designed according to the following formula with the load uniformly distributed in any two-thirds of the area of the pen:

$$P = \beta\left[1 + ((0.094 - 0.00035L)y) / d + (7.4 - 0.016L)\right] \quad \text{N/m}^2$$

where: β — coefficient, taken as 2500 for sheep or pigs and 5000 for cattle or horses;
d — minimum draught of the ship, in m;
y — longitudinal distance from the midpoint of the pen to amidships, in m;
L — length between the perpendiculars of the ship, in m.

2.2.3.8 The permissible stresses of livestock pens and floors are shown in Table 2.2.3.8.

Table 2.2.3.8

Material	Permissible tensile stress	Permissible shear stress
Steel	$0.75R_{eH}$	$0.375R_{eH}$
Aluminium	$0.75R_{p0.2}$	$0.375R_{eH}$
Other	To be specially considered by CCS	To be specially considered by CCS

2.2.4 Means of egress and access for persons

2.2.4.1 Each space in which livestock is carried is to be provided with no fewer than two means of egress widely separated and giving access to an open deck.

2.2.4.2 Access to a livestock space for persons is to be safe and, if combined with a ramp used for moving livestock between decks, is to be separated from the livestock ramp by protective fencing.

2.2.4.3 A pen, stall or similar fitting is to be provided with a means of access for persons with a secure closing arrangement having a structural strength equivalent to the strength of that part of the pen, stall or fitting.

2.2.4.4 If access is required between a vessel's side and a pen, stall or similar fitting for the purposes of the safe and proper operation of the vessel, a passageway is to be provided that has a clear width of not less than 750 mm between the vessel's rail or bulwark and the rails or receptacles of the pen, stall or fitting, except that obstructions outside the pen rails may reduce the passageway measured from the vessel's rail to 550 mm.

2.2.4.5 If it is necessary for persons to be on a means of access during the movement of livestock, it is to be provided with a passage of not less than 550 mm width that is to be:

(1) fenced to a height of not less than 1 m and with an intermediate horizontal rail approximately 550 mm above the walking surface; and

(2) fitted with treads at suitable stepping distances.

2.2.4.6 The passageways for carriage of livestock are to have a minimum clear height of 2.0 m.

Section 3 STABILITY

2.3.1 General requirements

2.3.1.1 The stability of livestock carriers is to comply with the requirements of this section or relevant requirements of flag State Administration.

2.3.1.2 The stability of livestock carriers is to comply with the requirements for cargo ships in Sections 9 and 10 of Chapter 1, PART TWO of the Rules.

2.3.2 Additional requirements for stability

2.3.2.1 The effects of the shift of livestock and fodder in pellet form (if any) and the effect of wind are to be taken into account for stability of livestock carriers. The following criteria are to be complied with by livestock carriers under the condition of intact stability:

(1) the angle of heel is not to exceed 10 degrees due to the effect of wind;

(2) the residual area A are to comply with the following requirements, taking into account the effects of the shift of livestock and fodder in pellet form and the effect of wind, as illustrated in Figure 2.3.2.1 below:

$$A \geq 0.018\ m\bullet rad + 0.2A_{(A+B)}$$

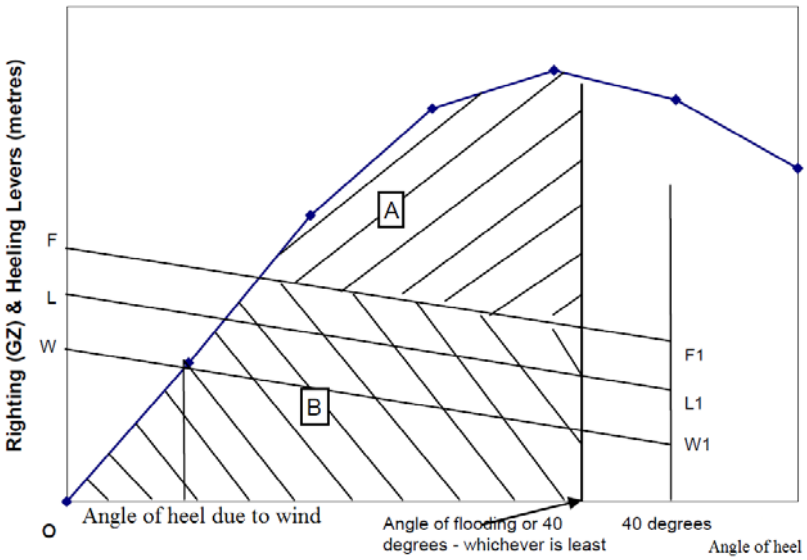

Figure 2.3.2.1 Rolling criteria

where: $A_{(A+B)}$ is the sum of area A and area B under the righting lever curve, as illustrated in Figure 2.3.2.3.

Definitions in Figure 2.3.2.3 are as follows:

OW — the heeling lever at 0° due to wind;

WW_1 — the heeling lever curve due to wind;

WL — the heeling lever at 0° due to the shift of livestock;

LL_1 — the heeling lever curve due to the combined effects of the wind and the shift of livestock;

LF — the heeling lever at 0° due to the effect of shift of fodder;

FF_1 — the heeling lever curve due to the combined effects of wind and the shift of livestock and fodder; and

θ — the angle of heel due to wind.

Note: If fodder is not pellet feed carried in bulk, the heeling lever due to shift of fodder will be zero.

(3) The heeling lever due to the effect of wind is to be determined according to the following requirements:

① The heeling lever due to the effect of wind at 0° is to be given by: $OW = \frac{PAH}{\Delta}$, where: Δ is displacement, in t; P is the wind pressure, 504 pa; A is the lateral area of the vessel above the waterline in m^2; H is the vertical distance between the centroid of the lateral area of the vessel above the waterline and the centroid of the vessel's underwater lateral area. For many vessels the vertical position of the centroid of the underwater lateral area may be taken at half the draft to the underside of the keel at amidships.

② The heeling lever due to the effect of wind at 40° is to be given by: 0.8 (heeling lever due to the effect of wind at 0°).

③ The heeling lever curve is to be taken as a straight line joining the heeling lever at 0° and the heeling lever at 40°.

(4) The heeling lever due to the shift of livestock is to be determined according to the following requirements:

① The heeling lever due to the shift of livestock at 0 is to be given by: . *m* is the average mass of livestock to be carried on the intended voyage~~:~~, in t; *f* is the floor area required per head of average mass of the livestock to be carried on the intended voyage, in m^2; *C* is livestock shift constant, $C = \frac{1}{6}\sum lb^2$, *l* is length of each pen, in m; *b* is breadth of each pen, in m; For vessels with uniform breadth of pens, the livestock vessel constant becomes:1/6 (breadth of pen x total floor area of pens); For vessels with varying breadths

of pens, the largest breadth may be used and the livestock shift constant becomes:1/6 (maximum breadth of pen x total floor area of pens).

② The heeling lever due to the shift of livestock at 40° is to be given by: 0.8 (heeling lever due to the shift of livestock at 0°).

③ The heeling lever curve is to be taken as a straight line joining the heeling lever at 0° and the heeling lever at 40°.

(5) The heeling lever due to the shift of fodder is to be determined according to the following requirements:

① The heeling lever due to the shift of fodder at 0° is to be given by: $\frac{M_f}{S \cdot \Delta}$; M_f is the sum of the shift moment of each compartment, where the shift moment of each compartment is to be given by 0.044 lb^3 where: l is the maximum length of the compartment; and b is the maximum breadth of the compartment, in m. The use of volumetric shift moments for the fodder, where the surface is assumed to take up an angle of slope of 15° to the horizontal for full compartments and 25° to the horizontal for partly filled compartments, is an acceptable alternative method to obtain the total shift moment of fodder. s is the stowage factor (the volume of fodder in pellet form per unit weight).

② The heeling lever due to the shift of fodder in pellet form carried in bulk at 40° is to be given by: 0.8 (heeling lever due to the shift of fodder at 0°).

③ The heeling lever curve is to be taken as a straight line joining the heeling lever at 0° and the heeling lever at 40°.

Section 4 PROVISION OF LIVESTOCK SERVICES

2.4.1 General requirements

2.4.1.1 Facilities or systems providing daily services for livestock are to be fitted in livestock spaces and these facilities or systems intended for:

(1) the supply of food, water and fresh air to the livestock;

(2) the cleaning of the livestock spaces;

(3) the draining and outside discharging of the sewage effluents produced by the livestock.

2.4.1.2 In addition to the provisions of this Section, the piping is to comply with the applicable requirements in Chapters 2 and 3 of PART THREE of the Rules.

2.4.2 Ventilation system

2.4.2.1 An enclosed space for the carriage of livestock is to be provided with a mechanical ventilation system of sufficient capacity to change the air of that space in its entire volume as follows:

(1) if the minimum clear height of the space is 2.30 m or more, not less than 20 changes per hour;

(2) if the minimum clear height of the space is 1.80 m, not less than 30 changes per hour; and

(3) if the minimum clear height of the space is between 2.30 m and 1.80 m, at a rate proportional to those specified above. This may be obtained by linear interpolation.

For the purposes of this paragraph, the volume of an enclosed space includes all that space contained between the vessel's side plating, bulkheads, tank top or decks enclosing the space, less the volume of any tanks or trunks that are airtight within the space and no deduction is to be made in respect of space occupied by livestock, pens or other livestock fittings.

2.4.2.2 A space for the carriage of livestock that is not enclosed is to be provided with a mechanical ventilation system if:

(a) the space, being a structure having an arrangement of pens on more than one deck level, has a breadth greater than 20 m; or

(b) because of a partial enclosure of the space, the natural ventilation is restricted.

The capacity of ventilation system is to comply with the requirements in paragraph 2.4.2.1.

The volume of a space that is not enclosed referred to in this paragraph includes all that space contained between the extremities of a pen structure including passageways on the outboard sides or ends of the structure, less the volume of any tanks or trunks that are airtight within the pen structure and no deduction is to be made in respect of space occupied by livestock, pens or other

livestock fittings.
2.4.2.3 A mechanical ventilation system is to distribute air so as to ensure that the whole of each livestock space is efficiently ventilated.
2.4.2.4 Ventilation circuits are to be supplied by at least two independent fans of such a capacity as to maintain the ventilation of all the spaces as required by 2.4.2.1 and 2.4.2.2 with one fan out of action.
Notwithstanding the above provisions, if a mechanical ventilation system is provided with adequate spare parts, the provision of only one fan is acceptable. Adequate spare parts are to be interpreted as including for each type of fan: one set of bearings; one rotor or impeller; and one complete motor.
2.4.2.5 Electrical supplies from both main and secondary sources of power are to be supplied to each group starter panel, with both supplies being as widely separated as practicable and neither passing through any space containing any part of the other source of power. Interlocks at each group starter are to prevent simultaneous supply by both sources of power.
2.4.2.6 If two or more independent fans are fitted in the ventilation piping of each space, fan group starter panels are to be located in at least two locations, with the operation of fans from either panel being able to effectively ventilate the required livestock spaces.

2.4.3 Fodder & Water arrangements

2.4.3.1 Spaces intended for livestock (including pens, stalls or similar fittings) are to be provided with receptacles for feeding and watering the animals concerned.
2.4.3.2 The receptacles are to be capable of containing at least 33 per cent of the daily allowance of fodder and water for the number of animals contained in the space (pen, stall or similar fitting) except where the fodder or water is provided by an automatic system.
2.4.3.3 A receptacle provided in accordance with 2.4.3.1 and 2.4.3.2 above is to be:
(1) suitable for the species of livestock;
(2) readily accessible to the livestock;
(3) capable of being serviced from outside the pen, stall or other fitting;
(4) so installed as to not impede ventilation; and
(5) so constructed and positioned, that fodder dust is not disturbed by the flow of ventilation.
2.4.3.4 If the fodder distribution system is dependent on electric power, the system is to be capable of being powered by both the main and secondary sources of supply.

2.4.4 Fresh water system

2.4.4.1 All livestock spaces are to be provided with fresh water service.
2.4.4.2 The fresh water system is to include one main supply pump and one standby pump, of a capacity sufficient to continuously supply fresh water to the livestock.
When the water supply system is not automatic, the standby pump may be replaced by a portable pump ready to be connected to at least one fresh water tank.
2.4.4.3 If the fresh water system is dependent on electric power, it is to be powered by both the main and secondary sources of power and can continue to operate despite a fire or other casualty in the space containing the main source of power. One pump may be located in the space occupied by the main source of power and supplied by that source of power. The other is to be able to maintain supply despite a fire or other casualty affecting the space occupied by the main source of power.
2.4.4.4 When the water supply is automatic, water receptacles are to be fitted with means of automatic water level control and devices to avoid the return of water from the receptacle to the fresh water tank.
2.4.4.5 The fresh water system serving the livestock spaces is to be totally independent from the fresh water system serving the spaces intended for the crew.

2.4.5 Water washing system

2.4.5.1 A water washing system is to be provided with appropriate connections to wash the livestock spaces.

2.4.6 Drainage and discharge of sewage

2.4.6.1 Each space intended for the livestock is to be fitted with a pipe or gutter of sufficient size to drain the sewage and the washing effluents.

2.4.6.2 Drainage arrangements are to be such that fluids drained from a pen are as far as practicable kept clear of other pens and associated working and access spaces.
Where necessary, drainage gutters and upper parts of the draining pipes are to be covered by a strainer plate.
2.4.6.3 The drainage system serving the livestock spaces is to be independent from any piping system serving the other spaces of the ship, and in particular from the bilge system.
2.4.6.4 The pipes and other components of the draining system are to be made of a material resistant to the corrosion due to the effluents.
2.4.6.5 Essential drainage tanks, wells and the top of drainage pipes in a vessel are to be accessible from outside livestock pens for the purpose of inspection and cleaning.
2.4.6.6 Pumps and ejectors serving the drainage tanks or wells are to be capable of conveying semi-solid matter.
2.4.6.7 All electrical equipment fitted to meet the requirements of 2.4.6 are to be capable of being operated by both the primary and the secondary sources of power.

Section 5 FIRE-FIGHTING APPLIANCES

2.5.1 Fire hydrants and fire hoses

2.5.1.1 The number and position of the hydrants are to be such that at least two jets of water not emanating from the same hydrant may reach any part of the spaces intended for the livestock. At least one of these jets is to be from a single length of hose without the necessity for hoses to pass over or through pens.
2.5.1.2 A fire hose is to be provided in an enclosed space for each hydrant and in any other space or on a deck for each 50 m length, or part thereof, of space or deck.
2.5.1.3 Each fire hose is to be provided with the necessary connections and a nozzle capable of directing water in the form of a spray and a jet.
2.5.1.4 Each hose is to be capable of being connected to any hydrant and to any other hose (other than hydrants and hoses within the engine room or accommodation spaces).
2.5.1.5 Fire hoses are to be located in conspicuous locations, near the hydrants and close to the entrances or access to the spaces.

2.5.2 Additional fire-fighting means

2.5.2.1 Livestock structures, including livestock decks and containment structures but excluding livestock services such as water pipes and feed troughs, are to be constructed of non-combustible materials.
2.5.2.2 If hay or straw is carried or used in a livestock space, one of the following fire-fighting means is to be provided:

- a fixed water fire-fighting system, or
- portable water extinguishers spaced no more than 18 m apart, one of these extinguishers being positioned at the entrance of the space concerned.

2.5.2.3 If electrical equipment other than that referred to in Section 6 of this Chapter is located in an enclosed livestock space, suitable fire-fighting means are to be provided in this respect.

Section 6 ELECTRICAL EQUIPMENT

2.6.1 General requirements

2.6.1.1 In addition to the applicable requirements of PART FOUR of the Rules, electrical equipment of livestock carrier is to comply with the provisions of this Section.

2.6.2 Sources of electrical power for livestock carriers

2.6.2.1 The main source of power is to meet the following:
The main source of power as specified in 2.1.1.1 of Chapter 2, PART FOUR of the Rules is to be provided and all electrical auxiliary services (including livestock services) necessary for maintaining the livestock carrier in normal operational and habitable conditions will be ensured without recourse to the emergency source of electrical power.

2.6.2.2 The secondary source of power is to meet the following requirements.
(1) The secondary source of power is to be located in a space that is not contiguous with any space containing the main source of power or part thereof, and be independent of any services provided from or through any such space. In case of a fire or other casualty in any space containing the main source of power or any part thereof, the secondary source of power must be capable of supplying power to livestock services for a period of 72 hours.
(2) The prime mover of secondary source of power is to be capable of supplying power to the system within 30 minutes in the failure of main source of power. The power supply may be an effective arrangement powered by an independent source of energy or the emergency source of power complying with the requirements of paragraphs 1.1, 1.4 and 2 of SOLAS regulation II-1/43.
(3) Instructions are to be provided for the changeover between main and secondary sources of power and vice-versa. A copy of such instructions is to be posted in the space containing the livestock source of power, and is to be readable under the emergency lighting required by SOLAS regulation II-1/43.2.2. The instructions are to detail, among other things, starting method, switchboard changeover and electrical supply changeover to livestock services.

2.6.3 Lighting

2.6.3.1 Livestock spaces, passageways between pens and access routes between or to those spaces are to be adequately lit.
2.6.3.2 An emergency lighting system that is automatically activated on the failure of the main electrical installation is to be provided in all parts of a vessel where livestock is carried, passageways between pens and access routes between or from those parts, and is to be capable of giving a level of illumination in all passageways and access routes for a continuous period of not less than 15 minutes. The lamp casings on light fittings for the emergency lighting system are to be painted red for ease of identification.
2.6.3.3 If fixed lighting is provided in a part of a vessel above the uppermost continuous deck, that lighting is to be capable of being controlled from the navigating bridge.
2.6.3.4 Light fittings is to be of sufficient strength and fitted with protective sheathing outside to resist damage by livestock and placed beyond possible contact by livestock.

2.6.4 Electrical equipment for use in dust laden atmospheres

2.6.4.1 Electrical equipment and cables installed in areas where flammable dusts may be present (such as spaces used for the storage or handling of bulk fodder) are to comply with the requirements of 2.18.3.2 of Chapter 2, PART FOUR of the Rules.
2.6.4.2 Lighting, or power points for portable lighting, in a space used for carriage of fodder in bulk, are to be controlled by switches situated on the navigating bridge or at the fodder-handling machinery control station and indicator lights are to be provided to show when power is supplied to the lighting or power points.