



Consultation Feedback Report

Marine Order 43 (Cargo and cargo handling-livestock) 2018 Outline

The Australian Maritime Safety Authority (AMSA) has amended *Marine Order 43 (Cargo and cargo handling - livestock) 2006*. The revised *Marine Order 43 (Cargo and cargo handling - livestock) 2018*, has now been made and is available on the AMSA Website. The new Marine Order commenced on 1 July 2018.

The amended order addresses the following new and revised policies for the carriage of livestock:

- changes to drainage requirements
- improved structural fire protection standards
- sewage holding tank requirements
- phasing out and prohibiting two tier arrangements for the carriage of sheep and goats
- improved ventilation on older existing ships
- bridge ventilation alarms
- rail height and rail spacing
- reportable livestock mortality rates
- fodder carriage requirements
- camel carriage requirements.

AMSA considers that the changes will make a number of improvements with the objective of promoting the safety of life at sea, safe carriage and stowage of livestock, safe navigation, preventing pollution of the maritime environment, and to ensure that AMSA has the necessary power to carry out inspections of vessels and implement various Conventions.

Consultation Feedback

Consultation was carried out with members of the Livestock Advisory Committee (LAC) on 28 March 2018, who were provided with a draft order and change summary document four weeks before public consultation was scheduled to commence. LAC members include the Department of Agriculture and Water Resources (DAWR), livestock ship operators and owners, Australian Livestock Ship Owners & Operators Association (LiveShip), Classification Societies, animal welfare organisations including the Royal Society for the Prevention of the Cruelty to Animals (RSPCA), Australian Livestock Exporters Council, Cattle Council of Australia, Sheepmeat Council of Australia and Sheep Producers Australia.

Phase-out periods for older vessels of between three and five years (sunset dates) were discussed for a number of proposed measures. It was agreed that comments on appropriate times for phasing-in these measures would be sought during formal public consultation.

On 10 April 2018 the government announced a ministerial review of the sheep trade with an expected report date of 11 May 2018. As a result of the review's recommendations the government decided that all vessels would be required to comply by 1 January 2020, unless able to comply earlier, with provisions prohibiting the carriage of livestock in more than one tier and provisions increasing first, ventilation requirements on open decks and secondly, air flow across pens. At the time of drafting this report, the McCarthy report could be viewed at <https://www.documentcloud.org/documents/4465299-McCarthy-Report-Into-Live-Exports.html>.

A copy of the draft order incorporating the above changes, together with a summary comparing the existing order to the proposed order was placed on AMSA’s website for public consultation on 25 May 2018 for a two-week period until 8 June 2018.

AMSA received **7,152** submissions, of which 7,073 were seeking an earlier implementation date for the three proposed measures than that set out in the government decision. When considering these suggestions, AMSA took into account livestock ship owners’ advice that the major structural changes required to comply would take at least 18 months and that during this time, vessels that were being altered to comply would be unavailable for use. It was therefore decided not to bring the compliance date forward any further.

Comments were received from eight industry stakeholders, six animal welfare organisations and 65 other stakeholders. Many comments included aspects related to animal welfare, as well as aspects for which AMSA has jurisdiction. Those animal welfare aspects will be forwarded to DAWR, which has jurisdiction.

The remaining comments related to matters that included requiring additional equipment and technologies. These would require further consideration, including consultation with equipment manufacturers and suppliers, to confirm that the required equipment and technologies are available, and suitable for fitting to ships. These submissions have been recorded and will be considered during the next review of the order.

The comments received during the public consultation and AMSA’s responses are summarised below.

Comment	Sunset dates for the provisions prohibiting the carriage of livestock in more than one tier and provisions increasing first, ventilation requirements on open decks and secondly, air flow across pens should be 1 January 2019 as announced by the government initially.
AMSA’s Response	<p><i>As a result of the review’s recommendations, the government decided that AMSA was to sunset provisions allowing the carriage of livestock in two tiers, reduced ventilation requirements on open decks and reduced air flows across pens from 1 January 2020, and that the order was to come into effect from 1 July 2018.</i></p> <p><i>When considering suggestions to move the sunset date earlier, we took into account not only the consultation comments received suggesting the sunset dates should be earlier, but also livestock ship owner’s advice that the major structural changes required to comply would take at least, if not longer than, 18 months.</i></p> <p><i>We also considered that whilst ships were being altered to come into compliance, they would be unavailable for exporters to use.</i></p> <p><i>It was therefore decided not to change the sunset date from the date provided in the government decision - 1 January 2020.</i></p>
Comment	0.5m/s air velocity across pens to be applied immediately and ventilation systems to have redundancy.
AMSA’s Response	<p><i>As a result of the review’s recommendations, the government decided that AMSA was to sunset provisions allowing the carriage of livestock in two tiers, reduced ventilation requirements on open decks and reduced air flows across pens from 1 January 2020, and that the order was to come into effect from 1 July 2018.</i></p>

	<p><i>When considering suggestions to move the sunset date earlier, we took into account not only the consultation comments received suggesting the sunset dates should be earlier, but also livestock ship owner’s advice that the major structural changes required to comply would take at least, if not longer than, 18 months.</i></p> <p><i>We also considered that whilst ships were being altered to come into compliance, they would be unavailable for exporters to use.</i></p> <p><i>It was therefore decided not to change the sunset date from the date provided in the government decision - 1 January 2020.</i></p> <p><i>The existing order already provides 100% redundancy for power sources and equipment for livestock services, including ventilation. The premise of redundancy in the order is that no single failure can stop delivery of the respective livestock service, such as ventilation, covered by the order. Further, In accordance with section 17 (Proper precautions) in the order, AMSA has the power to direct a vessel owner to take additional precautions relating to the carriage of livestock, to ensure there is no damage the vessel, or risk to the safety of persons or the proper carriage of livestock, or damage the environment.</i></p>
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Comment	All vessels should meet ventilation requirements in “Schedule 2, Part 2, clause 2.1(1) Ventilation in an enclosed space”, and compliance should be independently verified.
AMSA’s Response	<p><i>This clause is the requirement for minimum volumetric changes in an enclosed space, which already applies without exception to all vessels.</i></p> <p><i>The currently permitted reduction for volumetric air changes in not enclosed (open) spaces for older existing ships, will cease by sunseting the permitted reduction from 1 January 2020 in accordance with Schedule 2, Part 2, clause 2.3.</i></p> <p><i>Ventilation reports related to MO43 (volumetric changes and air velocity across the pens) are performed by third-parties.</i></p>

Comment	The allowance for reduction in airflow at vessels structure at the side should be deleted.
AMSA’s Response	<p><i>The structure at ship sides includes strengthening members that may restrict airflow. The allowance is only within those structures, and areas with no airflow are not permitted.</i></p> <p><i>In addition, where any space between structural members is sufficiently large for an animal to enter, but not large enough for the animal to turn around and get out, AMSA requires access to the space to be fitted with railings.</i></p>

Comment	Consider requiring air vents angled to flush air from under and between animals.
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AMSA's Response	<i>The minimum air velocity requirements from inlet to exhaust across the pen are intended to deal with the removal of foul air. Existing ships not meeting this minimum requirement will need to comply by 1 January 2020.</i>
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Comment	Reportable mortality for species other than (cattle) sheep, pigs and goats should also be reduced to 1% and cattle should be reduced to 0.5%.
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AMSA's Response	<p><i>MO 43 (2006) didn't include specific limits for reportable mortality. It only referenced the limits as they are set in the Australian Standards for the Export of Livestock (ASEL). Australian Standards for the Export of Livestock (Version 2.3) 2011 (currently in force) provides the following definition of reportable level.</i></p> <p><i>"reportable level, in respect of a species, means the percentage listed below or 3 animals, whichever is the greater number of animals:</i></p> <ul style="list-style-type: none"> <i>(a) sheep and goats: 2%;</i> <i>(b) cattle and buffalo, voyages ≥ 10 days: 1%;</i> <i>(c) cattle and buffalo, voyages < 10 days: 0.5%;</i> <i>(d) camelids: 2%;</i> <i>(e) deer: 2%."</i> <p><i>AMSA had already decided to include the current limits in ASEL in the order. This would enable us to set limits that are different to ASEL, where there is an evidenced need to do so in relation to matters covered by the order.</i></p> <p><i>Following their review, DAWR announced that they would be investigating mortalities of sheep at half the current level currently in ASEL (1% instead the 2% in ASEL). That changed limit was included in the order.</i></p> <p><i>Reductions for any species in MO43 will now be able to be considered by AMSA at future reviews.</i></p>
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Comment	No pre-load exemption should be permitted for <10 day voyages. "Section 10(2) Pre-loading inspection"
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AMSA's Response	<p><i>The pre-load inspection in MO43 is carried out by AMSA to ensure the vessel complies with the order. Other authorities may inspect a livestock vessel as permitted by their legislation at any time before or after an AMSA pre-load inspection.</i></p> <p><i>The exemption is not automatic – it may be provided by an AMSA inspector prior to each loading. It can only be provided as per the conditions where the livestock is cattle, the voyage is less than 10 days and the ship has had a pre-load inspection in the last 60 days. The mixture of other species with cattle is restricted to sheep and pigs only and a maximum area of 400m2. In practice species other than cattle have not been carried and there has been no evidence of vessels not complying with MO43 that suggest the exemption provision should be removed.</i></p>
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Comment	In a notifiable incident, the master must provide the number as well as the percentage of mortalities.
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AMSA's Response	<i>The percentage is the trigger for an investigation. The number is required to be reported as part of the master's report at the completion of a voyage and practically it is reported with the percentage for a notifiable incident.</i>
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Comment	AMSA should carry out a post loading survey to ensure fire alarms can be heard over the noise of stock and the ventilation system, and to ensure the vessel has a drainable trim.
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AMSA's Response	<i>The alarms in livestock spaces are checked by AMSA at inspections. Drainage is already required to be effective at all expected trims and our inspections check that is achieved. The new order adds requirements for drains to be located in specified positions in a livestock space.</i>
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Comment	A master's end of voyage report should be provided within a specified timeframe.
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AMSA's Response	<p><i>The wording requires the master to submit a report 'after the completion of a voyage'. In practical terms this is when a voyage under the order is completed (all animals discharged) and before the vessel embarks on another voyage of any description (departs the final discharge port).</i></p> <p><i>From an AMSA and MO43 perspective, the master's report must be received before AMSA will carry out an inspection, before the next loading under MO43.</i></p>
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Comment	Dual firefighting systems and concerns that low-sulphur fuels will lead to an increase in engine room fires.
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AMSA's Response	<p><i>Fire detection and extinction, fire protection of ship structures, and standards to mitigate fuel leakage and the hazards due to fuel leakage, are set in SOLAS. As are the requirements for the crew to be able to operate the equipment and deal with fire emergencies.</i></p> <p><i>Fuels with a flashpoint above 60 degrees centigrade are considered to be combustible. Fuels with a flashpoint lower than 60 degrees centigrade are considered to be flammable.</i></p> <p><i>Fuel oil on ships, as covered by SOLAS itself, cannot have a flashpoint below 60 degrees centigrade (some emergency uses excepted and those are outside the engine room and living spaces).</i></p> <p><i>Fuels with a flashpoint below 60 degrees centigrade are otherwise only permitted to be used in compliance with the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code). The Code is mandatory under SOLAS.</i></p> <p><i>SOLAS therefore sets standards to mitigate fuel leakage and the hazards due to fuel leakage, as well as for fuel leakage detection, fire detection and extinction, and the fire protection of ship structures, based on the flashpoint (combustibility or flammability) of the fuel. Sulphur levels do not affect the flashpoint of a fuel and therefore do not affect the combustibility or flammability of the fuel.</i></p> <p><i>Issue 6 of the order required that ships met at least the fire protection standards in the 1981 amendments to SOLAS for safety construction and</i></p>
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	<p><i>equipment. The new order requires that ships comply with at least the 1991/92 amendments and this increases again the minimum levels of fire safety and protection. This requirement is sunsetted five years from the date of effect of the order for existing ships.</i></p> <p><i>SOLAS also takes into account the unique nature of a ship and includes redundancy for emergency services, such as an emergency source of power that will power a separate fire pump.</i></p>
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Comment	The livestock/personnel access ramp must not detach from the vessel.
AMSA's Response	<i>Detachment in use would not comply with the order in 52(2)(b) “(2) The ramp or other means of access must: (b) be set up so that there is no gap between it and the vessel at any time the ramp is in use; and”.</i>

Comment	Remove and prohibit kick plates.
AMSA's Response	<p><i>Fluids must drain so where kick plates prevent that, the order is not complied with. Where fitted, the plates are part of the livestock structures and equipment and must be maintained in accordance with section 22 of the order:</i></p> <p>“22 Livestock structures, connections and equipment — construction and maintenance</p> <p>(1) Any structure, connection to the vessel or equipment that is for the carriage of livestock must be constructed and maintained to at least the standard that applies to comparable structures, connections to the vessel and equipment surveyed by the vessel's classification society.</p> <p>(2) Livestock structures must be manufactured, assembled and positioned to protect livestock from injury, avoidable suffering and exposure to weather and sea.</p> <p>(3) Livestock structures, including livestock decks and containment structures, but not including arrangements for the carriage of livestock, must be constructed of non-combustible materials.</p> <p>(4) The expression non-combustible material has the same meaning as in Regulation 3 of Chapter II-2 of SOLAS.”</p>

Comment	All livestock decks should be fitted with electronic wet and dry bulb data loggers and ammonia loggers with ammonia alarm on the bridge.
AMSA's Response	<p><i>Whilst they are primarily used for animal welfare purposes, the temperatures are useful to indicate possible ventilation issues and AMSA checks previous voyage temperature records during inspections. The accuracy of temperature monitoring equipment is not primarily governed by whether it is electronic or not. AMSA will consider if electronic temperature recording and logging would improve the data for our respective uses during the next review.</i></p> <p><i>Ammonia levels are both an animal welfare and a workplace health and safety issue. Whilst DAWR is responsible for animal welfare issues, the</i></p>

	<i>vessel's mandatory Safety Management System also covers these matters.</i>
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Comment	Sharp trough edges – recommend older plastic style troughs be used.
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AMSA's Response	<i>The order does not specify trough material/technology as such. As noted in the response to question 13, section 22 of the order requires certain things for equipment. Sharp edges on a trough that would cause injury to the animals and or personnel would indicate a lack of maintenance of the equipment as required by 22(1). These non-compliant equipment issues would be identified in the pre-loading inspection and need to be addressed as required before loading is permitted.</i>
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Comment	Drain cover position, strength, maintenance and risk of injury to livestock.
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AMSA's Response	<p><i>We believe the issues raised are covered adequately in the order. Poorly maintained or missing covers would indicate non-compliance with section 22 (and section 15) of the order.</i></p> <p><i>Drains in pens must comply with Schedule 2, 4.3(3).</i></p> <p><i>“(3) If a drain is inside a pen, it must be protected so that: (a) livestock cannot get their feet caught in the drain; and (b) any protection does not prevent the flow of effluent.”</i></p> <p><i>Generally, drains and covers would be regarded as livestock structures – even where they are in passageways used only to move livestock to a hospital pen.</i></p>
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Comment	Elevator shafts next to pens with livestock able to get limbs into machinery.
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AMSA's Response	<i>Whether it is argued the elevator shaft is equipment or structure, the order doesn't permit machinery to be unguarded to the extent it may cause injury to persons or animals. AMSA is able to take certain actions concerning safety under the Navigation Act 2012. If this issue was noted by, or reported to, AMSA, we would take action to ensure moving machinery was guarded adequately.</i>
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Comment	Gate latches should be designed or maintained to be easily opened with one hand.
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AMSA's Response	<i>This is an operational issue, however where latches have rusted and cannot be easily operated, they would not comply with the maintenance of structure requirements in section 22.</i>
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Comment	Water tank maintenance issues leading to apparent poor drinking water quality.
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AMSA's Response	<i>Livestock drinking water quality is an animal welfare issue, however maintenance of the tank is expected to be carried out under MO43 sections 16 and 22.</i>
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Comment	All vessels should have automatic watering systems.
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AMSA's Response	<i>There has been no evidence provided to AMSA to date that manual systems are ineffective. Some owners prefer manual watering, as more precise amounts of water consumed per trough/pen can be recorded and monitored.</i>
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Comment	7 days emergency reserve to apply to all vessels regardless of date of construction.
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AMSA's Response	<i>This is already an increase in requirements and is related to the design of a vessel. DAWR may determine the actual water quantity to be on board for each voyage in accordance with their requirements..</i>
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Comment	Drainage improvements; reduce sunsetting from 5 to 3 years for existing vessels.
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AMSA's Response	<i>This is a new policy to improve drainage, and is applied to new vessels only. For existing vessels this requirement would be a major reconstruction of the piping system, which would require penetration of watertight and strength bearing bulkheads.</i> <i>Evidence available for existing vessels indicates that the existing drainage requirements are sufficient. However, If AMSA believes any vessel has issues with drainage, which could pose a risk to the proper carriage of livestock, then AMSA has the power to direct vessels to put in place necessary systems for improvement of drainage as per section 17 of the order.</i>
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Comment	Top rail heights for cattle and sheep on outside of open decks, reduce sunset from 5 years to 3.
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AMSA's Response	<i>5 years is the usual ship survey cycle and that allows owners to plan and carry out these major structural changes without affecting the operation and availability of the ship.</i>
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Comment	Grandfathering of vessels for fodder (single tank permitted) is 1 July 1983, 35 years ago. Should be removed or sunset set at 3 years.
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AMSA's Response	<i>It will become less likely any vessel that old can or will comply with the SOLAS 91/92 amendment requirements, so in 5 years the clause will almost certainly be redundant. The clause will be reviewed during next review.</i>
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Comment	Mandate provision of livestock vessel information to be made public.
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AMSA's Response	<i>AMSA has no legislative power to regulate port authorities nor to publish vessel movements.</i>
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Comment	AMSA may consider an investigation, should be must carry out.
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AMSA's Response	<i>The word 'may' in the order is providing the 'permission' for AMSA to take the specified action under the stated conditions – it is not providing for AMSA to make a decision to carry out the investigation or not, if the specified condition is reached.</i>
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Comment	Is the number in subsection 13(1) the actual number referred to in 7.5.1(b) in the previous versions of MO43?
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AMSA's Response	<i>Under the existing order, the master must provide the actual number of livestock to AMSA before departure. Section 13 in the order now is the same requirement written in a modern drafting style.</i>
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Comment	In 13(4) the language has weakened the requirement. The information no longer has to be accurate.
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AMSA's Response	<i>The order is written in a modern drafting style and places responsibilities where they can be assigned and enforced. So in this example, with the existing order wording it is very difficult for AMSA to determine that a person has provided inaccurate information – we are required to determine what inaccurate is. With the new wording a person must ensure the details are accurate – they need to provide AMSA the evidence the information is accurate and why that is the case. The modern wording in fact strengthens the requirement. It was and is a penal provision and is now clearer as to when AMSA can consider having the evidence such that we can take that penal action.</i>
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Comment	Remove “as practicable” from the requirement for air to be clean and fresh.
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AMSA's Response	<i>A standard of air cleanliness and freshness can't be included in practical terms. AMSA can determine if the air is as clean and fresh as practicable from a physical inspection and system design perspective – for example ensuring exhaust air is not ingested by delivery air fans.</i>
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Comment	Decrease stocking densities in pens next to heated bulkheads.
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AMSA's Response	<i>Whilst stocking densities are an animal welfare issue and determined by DAWR, MO43 includes the risk of temperature increase from a heated structure or surface, and requires measures to be taken to mitigate it.</i> “19(2) If the casing or bulkhead of any engine room, boiler room or heated fuel tank forms the boundary of a space in which livestock is to be carried, measures must be taken to ensure that there is no significant rise in temperature above the ambient temperature of the livestock space. Example of a significant rise
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	If the ambient temperature is expected to be more than 22°C, an increase of 3°C would be considered significant. Note Adequate measures may include insulation of the bulkhead or other boundary of the space.”
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Comment	Markings such as a fuel gauge be painted onto an easily accessible area of the fodder tank walls indicating how many cubic metres/ tons etc. of fodder is remaining on board.
AMSA's Response	<i>Fodder tanks have capacity plans for the master to calculate remaining fodder. Fodder amounts for and during the voyage are under Department of Agriculture and Water resources jurisdiction.</i>

Comment	Trough heights to be adjustable.
AMSA's Response	<i>The order ensures that vessels permanently equipped for the carriage of Livestock are fitted with systems and equipment necessary for the welfare of livestock, such as fodder and water troughs. If access is physically restricted by structure, AMSA would take action to ensure access is unrestricted. Access related to the physical attributes of specific animals on each voyage needs to be determined by people responsible for the welfare of the animals.</i> <i>Although this hasn't been actioned in this review, AMSA will consider how structural requirements may be set to allow troughs to be set at different heights to suit different sizes of the same species.</i>

Comment	Deck coating abrasive levels
AMSA's Response	<i>As per the existing order, a non-slip surface is required. The level of abrasion that results from the owner's choice of surface/coating is an animal welfare issue.</i>

Comment	Reflective upper deck surfaces to reduce heat radiating through to the upper livestock spaces.
AMSA's Response	<i>Heat loads and calculations related to ventilation capacities and performance to deal with those loads are primarily animal welfare issues. An increase in heat loads on the upper decks so affected would require attention to stocking densities. AMSA is able to investigate issues reported at any time regarding ventilation on any deck and the order allows AMSA to require changes to be carried out if required.</i>

Comment	Humane killing device number should be increased based on the species, number of animals carried and design of the vessel.
AMSA's Response	<i>The humane killers are related to animal welfare so DAWR would be best placed to address this. The minimum humane killer requirements in MO43 are the "back-up" to DAWR requirements. There is no maximum limit imposed on the number of devices that can be on board in MO43.</i>

Comment	Vessels should be equipped with cloud-based equipment for continuous monitoring of conditions on board.
AMSA's Response	<i>This is related to animal welfare and would be for DAWR to consider.</i>

Comment	Stocking densities should be in MO43 and regulated by AMSA.
AMSA's Response	<i>Stocking densities are an animal welfare matter and are part of the conditions on the export licence issued by, and regulated by, DAWR.</i>

Comment	CCTV type monitoring of livestock spaces.
AMSA's Response	<i>This would be related to animal welfare and would be for DAWR to consider.</i>

Comment	Proper precautions in section 17 must assign animal welfare as the highest priority.
AMSA's Response	<p><i>Section 17 includes that</i></p> <p><i>“This section applies if AMSA believes, on reasonable grounds, that the doing of an activity or the failure to do an activity during the loading or unloading, stowage or carriage of livestock on a vessel, may:</i></p> <ul style="list-style-type: none"> <i>(a) damage the vessel; or</i> <i>(b) pose a risk to the safety of persons or the proper carriage of livestock; or</i> <i>(c) damage the environment.”</i> <p><i>These are not in order of priority and something that may pose a risk to the proper carriage of livestock may also have a direct or indirect impact on the welfare of an animal.</i></p> <p><i>Responsibility and legislation for animal welfare, however, rests with the Department of Agriculture and Water Resources (DAWR).</i></p>

Comment	Avoidable suffering is too low a standard in 22(2).
AMSA's Response	<i>This provision relates to a requirement for livestock structures. AMSA does not have responsibility for animal welfare, however we are able to gather evidence from DAWR who do hold that responsibility, to assist us to determine if avoidable suffering has occurred, or will occur</i>

Comment	Suggested increase of hospital pen area. DAWR are likely to increase their requirements as a result of their review.
AMSA's Response	<i>This issue has not been raised before in terms of hospital pen capacity in MO43. If DAWR have stricter requirements in future, then those would apply and would need to be complied with. If the minimum requirements in</i>

	<i>MO43 don't match those that DAWR require in their legislation, AMSA can consider how best to deal with that when/if it occurs.</i>
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Comment	Recommendation from a NSW coroner that consideration be given to establishing a permanent standing group with members from at least groups specified (for example law enforcement, AMSA, ATSB etc.)
AMSA's Response	<i>This relates to matters about a death at sea on any ship in, or coming to, Australia. MO43 does not legislate for this situation.</i>

Comment	Bulk fodder loaded through portable piping – earthing should be checked by qualified electrician.
AMSA's Response	<i>Ports and other state or Territory authorities may impose these conditions as they relate to a safe workplace.</i>

Comment	Blowers for loading bulk fodder should have a maximum decibel rating.
AMSA's Response	<i>Employees, employers and relevant State authorities would agree these kinds of conditions on equipment operating in a workplace.</i>

Comment	Ambient noise levels on livestock decks should be limited at the same levels as shore-based workplaces.
AMSA's Response	<i>Noise levels on ships are limited by internationally agreed instruments at the IMO. The levels are based on shore workplace limits. Hearing protection is used above certain noise levels, hence those in the livestock spaces may need to wear hearing protection.</i>

Comment	During loading of bulk fodder, dust concentrations in the surrounding environment and in spaces occupied by workers should be minimised, for example by pressurised work places.
AMSA's Response	<i>This is a workplace health and safety issue. It is noted that livestock spaces with the fans running (as they are with shore workers on board working cargo), generally provide a positive pressure in cargo spaces. Also the fodder spaces are not open to the cargo spaces, hence no dust from loading bulk fodder should be forced into the cargo spaces. Fodder and livestock loading do not usually occur at the same time; however where this does occur ports and other relevant workplace health and safety authorities may impose suitable conditions.</i>

Comment	Temporary fencing around hatches not strong enough for livestock on the loose.
AMSA's Response	<i>When the livestock are moved using passageways that are not intended to contain them, the people on board responsible for the transfer need to assess any risks to animal welfare that are present in those passageways. The vessels SMS should cover the safety of people and the animals during all cargo operations including the transfer of animals to hospital or other pens.</i>

Comment	Vessels must have a crush in hospital pens.
AMSA's Response	<i>These workplace health and safety requirements would be subject to a risk assessment. These safe work procedures aren't part of the order application</i>
Comment	There must be shade and ventilation for those attending to the access ramp.
AMSA's Response	<i>This is a workplace health and safety issue. Employees, employers and relevant State authorities would agree these kinds of conditions on equipment operating in a workplace.</i>
Comment	Portable panels for escaped livestock should be available so persons can recover the animals safely during loading and unloading.
AMSA's Response	<i>This is a workplace health and safety issue, which is not covered by the order. The vessel's Safety Management System (SMS) and shore workers WHS requirements should cover this.</i>
Comment	Wash-down water storage limitations – ships have limited capacity to carry out wash-downs in ports and other areas where discharge to sea is not permitted.
AMSA's Response	<i>The holding tank capacity for sewage (sewage includes added wash water) is determined by the owner to suit the vessel's operations, and is approved by the vessel's Flag Administration under MARPOL Annex IV.</i>
Comment	Two independently powered propulsion systems should be required.
AMSA's Response	<i>Some vessels of all types are powered by two independent propulsion systems. The vast majority though rely on a single propulsion unit with redundancy in the ancillary equipment required for that propulsion unit to operate. In addition, vessels carry spares to fix engine problems with on-board resources. Not actioned as part of this review.</i>
Comment	Livestock vessels should be fitted with roll stabilisation systems.
AMSA's Response	<i>Roll stabilisation systems may use seawater and be passive or active (flume tanks), or ultimately as fitted to many passenger ships, be mechanically active (stabiliser fins). Retro-fitting these systems to existing ships would be a major challenge both financially and in an engineering sense. This wasn't actioned in this review, however it will be taken into account at the next review of the order.</i> <i>Schedule 1 provides for additional stability requirements in addition to the internationally applied requirements. These additional requirements reduce the period of rolling and decrease the effect of acceleration forces due to rolling. The schedule also ensures the movement of livestock and</i>

	<i>fodder is allowed for in terms of ship stability – these “cargo” weights do not move on other ship types of course. The stability requirements in the order must be included in the stability book for the ship as approved by the flag Administration.</i>
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Comment	Severe Weather conditions, mandatory postponement of loading/unloading or sailing.
AMSA's Response	<i>The master of any ship is responsible for taking into account weather on the entire voyage to ensure the safety of the ship, those on it and the cargo before departure on every voyage. They are then also responsible for the same decisions on the voyage as the weather changes. The order adds to what they must consider to ensure the different nature of the cargo is taken into account.</i>

Comment	Contingency plans to access safe harbour within 36 hours and short notice availability of salvage vessels and crew.
AMSA's Response	<i>Ship operators are required to have contingency plans in place. There are international obligations on all masters to assist a ship if requested to do so. A requirement to keep within 36 hours (about 540 nautical miles) of an appropriately equipped port would add significantly to the length of the voyage, which is not desirable when carrying livestock.</i>

Comment	The master must cancel/abort/delay a livestock voyage if predicted severe weather imposes risks to the livestock.
AMSA's Response	<i>The master of any ship is responsible for taking into account weather on the entire voyage to ensure the safety of the ship, those on it and the cargo before departure on every voyage. They are then also responsible for the same decisions on the voyage as the weather changes. The order adds to what they must consider to ensure the different nature of the cargo is taken into account.</i>

Comment	Same pay as Australian entitlement for crew and others caring for Australian livestock.
AMSA's Response	<p><i>AMSA does not regulate crew pay on foreign ships. Pay and conditions on board a vessel are the responsibility of the owner and governed by the Maritime Labour Convention 2006 (MLC). The flag Administration is responsible for certifying the vessel complies with applicable Conventions.</i></p> <p><i>Australia (AMSA) carries out rigorous port State Control (PSC) inspections of foreign vessels to check the vessel complies with its certificates and all applicable requirements.</i></p> <p><i>On ships where there are additional personnel to carry out specialised tasks unrelated to the operation of the ship (such as caring for livestock as cargo, or contractors/service technicians travelling with the ship), they would not be crew employed under the seafarer's employment agreement (SEA) under the MLC. Their employment would be subject to contracts with their respective employer.</i></p>

Comment	Crew qualification and standard of training should be same as crew working on Australian vessels.
AMSA's Response	<p><i>Crew qualifications and training on every ship on an overseas (SOLAS) voyage is as required by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW). The flag Administration is responsible for certifying the vessel complies with applicable Conventions. Australia (AMSA) carries out rigorous port State Control (PSC) inspections of foreign vessels to check the vessel complies with its certificates and all applicable requirements.</i></p>