



**Australian Government**  
**Australian Maritime Safety Authority**

---

**Marine Order 43 (Cargo and cargo handling — livestock) 2006**

**in effect under the *Navigation Act 2012***

---

This is a compilation of *Marine Order 43 (Cargo and cargo handling — livestock) 2006* prepared on 5 June 2013, taking into account modifications made by *Marine Order 4 (Transitional modifications) 2013*.

Subsection 343(2) of the *Navigation Act 2012* provides that the Marine Orders may provide for specified orders that were in force under the *Navigation Act 1912* immediately before its repeal to have effect, for the *Navigation Act 2012*, with the modifications made for it in the Marine Orders.

*Marine Order 4 (Transitional modifications) 2013* provides for this Order to have effect and makes modifications for it.

This compilation is not a compilation for the *Legislative Instruments Act 2003*, and so is not registered on the Federal Register of Legislative Instruments.

Prepared by the Office of Legislative Drafting, Australian Maritime Safety Authority.

	Page
1	Name of Order..... 3
1A	Purpose ..... 3
1B	Power ..... 3
2	Definitions..... 3
3	Interpretation ..... 4
4	Application ..... 5
5	Modifications ..... 5
5A	Equivalents ..... 5
6	Review of decisions..... 6
7	Notification & inspection ..... 6
8	Restrictions on carriage of livestock..... 9
9	Structure & protective arrangements ..... 10
10	Australian certificate for the carriage of livestock..... 10
11	Stability..... 14
12	Livestock services ..... 15
13	Fire-fighting appliances ..... 15
14	Loading of bulk fodder..... 16
15	Means of egress and access for persons ..... 17
16	Means of access for livestock ..... 18
17	Equipment for care of livestock on board..... 19
18	Provision of humane killing device ..... 19
19	Master's report..... 19
20	Sheep — design of pens & passageways ..... 20
21	Sheep — strength of pen fittings ..... 21
22	Sheep — arrangement of pens ..... 22
23	Cattle — design of pens, stalls & passageways ..... 23
24	Cattle — strength of pen & stall fittings ..... 24
25	Cattle — arrangement of pens & stalls ..... 25
26	Horses — arrangements for carriage..... 26
27	Horses — design of stalls, pens & passageways ..... 26
28	Horses — strength of stall & pen fittings ..... 27
29	Horses — arrangement of stalls & pens ..... 27
30	Goats ..... 29
31	Pigs..... 29
32	Other species of livestock ..... 29
33	Provision of hospital pens & stalls..... 30
34	Carriage of livestock in portable equipment ..... 30
35	Carriage of livestock on a short voyage ..... 31
36	Disposal of dead livestock..... 32
37	Livestock mortality..... 33
38	Additional requirements ..... 34
39	Transitional ..... 35
Schedule 1	Forms..... 36
Schedule 2	Australian Certificate for the Carriage of Livestock ..... 50
Schedule 2A	Australian certificate for the carriage of livestock..... 51
Schedule 3	Stability Criteria for Livestock Carriers ..... 52
Schedule 4	Provision of livestock services..... 57

## 1 Name of Order

This Order is *Marine Order 43 (Cargo and cargo handling — livestock) 2006*.

### 1A Purpose

This Order:

- (a) makes provision for the certification of vessels engaged in the carriage of livestock cargoes; and
- (b) specifies requirements concerning the stowage and carriage of such cargoes for the safe operation of vessels.

### 1B Power

- 1B.1 Section 98 of the Navigation Act provides that the regulations may provide for safety certificates.
- 1B.2 Subsection 112(4) of the Navigation Act provides that the regulations may provide for the carriage on a vessel of cargo and livestock.
- 1B.3 Subsection 339(1) of the Navigation Act provides for regulations to be made prescribing matters required or permitted to be prescribed or which are necessary or convenient to be prescribed for carrying out or giving effect to the Act.
- 1B.4 Paragraph 339(2)(i) of the Navigation Act provides that the regulations may provide for maintenance, testing, survey and certification of vessels.
- 1B.5 Subsection 342(1) of the Navigation Act provides that AMSA may make orders for which provision may be made by regulation.

## 2 Definitions

In this Order:

***anniversary date*** means the day and the month of each year which will correspond to the date of expiry of the Australian Certificate for the Carriage of Livestock.

***approved*** means approved by the Manager, Ship Inspection and Registration.

***Australian Standards for the Export of Livestock (ASEL)*** has the same meaning as in the Export Control (Animals) Order 2004 made under the *Export Control Act 1982*.

***fresh water generator*** includes a reverse osmosis water plant.

***IMDG Code*** means the International Maritime Dangerous Goods Code.

*Note* The IMDG Code as currently in force is available from the IMO — see <http://www.imo.org>. Information about the IMDG Code as currently in force is available in a Marine Notice on AMSA's website at <http://www.amsa.gov.au>.

***inspector of stock*** has the same meaning as “**inspector**” in the *Livestock Disease Control Act 1994* (Vic.) and the *Animal Health Act 1995* (Tas.).

***ISM Code*** means the International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention, as defined in *Marine Order 58 (International Safety Management Code) 2002*.

**livestock** includes sheep, cattle (including buffalo), horses (including mules and asses), goats, pigs, camels and other animals that may be used in commercial enterprise, but does not include household pets.

**livestock services** means all of the following:

- (a) ventilation;
- (b) fresh water supplies;
- (c) feed and/or fodder supplies;
- (d) lighting; and
- (e) effluent removal systems.

**non-combustible material** has the same meaning as “non-combustible material” in Regulation 3 of Chapter II-2 of SOLAS.

**short voyage** means a voyage that is not expected to exceed 24 hours.

**uppermost continuous deck** means the uppermost complete deck of a vessel that is exposed to the weather and sea, being a deck fitted as an integral part of the vessel's structure and all openings in the weather positions of which are fitted with permanent means of closing.

*Note 1* Some terms used in this Order are defined in *Marine Order 1 (Administration) 2011*, including:

- General Manager, Ship Safety Division
- IMO
- Manager, Ship Inspection and Registration
- MARPOL
- Navigation Act
- SOLAS.

*Note 2* Other terms used in this Order are defined in the Navigation Act, including:

- AMSA
- foreign vessel
- inspector
- owner
- recognised organisation
- regulated Australian vessel
- International Maritime Dangerous Goods Code.

### 3 Interpretation

- 3.1 In this Order, a reference to the date on which a vessel was constructed means the date on which not less than 50 tonnes or one per cent of the proposed total mass of the structural material of the vessel, whichever is the less, has been assembled.
- 3.2 In this Order, a reference to the date on which a vessel was converted means the date on which the conversion commenced.
- 3.3 If one or more of sections 17, 18, 30, 31 or 32 are inconsistent with an ASEL, or an order made under section 17 of the *Australian Meat and Live-stock Industry Act 1997*, those sections will have no force or effect to the extent of the inconsistency.

## 4 Application

- 4.1 This Order applies to:
- (a) a regulated Australian vessel on which it is intended to take on, that is taking on, has on board or is carrying livestock between ports, wherever those ports are located; and
  - (b) a foreign vessel on which it is intended to take on, that is taking on, or has on board livestock at any port in Australia or that is carrying livestock to sea from any port in Australia.
- 4.2 However, this Order does not apply to a vessel if:
- (a) it arrives at a port in Australia carrying livestock loaded at a port outside Australia; and
  - (b) an inspector is satisfied that the provisions of this Order are being substantially complied with for the livestock.

## 5 Modifications

- 5.1 A person may apply, in accordance with the application process set out in *Marine Order 1 (Administration) 2011*, for the modification of a requirement of this Order, other than a requirement of subsection 10.5.
- 5.2 The decision maker for the application is the Manager, Ship Inspection and Registration.
- 5.3 The Manager, Ship Inspection and Registration may allow a modification only if he or she is satisfied that:
- (a) compliance with the requirement would be unnecessary or unreasonable having regard to the vessel, its equipment and its intended voyage; and
  - (b) allowing the modification would not contravene SOLAS.

*Note* *Marine Order 1 (Administration) 2011* deals with the following matters about exemptions and other matters mentioned in it:

- making an application
- seeking further information about an application
- the time allowed for consideration of an application
- imposing conditions on approval of an application
- notification of a decision on an application
- review of decisions.

## 5A Equivalentents

- 5A.1 A person may apply, in accordance with the application process set out in *Marine Order 1 (Administration) 2011*, for approval to use an equivalent.
- Note* For definitions of *equivalent* and *use* — see subsection 5A.4.
- 5A.2 The decision maker for the application is the Manager, Ship Inspection and Registration.
- 5A.3 The Manager, Ship Inspection and Registration may approve use of an equivalent only if he or she is satisfied that:
- (a) use of the equivalent would be at least as effective as compliance with the requirement to which the equivalent is an alternative; and
  - (b) approving use of the equivalent would not contravene SOLAS; and
  - (c) approving the equivalent would not contravene subsection 10.5.

5A.5 In this section:

**equivalent** means:

- (a) a fitting, material, appliance or apparatus that could be fitted or carried in a vessel as an alternative to a fitting, material, appliance or apparatus that a provision of this Order requires to be fitted or carried in the vessel; or
- (b) an arrangement that could be made, or a procedure that could be followed, in or for a vessel as an alternative to a requirement of this Order.

**use**, of an equivalent, includes:

- (a) fitting or carrying the equivalent in or on a vessel; and
- (b) making an alternative arrangement or following an alternative procedure.

## 6 Review of decisions

A decision under subsections 7.3.1, 21.4, 24.4, 32.2, 34.3.2, 37.9 or 38.1 of this Order is taken to be a reviewable decision for section 18 of *Marine Order 1 (Administration) 2011*.

*Note* Section 313 of the Navigation Act provides for review by the Administrative Appeals Tribunal of decisions made under sections 100, 101 and 102 of the Act relating to safety certificates.

## 7 Notification & inspection

### 7.1 Pre-loading inspection

7.1.1 Subject to subsection 7.1.3, the master of a vessel must not allow livestock to be loaded onto the vessel at a port in Australia, other than for carriage on a short voyage, until an inspector has carried out an initial pre-loading inspection of the vessel, and such subsequent pre-loading inspections as the inspector considers necessary, to ascertain that the livestock fittings, livestock equipment and arrangements for the carriage of livestock on the vessel comply with the provisions of this Order or with the Australian Certificate for the Carriage of Livestock for the vessel and are in a fit state for the proper carriage of the livestock to be loaded.

Penalty: 50 penalty units.

7.1.1A An offence against subsection 7.1.1 is a strict liability offence.

7.1.1B A person is liable to a civil penalty if the person contravenes subsection 7.1.1.

Civil penalty: 50 penalty units.

7.1.2 Subject to subsection 7.1.3, the master of a vessel must not allow livestock to be loaded on to the vessel at a port in Australia for carriage on a short voyage until an inspector has carried out such pre-loading inspections of the vessel as the inspector considers necessary to ascertain that the livestock fittings, livestock equipment and arrangements for the carriage of livestock comply with the relevant provisions of this Order and are in a fit state for the proper carriage of the livestock.

Penalty: 50 penalty units.

7.1.2A An offence against subsection 7.1.2 is a strict liability offence.

7.1.2B A person is liable to a civil penalty if the person contravenes subsection 7.1.2.

Civil penalty: 50 penalty units.

- 7.1.3 Subsections 7.1.1 and 7.1.2 do not apply to the loading of cattle on to a vessel undertaking a voyage of less than 10 days if:
- (a) a satisfactory pre-loading inspection has been carried out within 60 days prior to the intended loading;
  - (b) an inspector considers that a further pre-loading inspection is not warranted; and
  - (c) the information specified in subsection 7.2 has been provided prior to loading.
- 7.1.4 Species other than cattle may be loaded as well as cattle under subsection 7.1.3 if:
- (a) the maximum total area permitted for species other than cattle is 400m<sup>2</sup>, or 25 per cent of the net pen area (as described in the Record of Equipment and Arrangements), whichever is the less; and
  - (b) the Record of Equipment and Arrangements indicates that the vessel is approved for all species of livestock to be carried .

## 7.2 Notification of intention to load livestock

An inspection required by subsection 7.1 will not be carried out until the following information has been provided by an approved method for the port of loading:

- (a) the name of the vessel;
- (b) the voyage number;
- (c) the port and berth, and the date and time, at which the vessel will be available for inspection, together with the estimated time of commencement of loading;
- (d) a description of the livestock to be carried including the type, number and estimated average mass of the livestock;
- (e) the type of proposed containment in the case of a vessel that is to carry livestock on a short voyage;
- (f) the port of discharge;
- (g) the expected length of voyage, in days; and
- (h) confirmation that all equipment, machinery and arrangements essential for the safe operation of the vessel, including livestock services and secondary power sources, are in full working order.

*Note 1* The methods that have been approved by the Manager, Ship Inspection and Registration, are listed on the form referred to in note 2.

*Note 2* The notice required by subsection 7.2 must be given: for paragraphs (a), (b), (c) and (f), and an estimate of paragraph (d) — not less than 72 hours before the time at which the ship will be available for inspection; and for paragraphs (e), (g) and (h) and final data for paragraph (d) — prior to departure. Notice may be made by telephone, followed by notice in writing. Failure to provide notice within these time limits not less than 72 hours before the time at which the ship will be available for inspection may result in delay to loading or sailing of the vessel. A suitable form for the purpose is at <http://www.amsa.gov.au>.

*Note 3* For paragraph (h), section 186 of the Navigation Act requires the master of a vessel to report to AMSA if the vessel has been involved in a marine incident that has affected, or is likely to affect, the safety, operation or seaworthiness of the vessel.

**7.3 Prohibition on loading**

- 7.3.1 If an inspector is of the opinion that the provisions of this Order are not being complied with, the inspector may order that:
- (a) the loading of livestock must not be commenced or continued until such time as an inspector is satisfied that compliance with the provisions of this Order has been achieved and the order revoked; or
  - (b) spaces nominated in the order must not be used for the carriage of livestock until such time as an inspector is satisfied that compliance with the provisions of this Order has been achieved in respect of those spaces and the order revoked.

*Note* It may not always be practical for an inspector to give such order in writing in the first instance. However, an order given orally will be followed by written confirmation at the earliest opportunity.

- 7.3.2 A person must not act in contravention of an inspector's order under subsection 7.3.1.

Penalty: 50 penalty units.

- 7.3.2A An offence against subsection 7.3.2 is a strict liability offence.

- 7.3.2B A person is liable to a civil penalty if the person contravenes subsection 7.3.2.

Civil penalty: 50 penalty units.

**7.4 Inspections during and after loading**

- 7.4.1 An inspector may inspect a vessel at any time during or after loading in order to ascertain whether the requirements of this Order are being, or have been, complied with.
- 7.4.2 If an inspector is satisfied that the requirements of this Order are not being, or have not been, complied with, he or she is to advise the master of the circumstances as soon as possible.

**7.5 Taking a ship to sea**

- 7.5.1 The master must not take a vessel to sea with livestock unless:

- (a) the vessel is in compliance with, and the livestock has been loaded in accordance with, the requirements of this Order; and
- (b) information has been provided to the master detailing the actual number, weight and type of livestock loaded on board the vessel.

Penalty: 50 penalty units.

- 7.5.1A An offence against subsection 7.5.1 is a strict liability offence.

- 7.5.1B A person is liable to a civil penalty if the person contravenes subsection 7.5.1.

Civil penalty: 50 penalty units.

- 7.5.2 A person must not provide the master of ship with inaccurate information regarding the actual number, weight and type of livestock loaded on board the ship.

Penalty: 50 penalty units.

- 7.5.2A An offence against subsection 7.5.2 is a strict liability offence.



7.5.2B A person is liable to a civil penalty if the person contravenes subsection 7.5.2.

Civil penalty: 50 penalty units.

*Note* Severe weather conditions substantially increase the risk of injury and mortality to livestock. If there is a possibility of such conditions being experienced on the proposed route, the master should consider action to be taken to minimise the risk, such as the use of a weather routing service. The master may need to consider delaying loading if there is an imminent threat of severe weather conditions.

## 7.6 Maintenance of services and arrangements while at sea

7.6.1 The master of a vessel must ensure that livestock services provided for livestock carried are maintained in serviceable condition in accordance with the particulars shown on the vessel's Record of Equipment and Arrangements.

Penalty: 50 penalty units.

7.6.1A An offence against subsection 7.6.1 is a strict liability offence.

7.6.1B A person is liable to a civil penalty if the person contravenes subsection 7.6.1.

Civil penalty: 50 penalty units.

7.6.2 A person must not, without the express authority of the master, make any alteration during the voyage to any livestock fittings, livestock equipment or arrangements for the carriage of livestock.

Penalty: 50 penalty units.

7.6.2A An offence against subsection 7.6.2 is a strict liability offence.

7.6.2B A person is liable to a civil penalty if the person contravenes subsection 7.6.2.

Civil penalty: 50 penalty units.

## 8 Restrictions on carriage of livestock

8.1 Livestock must not be carried or loaded for carriage on or in any part of a vessel where the livestock, livestock fittings, livestock equipment or arrangements for the carriage of livestock would:

- (a) obstruct access to any accommodation space or working space necessary for the safe running of the vessel, or the means of egress from any hold or underdeck space; or
- (b) interfere with life-saving or fire-fighting appliances; or
- (c) interfere with the sounding of tanks or bilges; or
- (d) interfere with the operation of closing appliances; or
- (e) interfere with the operation of freeing ports; or
- (f) interfere with the lighting or ventilation of other parts of the vessel; or
- (g) interfere with the proper navigation of the vessel.

8.2 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, adequate measures must be taken to ensure that there is no resultant undesirable rise in temperature in the livestock space above the ambient temperature of the space.

*Note* Generally, where the ambient temperature in the space is expected to exceed 22°C, an increase of 3°C is considered undesirable. Adequate measures may include insulation of the bulkhead or other boundary of the space.

8.3 Subject to subsection 8.4, livestock must not be carried in more than one tier on any deck.

- 8.4 Sheep, goats and pigs may be carried in more than one tier on any one deck subject to compliance with subsections 20, 21, 22, 30, 31 and 34 of this Order.
- 8.5 Livestock must not be carried over a hatchway unless the hatchway is protected against consequent damage and the hatchway covers are secured against movement.
- 8.6 Livestock must not be carried unless contained in pens, stalls or other similar fittings permitted by this Order.
- 8.7 Livestock must not be carried:
  - (a) within the same underdeck compartment as; or
  - (b) within 6 metres horizontally from; or
  - (c) otherwise in a position where the livestock might be affected by the spillage of;  
dangerous goods to which the International Maritime Dangerous Goods (IMDG) Code applies.

## **9 Structure & protective arrangements**

- 9.1 The livestock structure of a vessel, its connections to the hull, its fittings and equipment, and all items provided for the needs of livestock outside the livestock structure must be constructed and maintained to a standard no less than that which would be applicable to similar structures, connections, fittings, equipment and items surveyed by the vessel's recognised organisation.
- 9.2 A vessel to be used for the carriage of livestock must be provided with durable fittings so manufactured, assembled or positioned as to protect the livestock from injury, avoidable suffering and exposure to weather and sea.
- 9.3 Livestock structures, including livestock decks and containment structures but excluding livestock services such as water pipes and feed troughs, must be constructed of non-combustible materials.

## **10 Australian certificate for the carriage of livestock**

- 10.1.1 For subsection 99(1) of the Navigation Act, an Australian certificate for the carriage of livestock is a safety certificate.
- 10.1.2 A vessel must have the following surveys:
  - (a) a survey for an Australian certificate for the carriage of livestock; and
  - (c) within 12 months after the issue of an Australian certificate for the carriage of livestock, and each 12 months after that until the certificate ceases to have effect — an annual survey for endorsement of the vessel's Australian certificate for the carriage of livestock.
- 10.1.3 For sections 103, 104, 106 or 107 of the Navigation Act, a vessel must have an Australian certificate for the carriage of livestock in accordance with Form 1 of Schedule 1.

*Note* It is an offence under sections 103, 104, 106 and 107 of the Navigation Act if a vessel is taken to sea without a certificate of a specified kind in force for the vessel.
- 10.1.4 An Australian certificate for the carriage of livestock is in effect for 5 years or a lesser time determined by the Manager, Ship Inspection and Registration.

*Note* The expiry date of the certificate will normally be aligned with the expiry date of the vessel's Cargo ship safety construction certificate, and the survey for annual endorsement of the Australian

certificate for the carriage of livestock should be carried out, as far as practical, at the same time as the survey for the annual endorsement of the Cargo ship safety construction certificate.

10.1.5 After an Australian certificate for the carriage of livestock ceases to have effect, the vessel must be surveyed again in accordance with subsection 10.1.2.

## 10.2 Issuing criteria

10.2.1 For paragraph 100(1)(b) of the Navigation Act, the criteria for the issue of an Australian certificate for the carriage of livestock are that:

- (a) the information mentioned in Schedule 2 is given in writing to the Manager, Ship Inspection and Registration; and
- (b) the information mentioned in Schedule 2A is given in writing to the Manager, Ship Inspection and Registration; and
- (c) the survey for the Australian certificate for the carriage of livestock shows that the vessel complies with this Order; and
- (d) the livestock fittings, livestock equipment and arrangements for the carriage of livestock of the vessel:
  - (i) comply with this Order for the species sought to be carried; or
  - (ii) are of a standard that is at least equivalent to those required by this Order; or
  - (iii) if the ship carried livestock from Australia before 1 July 1983 — are of a standard substantially in compliance with this Order; and
- (e) the ship complies with, or, if it was constructed or converted for the carriage of livestock before 1 July 2000, substantially complies with, the bridge visibility requirements of Regulation 22 of Chapter V of SOLAS; and
- (f) issue of the certificate is not prohibited by subsection 10.5.

10.2.2 The information mentioned in paragraphs 10.2.1(a) and (b) must be in English or accompanied by an English translation.

10.2.3 A copy of the information mentioned in paragraphs 10.2.1(a) and (b) must be kept on the vessel.

## Variation criteria

10.3.1 For section 101 of the Navigation Act, the criteria for the variation of an Australian certificate for the carriage of livestock are that:

- (a) a written application for a variation of the certificate is made to the issuing body, specifying the nature of variation sought; and
- (b) the vessel complies with the survey requirements that apply to it; and
- (c) the vessel undergoes any additional surveys required by the Manager, Ship Inspection and Registration; and
- (d) the vessel complies with any conditions imposed by the Manager, Ship Inspection and Registration.

### Revocation criteria

- 10.3.1A For section 102 of the Navigation Act, the criteria for revocation of an Australian certificate for the carriage of livestock are that:
- (a) a safety certificate required by the vessel under *Marine Order 31 (Ship surveys and certification) 2006* becomes invalid; or
  - (b) a survey for endorsement of the Australian certificate for the carriage of livestock has not been satisfactorily completed within 3 months after its anniversary date; or
  - (c) a requirement of paragraph 10.2.1(d), (e) or (f) is no longer met for the vessel; or
  - (d) the arrangements for the carriage of livestock are substantially changed as set out in subsection 10.6.3; or
  - (e) the arrangements for the carriage of livestock are modified as set out in subsection 10.6.4 and the modifications do not comply with the requirements of this Order for the construction of livestock structures and pens; or
  - (f) the person with overall general control and management of the vessel changes; or
  - (g) after 30 November 2011 — the vessel does not meet the requirements of SOLAS that apply to a vessel constructed after 31 August 1984.

*Note* For paragraph 10.3.1A(f), the person with overall general control and management of the vessel is the person identified as operator in the Document of Compliance issued under the ISM Code.

- 10.3.2 In circumstances where there is insufficient time for the issue or reissue of an Australian certificate for the carriage of livestock before the vessel is due to sail, the Manager, Ship Inspection and Registration, may issue an Interim Document in the form specified in Form 4 of Schedule 1 for a period not exceeding one month, and that Interim Document has effect as though it were an Australian certificate for the carriage of livestock.

### 10.4 Annual endorsement of certificate

- 10.4.1 An Australian certificate for the carriage of livestock is subject to annual endorsement.
- 10.4.2 If, following a survey of a vessel, the Manager, Ship Inspection and Registration, is satisfied that the arrangements for the carriage of livestock have been maintained in accordance with this Order, and that endorsement of the certificate is not prohibited by subsection 10.5, the Manager, Ship Inspection and Registration, will endorse the vessel's Australian certificate for the carriage of livestock accordingly.

*Note* The arrangements for the carriage of livestock include, but are not limited to, services provided for the carriage of livestock, livestock structures, fodder and water tanks, connections to the vessel, and all fittings and equipment, whether required by this Order or not, necessary for the carriage of livestock.

### 10.5 Prohibition on issue, reissue or endorsement of certificate

- 10.5.1 An Australian certificate for the carriage of livestock is not to be issued, endorsed or reissued in respect of any vessel unless:
- (a) the vessel is classed by a recognised organisation;

- (b) there is in force in respect of the vessel certification under the ISM Code; and
- (c) one of the following applies:
  - (i) irrespective of the date of construction, the vessel meets the requirements of SOLAS applicable to vessels constructed on or after 1 September 1984; or
  - (ii) subject to subsection 10.5.2, an Australian certificate for the carriage of livestock has been previously issued in respect of the vessel, the owner of the vessel has not changed, and the requirements specified in subsection 10.3 for reissue of that certificate are met on, or within the three months following, its validity ceasing for whatever reason.

*Note* These requirements are contained in SOLAS 74, as amended by the 1978 SOLAS Protocol and the 1981 SOLAS amendments adopted by IMO resolution MSC.1(XLV) which entered into force on 1 September 1984.

- 10.5.2 Notwithstanding subparagraph 10.5.1(c)(ii), no Australian certificate for the carriage of livestock can be reissued or endorsed with an expiry date after 1 December 2011 in respect of a vessel that does not meet the requirement set out in subparagraph 10.5.1(c)(i).

## 10.6 Validity and duration of certificate

- 10.6.3 For the purposes of paragraph 10.3.1A(d), the arrangements for the carriage of livestock are considered to be substantially changed if:

- (a) modifications are made to the livestock structures affecting 50 per cent or more of the total pen area; or
- (b) modifications increase the total pen area by 10 per cent or more.

- 10.6.4 For the purposes of paragraph 10.3.1A(e), the arrangements for the carriage of livestock are modified if:

- (a) modifications to the livestock structures affect more than 10 per cent but less than 50 per cent of the total pen area, or
- (b) modifications increase the total pen area by more than 2 per cent but less than 10 per cent.

*Note* Modifications that are made to the livestock structures affecting less than 10 per cent of the total pen area, or increasing the pen area by less than 2 per cent, should comply with the requirements of this Order applying at the date of construction of those pre-existing livestock structures and pens.

- 10.6.5 The owner of a vessel for which the Australian certificate for the carriage of livestock has been revoked must return the certificate to the Manager, Ship Inspection and Registration, at any time if requested to do so by the Manager, Ship Inspection and Registration.

Penalty: 50 penalty units

- 10.6.5A An offence against subsection 10.6.5 is a strict liability offence.

- 10.6.5B A person is liable to a civil penalty if the person contravenes subsection 10.6.5.

Civil penalty: 50 penalty units.

## 10.8 Certificate to be kept on board ship

The owner of a vessel must ensure that the Australian certificate for the carriage of livestock in respect of the vessel, together with its associated Record of

Equipment and Arrangements, is on board the vessel at all times when the vessel is engaged in the loading and carriage of livestock.

Penalty: 50 penalty units

10.8A An offence against subsection 10.8 is a strict liability offence.

10.8B A person is liable to a civil penalty if the person contravenes subsection 10.8.

Civil penalty: 50 penalty units.

#### 10.9 Production of certificate

The master of a vessel must, on the request of an inspector, produce the Australian certificate for the carriage of livestock in respect of the vessel.

Penalty: 50 penalty units

10.9A An offence against subsection 10.9 is a strict liability offence.

10.9B A person is liable to a civil penalty if the person contravenes subsection 10.9.

Civil penalty: 50 penalty units.

#### 10.10 Livestock to be carried in compliance with certificate

The master of a vessel must ensure that, when livestock is on board the vessel, the livestock fittings, livestock equipment and arrangements for the carriage of livestock shown in the Australian certificate for the carriage of livestock are in position and in good order and the livestock are contained and carried in compliance with the certificate.

Penalty: 50 penalty units.

10.10A An offence against subsection 10.10 is a strict liability offence.

10.10B A person is liable to a civil penalty if the person contravenes subsection 10.10.

Civil penalty: 50 penalty units.

#### 10.11 Alterations

The owner of a vessel in respect of which an Australian certificate for the carriage of livestock is in force must advise the Manager, Ship Inspection and Registration, as soon as practicable if:

- (a) the vessel is sold or scrapped; or
- (b) the vessel changes flag or port of registry; or
- (c) the vessel changes name; or
- (d) the vessel's recognised organisation changes; or
- (e) a change is made in the vessel's equipment, services or arrangements provided for the carriage of livestock.

Penalty: 50 penalty units.

10.11A An offence against subsection 10.11 is a strict liability offence.

10.11B A person is liable to a civil penalty if the person contravenes subsection 10.11.

Civil penalty: 50 penalty units.

### **11 Stability**

11.1 The master of a vessel must, before loading commences, ensure that the vessel has the ability to comply with the stability criteria specified in the IMO Code on

Intact Stability at all stages of the voyage, taking into account, as specified in Schedule 3, the effects of shift of livestock and fodder and the effect of wind.

Penalty: 50 penalty units.

- 11.1A An offence against subsection 11.1 is a strict liability offence.
- 11.1B A person is liable to a civil penalty if the person contravenes subsection 11.1.
- Civil penalty: 50 penalty units.

*Note* The IMO Code on Intact Stability is contained in Annex to IMO Resolution A.749(18), as amended by MSC.75(79).

- 11.2 The master of a vessel on which livestock is to be loaded must, if requested by an inspector, produce for examination the stability information specified by Schedule 3 and the stability calculations for the intended voyage and, if requested, must provide a copy to the inspector.

Penalty: 50 penalty units.

- 11.2A An offence against subsection 11.2 is a strict liability offence.
- 11.2B A person is liable to a civil penalty if the person contravenes subsection 11.2.
- Civil penalty: 50 penalty units.

## 12 Livestock services

- 12.1 A vessel permanently equipped for the carriage of livestock must be fitted with systems and equipment that ensure the maintenance of livestock services at a level necessary for the welfare of the livestock.
- 12.2 Compliance with Schedule 4 will meet this requirement. However, as an alternative, an owner may demonstrate adequate redundancy in systems and equipment by supplying to the Manager, Ship Inspection and Registration, a risk analysis of the systems involved. A revised risk analysis must be provided whenever the arrangements referred to in that analysis are changed. An alternative will not be accepted if:
- it is inconsistent with Annex IV of MARPOL 73/78; or
  - it does not comply with subsection 6.8 of Schedule 4.

*Note* Guidance for the preparation of risk analyses is contained in Australian Standard AS3931:1998.

## 13 Fire-fighting appliances

- 13.1 Fire hydrants must be provided so that at least two jets of water from separate hydrants can be simultaneously directed to any part of a space or deck where livestock are located. One of those jets of water must be provided by a single length of hose. The hydrants must be connected to the fire main provided on the vessel.
- Note* The hydrants should be located so that two jets of water can be directed at a single point without the necessity for hoses to pass over or through pens.
- 13.2 A fire hose, together with the necessary connections and a nozzle capable of directing water in the form of a spray and a jet, must be provided:
- in an enclosed space—for each hydrant; and
  - in any other space or on a deck—for each 50 metres length, or part thereof, of space or deck.

Each hose must 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).

- 13.3 The master of the vessel must ensure that each fire hose, with its connections and nozzle, is kept in a conspicuous position near the hydrant with, or close to the entrances or stairways leading to the space or deck in which it is intended to be used.

Penalty: 50 penalty units

- 13.3A An offence against subsection 13.3 is a strict liability offence.

- 13.3B A person is liable to a civil penalty if the person contravenes subsection 13.3.

Civil penalty: 50 penalty units.

- 13.4 If hay or straw is carried or used in a space where livestock is located, there must be provided:
- (a) a portable fire extinguisher that uses water as the extinguishing medium, for every 18 metres or part thereof of the space, one of which must be placed adjacent to an entrance to the space; or
  - (b) an approved fire-fighting arrangement that uses water as the extinguishing medium.

- 13.5 If electrical equipment, other than for the purposes of lighting, is situated in an enclosed livestock space, an adequate number of portable fire extinguishers or a fixed fire-fighting installation suitable for use with electrical equipment, must be provided in that space.

- 13.6 Hydrants, hoses, hose connections and nozzles, portable fire extinguishers and fixed fire-fighting installations provided for the purposes of section 13 must be of equivalent standard to fire appliances required to be carried for the issue of a Cargo Ship Safety Equipment Certificate.

*Note* Fire-fighting appliances carried in addition to those required by section 13 may be positioned to the requirements of the owner of a vessel.

- 13.7 Notices must be prominently displayed prohibiting smoking or the use of naked lights in livestock spaces and any spaces used for the storage of fodder, hay, bedding or any other flammable material.

- 13.8 Fire extinguishers provided in compliance with subsection 13.4 or 13.5 must be tested at intervals not exceeding five years in the same manner as they would be tested for the issue of a cargo vessel safety equipment certificate.

## **14 Loading of bulk fodder**

- 14.1 When bulk fodder is to be loaded, areas where flammable dusts may be present (such as spaces used for the storage or handling of bulk fodder) must be classified in accordance with Australian Standard AS/NZS 61241.10 (IEC 61241-10). Electrical equipment to be installed in spaces so categorised should be selected, installed, certified and maintained in compliance with Australian Standards AS 2381.1 and AS/NZS 61241.14 (IEC 61241-14) or alternatively the components must be electrically isolated.



- 14.2 When bulk fodder is loaded by means of portable piping, the following provisions must be complied with:
- (a) a bulk fodder truck must be effectively earthed to a suitable part of the wharf or quay and, if a separate blower trailer is used, both truck and trailer must be earthed;
  - (b) the piping must, if possible, be so arranged that it is electrically continuous and if the pipes are so manufactured that they are not electrically continuous, a bare wire strong enough to withstand normal handling must be wound round the full length of the pipe in spiral fashion with a pitch of approximately 500 millimetres;
  - (c) the piping must be effectively earthed to the vessel and all earth connections must be secured with clips so that there can be no interruption or disconnection during the handling or manoeuvring of the piping;
  - (d) if more than one pipe length is used, they must not, if practicable, be insulated from one another;
  - (e) if pipe connections depend on heavy duty seals that are not electrically conductive, each individual pipe length must be earthed to the adjoining length by metal straps or must be earthed separately; and
  - (f) a conductive sleeve approximately 500 millimetres long must be fitted at the discharge end of the pipe and must be electrically continuous with the pipe or, if fitted, the bare spiralled wire referred to above.
- 14.3.1 Subject to subsection 14.3.2, fodder tanks must be emptied before loading pelletised fodder.
- Note* Attention is drawn to the potential danger of working in confined spaces, oxygen depletion being likely in any space containing large amounts of vegetable matter. Appropriate confined space entry procedures should be followed.
- 14.3.2 Where fodder remains from a previous voyage and it is not practical to empty all tanks completely:
- (a) where there are two or more tanks — one may contain left over fodder, the remainder being emptied; or
  - (b) where there is only one tank — compacted residues are broken up and, so far as practical, moved so as to ensure their being consumed during the subsequent voyage,
- provided that each tank is completely emptied at least once in every 90 days.
- 14.3.3 The master of the vessel must maintain records of emptying of fodder tanks and must make such records available for inspection by an inspector.
- Penalty: 50 penalty units
- 14.3.3A An offence against subsection 14.3.3 is a strict liability offence.
- 14.3.3B A person is liable to a civil penalty if the person contravenes subsection 14.3.3.
- Civil penalty: 50 penalty units.

## 15 Means of egress and access for persons

- 15.1 In a vessel constructed or converted for the carriage of livestock after 1 July 1983 there must be provided in each space in which livestock is carried no fewer than two means of egress widely separated and giving access to an open deck.

- 15.2 Access to a livestock space for persons must be safe and, if combined with a ramp used for moving livestock between decks, must be separated from the livestock ramp by protective fencing.
- 15.3 A pen, stall or similar fitting must 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.
- 15.4 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 must be provided that has a clear width of not less than 750 millimetres 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, such as receptacles, pipework, etc., may reduce the passageway measured from the vessel's rail to 550 millimetres.
- 15.5 If a means of egress or access is provided in accordance with section 15, or if a passageway is provided in accordance with this Order, the master must ensure that the means of egress, access or passageway is kept clear at all times during a voyage.  
Penalty: 50 penalty units
- 15.5A An offence against subsection 15.5 is a strict liability offence.
- 15.5B A person is liable to a civil penalty if the person contravenes subsection 15.5.  
Civil penalty: 50 penalty units.
- 15.6 Passageways and walkways in livestock areas must:
- (a) in a vessel that was engaged in carrying livestock from Australia before 1 July 1983—have a minimum clear height of 1.8 metres; or
  - (b) in any other vessel—have a minimum clear height of 2.0 metres.

## **16 Means of access for livestock**

- 16.1 A ramp or other suitable means of access appropriate to the species, must be provided for the loading or unloading of livestock. It must be so erected as to prevent any gap occurring between it and the vessel and must be set at a gradient not excessive for the species to be loaded or unloaded.

*Note* For suitable dimensions for ramps, refer to subsection 22.3 for sheep and subsection 25.3 for cattle.

- 16.2 A means of access must 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 sited at either the top or the bottom of the ramp.

*Note* The positioning of the closing arrangement will depend on the species of livestock; for cattle it should be located as close as possible to the point of entry to the vessel.

- 16.3 If a means of access is part of the vessel's equipment, it must be designed to support a uniformly distributed load over the walking surface not less than the values specified in Table 1.

**Table 1**

<b>Species</b>	<b>Load (newtons per square metre)</b>
Cattle and horses	4,700
Sheep, goats and pigs	2,400

- 16.4 The maximum permissible tensile stress for material used in the construction of a means of access must not exceed the values specified in Table 2 for the applicable specified load.

**Table 2**

<b>Material</b>	<b>Maximum permissible tensile strength</b>
Steel	0.5 x minimum yield stress
Aluminium	0.5 x 0.2% proof stress
Other	As specified by the Manager, Ship Inspection and Registration

- 16.5 If it is necessary for persons to be on a means of access during the movement of livestock, it must be provided with a passage of not less than 550 millimetres width that must be:
- fenced to a height of not less than one metre and with an intermediate horizontal rail approximately 550 millimetres above the walking surface; and
  - fitted with treads at suitable stepping distances.

## **17 Equipment for care of livestock on board**

- 17.1 If the normal means of tending, feeding and watering of the livestock is wholly or partially by automatic means, arrangements must be provided for the satisfactory tending, feeding and watering of the livestock in the event of a malfunction of the automatic means, but without compromising the safe navigation of the vessel.

*Note* The attention of owners, masters and agents is drawn to orders under section 17 of the *Australian Meat and Live-stock Industry Act 1997*. Note also that the provision of appropriate resources for tending cargo is among the master's responsibilities under the ISM Code.

## **18 Provision of humane killing device**

There must be provided on a vessel carrying livestock a means of humanely killing livestock appropriate for use with the species carried.

## **19 Master's report**

Upon completion of a voyage, other than a short voyage, during which livestock has been carried, the master of a vessel must make a report in writing to :

- the Secretary of the Department of Agriculture, Fisheries and Forestry; and
  - the Manager, Ship Inspection and Registration,
- in accordance with Form 5 in Schedule 1.

## Section 9T209T

---

*Note* The Master's Report is to be sent to Department of Agriculture, Fisheries and Forestry, GPO Box 858, CANBERRA ACT 2601, Facsimile: (02) 6272 5423. The Master's Report is also to be provided to the Manager, Ship Inspection and Registration, AMSA, GPO Box 2181, CANBERRA ACT 2601, Facsimile: (02) 6279 5058. A Master's Report form is obtainable from AMSA's website at [www.amsa.gov.au](http://www.amsa.gov.au).

### 20 Sheep — design of pens & passageways

- 20.1.1 Subject to subsection 20.1.2, the construction of pens for sheep and of adjacent passageways must comply with the details specified in Table 3.

**Table 3**

<b>Detail of design</b>	<b>Dimension</b>
Maximum breadth	4.5 metres
Minimum breadth	2.0 metres
Maximum length	Not more than twice the breadth
Minimum length	Not less than the breadth
Maximum clear floor area within pen	40.5 square metres
Minimum clear height within pen	1.1 metres
Maximum clear vertical distance between rails	300 millimetres
Maximum clear vertical distance below bottom edge of lowest rail of pen installed at deck level	200 millimetres
Maximum clear vertical distance below bottom edge of lowest rail of pen not installed at deck level except where a vertical plate or board is fitted in accordance with subsection 22.4	50 millimetres
Minimum height of top edge of uppermost rail above pen floor except that the height of that rail may be decreased if the clear height above that rail does not exceed 300 millimetres.	900 millimetres
Minimum width of adjacent passageway clear of receptacles and any other obstructions	550 millimetres

- 20.1.2 In open structures above the weather deck, where pen rails form the outer perimeter containment, reduced pen rail spacing is required to minimise the risk of animals being lost overboard. These spacings are:
- the maximum clear vertical space below the bottom edge of the lowest rail and the top of a deck boundary angle or fashion plate, must be 100 millimetres; and
  - the maximum clear vertical space between rails must be 200 millimetres except that the maximum clear vertical space between the uppermost rail and the next lower rail may be 250 millimetres.
- 20.2 The clear floor area within a pen referred to in Table 3 is the area of the pen exclusive of any receptacle or other object or structure occupying any part of the area of the pen.

*Note* A bar fitted in accordance with subsection 7.6.2 of Schedule 4 is not regarded as forming an obstruction.

- 20.3 The deck within pens, passageways and ramps between decks must have a surface that provides a satisfactory non-slip foothold for the sheep.
- 20.4 The closing arrangement referred to in subsection 16.2 must be a gate capable of being quickly closed to control the movement of sheep from shore to vessel and vice versa. Within the vessel, sliding or swinging gates must be provided where necessary to control the movement of sheep to and from pens.

## 21 Sheep — strength of pen fittings

- 21.1 Subject to subsection 21.4, rails and stanchions forming a fore and aft boundary of a sheep pen must be capable of withstanding a load per metre length determined by the application of Formula 1, uniformly distributed up to the height of the top of the uppermost rail the centre of which is at a height of not more than 900 millimetres above the pen floor.

### Formula 1

$F = 1668 B (0.574 + 0.0252 Z)$  newtons per metre length

where:  $F$  = load per metre length of boundary;

$B$  = maximum breadth of pen, in metres; and

$Z$  = the vertical distance from a point 0.50 metre above the pen floor to the vessel's water-line corresponding to the anticipated lightest load, in metres.

*Note* A rail, the centre of which is at a height of more than 900 millimetres above the pen floor, is not considered to be load bearing.

- 21.2 Rails and stanchions forming a boundary of a sheep pen other than a fore and aft boundary referred to in subsection 21.1, must be of substantially the same method of construction and of substantially the same scantlings as required for the fore and aft boundaries.
- 21.3.1 Subject to subsection 21.4, any two-thirds of the area of the floor of a sheep pen must be capable of withstanding 100 per cent of the floor load, determined by the application of Formula 2, uniformly distributed over the area.

### Formula 2

$$F = 2500 \left[ 1 + \frac{1}{d} \left( (0.094 - 0.00035L)y + (7.4 - 0.016L) \right) \right]$$

where:  $F$  = floor load, in newtons per square metre

$d$  = draught of the vessel corresponding to the anticipated lightest loaded water-line, in metres;

$y$  = longitudinal distance from the midpoint of the pen to amidships, in metres; and

$L$  = length between the perpendiculars of the vessel in metres.

- 21.3.2 A floor support of a sheep pen that also forms a boundary of a lower pen must comply with subsections 21.1, 21.2 and 21.3.1.
- 21.4 In respect of a livestock pen structure above the uppermost continuous deck, the requirements of subsections 21.1, 21.2 and 21.3.1 may be dispensed with if the owner of a vessel obtains the approval of the Manager, Ship Inspection and Registration, to calculations showing that the rails and stanchions of the pens

and the pen floor and floor supports of those pens in that structure are capable of withstanding appropriate design forces using the criteria specified by the recognised organisation responsible for approving the design of the structure.

- 21.5 The maximum stresses permissible for materials used in the construction of the boundaries and floors of a pen must not exceed the values specified in Table 4 when under the loads determined in accordance with subsections 21.1, 21.3.1 and 21.4, as appropriate.

Table 4

Material	Maximum permissible tensile stress	Maximum permissible shear stress
Steel	0.75 x minimum yield stress	50 per cent of maximum permissible tensile stress
Aluminium	0.75 x 0.2 per cent proof stress	50 per cent of maximum permissible tensile stress
Other	As specified by the Manager, Ship Inspection and Registration	As specified by the Manager, Ship Inspection and Registration

## 22 Sheep — arrangement of pens

- 22.1 A passageway must be provided on at least one side of each sheep pen.  
*Note* To ensure adequate access by animals for feeding purposes, the passageway should be on the longest pen boundary.
- 22.2 The means of closing sheep access to a pen may be a gate or portable rails:
- capable of maintaining continuity of strength and the alignment of the adjoining boundary; and
  - capable of being secured against accidental lifting or removal.
- 22.3 If sheep are to be moved between decks, a ramp must be provided that must:
- have a minimum clear width of 550 millimetres;
  - have sides that are free from protrusions and that extend to a height of not less than 900 millimetres perpendicular to the ramp floor;
  - be fitted with foot battens:
    - of a minimum height of 25 millimetres and a minimum breadth of 10 millimetres with edges well rounded; and
    - spaced at regular intervals of not more than 300 millimetres, each end batten being not more than 100 millimetres from the end of the ramp; and
  - have a gradient not exceeding 1 in 2.
- 22.4 If a lower tiered pen on a deck has a water or food receptacle adjacent to a passageway, the upper tiered pen must have fitted to the side adjoining the passageway, a vertical plate or board of a height not less than 225 millimetres that abuts the floor of the pen.  
*Note* This provision is intended to prevent the fouling of food and water of livestock in lower tiers.
- 22.5 If pens are on an exposed deck, the uppermost pens must be fitted with a roof of a height that provides at least the minimum clear height specified in Table 3 for

each pen and that is waterproof and extends not less than 450 millimetres beyond the deck area occupied by the pens.

- 22.6 Pens and stalls at the forward end of a livestock structure on or above the uppermost continuous deck and the feeding and watering arrangements provided for those pens and stalls must be effectively screened from sea spray. Suitable arrangements must be made to prevent the ingress of seawater to any part of the pens or stalls in any sea condition.

*Note* Spaces enclosed or partially enclosed to meet this requirement should be provided with a mechanical ventilation system in accordance with subsection 3.2.1 of Schedule 4 or equivalent.

- 22.7.1 If pens are constructed in more than one tier on a deck, walkways must be provided so that no pen floor is at a height of more than 1.50 metres above the deck or a walkway.

### 23 Cattle — design of pens, stalls & passageways

- 23.1 Subject to subsection 23.2, the construction of pens for cattle and of adjacent passageways must comply with the details specified in Table 5.

**Table 5**

Detail of design	Dimension
Maximum breadth	4.5 metres
Minimum breadth	2.1 metres
Minimum length	2.3 metres
Maximum clear floor area within pen	21.0 sq metres
Maximum height of top edge of lowest rail above pen floor between pens	600 millimetres
Minimum clear height within pen:	
(a) if a mechanical ventilation system is provided in accordance with section 12	1.8 metres
(b) in any other case	2.3 metres
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 metre
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 metre
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 metre
Minimum width of adjacent passageway measured clear from rails, when pens are on one side only of the passageway	0.75 metre

*Note 1* For provision of a mechanical ventilation system, refer also to clause 3 of Schedule 4.

*Note 2* If pens are on one side only of the passageway and the passageway is required to service livestock any fixed obstruction must not reduce width below 0.7 m. If such a passageway is required for safe operation of the vessel, refer to subsection 15.4.

- 23.2 The height of the rails of a pen may be varied, with the approval of an inspector, to the extent of 75 millimetres either way from those specified in Table 5.
- 23.3.1 Subject to subsection 23.3.2, there must be a maximum clear space of 300 millimetres between the rails of a pen, or between the lowest rail and the pen floor, or between a rail and the overhead structure of the vessel except that a rail need not be placed at a height of more than 1.40 metres.
- 23.3.2 If a water or food receptacle is fitted to the outside of a pen or if fodder is distributed on the floor outside a pen, a clear vertical space of not more than 500 millimetres, for the purpose of watering or feeding livestock in the pen, may be provided between adjacent pen rails on the side of the pen adjoining the passageway.
- 23.4 The clear floor area within a pen referred to in Table 5 is the area of the pen exclusive of any receptacle or other object or structure occupying any part of the area of the pen.
- 23.5 If cattle are to be carried in stalls, the design and dimensions of the stalls must comply with subsection 27.1.
- 23.6 The deck within pens, passageways and ramps between decks must have a surface that provides a satisfactory non-slip foothold for the cattle.
- 23.7 The closing arrangement referred to in paragraph 16.2(c) must be a sliding gate capable of being quickly closed to control the movement of cattle from shore to vessel and vice versa. Within the vessel, sliding or swinging gates must be provided where necessary to control the movement of cattle to and from pens.

## **24 Cattle — strength of pen & stall fittings**

- 24.1 Subject to subsection 24.4, rails and stanchions forming a fore and aft boundary of a cattle pen must be capable of withstanding a load per metre length determined by the application of Formula 3, uniformly distributed up to the height of the top of the uppermost rail the centre of which is at a height of not more than 1.40 metres above the pen floor.

### **Formula 3**

$$F = 3336 B (0.574 + 0.0252 Z) \text{ newtons per metre length}$$

where: F = load per metre length of boundary;

B = maximum breadth of pen, in metres; and

Z = the vertical distance from a point 0.75 metre above the pen floor to the vessel's water-line corresponding to the anticipated lightest load, in metres.

*Note* A rail, the centre of which is at a height of more than 1.40 metres above the pen floor, is not considered to be load bearing for the purposes of this subsection.

- 24.2 Rails and stanchions forming a boundary of a cattle pen, other than a fore and aft boundary referred to in subsection 24.1, must be of substantially the same method of construction and of substantially the same scantlings as determined to be required for the fore and aft boundaries.
- 24.3.1 Subject to subsection 24.4, any two-thirds of the area of the floor of a cattle pen must be capable of withstanding 100 per cent of the floor load, determined by the application of Formula 4, uniformly distributed over the area.



**Formula 4**

$$F = 5000 \left[ 1 + \frac{1}{d} \left( (0.094 - 0.00035L)y + (7.4 - 0.016L) \right) \right]$$

where: F = floor load, in newtons per square metre

d = draught of the ship corresponding to the anticipated lightest loaded water-line, in metres;

y = longitudinal distance from the midpoint of the pen to amidships, in metres; and

L = length between the perpendiculars of the vessel in metres.

24.3.2 A floor support of a cattle pen that also forms a boundary of a pen on a lower deck, must comply with subsections 24.1, 24.2 and 24.3.1.

24.4 In respect of a livestock pen structure above the uppermost continuous deck, the requirements of subsections 24.1, 24.3.1 and 24.3.2 may be dispensed with if the owner of the vessel obtains the approval of the Manager, Ship Inspection and Registration, to calculations showing that the rails and stanchions of the pens and the pen floor and floor supports of those pens in that structure are capable of withstanding appropriate design forces using the criteria specified by AMSA or other recognised organisation responsible for approving the design of the structure.

24.5 The maximum stresses permissible for materials used in the construction of the boundaries and floors of a pen must not exceed the values specified in Table 6 when under the loads determined in accordance with subsection 24.1, 24.3.1 or 24.4, as appropriate.

**Table 6**

<b>Material</b>	<b>Maximum permissible tensile stress</b>	<b>Maximum permissible shear stress</b>
Steel	0.75 x minimum yield stress	50 per cent of maximum permissible tensile stress
Aluminium	0.75 x 0.2 per cent proof stress	50 per cent of maximum permissible tensile stress
Other	As specified by the Manager, Ship Inspection and Registration	As specified by the Manager, Ship Inspection and Registration

24.6 If cattle are to be carried in stalls, the stalls must be constructed in accordance with subsection 27.1.

**25 Cattle — arrangement of pens & stalls**

25.1.1 A passageway and means of access must be provided to facilitate the care and removal of animals.

25.1.2 Cattle stalls must be so arranged that access is provided to the rear of each stall. The means of closing a cattle access to a pen or stall may be a gate or portable rails:

- (a) capable of maintaining continuity of strength and the alignment of the adjoining boundary; and
- (b) capable of being secured against accidental lifting or removal.

- 25.3 If cattle are to be moved between decks, a ramp must be provided that must:
- (a) have a minimum clear width of 750 millimetres;
  - (b) have sides that:
    - (i) are free from protrusions;
    - (ii) extend to a height of not less than 1.40 metres perpendicular to the ramp floor; and
    - (iii) are panelled or sheathed to a height of not less than 1.20 metres perpendicular to the ramp floor;
  - (c) be fitted with foot battens:
    - (i) of a minimum height of 50 millimetres and a minimum breadth of 25 millimetres with edges well rounded; and
    - (ii) spaced at regular intervals of not more than 300 millimetres, each end batten being not more than 200 millimetres from the end of the ramp;
  - (d) have a gradient not exceeding 1 in 2; and
  - (e) have a personnel ramp adjacent to each cattle ramp as follows:
    - (i) having a minimum clear width of 500 mm;
    - (ii) having a 1 metre high guard rail on the side remote from the cattle ramp;
    - (iii) being provided with access at each deck that avoids as far as practicable personnel needing to cross the cattle race; and
    - (iv) being provided with foot battens or non-skid surface.
- 25.4 If pens or stalls are on an exposed deck, the uppermost pens or stalls must be fitted with a roof of a height that provides at least the minimum clear height required by section 23 for each pen or stall and that is waterproof and extends not less than 450 millimetres beyond the deck area occupied by the pens or stalls.
- 25.5 Pens and stalls at the forward end of a livestock structure on or above the uppermost continuous deck and the feeding and watering arrangements provided for those pens and stalls must be effectively screened from sea spray. Suitable arrangements must be made to prevent the ingress of seawater to any part of the pens or stalls in any sea condition.

*Note* Spaces enclosed or partially enclosed to meet this requirement should be provided with a mechanical ventilation system in accordance with subclause 3.2.1 of Schedule 4 or equivalent.

## **26 Horses — arrangements for carriage**

Each horse carried must be in a separate stall except that, if accepted by an approved veterinary officer prior to loading, horses may be carried in pens.

*Note* The Manager, Ship Inspection and Registration, has approved for the purposes of section 26 veterinary officers employed by the Australian Quarantine Inspection Service.

## **27 Horses — design of stalls, pens & passageways**

- 27.1 The construction of stalls for horses and of adjacent passageways must comply with the details specified in Table 7, although dimensions marked \* may, with the approval of an inspector, be varied by up to 75 millimetres either way.

Table 7

Detail of design	Species	Dimension
Maximum clear length within stall	(i) Horses	2.50 metres*
	(ii) Mules or asses	2.30 metres*
Minimum clear length within stall		2.30 metres*
Minimum clear passage:		
(a) between 2 rows of stalls and bounded by the front rails	(i) Horses	1.70 metres*
	(ii) Mules or asses	1.50 metres*
(b) between 2 rows of stalls and bounded by front and back rails		1.20 metres*
(c) in any other case		1.00 metre*
Minimum clear breadth within stall:		
(a) if the stall is aligned athwartships		0.70 metres
(b) if the stall is aligned fore and aft		0.90 metres
Height of uppermost front, back and side rail from floor to top edge		1.15 metres*
Height of lowest front, back and side rail from floor to top edge		0.75 metres*

27.2.1 The construction of pens for the carriage of horses must be in accordance with section 23.

27.2.2 The clear height within a pen or stall for horses must be to the satisfaction of an approved veterinary officer.

*Note* The Manager, Ship Inspection and Registration, has approved for the purposes of subsection 27.2.2 veterinary officers employed by the Australian Quarantine Inspection Service.

27.3 The closing arrangement referred to in subsection 16.2 must be a sliding gate capable of being quickly closed to control the movement of horses from shore to vessel and vice versa. Within the vessel, sliding or swinging gates must be provided where necessary to control the movement of horses to and from pens.

## 28 Horses — strength of stall & pen fittings

28.1 The rails and stanchions of a horse stall must be constructed of approved materials giving a strength not less than that of heavy gauge tubular steel pipe of 50 millimetres nominal bore.

*Note* Pipe complying with Australian Standard 1074 or an equivalent standard will be accepted for the purposes of subsection 28.1.

28.2 A pen for the carriage of horses must be constructed in accordance with section 24.

## 29 Horses — arrangement of stalls & pens

29.1 A passageway must be provided at the front of each horse stall and each stall or pen must be so arranged that access is provided to the rear of each horse.

- 29.2 The means of closing a horse access to a pen or stall, may be a gate or portable rails:
- (a) capable of maintaining continuity of strength and the alignment of the adjoining boundary; and
  - (b) capable of being secured against accidental lifting or removal.
- 29.3 The floor of a stall or pen must be of adequate strength, so constructed as to facilitate drainage and cleaning and:
- (a) if constructed of wood:
    - (i) in the case of a stall, must be boards close fitting at the front of the stall and spaced about 25 millimetres apart at the rear, effectively secured against lifting; and
    - (ii) foot battens of cross section not less than 50 millimetres by 50 millimetres with edges well rounded must be provided at the front and rear of the stall or pen;
  - (b) if constructed of concrete, the concrete must be well finished off to provide a non-slip surface and, if necessary, suitable standings must be provided; and
  - (c) if constructed of metal mesh, the mesh must be made of rods having a diameter of approximately 9 millimetres placed to provide apertures of not more than 50 millimetres by 50 millimetres and suitable standings<sup>40</sup> must be provided.
- Note* Standings are floor cushioning materials such as rubber strips or fibre matting.
- 29.4 If horses are to be moved between decks, a ramp must be provided that must:
- (a) have a minimum clear width of 750 millimetres;
  - (b) have panelled or sheathed sides that are free from protrusions and that extend to a height of not less than two metres perpendicular to the ramp floor; and
  - (c) be fitted with foot battens that are:
    - (i) of a minimum height of 50 millimetres and a minimum breadth of 25 millimetres with edges well rounded;
    - (ii) spaced at regular intervals of not more than 300 millimetres, each end batten being not more than 200 millimetres from the end of the ramp; and
    - (iii) have a gradient not exceeding 1 in 2.
- 29.5 If stalls or pens are on an exposed deck, the uppermost stalls or pens must be fitted with a roof of a height that provides at least the minimum clear height specified by section 27 for each stall or pen and that is waterproof and extends not less than 450 millimetres beyond any part of a stall or pen referred to in subsection 29.6.
- 29.6.1 A stall or pen on an exposed deck must:
- (a) in the case of an outermost stall or pen, be fitted with protective sheathing on its outboard side; and
  - (b) in the case of a stall or pen the forward end of which would otherwise be exposed, be fitted with protective sheathing on its forward end.

- 29.6.2 Sheathing must effectively screen the stall or pen and its feeding and watering arrangements from sea spray, but must not exclude natural ventilation.  
*Note* Sheathing may be portable if it is capable of being fitted from outside a stall or pen.
- 29.7 If the back of a stall forms a boundary of a passageway or another stall, a kick rail or board must be fitted to that end of the stall so that the clear space between rails or rail and board, does not exceed 150 millimetres.
- 29.8.1 Each horse must be fitted with a collar made of leather or other suitable material and, in each stall, two cross ties and suitable fastenings must be provided to enable a horse to be restrained from biting, rearing or attempting to jump from the stall.
- 29.8.2 If chain cross ties are provided for the purposes of subsection 29.8.1, the master must ensure that a suitable set of bolt cutters is carried and is kept readily available.  
 Penalty: 50 penalty units.
- 29.8.2A An offence against subsection 29.8.2 is a strict liability offence.
- 29.8.2B A person is liable to a civil penalty if the person contravenes subsection 29.8.2.  
 Civil penalty: 50 penalty units.

### 30 Goats

- 30.1 Subject to subsections 30.2 and 30.3, the carriage of goats must be in accordance with sections 20, 21 and 22.
- 30.2 If necessary for secure enclosures, further pen rails spaced at vertical intervals of not more than 300 millimetres must be provided to a height of 1.50 metres above the pen floor.
- 30.3 Space between the rails of a goat pen must be closed off with an effective means for the containment of goats in the pen and food and water receptacles must be located inside the pen.

*Note* Wire mesh is considered to be an effective means of containment. If goats are carried on the upper tier of a two tiered pen, wire mesh need not be used. Inspection by an inspector of the means of containment is not required if the vessel would not otherwise be subject to pre-loading inspection and the master confirms that the means of containment has been fitted to pens allocated to goats in a manner that has previously proved to be effective and has previously been accepted an inspector. Requests for acceptance of such arrangements should be made on the notice lodged in accordance with subsection 7.2, including details of the voyage for which the arrangements were previously accepted. A log-book entry should also be made to record acceptance of arrangements on this basis.

### 31 Pigs

Requirements for the carriage of pigs are in accordance with sections 20, 21 and 22.

### 32 Other species of livestock

- 32.1 If livestock other than sheep, cattle, horses, goats or pigs is to be carried, a stall or pen must be provided that:
- is capable of safely containing the livestock for the period of the voyage;
  - is constructed having regard to the size and other characteristics and needs of the livestock to be carried; and

(c) is furnished with arrangements for the proper feeding, watering and tending of the livestock,

and other appropriate measures must be taken in conformity with the provisions of this Order to ensure the safety of the livestock and of persons in the vicinity of the livestock.

32.2 The arrangements provided under subsection 32.1 must be approved by an inspector prior to loading of the livestock.

### **33 Provision of hospital pens & stalls**

33.1 If sheep, goats or pigs are carried, hospital pens must be provided corresponding to at least 0.25 per cent of the pen area available for the carriage of those species and, if the livestock is carried on more than one deck, the hospital pens must be distributed on each deck in proportion to livestock carried on that deck, as far as is practicable.

33.2 If cattle are carried, hospital pens must be provided, as far as practicable on each deck, equal to at least 1 per cent of the pen area available on that deck for the carriage of cattle. However, where the pen area for the carriage of cattle on a deck is less than 500 square metres, the hospital pen may be sited on an adjacent deck above or below, provided that the hospital pen is readily accessible to cattle transferred from one deck to the other, and the area of the hospital pen is not less than 1 per cent of the pen area available for the carriage of cattle on the decks it serves.

33.3 Subject to the approval of the Manager, Ship Inspection and Registration, the length and breadth of a hospital pen may be less than that specified by Table 3 or Table 5 provided that no side of a pen is less than 1.50 metres in length.

33.4.1 If horses are carried, a hospital stall must be provided in respect of each 20 horses or part thereof.

33.4.2 A hospital stall provided in accordance with subsection 33.4.1 must be so located as to be readily accessible for the transfer of a horse.

33.5 If livestock other than sheep, cattle, horses, goats or pigs are carried, appropriate hospital pens or stalls must be provided.

33.6 Hospital pens or stalls provided in accordance with section 33 must be constructed to the standard required for the species of livestock for which they are provided and must bear clear identification as spare pens or stalls.

33.7 Animals that are carried individually penned or stalled may be disregarded when calculating the number or area of hospital pens.

### **34 Carriage of livestock in portable equipment**

34.1 For the purposes of this Order, portable equipment is taken to include boxes, platforms and containers or other arrangements used to form pens or stall for the carriage of livestock. Portable equipment does not include a transport unit referred to in subsection 35.3.

*Note* In addition to the requirements of this Order, *Marine Order 32 (Cargo handling equipment) 2011* and *Marine Order 44 (Safe containers) 2002* may have application in relation to portable equipment.

34.2 Portable equipment must not be used for the carriage of livestock unless it is approved.

*Note* Approval may be subject to conditions as to the use of the equipment such as the species of livestock which may be carried and the types of voyage on which the equipment may be used.

- 34.3.1 Portable equipment containing livestock must:
- (a) be stowed in a position that enables the livestock to be suitably protected from the weather and not subject to the machinery exhausts;
  - (b) be stowed in a position that ensures suitable access to the equipment and livestock;
  - (c) be secured to prevent movement;
  - (d) be adequately lit and ventilated;
  - (e) have adequate provision for cleaning and drainage; and
  - (f) have adequate provision for feeding and watering.

*Note* For paragraph (b), suitable access to the equipment should be not less than 1.2 metres along the length of the equipment and in addition there should be at least 1.0 metre end clearance, when the equipment is end loaded.

- 34.3.2 The arrangements provided under subsection 34.3.1 are to be approved by an inspector.

- 34.4 Portable equipment containing horses must be positioned so that the horses will stand facing athwartships.

### **35 Carriage of livestock on a short voyage**

- 35.1 Sections 10, 11, 14, 16, 19 and 33 do not apply to livestock carried on a short voyage.
- 35.2.1 Sections 30, 31 and 32 do not apply to livestock carried on a short voyage except to the extent that they are relevant in determining the maximum number of livestock permitted to be carried in a pen.
- 35.2.2 The maximum number of livestock permitted to be carried in a pen and the required clear height in the pen is to be determined by an inspector of stock in the State or Territory of the port from which livestock is shipped.

*Note* Refer to *Animal Welfare Standard No.8, Transport of livestock across Bass Strait*, published by the Tasmanian Department of Primary Industries, Water and the Environment, with regard to stocking densities.

- 35.3 Provisions relating to the carriage of livestock in pens or in portable equipment, other than subsections 34.3.1 and 35.4, do not apply to the carriage of livestock in the following transport units:
- (a) registered road vehicle; or
  - (b) registered trailer or float; or
  - (c) portable stock crate mounted on a registered road vehicle; or
  - (d) any other transport unit accepted by an inspector,
- where livestock is carried in accordance with the laws of the State or Territory of the port from which livestock is shipped.
- 35.4 If livestock is contained in portable equipment, it is to be constructed or arranged so as to minimise:
- (a) the possibility of livestock projecting their heads and limbs out of the equipment; and
  - (b) spillage of excrement to the deck of the vessel and, when the livestock is carried in more than one tier, to lower tiers.

- 35.5.1 Sufficient water, distribution systems and receptacles are to be carried to enable livestock to be watered in the event of an unexpected delay to the vessel.
- 35.5.2 Prior to loading, the shipper, or the driver of a road vehicle, must advise the master when livestock was last watered.
- 35.5.3 The master must ensure that stock is watered at least once in each period of 24 hours while on board.

Penalty: 50 penalty units.

35.5.3A An offence against subsection 35.5.3 is a strict liability offence.

35.5.3B A person is liable to a civil penalty if the person contravenes subsection 35.5.3.

Civil penalty: 50 penalty units.

*Note* Watering of livestock should be carried out at more frequent intervals if circumstances warrant such action. Fodder is not required.

- 35.6.1 Livestock must be provided with adequate flow through ventilation in close proximity above and or below the containment unit.
- 35.6.2 Openings in portable equipment, specifically provided for ventilation, are to be so placed as to prevent direct draughts on the livestock.
- 35.6.3 Road transport vehicles which have inadequate flow through ventilation capability when stationary are not to be used for sea transport.
- 35.6.4 The master must ensure that when livestock is carried on enclosed decks in Ro-Ro ships the ventilation system is run continuously.
- 35.6.5 A horse float must have openings to the front and rear, each measuring not less than 0.4 of a square metre.

*Note* Mares with small foals at foot are not to be transported in floats, unless the foals are denied access to doors if secured open for ventilation purposes.

35.6.6 Portable equipment units for the carriage of horses must have an opening in both front and rear or in both sides, each opening being not less than 0.4 of a square metre.

35.7 The master of the ship must ensure that road vehicles and horse floats are properly stowed and secured in accordance with subsection 34.3.1.

Penalty: 50 penalty units.

35.7A An offence against subsection 35.7 is a strict liability offence.

35.7B A person is liable to a civil penalty if the person contravenes subsection 35.7.

Civil penalty: 50 penalty units.

*Note* The master should take account of inclement weather before proceeding to sea with livestock on board.

### **36 Disposal of dead livestock**

36.1 The master of a vessel must ensure that the carcass of any dead livestock is disposed of in accordance with the requirements of Annex V of MARPOL 73/78.

Penalty: 50 penalty units.

36.1A An offence against subsection 36.1 is a strict liability offence.

36.1B A person is liable to a civil penalty if the person contravenes subsection 36.1.

Civil penalty: 50 penalty units.



- 36.2 The master of a vessel must ensure that no carcass of any dead livestock is disposed of at sea within 100 nautical miles of nearest land unless the carcass has been passed through a comminuter or grinder or has been slit to the extent that the thoracic and abdominal cavities are opened.  
Penalty: 50 penalty units.
- 36.2A An offence against subsection 36.2 is a strict liability offence.
- 36.2B A person is liable to a civil penalty if the person contravenes subsection 36.2.  
Civil penalty: 50 penalty units.

### 37 Livestock mortality

In section 37:

**mortality** means, in respect of any species, the percentage determined by dividing the number of deaths of that species occurring while on the vessel (including during loading and unloading) by the total number of that species loaded and multiplying the resultant figure by 100.

**reportable level** has the same meaning as in Standard 5 of the ASEL.

- 37.1 The master of a vessel must provide to the Manager, Ship Inspection and Registration, by the most expedient means of communication available, a copy of any notifiable incident report that has been provided to the Australian Quarantine Inspection Service in accordance with Standard 5.11 of the ASEL.  
Penalty: 50 penalty units.
- Note* The Manager, Ship Inspections, can be provided a copy by mail at GPO Box 2181, Canberra, ACT, 2601, Australia; or by fax on +61 (0)2 6279 5058; or by email at mocbrshipman@amsa.gov.au.
- 37.1A An offence against subsection 37.1 is a strict liability offence.
- 37.1B A person is liable to a civil penalty if the person contravenes subsection 37.1.  
Civil penalty: 50 penalty units.
- 37.2 If the Manager, Ship Inspection and Registration, becomes aware, either through a report under subsection 37.1 or otherwise, that the mortality of any one species is equal to or greater than the reportable level, the Manager, Ship Inspection and Registration, may direct an inspector to carry out a preliminary inquiry into the cause or causes of the deaths and as soon as practicable make a report to the Manager, Ship Inspection and Registration.
- 37.3 The Manager, Ship Inspection and Registration, may require the owner or master of the vessel to provide such information as that officer reasonably considers relevant, including information to monitor the situation on board a vessel still engaged on its voyage.
- 37.4 The owner, operator or master, as appropriate, of the vessel must comply with a requirement of the Manager, Ship Inspection and Registration, under subsection 37.3.  
Penalty: 50 penalty units.
- 37.4A An offence against subsection 37.4 is a strict liability offence.
- 37.4B A person is liable to a civil penalty if the person contravenes subsection 37.4.  
Civil penalty: 50 penalty units.

- 37.5 A preliminary inquiry under subsection 37.2 commences immediately the Manager, Ship Inspection and Registration, an inspector to carry out such an inquiry, whether or not the vessel is still engaged on its voyage.
- 37.6 An inspector carrying out a preliminary inquiry may require the owner or master of the vessel to provide such information as the inspector reasonably considers relevant to the inquiry, including information to monitor the situation on board a vessel still engaged on its voyage.
- 37.7 The owner or master, as appropriate, of the vessel must comply with a requirement of an inspector under subsection 37.6.  
Penalty: 50 penalty units.
- 37.7A An offence against subsection 37.7 is a strict liability offence.
- 37.7B A person is liable to a civil penalty if the person contravenes subsection 37.7.  
Civil penalty: 50 penalty units.
- 37.8 A preliminary inquiry carried out under subsection 37.2 may include verification of the continued accuracy of relevant data shown on the vessel's Record of Equipment and Arrangements.
- 37.9 The Manager, Ship Inspection and Registration, may prohibit or impose conditions on the loading of livestock on a vessel in respect of which a preliminary inquiry is being, or has been, carried out under subsection 37.2.
- 37.10 The master of the vessel must comply with a prohibition or condition imposed under subsection 37.9.  
Penalty: 50 penalty units.
- 37.10A An offence against subsection 37.10 is a strict liability offence.
- 37.10B A person is liable to a civil penalty if the person contravenes subsection 37.10.  
Civil penalty: 50 penalty units.
- 37.11 After the report of a preliminary inquiry has been completed, the Manager, Ship Inspection and Registration, must, as soon as practicable, determine whether circumstances exist that warrant action being taken under subsection 10.6 for the suspension of the vessel's Australian Certificate for the Carriage of Livestock.
- 37.12 If satisfied that circumstances do not exist that warrant action being taken under subsection 10.6 for the suspension of the Australian Certificate for the Carriage of Livestock, the Manager, Ship Inspection and Registration, is to lift any prohibition or remove any conditions on loading of livestock.
- 38 Additional requirements**
- 38.1 If the Manager, Ship Inspection and Registration, considers that the safety of persons or the proper carriage of livestock is insufficiently provided for in spite of the vessel, its equipment and arrangements complying with this Order, the Manager, Ship Inspection and Registration, may give a direction to the owner or master of the vessel, or both, specifying such additional precautions or conditions of carriage as that officer considers necessary.
- 38.2 Any person to whom a direction is given under subsection 38.1 must comply with that direction.  
Penalty: 50 penalty units.
- 38.2A An offence against subsection 38.2 is a strict liability offence.

- 38.2B A person is liable to a civil penalty if the person contravenes subsection 38.2.  
Civil penalty: 50 penalty units.

### 39 Transitional

- 39.1 An exemption or modification granted or continued, or an Australian Certificate for the Carriage of Livestock issued, under a provision of Issue 5 of *Marine Order 43 (Cargo and cargo handling — livestock) 2006* and in force immediately before this Issue of this Order came into force, is to continue in force as if granted under this Issue of this Order.
- 39.2 An action taken of the kind described in the first column of Table 8 taken under the provision of Issue 5 specified in the second column is deemed to be an equivalent action taken under the provision of this Issue specified in the third column.

**Table 8**

<b>Action</b>	<b>Provision of Issue 5</b>	<b>Provision of Issue 6</b>
Investigation into mortality	subsection 40.2	subsection 37.2
Imposition of additional requirements, including any conditions imposed	subsection 41.1	subsection 38.1



subject to annual surveys being satisfactorily completed in accordance with *Marine Order 43 (Cargo and cargo handling — livestock) 2006*.

Issued at Canberra A.C.T.

Signed	Date	Official stamp
<b>THIS IS TO CERTIFY</b> that, at the first annual survey, the vessel was found to comply with the relevant requirements of <i>Marine Order 43 (Cargo and cargo handling — livestock) 2006</i> .		

Signed	Official stamp
--------	----------------

Place

Date

**THIS IS TO CERTIFY** that, at the second annual survey, the vessel was found to comply with the relevant requirements of *Marine Order 43 (Cargo and cargo handling — livestock) 2006*.

Signed	Official stamp
--------	----------------

Place

Date

**THIS IS TO CERTIFY** that, at the third annual survey, the vessel was found to comply with the relevant requirements of *Marine Order 43 (Cargo and cargo handling — livestock) 2006*.

Signed	Official stamp
--------	----------------

Place

Date

**THIS IS TO CERTIFY** that, at the fourth annual survey, the vessel was found to comply with the relevant requirements of *Marine Order 43 (Cargo and cargo handling — livestock) 2006*.

Signed	Official stamp
--------	----------------

Place

Date

---

## Form 2

### Record of Equipment and Arrangements

#### 1 General Description of vessel

Name of vessel

IMO Number

Port of registry

#### Arrangements for the carriage of livestock for

(kind of livestock)

.....  
.....  
.....  
.....  
.....

#### Position of livestock spaces

on exposed

deck

in enclosed

spaces

.....  
.....

#### Livestock carried

Species

.....

#### Pen area available for the carriage of livestock

(sum of total available pen areas on all decks as calculated in section 2)

.....  
*Note: Where appropriate indicate:*

(a) space available for sheep only

(b) space available for cattle only

(c) space available for each species of livestock for mixed shipment.

*Scale of minimum floor area for each of the species of livestock carried:*

**2 Pen construction and areas**

Details appear on drawing(s) No.

Deck covering .....

Tier construction .....

General description of pens
-----------------------------

Livestock space or deck\*\*  
 .....  
 .....

Tiers..... Fixed or portable.....  
 Total volume of space..... Number of air changes.....  
 Species of livestock.....  
 .....

<i>Pen number</i>	<i>Allowable floor area*</i>	<i>Pen number</i>	<i>Allowable floor area*</i>	<i>Pen number</i>	<i>Allowable floor area*</i>

*Total allowable floor area* .....  
*Less area of ..... pens allocated as hospital pens* .....  
*Total available pen area on this deck* .....

\* Total floor area of pen **less** deductions for intrusions into the space and excluded areas

\*\* These details are to be provided for each deck on which livestock is carried

### 3 Ventilation

Details appear on drawing(s) No.

--

#### Fans

<i>Position</i>	<i>Motor type &amp; size</i>	<i>Air quantity delivered m<sup>3</sup></i>	<i>Reversible or single direction</i>

Description of initial testing procedure to show compliance with section 13

.....  
 .....  
 .....  
 .....

Spare components

.....  
 .....  
 .....

Failure alarms (description and location)

.....  
 .....  
 .....

### 4 Vessel's generating capacity

#### Main sources of power:

*Sources of power sufficient to supply power continuously for all livestock services while livestock is on board without interfering with the normal operation of the vessel.*

<i>Number</i>	<i>Type</i>	<i>kW or kVA</i>	<i>Consumption per day (full load)</i>

#### Secondary sources of power:

*Sources of power sufficient to supply power continuously for all livestock services while livestock is on board if the primary source of power is out of action for any reason.*

<i>Number</i>	<i>Type</i>	<i>kW or kVA</i>	<i>Consumption per day (full load)</i>



**Total capacity of fuel tanks available for generators (excluding secondary source of power)** .....

**Capacities of fuel tanks available for generators providing secondary sources of power** .....

**Is fuel for main sources of power compatible with fuel for secondary sources of power?** .....

**Can secondary sources of power be supplied with fuel from all fuel tanks for secondary sources?** .....

**Can secondary sources of power be supplied with fuel from any or all fuel tanks for main sources?** .....

**Normal maximum load, auxiliary and domestic services, including cargo non-livestock services**

(a) at sea: .....

(b) in port: .....

(c) ventilation: .....

**Normal load, livestock services, continuous running**

(d) lighting: .....

(e) fodder: .....

(f) water: .....

**Generating capacity cross-connection arrangements**

<i>SOLAS generators</i>	<i>Can these supply livestock services?</i>	<i>Non-SOLAS generators</i>	<i>Can these supply non-livestock services?</i>
Main 1	Yes/No	Livestock 1	Yes/No
Main 2	Yes/No	Livestock 2	Yes/No
Main 3	Yes/No		
Main 4	Yes/No		
Emergency	Yes/No		

**Spares for generators**

.....

.....

.....

.....

**Spares for secondary source of power**

.....

.....

.....

.....

---

## 5 Drainage

Details appear on drawing(s) No.

General description

.....  
.....  
.....  
.....

Position and capacity of drain wells

.....

Types of pumps

.....

Situation of  
pumps.....

.....

Type of alarm system

.....

Sewerage retention  
facilities.....

.....

## 6 Fire-fighting appliances (livestock spaces only)

Details appear on drawing(s) No.

Type of hydrants and hoses

.....

Type of fire extinguishers

.....

**Type of fixed fire-fighting installation:**

— silos

.....

.

— enclosed spaces

.....

## 7 Fodder

Details appear on drawing(s) No.

**Fodder**

— type ..... silo capacity

.....

— other

stowage.....

Distribution arrangements from stowage to pens

.....

Feeding arrangements at pens

.....

Alternative arrangements in event of mechanical failure

.....

.....

.....

**8 Water**

Details appear on drawing(s) No.

Tank capacities

.....

.....

.....

.....

.....

Total

.....

.....

**Fresh water generation**

type

.....

.....

production per day

.....

**Fresh water pumps**

type

.....

.....

capacity

.....

**Description of automatic system**

.....

.....

**Description of additional portable or fixed pump**

type

.....

.....

capacity

.....

**9 Summary of equipment**

<i>Compartment or zone</i>	<i>Number of extinguishers</i>	<i>Date of test</i>	<i>Fire hydrants</i>	<i>Fire hoses</i>	<i>Fresh water hydrants</i>	<i>Fresh water hoses</i>

**10 Humane killing device**

**Insert a statement indicating the devices provided for humanely killing livestock:**

.....

.....

.....

**11 Disposal of carcasses**

Insert a statement indicating the means of disposal of carcasses, together with details of comminuters/grinders and lifts usable for hoisting out carcasses from lower decks:

.....  
 .....

**12 Lighting**

**Lighting in passageways**

type

.....

....

level of illumination

.....

**Emergency lighting**

type

.....

....

level of illumination

.....

**Lighting in pens**

type

.....

....

level of illumination

.....

*Note 'Level of illumination' means illumination in the horizontal plane measured at a height of one metre above the walking surface. Minimum and maximum levels are to be included.*

**13 Sewage**

**Arrangements provided under MARPOL Annex IV of discharge of livestock effluent:**

Sewage treatment plant .....Fitted / not fitted

Holding tanks .....m<sup>3</sup> total

Maximum discharge rate of untreated undiluted effluent .....m<sup>3</sup>/hr

**14 List of supporting information and drawings**

<i>Title</i>	<i>Plan No.</i>	<i>Date</i>
--------------	-----------------	-------------

---

--	--	--

---

**Form 3****MODIFICATION OF PROVISIONS**

This Record shall be permanently attached to  
the Australian Certificate for the Carriage of Livestock

Name of vessel

IMO Number

The following modifications have been allowed to provisions of *Marine Order 43 (Cargo and cargo handling — livestock) 2006* in accordance with subsection 5.1 of *Marine Order 43 (Cargo and cargo handling — livestock) 2006*:

Issued at Canberra A.C.T.

Signed

Date

Official stamp

---

## Form 4

### Interim Document

Pending Issue of an Australian Certificate for the Carriage of Livestock  
Issued under the provisions of *Marine Order 43 (Cargo and cargo handling — livestock) 2006*

BY THE AUSTRALIAN MARITIME SAFETY AUTHORITY

Name of vessel

IMO Number

Port of registry

Gross tonnage

Date on which keel was laid

Distinctive number or letters

Name and address of person with overall general control and management of the vessel

*Note* This is the person identified as operator in the Document of Compliance issued under the ISM Code.

### THIS IS TO CERTIFY THAT

- The vessel identified above has been surveyed in accordance with subsection 10.3 of *Marine Order 43 (Cargo and cargo handling — livestock) 2006* for the ISSUE / REISSUE\* of an Australian Certificate for the Carriage of Livestock.
- In accordance with *Marine Order 43 (Cargo and cargo handling — livestock) 2006*, the Manager, Ship Inspection and Registration, has authorised the Inspector signing this document to issue this interim document, pending the issue by the Manager, Ship Inspection and Registration, of the Australian Certificate for the Carriage of Livestock.
- This interim document is valid for one month from the date of issue, and for that period has the effect of a valid Australian Certificate for the Carriage of Livestock for the vessel identified above.

Issued at

Official stamp

Signed

Date

\*Strike out that which does not apply



**Form 5****MASTER'S REPORT****CARRIAGE OF LIVESTOCK**

Provision 19 of *Marine Order 43 (Cargo and cargo handling — livestock) 2006*

This Master's Report is to be sent to:

(a) the Secretary of the Department of Agriculture, Fisheries and Forestry,  
GPO Box 858 CANBERRA ACT 2601. Fax: (02) 6272 5423

AND

(b) the Manager, Ship Inspection and Registration,  
GPO Box 2181 CANBERRA ACT 2601. Fax (02) 6279 5058

It may be lodged electronically.

**VESSEL DETAILS**

Name of vessel:	Voyage number:
Name and addresses of all livestock exporters:	Duration of voyage (days):

**LOADING DETAILS**

Port	Type	Number loaded	Date completed
	Sheep		
	Cattle		
	Other (specify)		
	Sheep		
	Cattle		
	Other (specify)		
	Sheep		
	Cattle		
	Other (specify)		

**DISCHARGE DETAILS**

Port	Type	Number discharged	Date completed	Mortality (number)	Mortality %
	Sheep				
	Cattle				
	Other (specify)				
	Sheep				
	Cattle				
	Other (specify)				
	Sheep				
	Cattle				
	Other (specify)				

<b>Name of Master</b>		<b>Signed*</b>	<b>Date:</b>
-----------------------	--	----------------	--------------

\* Not required if Report lodged electronically

\* \* \* \* \*

## **Schedule 2 Australian Certificate for the Carriage of Livestock**

### **Information to be provided by applicants**

The following information must be provided by applicants for an Australian Certificate for the Carriage of Livestock:

#### ***All applicants***

- Name of vessel
- Port of registry
- IMO number
- Official number
- Recognised organisation
- ISM issuing authority
- ISM operator
- Name and address of operator of the vessel or, if the operator is not resident in Australia, the Australian agency which will be responsible for payment of AMSA fees and charges

#### **Applicants for initial issue**

- Whether vessel is a conversion or a new construction
  - if conversion, date keel of vessel originally laid
- Name and location of shipyard of construction or conversion
- Expected date of completion
- If information and plans required by *Marine Order 43 (Cargo and cargo handling — livestock) 2006* do not accompany application, date when they will be submitted

#### **Applicants for endorsement or reissue**

- Expiry date of current Australian Certificate for the Carriage of Livestock
- Place, date and time where vessel will be available for survey

---

## Schedule 2A Australian certificate for the carriage of livestock

### Additional information to be provided by applicants

Three copies of each of the following documents must be submitted:

- (a) scale drawings that provide details of:
  - (i) the design, materials, methods of construction and arrangement of fittings for the containment and movement of the livestock;
  - (ii) ventilation arrangements, including current test measurements, together with the gross volume of enclosed spaces;
  - (iii) lighting;
  - (iv) the provisions for storage and distribution of fodder and water;
  - (v) drainage arrangements;
  - (vi) arrangements of main and secondary supplies of power;
  - (vii) the provision of fire-fighting appliances;
  - (viii) the general arrangement of the vessel, both before and after modification to carry livestock, if a converted vessel; and
  - (ix) the structural fire protection plan of the vessel, both before and after modification to carry livestock, if a converted vessel;
- (b) stability data for the vessel with livestock on board;
- (c) a documented maintenance program related to:
  - (i) the livestock containment structure (including accessways, ramps between decks and vessel/shore livestock accesses);
  - (ii) ventilation, lighting and drainage arrangements for the livestock areas of the vessel, including main and secondary sources of power;
  - (iii) the arrangements for storage and distribution of fodder and water;
  - (iv) the making of potable water on board (if this is required to provide for the necessary quantity of water to supply the livestock); and
  - (v) the fire-fighting appliances in the livestock areas of the vessel; and
- (d) a Record of Equipment and Arrangements in accordance with Form 2 of Appendix 1.

*Note 1* An electronic copy of documentation may be accepted by prior arrangement with AMSA.

*Note 2* For paragraph (c), a documented maintenance program may be incorporated into the vessel's Safety Management System. If it is, the operator should provide a document that details where and how each of the listed requirements has been addressed in the Safety Management System.

---

## Schedule 3 Stability Criteria for Livestock Carriers

### 1 Effects of Shift and Wind

The effects of the shift of livestock and fodder and the effect of wind is to be taken into account in the following manner.

#### 1.1 Shift of livestock criteria

1.1.1 The heeling lever due to the shift of livestock at 0° is to be given by:

$$\frac{\text{average mass of livestock carried} \times \text{livestock shift constant}}{\text{floor area required per head of livestock} \times \text{displacement}}$$

where:

**average mass of livestock carried** means the average mass of livestock to be carried on the intended voyage;

**floor area required per head of livestock** means the floor area required per head of average mass of the livestock to be carried on the intended voyage; and

**livestock shift constant** is:

$$\frac{\sum [\text{length of each pen} \times (\text{breadth of each pen})^2]}{6}$$

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).

1.1.2 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°).

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

#### 1.2 Shift of fodder criteria

1.2.1 The heeling lever due to the shift of fodder in pellet form carried in bulk at 0° is to be given by:

$$\frac{\text{total shift moment of fodder}}{\text{stowage factor of fodder} \times \text{displacement}}$$

where total shift moment means the sum of the shift moment of each compartment which 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.

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.

1.2.2 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°).

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

**1.3 Effect of wind criteria**

1.3.1 The heeling lever due to the effect of wind at 0° is to be given by:

$$\frac{PAH}{\text{displacement}}$$

where:

P (wind pressure) is 0.05 tonnes/m<sup>2</sup>;

A is the lateral area of the vessel above the waterline in square metres; and

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.

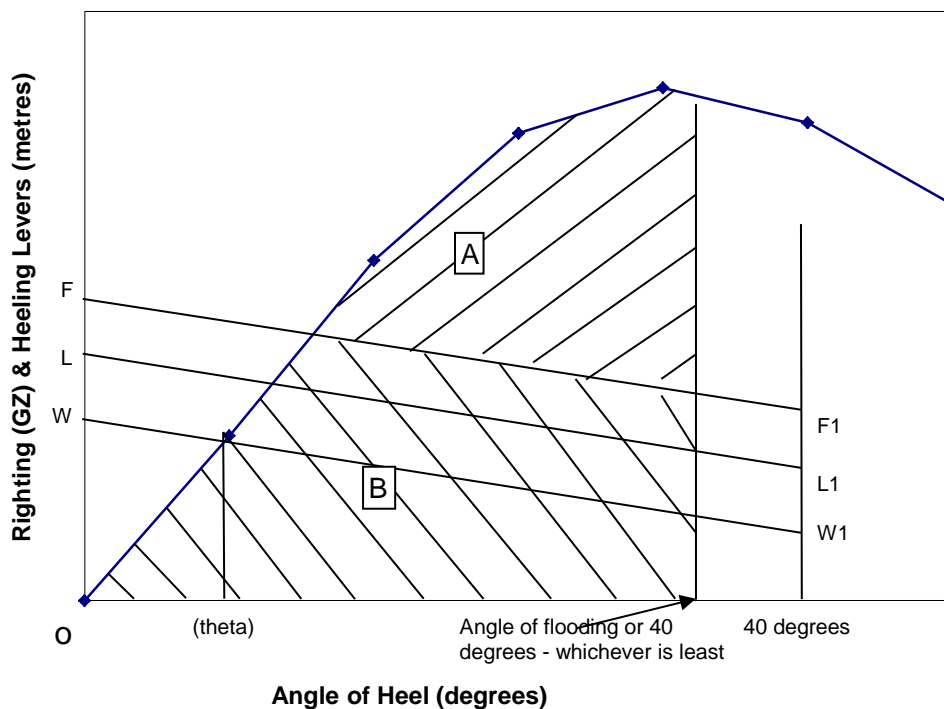
*Note* For many vessels the vertical position of the centroid of the underwater lateral area may be taken at half the draft to the underside of the keel at amidships.

1.3.2 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°)

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

**1.4 Illustration of stability requirements**



where:

OW is the heeling lever at 0° due to wind

WW<sub>1</sub> is the heeling lever curve due to wind;

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

LL<sub>1</sub> is the heeling lever curve due to the combined effects of the wind and the shift of livestock;

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

FF<sub>1</sub> is the heeling lever curve due to the combined effects of wind and the shift of livestock and fodder; and

θ is 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.

## 2 Information to be provided on a Vessel

### 2.1 Livestock shift constant

2.1.1 The livestock shift constant is to be determined for all conditions of pen utilisation that may arise in practice unless the maximum value is used for all calculations.

2.1.2 This constant will vary for different configurations of pen utilisation, for example, where cattle are carried the constant will be different to the constant applicable where sheep are carried.

### 2.2 Heeling moment for fodder

The heeling moment for each compartment is to be determined separately unless the greatest heeling moment for all compartments added together is provided: that is, the total heeling moment for the worst condition of stability.

### 2.3 Wind effect

The values of A and H will vary with the draft of the vessel. Values therefore are to be provided for the range of drafts that may occur in practice or

alternatively the wind effect  $\frac{PAH}{displacement}$  may be given in tabular or

graphical form.

## 3 Method of Calculation

3.1 The following example of calculations required to demonstrate compliance is given for information only. Other methods for demonstrating compliance may be used.

### 3.2 Information required

Livestock shift constant information)	= C	(from vessel's
Average mass of livestock per animal declaration)	= m	(from shipper's
Floor area per animal (Part 43)	= f	(from appropriate table in

---

Fodder heeling moment information)	= F	(from vessel's
Stowage factor of fodder declaration)	= S	(from shipper's
Wind pressure	= P	(0.05 tonnes/m <sup>2</sup> )
Lateral area of the vessel above the waterline information)	= A	(from vessel's
Vertical separation of centroids information)	= H	(from vessel's
Displacement information)	= D	(from vessel's
GM information)	= GM	(from vessel's

### 3.3 Calculation

*Livestock:*

$$\text{Heeling lever at } 0^\circ = \frac{m \times c}{f \times D} = Z$$

*Fodder:*

$$\text{Heeling lever at } 0^\circ = \frac{F}{S \times D} = Y$$

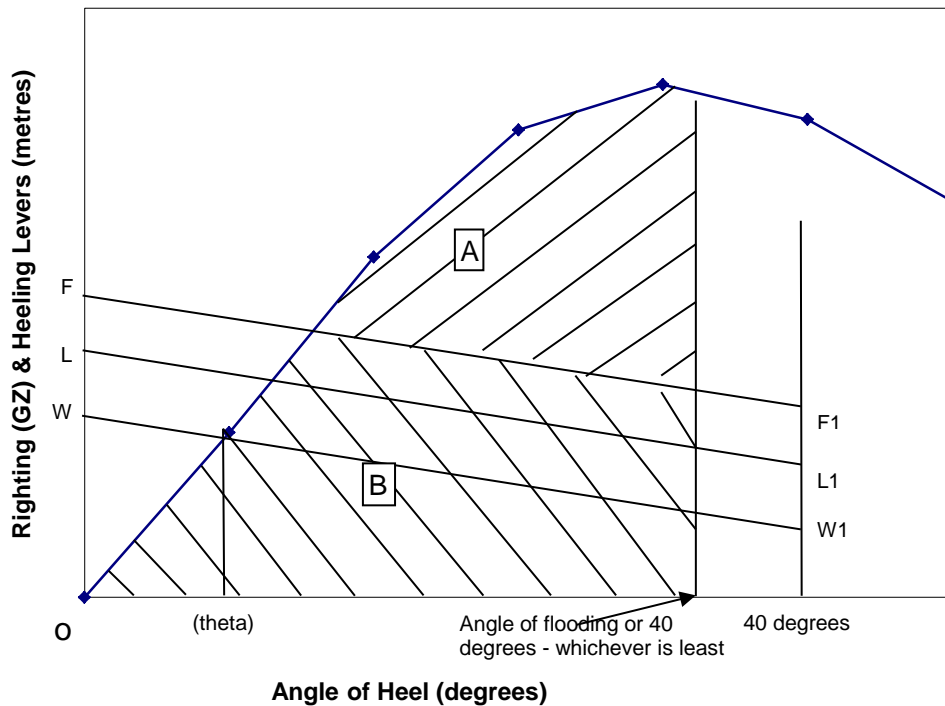
*Wind:*

$$\text{Heeling lever at } 0^\circ = \frac{0.05 \times A \times H}{D} = X$$

*Angle of heel due to wind:*

$$\text{Angle of heel} = \frac{X}{GM} \times 57.3$$

### 3.4 Comparison with stability criteria



- (a) Check that area under righting lever curve is not less than 3.15 metre-degrees up to 30° angle of heel and not less than 5.16 metre-degrees up to 40° angle of heel or angle of flooding if this angle is less than 40°.
- (b) Check that area under righting lever curve between the angles of heel of 30° and 40° or between 30° and angle of flooding, if this angle is less than 40°, is not less than 1.72 metre-degrees.
- (c) Check that righting lever GZ is at least 0.20 metres at an angle of heel equal to or greater than 30°.
- (d) Check that maximum righting lever occurs at an angle of heel 25° or greater.
- (e) Check that initial metacentric height GM is not less than 0.15 metres.
- (f) Check that angle of heel due to wind effect is not more than 10°.
- (g) Check that area A is not less than [1.03 metre-degrees + 0.2 area (A+B)].

\* \* \* \* \*



---

## Schedule 4 Provision of livestock services

### 1 General

Section 12 provides that a vessel permanently equipped for the carriage of livestock must be fitted with systems and equipment that ensure the maintenance of livestock services at a level necessary for the welfare of the livestock. Compliance with this Appendix will meet this requirement.

However, as an alternative, an owner may demonstrate adequate redundancy in systems and equipment by supplying to the Manager, Ship Inspection and Registration, a risk analysis of the systems involved. In particular, vessels constructed on or before 31 December 2001, or for which application is made for an Australian Certificate for the Carriage of Livestock before 31 December 2001, may until the end of 2006 meet the requirement by complying with sections 13, 14, 15, 16, 19 and 20 of Issue 4 of *Marine Order 43 (Cargo and cargo handling — livestock) 2006* (as applied by subsections 2.2.3, 2.2.4 and 2.2.5 of that Issue).

### 2 Sources of electrical power for livestock vessels

#### 2.1 Main source

The vessel's main source of power, as defined in Regulation 41 of Chapter II-1 of SOLAS should, in addition to being able to supply the services defined in Regulation 40.1.1 under the conditions specified in Regulation 41, be able to supply power to the livestock services under those same conditions.

#### 2.2 Secondary source

The secondary source of power should meet the following:

- (a) it should 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;
- (b) the prime mover should be capable of being started readily by an effective arrangement powered by an independent source of energy. The independent source of energy should have sufficient capacity to be able to fully recharge the starting arrangement within 30 minutes;
- (c) it must be capable of supplying power to livestock services for a period of three days in case of a fire or other casualty in any space containing the main source of power or any part thereof;
- (d) it must at all times be maintained in a condition acceptable to the vessel's recognised organisation;
- (e) the secondary source of power, all associated ancillaries and electrical systems associated with livestock services should comply with Regulation 45 of Chapter II-1 of SOLAS and meet the requirements of the ship's recognised organisation for electrical systems; and
- (f) instructions should be provided for the changeover between main and secondary sources of power and vice-versa. A copy of such instructions should be posted in the space containing the livestock source of power, and should be readable under the emergency lighting required by Regulation 43.2.2 of Chapter II-1 of SOLAS. The instructions should detail, among

other things, starting method, switchboard changeover and electrical supply changeover to livestock services.

*Note* For paragraph (b), the emergency source of power required by paragraph 1.1 of Regulation 43 of Chapter II-1 of SOLAS may be used to power the starting arrangement in accordance with paragraph 1.4 of Regulation 43 of Chapter II-1 of SOLAS provided that the emergency source of power at all times complies with paragraph 2 of Regulation 43 of Chapter II-1 of SOLAS and the vessel's recognised organisation approves the arrangement.

### **3 Ventilation**

- 3.1.1 An enclosed space for the carriage of livestock should be provided with a mechanical ventilation system of sufficient capacity to change the air of that space in its entire volume as follows:
- (a) if the minimum clear height of the space is 2.30 metres or more, not less than once every three minutes;
  - (b) if the minimum clear height of the space is 1.80 metres, not less than once every two minutes; and
  - (c) if the minimum clear height of the space is between 2.30 metres and 1.80 metres, at a rate proportional to those specified above.
- 3.1.2 For the purposes of subclause 3.1.1, 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.
- 3.2.1 A space for the carriage of livestock that is not enclosed should 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 metres; or
  - (b) because of a partial enclosure of the space, the natural ventilation is restricted.
- 3.2.2 On vessels constructed or converted on or after 27 May 2004, any mechanical ventilation system referred to in subclause 3.2.1 should be capable of providing 100 per cent of the relevant capacity in subclause 3.1.1. On all other vessels, any mechanical ventilation system referred to in subclause 3.2.1 should be capable of providing 75 per cent of the relevant capacity in subclause 3.1.1.
- 3.2.3 In determining capacity for the purpose of subclause 3.2.2, the volume of a space referred to in subclause 3.2.1 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.

- 3.3 A mechanical ventilation system should distribute air so as to ensure that the whole of each livestock space is efficiently ventilated. On vessels constructed or converted on or after 27 May 2004, the mechanical ventilation system should be capable of providing a minimum air velocity across any part of a pen from a source of supply of not less than 0.5 metres per second.

*Note* A lower air velocity may be accepted in some areas of the pen where a solid structure or the vessel's side impedes the immediate flow. However, these areas should not exceed 4% of the area of any pen.

- 3.4 Appropriate measures must be taken by the owner to ensure that air supplied to livestock spaces is as clean and fresh as practicable and that adequate separation measures are taken to ensure minimal recirculation of intake and exhaust air. Exhaust air outlets must be sited clear of the accommodation.

*Note* The use of a vertical high velocity exhaust system may aid in the reduction of the recirculation of exhaust and intake air.

- 3.5 Ventilators serving livestock spaces must remain open in all weather conditions while livestock are on board.

*Note* The Load Line Convention requires ventilators serving spaces below the freeboard deck, or serving enclosed superstructure decks, which can be left open in all weather conditions to be at least 4.5 metres above the deck if situated on exposed superstructure decks within L/4 from the forward perpendicular, exposed freeboard decks and raised quarter decks, and at least 2.3 metres above if situated elsewhere.

- 3.6 If a mechanical ventilation system is fitted, adequate spare parts should be

*Note 1* 'Adequate spare parts' should be interpreted as including for each type of fan: one set of bearings; one rotor or impeller; and one complete motor.

*Note 2* If a mechanical ventilation system provides an air change in excess of that specified in this Order, fans providing that excess may be accepted in place of the spares required by subclause 3.6, provided the distribution of air will remain efficient.

- 3.7 In order to achieve an adequate level of redundancy, it is suggested that fan group starter panels be located in at least two locations, with the operation of fans from either panel being able to effectively ventilate the required livestock spaces. Electrical supplies from both main and secondary sources of power should 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 should prevent simultaneous supply by both sources of power.

## 4 Lighting

- 4.1 Livestock spaces, passageways between pens and access routes between or to those spaces should be adequately lit.
- 4.2 Guidance may be obtained from Australian Standard AS1680. Generally however, a minimum lighting level of 20 lux is acceptable for areas of general movement and duties such as feeding and watering livestock, while an illumination level of 110 lux is needed for close examination of livestock.
- 4.3 An emergency lighting system that is automatically activated on the failure of the main electrical installation should be provided in all parts of a vessel where livestock is carried, passageways between pens and access routes between or from those parts, and should be capable of giving a level of illumination of not less than 8 lux in all passageways and access routes for a continuous period of not less than 15 minutes.

*Note* The lamp casings on light fittings for the emergency lighting system should be painted red for ease of identification.

- 4.4 If fixed lighting is provided in a part of a vessel above the uppermost continuous deck, that lighting must be capable of being controlled from the navigating bridge.
- 4.5 Light fittings must be waterproof and:
  - (a) of sufficient strength to resist damage by livestock; or
  - (b) placed beyond possible contact by livestock.
- 4.6 It is acceptable for vessels that were permanently fitted for the carriage of livestock and had carried livestock from Australia before 1 July 1983 to be equipped with emergency hand lamps instead of an emergency lighting system referred to in subclause 4.2.

## **5 Electrical Equipment for use in dust laden atmospheres**

- 5.1 Areas where flammable dusts may be present (such as spaces used for the storage or handling of bulk fodder) must be classified in accordance with Australian Standard AS 61241.3 (IEC 61241-3:1997). Electrical equipment to be installed in spaces so categorised must be selected, installed, certified and maintained in compliance with Australian Standards AS 2381.1 and AS 61241.1.2 (IEC 61241-1-2:1999).
- 5.2 Lighting, or power points for portable lighting, in a space used for carriage of fodder in bulk, should be controlled by switches situated on the navigating bridge or at the fodder-handling machinery control station and indicator lights should be provided to show when power is supplied to the lighting or power points.

## **6 Drainage**

- 6.1 Provision should be made for effectively draining fluids from each pen in which livestock is to be carried, under any expected conditions of trim by the head or by the stern, except that drainage is not required from the upper tier of sheep pens of ships constructed or converted before 27 May 2004 unless necessary to comply with subclause 6.6 of this Appendix.
- 6.2 Drainage arrangements should be such that fluids drained from a pen are as far as practicable kept clear of other pens and associated working and access spaces.
- 6.3 A pump or eductor for a drainage tank or well should:
  - (a) be capable of handling semi-solid matter;
  - (b) evacuate the tank or well by lines other than the vessel's bilge lines; and
  - (c) be powered from both the main and secondary sources of power.
- 6.4 Essential drainage tanks, wells and the top of drainage pipes in a vessel should be accessible from outside livestock pens for the purpose of inspection and cleaning.
- 6.5 A drainage channel and the top of a drainage pipe should be covered by a strainer plate if:
  - (a) it is located inside a pen and could, if uncovered, cause injury to an animal;or

- (b) it is located in a passageway and could, if uncovered, cause injury to a person.

This may require a holding tank to prevent accumulation of effluent in the livestock spaces while in port.

*Note* Effluent or effluent contaminated water must not be intentionally discharged from a vessel while the vessel is within the limits of an Australian port.

- 6.6 For all new vessels, and existing vessels after 27 September 2008, a holding tank or treatment plant is to be provided, complying with Annex IV of MARPOL 73/78, to treat, store and discharge effluent in accordance with that Annex. The holding tank is to be of sufficient storage capacity:
- (a) to ensure that effluent is not discharged in contravention with Annex IV of MARPOL 73/78; and
- (b) to retain on board all effluent generated while the vessel is in areas for which discharge is prohibited, such as in port and within 12 nautical miles of nearest land.

*Note* For the purposes of plan assessment, the effluent produced will be assumed to be the total of fodder consumption and the water consumption based on the daily allowance for the maximum expected time for the vessel to be operating in waters for which discharge is prohibited.

- 6.7 For the purpose of subclause 6.6:
- (a) an existing vessel is a vessel:
- (i) built or converted before 27 September 2003;
- (ii) in respect of which an Australian Certificate for the Carriage of Livestock has been issued prior to 27 May 2004; and
- (iii) the owner of which has not changed since 27 May 2004; and
- (b) a new vessel is a vessel that is not an existing vessel.
- 6.8 All equipment fitted to meet the requirements of subclause 6.6 must be capable of being operated by both the primary and the secondary sources of power.

## **7 Fodder & Water arrangements**

- 7.1 A storage and efficient distribution system should be provided to supply fresh drinking water to livestock at all times while livestock are on board. If it is an automatic system, it should be so constructed as to:
- (a) minimise, by control of the level of water, any spillage from a receptacle; and
- (b) prevent the return of water from a receptacle to the freshwater tank.

*Note* For the issue of an ACCL the ability of a vessel to provide an emergency water reserve from the vessel's tanks will be assessed on the basis of a requirement of 36 litres per square metre of pen area per day for cattle and 6 litres per head per day for sheep. If the capacity of the usable tanks is such that a vessel has three days supply in the tanks, any fresh water generator fitted to the vessel need not be supplied from both primary and secondary source of power.

- 7.2 The master should ensure that each tank used for the storage of drinking water for livestock is maintained in good condition to ensure that the water is not contaminated.

- 7.3 In order to achieve a satisfactory level of redundancy, the following are required:
- (a) water which may include the output from a fresh water generator, provided it can 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;
  - (b) at least two pumps for distribution of water supplies should be provided. One may be located in the space occupied by the main source of power and supplied by that source of power. The other should be able to maintain supply despite a fire or other casualty affecting the space occupied by the main source of power; and
  - (c) if the fodder distribution system is dependant on electric power, the system must be capable of being powered by both the main and secondary sources of supply.
- 7.4 Fodder in pelletised or other concentrated form supplied to a vessel should be accompanied by a certificate from the pellet manufacturer stating the average temperature and moisture content of the pellets as delivered alongside the vessel and certifying that the pellets were manufactured in accordance with the National Pellet Standards issued by the Livestock Exporters' Industry Advisory Council.
- 7.5.1 Each pen, stall or similar fitting should be provided with receptacles for feeding and watering of livestock and, except where the fodder or water is provided by an automatic system, the receptacles must 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 pen, stall or fitting.
- Note 1* For the purposes of approval of the receptacle only, the daily allowance fodder is to be taken as 5.7kg per m<sup>2</sup> of pen space for cattle and 4.8kg per m<sup>2</sup> of pen area for sheep and goats (irrespective of age).
- Note 2* For the purposes of approval of the receptacle only, the daily allowance for water to be calculated on the basis of a requirement of 36 litres per square metre of pen area per day for cattle and 6 litres per head per day for sheep.
- 7.5.2 A feeding receptacle is not required for a pen containing cattle, provided:
- (a) the pen adjoins a passageway and the cattle can conveniently consume hay distributed on the floor of the passageway; and
  - (b) urine, faeces and water used in washing any pen is prevented from fouling the passageway.
- 7.6.1 A receptacle provided in accordance with subclause 7.5.1 should be:
- (a) suitable for the species of livestock;
  - (b) readily accessible to the livestock;
  - (c) capable of being serviced from outside the pen, stall or other fitting;
  - (d) so installed as to not impede ventilation; and
  - (e) so constructed and positioned, that fodder dust is not disturbed by the flow of ventilation.

In respect of adult sheep the top of a trough used as a water or fodder receptacle should be approximately 550 millimetres above the pen floor.

- 7.6.2 A pipe or rounded bar should be provided in a pen where the trough is not portable in order to minimise fouling of the trough. The pipe or bar should be at a suitable height to prevent or minimise fouling of the trough and at a horizontal distance of 75 millimetres (in a pen designed for sheep) or 150 millimetres (in a pen designed for cattle) or more from the edge of the trough.
- 7.7 Automatic feeding and watering systems should, if practicable, be set up and capable of supplying water and fodder in accordance with this Order before livestock are loaded. Irrespective of the systems used, water and fodder should be provided to livestock not later than 12 hours after loading has commenced.
- 7.8 Fodder other than hay stored in bulk in a vessel on which conversion or construction for the carriage of livestock commenced after 1 July 1983, should be carried in not less than two separate spaces on the vessel.
- 7.9 The master should ensure that fodder in storage or in feeding receptacles is kept in a dry state, protected from the weather and sea.
- Note* Pelletised food is, depending on moisture content, liable to spontaneous combustion. Guide-lines cannot be given as to the level of moisture that causes this reaction in individual types of pellets. Masters and others concerned are advised to ensure that the moisture content of pellets is within the product specification and to avoid loading pellets in wet weather conditions.
- 7.10 Fodder may be stored in an enclosed livestock space if it does not interfere with the ventilation, lighting, drainage and passageway provisions of this Order. Fodder stowed on an open deck, whether on pallets, in containers or otherwise, should be secured to prevent movement prior to proceeding to sea.

## Notes to *Marine Order 43 (Cargo and cargo handling — livestock) 2006*

### Note 1

*Marine Order 43 (Cargo and cargo handling — livestock) 2006* (in effect under subsection 343(2) of the *Navigation Act 2012*) as shown in this compilation comprises *Marine Order 43 (Cargo and cargo handling — livestock) 2006* modified as indicated in the following tables.

#### Table of Orders

Year and number	Registration date	FRLI number	Commencement date	Application, saving or transitional provisions
<i>Marine Orders Part 43 (MO 2006/13)</i>	7 Nov 2006	F2006L03643	1 December 2006	
<i>Marine Order 4 (Transitional modifications) 2013 (MO 2013/3)</i>	30 May 2013	F2013L00871	1 July 2013	Section 3 and Schedules 1-42

#### Table of amendments

ad. = added or inserted   am. = amended   rep. = repealed   rs. = repealed and substituted   mod. = modified

Provision affected	How affected
1.....	mod. 2013/3
1A.....	mod. 2013/3
1B.....	mod. 2013/3
2.....	mod. 2013/3
3.....	mod. 2013/3
4.....	mod. 2013/3
5.....	mod. 2013/3
5A.....	mod. 2013/3
6.....	mod. 2013/3
7.....	mod. 2013/3
8.....	mod. 2013/3
9.....	mod. 2013/3
10.....	mod. 2013/3
11.....	mod. 2013/3
12.....	mod. 2013/3
13.....	mod. 2013/3
14.....	mod. 2013/3
15.....	mod. 2013/3
16.....	mod. 2013/3
17.....	mod. 2013/3
18.....	mod. 2013/3
19.....	mod. 2013/3
20.....	mod. 2013/3
21.....	mod. 2013/3
22.....	mod. 2013/3



---

ad. = added or inserted   am. = amended   rep. = repealed   rs. = repealed and substituted   mod. = modified

---

<b>Provision affected</b>	<b>How affected</b>
23.....	mod. 2013/3
24.....	mod. 2013/3
25.....	mod. 2013/3
26.....	mod. 2013/3
27.....	mod. 2013/3
28.....	mod. 2013/3
29.....	mod. 2013/3
30.....	mod. 2013/3
31.....	mod. 2013/3
32.....	mod. 2013/3
33.....	mod. 2013/3
34.....	mod. 2013/3
35.....	mod. 2013/3
36.....	mod. 2013/3
37.....	mod. 2013/3
38.....	mod. 2013/3
39.....	mod. 2013/3
Schedule 1 .....	mod. 2013/3
Schedule 2.....	mod. 2013/3
Schedule 2A.....	mod. 2013/3
Schedule 3.....	mod. 2013/3
Schedule 4.....	mod. 2013/3

---