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Animals Australia submission to the Review of the Australian Standards for the Export of Livestock – Response to the Stage 2: Issues Paper, by the Technical Advisory Committee.

Animals Australia appreciates the opportunity to provide input into Stage 2 of the Review of the Australian Standards for the Export of Livestock (**ASEL**).

As you will be aware, Animals Australia is a peak animal protection organisation in Australia. We have been involved in animal welfare issues relevant to Australia's live export industry for over 30 years, and we are recognised as a key stakeholder in matters relating to animal welfare issues in the live export trade.

Animals Australia has also monitored, investigated, and scrutinised the live animal export trade industry for more than 30 years. Along with all other animal protection societies, we advocate that all animals should be slaughtered as close as possible to their farm of origin, in order to avoid the unnecessary and immense suffering that is caused by additional transport and handling. This is particularly pertinent in the live animal export trade, where our evidence has consistently shown that animals are routinely subjected to unskilled and cruel handling methods, as well as long-haul transport in perilous conditions which results in suffering and often inhumane slaughter practices.

To this end, Animals Australia advocates for a total ban on live animal exports. However, until such time as a ban is in place, we support the implementation of substantive and enduring changes to the legislative regime governing live animal export (including the ASEL) in order to safeguard the welfare of exported animals as much as possible.

We are therefore pleased to provide the following comments in relation to the issues raised in the 'Stage 2: Issues Paper'. For convenience, our are provided directly under the question we are addressing from the Issues Paper.

3.1 Reportable Mortality Rates

3.1 (1) Should the current reportable mortality rates (RMR) be revised and, if so, how?

As has been acknowledged in the Issues Paper accompanying this review,[1] mortality rates are a blunt and thus inadequate measure of animal welfare. The obvious deficiency inherent in a focus on

[1] Technical Advisory Committee, *Stage 2: Issues Paper* (August 2018) page 12.

mortality rates, is that it would be *prima facie* acceptable for all animals to suffer on a live export voyage, so long as the number of actual mortalities does not exceed the reportable limits.

The McCarthy Review provided therefore that the industry should focus not on mortalities, but on 'measures that reflect the welfare of the animal'.[2] The Secretary of the Department of Agriculture and Water Resources (**DAWR**), Daryl Quinlivan, has also acknowledged that 'mortality outcomes are not a sufficient measure of the performance of the trade and certainly not of the welfare of the animals involved'.[3]

Animals Australia's position is that reportable mortality rates should be revised and lowered for all species on all voyages to ensure investigations occur and identified issues addressed. However, mortality rates should not be relied upon to indicate the welfare outcomes of any particular voyage.

3.1 (2) At what level of mortality should a notifiable incident be declared, thereby triggering an investigation?

Animals Australia supports (as a minimum) the recommendation contained in the McCarthy Review that reportable mortality limits for sheep exported by sea to the Middle East should be reduced from 2% to 1%. However, we believe that the 'notifiable incident' level should be linked to the 'average mortality' for species and type of voyage (short or long haul).

Our view is therefore that a significant reduction (see below) should also take place with respect to all species of exported animals, including cattle, buffalo and goats, for all voyages undertaken during any time of year and regardless of destination.

In addition, it should be part of the normal procedures of the regulator to have experienced and expert personnel monitor and analyse closely the reports of all voyages to detect anomalies and to randomly closely audit other voyages to ensure accuracy.

3.1 (3) Should there be a relationship between the average mortality rate and the RMR and should it be reviewed annually?

As already stated, mortality rates are not a good indicator of animal welfare outcomes on any particular voyage. However, it makes sense for the reportable mortality rate to relate to the average mortality rate for any particular voyage. Whilst Animals Australia does not conflate 'average' mortality rates with 'acceptable' mortality rates, our view is that animal deaths occurring above the 'average' should be thoroughly investigated and reported on.

Investigations into mortality incidents are an important means by which it is possible to identify and address those factors that have contributed to a higher than usual mortality outcome on a particular voyage and are therefore essential to any attempt to mitigate future high mortalities. Inherent in this approach is the nexus between mortality and morbidity; if mortality rates are lowered it will inevitably reduce (though not eliminate) animal suffering.

An assessment of average mortality figures could be used meaningfully to review the RMR on a continuous basis. The very purpose of investigations into high mortality incidents should be to make enduring changes to the live animal export industry to avoid future high mortality incidents. If changes are therefore made to the industry on the basis of these investigations in order to reduce the number of overall mortalities, it is foreseeable that average mortality levels could also reduce over time, as conditions needed to reduce instances of death are identified.

Certainly however, if the average mortality rates were to rise during a particular annual period, Animals Australia would not support increasing the reportable mortality rate to accommodate that

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[2] Dr Michael McCarthy - *Review of conditions for the export of sheep to the Middle East during the northern summer* – 11 May 2018. Available here.

[3] See for example Hansard Senate Estimates of 24/5/18 of the Senate Committee on Rural and Regional Affairs and Transport Legislation Committee, page 123, available here,

increase in average mortality. The goal must always be to maximize opportunities for investigation and review of on-board conditions, with the clear intention of reducing overall mortalities. Therefore, even if annual average mortality rates rise, the RMR should be retained at a lower limit in order to trigger more mortality investigations to understand precisely the reasons why the average number of mortalities has increased during a particular year.

The current key figures would therefore be that an investigation should be triggered when a sheep shipment exceeds 0.71% mortality (the 2017 average death rate), and cattle voyages exceeding 0.10% (the 2017 average death rate).[4]

3.1 (4) What should be the stated purpose of an RMR, and what should be the consequence(s) of exceeding the RMR for a voyage?

The purpose of an RMR should be to trigger a thorough investigation into those voyages where the mortality rates have exceeded the reportable limit. The purpose of the investigation should be not only to identify the precise reasons why the mortality rates for the voyage exceeded the reportable limit, but also to place conditions on all subsequent voyages to prevent re-occurrence. Importantly, Animals Australia believes that changes implemented because of a high mortality investigation (for example, lowered stocking densities, more bedding) should be enduring and should apply to all future voyages of the same kind taking place in similar conditions, and not only to a single subsequent voyage.

A repeat exceedance of the RMR for a particular type of voyage by a single exporter should result in no further export permits being issued to that exporter until such time as the Department can be satisfied that the exporter has made significant and lasting changes to their export practices to ensure that the reportable limit is not exceeded again. Where reportable mortality incidents are the result of breaches of the ASEL, cancellation or suspension of the exporter's license must also be seriously considered

3.5 (5) Should the RMR also relate to classes of livestock (within species), different areas of the vessel etc. as well as length of journey?

The RMR should be linked to the average mortality for the species and type of voyage (see above), but all voyage reports should be analysed thoroughly to detect issues related to classes of livestock or other factors. For example, it is already known that rams are at higher risk than wethers and ongoing assessment of such factors is required.

3.6 (6) Should the RMR be replaced by, or supplemented with, reportable levels for more general welfare indicators (e.g. see McCarthy Review report)? If so, what should the welfare indicators be and what should be the reportable level for each?

RMRs must be supplemented by reportable levels of general welfare indicators. We note that the definition of 'animal welfare' being relied upon for the development of the revised ASEL standards is taken from the World Organisation for Animal Health (OIE) and is concerned with 'how an animal is coping with the conditions in which it lives'. According to this definition, poor states of welfare exist whenever an animal is:

[4] See mortality figures here: http://www.agriculture.gov.au/export/controlled-goods/live-animals/live-animal-export-statistics/reports-to-parliament.

- Unhealthy.
- Uncomfortable.
- Poorly nourished.
- Unsafe.
- Unable to express innate behaviour.
- Experiencing unpleasant states such as pain, fear and distress.

We also note that the proposed reformatted ASEL supplements this definition by reference to the 'five freedoms' of animal welfare, those being:

1. Freedom from hunger, thirst and malnutrition;
2. Freedom from fear and distress;
3. Freedom from physical and thermal discomfort;
4. Freedom from pain, injury and disease; and
5. Freedom to express normal patterns of behaviour.

As a preliminary observation, Animals Australia's view is that these definitions of animal welfare are not an accurate reflection of where current animal welfare science is moving with respect to assessing animal 'welfare'.

Current thinking in this space is now moving away from those approaches that measure animal welfare by reference only to *absence* of negative mental and/or physical states, towards models that assess animal welfare also by reference to the presence of *positive* mental states. The use of a more current animal welfare model, such as David Mellor's 'Five Domains Model', for example, could therefore serve to supplement the current basic definitions of animal welfare in order to provide a more comprehensive understanding of animal welfare outcomes during particular voyages.[5]

These issues are discussed and animal welfare indicators detailed in the industry report W.LIV3032.[6] These indicators should be quantified and adopted into regular reporting processes.

Regardless, Animals Australia's view is that monitoring and reporting on <u>all</u> aspects of an animal's welfare (even as currently defined by the ASEL) should be part of mandatory reporting duties and should also be accompanied by appropriate reportable limits. These limits should be determined by reference to existing animal welfare science and should reflect the point at which an animal's welfare can no longer be considered 'good'.

The legislative scheme that permits live animal export purports to protect animal welfare, and therefore any welfare compromises encountered on a voyage must be reported and recorded. The stated 'outcomes' section of the reformatted ASEL claims to achieve three core objectives, all relating to 'animal welfare'. It is therefore paramount that any outcomes that result in 'poor' welfare outcomes be recorded and reported on, as they indicate either a need to revise the ASEL to provide better animal welfare standards, or a need to sanction exporters for failures to comply with existing provisions.

3.2 Voyage Reporting Requirements

3.2 (1) What further changes, if any, do you think are necessary to the voyage reporting requirements of the standards?

The reporting requirements suggested for the daily reports and the end of voyage reports outlined in the ASEL 2012-13 are supported by Animals Australia and should be implemented.

The 'animal based' welfare indicator measures outlined in the industry report W.LIV.3032[7] should also be incorporated.

3.2 (2) Should the voyage reporting changes recommended by the McCarthy Review and then instituted by the Department be applied more broadly?

The McCarthy Review recommendations (relating to panting and heat stress scores) should be mandatory for all voyages – not only for sheep to the Middle East. In addition, new technology to assist all reporting and particularly to add accurate recording/reporting of environmental data, should be fast tracked for all vessels.

3.3 (3) Some stakeholders would like voyage reports to be publicly available, while others argue that this approach may limit candour. What is the best approach to balance public transparency with frankness in reporting?

Animal welfare issues in the live animal export trade are a matter of considerable public interest. The need for transparency in reporting was also acknowledged in the Keniry Review (2003) and again in the Farmer Review (2011).

However, Animals Australia and other community organisations continue to have to undertake expensive and time-consuming FOI processes to obtain the most basic documents (such as those described below) in order to be able to make an assessment of animal welfare outcomes on live export voyages. Our strong view is that reporting obligations must be broadened to provide much greater transparency, and to keep the interested public informed as to the animal welfare standards on board export voyages.

Our view is that the following reports (redacted only for strictly commercial-in-confidence elements) should be regularly published for each voyage:

- Master's Reports;
- Daily reports of the onboard veterinarian (AAV);
- End of voyage veterinary (AAV) reports (which detail welfare issues, causes of death);
- Independent Observer reports (and accompanying visual and data evidence); and
- Any actions taken as a result of issues by exporters or regulatory bodies (e.g. AMSA, DAWR).

In addition, once further electronic / auto-recording of environmental data such as temperature / humidity / noxious gases (etc) is being logged (as recommended by the McCarthy Review), this data should also be made available with final reports on each voyage.

3.4 (4) Should there be on board real-time monitoring of animals and vessel conditions? If so, what should these be and what would be the cost?

Animals Australia believes there should be on board real-time monitoring of animals and vessel conditions. Such monitoring could be supplemented by CCTV which is then made available to view (preferably[8]) as a live-stream by authorised persons with animal welfare expertise within the Department.

In April 2018, the *60 Minutes* exposé of on-board conditions across five different voyages to the Middle East indicated that there is a serious need for independent third party monitoring of on-board conditions.[9] The exposé showed that serious and unacceptable breaches of law resulting in

[5] David Mellor (2016) 'Updating animal welfare thinking: moving beyond the 'five freedoms' towards 'a life worth living'' 6(3) *Animals* 1.
[6] Wickham, Fleming, and Collins, Development and assessment of livestock welfare indicators; W.LIV 3032, February 2017.
[7] Wickham, Fleming, and Collins, Development and assessment of livestock welfare indicators; W.LIV 3032, February 2017.
[8] It is acknowledged that connectivity issues may not always enable live-streaming, but methods of securing footage for even delayed monitoring is required.
[9] Available to view here.

unacceptable and illegal animal suffering and death, would, if not for the actions of a single whistle-blower, have gone unseen.

The implementation of CCTV on live export vessels would ensure that exporters are held accountable for the welfare of those animals that are under their care and control. It would also assist with ensuring that the ASEL standards are maintained in line with export licencing requirements.

3.5 (5) Should there be specific recording and reporting of additional environmental parameters on vessels during voyages? What might these be, and can or should reportable 'trigger' levels be set?

Animals Australia submits that ammonia concentrations should be monitored and reported daily on all decks (both open and closed). Reportable trigger levels should be based on scientific research and which indicates those concentrations at which ammonia becomes aversive to animals and may begin to have a negative impact on their welfare (i.e. minimum of 25 ppm).

Further, currently temperature and humidity (and thus wet bulb temperature) is inadequately reported. The current daily reports record a single reading before noon for each deck. Readings are required at least four times a day and on key areas of the deck to better approximate the conditions for most (if not all) deck/pen areas. Such variation in environmental/climate conditions in different areas could cause significant issues for animals if not detected and mitigated.

3.6 (6) Should there be specific recording and reporting of animal welfare indicators during, and at the conclusion of a voyage? If so, what might these welfare indicators be, how frequently should they be measured and can/should reportable trigger levels for these measures be established?

As outlined in response 3.1 (6) above, there should be mandatory recording and reporting of <u>all</u> animal welfare indicators during and at the conclusion of a voyage, and these should be accompanied by reportable trigger levels.

Animals Australia's view is that <u>all</u> poor animal welfare outcomes should be adequately investigated, and that there is no 'acceptable' level of animal suffering.

As explained, we believe the welfare indicators could simply be drawn from the definition(s) of 'animal welfare' contained within the reformatted ASEL, with trigger levels set by reference to current animal welfare science. Indeed, given that the purported objective of the ASEL is to ensure the 'welfare' of animals (so-defined), it is entirely appropriate for monitoring and recording of animal welfare indicators to take place, to ensure that the stated objectives of the ASEL are being met by all exporters, and/or that the ASEL is serving its intended purpose.

3.7 (7) If reporting requirements are increased, what might be this cost and who would pay?

Animals Australia ls not in a position to provide costings of increased reporting. However, any extra costs related to reporting on preparation of livestock and voyages must be borne by the exporters who transport live animals from Australia. Exporting livestock is only legally permitted when Australian standards are complied with, and the obligation is on exporters to demonstrate compliance, with reporting being a significant factor to demonstrate compliance.

4. Heat Stress Risk Assessment

4 (1) Should paragraph 3A.4 (a) (ii) be amended to include other geographical locations?

Animals Australia understands that there have been two high mortality cattle voyages to China already this year that have been the result of heat stress. Our view is that s3A.4(a)(ii) should therefore be amended to also include cattle shipments from southern Australian ports to China during the Australian winter (May – October). Similar issues arise for voyages to the Middle East whereby winter-acclimatised animals are travelling for several weeks to the northern hemisphere heat and humidity.

4(2) Is the restrictive period of May to October for voyages departing to the Middle East appropriate? Are these the high-risk months for heat stress for animals being exported to the Middle East? If not, what months should be considered as high risk?

Based on existing statistics and scientific research it is clear that the full period of May through to October should be considered 'high risk'.

Publicly available data, published industry and independent scientific research, and reports over several decades show conclusively that on-ship mortalities are significantly higher (up to double) during this period.

At **Appendix A** we provide a table which is collated from DAWR records (from Masters' reports).[10] This table shows the monthly death figures/percentages of sheep exported to the Persian Gulf (from 2005 – 2017). It clearly shows the overall death rate escalating in May and reducing only after October. Similar figures, with the same pattern, are available for the Red Sea ports.

The graph provided at **Appendix B** is also collated from DAWR records (from Masters' reports),[11] and shows how many sheep shipments per month have exceeded 1,000 reported sheep deaths (most of which were under the 2% reportable level). This graph again illustrates that high risk shipments commence in May and only start to reduce significantly in November.

At **Appendix C** we provide a graph that was originally included with the National Annual 'Performance' Report compiled for MLA.[12] The graph shows that a similar – almost doubling – rate of the mortality on ships in those Middle Eastern summer months back in 1985 to 1990 is evident; and that the pattern has not altered over time.

Ambient wet bulb temperature (**WBT**) graphs have also been provided in industry-funded research during the development of the Heat Stress Risk Assessment (**HSRA**) software, 'Hotstuff'.[13] As seen at **Appendix D,** the 50% mark (i.e. expected half the time) for WBT is close to 25 WBT degrees, rising to 28 WBT, for most ports from May to October.

Industry research has also indicated that 26 WBT degrees and over is a 'caution' zone for heat stress, and 29 and over is the 'danger' zone[14] (and Barnes et al indicates for wethers that the danger zone commences at 28 WBT degrees). This is particularly concerning when it is known that **these figures (at Appendix D) are ambient temperatures**, and the livestock deck temperatures are

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[10] The DAWR records are available here.
[11] The DAWR records are available here.
[12] Department of Agriculture and Food, Western Australia, *National Livestock Export Industry Sheep, Cattle and Goat Transport Performance Report*, Project Code W.LIV.0291 (2016) < https://www.mla.com.au/download/finalreports?itemId=3328>.
[13] Colin Eustance and Sonia Corry, *Revision of the Heat Stress Risk Assessment Methodology to Properly Incorporate Risk of Heat Stress While at Port* (Meat and livestock Australia) Project Code B.LIV.0249 (2009) <https://www.mla.com.au/download/finalreports?itemId=279>.
[14] MAMIC Pty Ltd, *Investigation of the Ventilation Efficacy on Livestock Vessels* (Meat and Livestock Australia) Project Number SBMR.002 (2001) <http://www.livecorp.com.au/research-development/reports/investigation-of-the-ventilation-efficacy-on-lives>.

known to be up to 6 WBT degrees higher than the ambient temperatures (between the inlet air, and outlet air from the vessel, i.e. heated from the livestock deck).[15] As such only a few degrees increment pushes the temperature on the livestock decks into the danger zone for sheep throughout those 6 months each year.

It is therefore clearly appropriate for the ASEL to include the full period of May to October as a 'high risk period'. Animals Australia supports the clear position of the Australian Veterinary Association, who, based on substantive science, provided in their submission to the McCarthy Review that:

> *Irrespective of stocking density, thermoregulatory physiology indicates that sheep on live export voyages to the Middle East during May to October will remain susceptible to heat stress and die due to the expected extreme climatic conditions during this time. Accordingly,* ***voyages carrying live sheep to the Middle East during May to October cannot be recommended****.*

4(3) Are there different high-risk months for different markets that aren't considered in the standards?

The northern cyclone season is of particular concern. Over the years a significant number of cattle shipments have encountered ferocious weather, leading to significant injuries and deaths during this season[16].

Other shipments have (necessarily) had the voyage path altered (after departure) and elongated to avoid such weather, occasioning further transport stress and risking food and water supply shortages.

Whilst it is understood that the Master of each ship usually makes a decision as to whether to depart into perilous weather, ASEL's brief to protect the welfare of transported animals means these Standards cannot remain silent on this issue. ASEL should therefore mirror Section 14 of Marine Order 43 '*Severe weather conditions — minimising risk to livestock*'[17] which indicates a Master *must* delay loading or chart an alternate route to reduce injury or mortality of livestock if the original route was likely to encounter severe weather conditions.

[15] Ibid.

[16] Several examples of injuries and deaths due to cyclones include: In March 2007, a ship with 1,695 cattle on board traveling from Fremantle (WA) to Jakarta (operated by Halleen Australasian Livestock Traders Pty Ltd) was battered by a cyclone. 68 cattle died (4.01%) during the 8-day voyage; In February 2008, 15 cattle (0.85%) had to be euthanased due to injuries sustained when the ship ventured into the path of Cyclone Nicholas (reports available from AMSA); Further – several shipments of cattle to Japan through 2012 and 2013 met 'rough weather' causing injuries and deaths.

[17] Marine Order 43 (Cargo and cargo handling — livestock) 2018.

5.1 Sourcing Bos Taurus Cattle

5.1 (1) Should Paragraph 1A 3.2 (c) (iii) be retained in its current form?

Animals Australia's view is that this paragraph should be amended to state that *Bos Taurus* cattle must not, under any circumstances, be exported from South Australia (below latitude 26º) between May to October. Given that *Bos Taurus* cattle are at a very high risk of experiencing adverse animal welfare outcomes when exported during this 'heat stress' period, we cannot support the inclusion of any exemptions to a general prohibition on exporting them during these months

5.1 (2) Should Paragraph 1A 3.2 (c) (iv) be retained in its current form?

This paragraph should be amended to read that *Bos Taurus* cattle with a body condition score of **4 or more** should not be sourced for export from any area north of latitude 26º between 1st October - 31st December (inclusive). Given that heavier cattle are at increased risk of experiencing heat stress and other associated poor welfare outcomes, the ASEL should protect against these adverse outcomes by preventing those cattle with a body condition score of 4 or more from being exported during these particularly dangerous months.

5.2 Shearing Sheep and Hair Sheep

5.2 (1) Should there be a minimum period of time off-shears and/or wool length to apply for all wool sheep being sourced for export?

We find there is a clear conflict in the Issues Paper, causing confusion in regard to the time off shears on farm as compared with those shorn in a registered feedlot in sheds.

Animals Australia supports the requirement that sheep be 10 days or more off shears at the time they are sourced (on farm) for export.

Sheep in all situations need time to recover after shearing, and for any shearing cuts/injuries to be resolved.

Notwithstanding the imperative to reduce heat stress through shorter wool cover, if shorn at the registered premises there must be a minimum mandatory period of 3 days off-shears where sheep are shorn prior to loading (but after sourcing) and held at registered premises. Such a minimum period will allow the sheep to settle after the stressful experience of shearing and may therefore assist in reducing cumulative stress on sheep, contributing to better animal welfare outcomes during export.

5.2 (2) Should all hair sheep and alpacas be subject to the same requirements as wool sheep?

The requirement should be the same for all sheep – i.e. the 25mm limit should be applied to all sheep, whether wool or hair sheep. Long hair or wool affects actual space and creates an additional risk to heat stress suffering and particularly so if a faecal coat develops.

5.2 (3) Should the standards be amended to alter the specifications currently in place prescribing time-off periods for shorn wool sheep and shorn hair sheep? If so, what would you suggest?

See above response for 5.2(1).

5.4 (4) Are any other changes necessary to the requirements for wool sheep and hair sheep?

See above responses for 5.2(1) and 5.2 (3).

5.4 (5) Should the current standards regarding timing of shearing prior to loading for export by sea be revised?

As mentioned above, Animals Australia is of the view that where shearing is to take place prior to export (but after sourcing), it should be performed a minimum of three clear days prior to loading and only if the sheep can be kept in sheds to avoid extreme weather.

5.3 Maximum Weight of Cattle and Buffalo Sourced for Export

5.3 (1) Should the maximum weight for sourcing and exporting cattle and buffalo be the same?

Yes: Heavy cattle and buffalo are each at risk of injury, but we are not aware of any significant difference between the species.

5.3 (2) Should cattle and buffalo exported for feeder and slaughter purposes have a different maximum weight to cattle and buffalo exported for breeder purposes?

No: The maximum weight of both species must be fixed according to: consideration of class and facilities available on the vessel; and the accommodation and welfare considerations for the animals. We are not aware of any justification for a variation based on the ultimate export 'purpose' of the animals.

5.3 (3) Is 500 kg appropriate? Is 650 kg? Should it be higher/lower and why? What are the animal health and welfare risks? Are there any mitigating measures that must be taken?

Animals Australia is of the view that 500kg is the heaviest weight that should be permitted. Animals weighing above 500kg are at the greatest risk of physical injury during voyages due to their reduced agility and their reduced ability to rise if they fall. We believe animals over this weight must not be exported.

5.3 (4) Is a weight restriction appropriate and are there extra conditions that should apply or should it be more specific, for instance, a body condition score and breed?

A weight restriction is appropriate but should also be accompanied by a proper assessment of each individual animal's body condition, body score and fitness.

All animals should be adequately assessed with regard to whether they are 'fit' to export, and this is already a legal requirement under the ASEL. For example, standard 1A1.1(a) requires that livestock being exported by sea be individually inspected by a competent person to determine if the animals remain fit to export.

Such inspection must occur: as animals are unloaded into registered premises; daily while they are in the registered premises; prior to inspection by an authorised person; and immediately prior to animals being loaded on the export vessel. This inspection process should always be undertaken diligently with a view to identifying any animals who may, for reason of poor body condition, illness, injury or otherwise, be unfit to export.

In addition to a weight restriction – flooring and bedding are key components for adult cattle/buffalo. Large animals slipping and causing injuries and then leading to abrasions is a key cause of deaths due to sepsis infection in these animals.

5.4 Minimum Time Sheep, Goats, Cattle and Buffalo Must Remain at a Registered Premises Prior to Export by Sea

5.4 (1) What is the minimum time that sheep and goats should be held in an outdoors registered premises prior to loading aboard an export vessel? Should other provisions be included regarding seasonal factors, feeding and pre-conditioning to shipboard rations?

Animals Australia believes that sheep should be held in registered premises for a longer period of time than the current prescribed minimum period in the ASEL to ensure that they are accustomed to and consuming adequate food.

We note that in their submission to this review, the Australian Live Exporter's Council (**ALEC**) contended that so long as 'sheep are rested, the sooner they are loaded for export, the better'. Moreover, they specifically provided that:

> 'An extra two days in pre-export quarantine does not enable shy feeders to be identified any better, and most of the sheep that are reluctant to eat in the feedlot start eating once they are loaded onto the vessel…Two clear days in a registered or approved premises is sufficient time for sheep and goats….'.

Yet, this submission directly contradicts industry-funded research on this topic, which illustrates that on average, it took five days for some 95% of the animals in a feedlot to spend an adequate amount of time at the feed trough.[18]

Given the fact that sheep are at particular risk of inanition (and salmonellosis), it is particularly important that they spend sufficient time in registered premises prior to loading such that inappetance can be either overcome, or 'shy feeders' are identified to ensure that inappetant sheep are not loaded.

It is thus *imperative* that sheep in all locations are given a <u>minimum</u> of seven (clear) days to acclimatise to the shipping pelletised feed. Feeding requirements in registered premises must be amended to reflect this need.

5.4 (2) What is the minimum time that sheep and goats should be held in sheds registered premises prior to loading? Should other requirements be made for seasonal factors, feeding and pre-conditioning to shipboard rations?

See answer to 5.4(1) above. Seven clear days regardless of the registered premises is required.

Animals Australia does not believe goats should be exported at all due to their higher vulnerability to welfare challenges and routinely higher mortality rates during transport.

5.4 (3) Should the standards be amended to alter the specifications currently in place prescribing timelines for various classes of livestock to remain at a registered premises prior to export by sea? If so, what would you suggest?

All cattle and buffalo – regardless of the forthcoming voyage type/duration – should be held in registered premises at least for three clear days before export to enable their gut flora to be re-established after transport and handling to the registered premises

In past years multiple high mortality shipments have occurred and been attributed (by the AQIS investigations) to failure to be adequately prepared for sea transport. Cattle need several days to rest, consume and adapt to pelleted feed, and be adequately hydrated after land transport and handling before being loaded for export.

5.4 (4) What would be the cost implications of any changes to the times livestock must spend in registered premises?

Animals Australia is not in a position to provide any estimates. Costs are a matter for the commercial arrangements between the cattle owners and exporters.

5.5 Management of Shy Feeders and Inanition in Sheep

5.5 (1) What measures should be required to reduce the incidence of inanition and salmonellosis in sheep? Are the current requirements in the standards adequate to manage shy feeders and inanition in sheep?

5.5 (2) If not, what changes would you suggest?

We will address both of these questions together.

As was noted in the 2012-2013 ASEL review and has been acknowledged since the 1980s, the salmonellosis/inanition complex is the major cause of morbidity and mortality in live sheep exports.

Current measures to prevent inanition are clearly inadequate, and the ASEL should include many more measures to address this serious issue.

Importantly, the causes of inanition (and associated salmonellosis) are multiple, and thus addressing inanition/salmonellosis requires a multifaceted approach. Research by Phillips and Santurtun explains precisely how cumulative stressors inherent in the live export of sheep can contribute to a failure to eat. It is for this reason that Animals Australia is of the view that all 'stressors' involved in the export of live sheep must be addressed by the ASEL to reduce instances of inanition and salmonellosis:

> In considering the welfare impact of the ship journey, it is important to recognise that it is a part of a much longer transport process. This usually includes mustering the animals, usually from rangelands, holding them before loading onto a transporter, transfer to an assembly depot near the port, holding for a few days to adapt to pellets and high stocking densities before loading onto another transporter to transfer to the port, offloading to enter the ship, the ship journey itself, offloading from the ship and loading onto another transporter, and finally travel to a feedlot, where they remain for at least a few weeks before transport to an abattoir…On board, feed access and/or high stocking densities limit intake, because inappetant sheep recover their appetite in the lightly-stocked hospital pens (Black, 1996). Ammonia levels typical of ship transport of sheep also reduce intake… The effects that ship motion has on sheep welfare are poorly understood. It is possible that motion sickness contributes to inappetence (Phillips, 2008), with evidence from the Australian Bureau of Animal Health (1981) that 2% of 294 sheep carcasses from ship mortalities presented external signs of vomiting, and 2% of a further sample of 190 carcasses presented inhaled ingesta.' [19]

We provide some further detail below with respect to how the ASEL may address some of these stressors.

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[18] See for example the summary contained in the LiveCorp Submission to the *Review of Australian Standards for the Export of Livestock (ASEL) Stage 1,* page 12, available here: <http://www.agriculture.gov.au/SiteCollectionDocuments/animal/lae/asel/livecorp.pdf>.

[19] Clive Phillips and Eduardo Santurtun, (2013) 'The welfare review of livestock transported by ship' 196(3) *The Veterinary Journal* 309.

1. Longer opportunities to acclimatised to pelleted food at registered premises, and better identification of 'shy feeders' prior to loading

As already explained in 5.4(1) (above), the ASEL should mandate that sheep are provided with a longer opportunity to acclimatise to pelleted food. In addition, the ASEL should contain further requirements to ensure that 'shy feeders' are appropriately identified prior to loading. The use of electronic monitoring systems could assist in this regard.

The ASEL should also make recommendations with respect to trough design and location at registered premises. Additional trough space and the provision of troughs in the middle of feedlot paddocks may give greater opportunities to shy feeders to access feed and acclimatise to pelleted food.[20]

2. Electronic monitoring of animals and routine inspections on-board

In addition to more thorough visual inspection of all individual sheep to identify any animals that are showing signs of hollowing or are otherwise ill/scouring, electronic systems are now available that can assess individual feeding patterns. Such systems assess whether sheep are approaching and spending sufficient time at the feed troughs. This information therefore provides the opportunity to ensure shy feeders are not selected for export. Similarly of those loaded, electronic systems and more thorough inspection onboard is required to then immediately remove ailing animals from the main pens to be cared for in hospital pens. Research indicates that 'shy feeders' can recover their appetite in these pens with more space and supplementary feed offerings.[21]

Of course, the ease of performing these visual inspections would be enormously increased by the use of allometric models to determine lower, more appropriate, stocking densities that enable stock people to assess animals individually.

3*. Lowered stocking densities and improved ventilation*

Stocking densities on export vessels are inextricably linked to animal welfare outcomes.

Whilst reduced stocking densities cannot alone prevent sheep suffering heat stress, it is clear that high stocking densities can *exacerbate* heat stress issues and contribute to further suffering and death. It is for this reason that the OIE Standards (which are referred to and purportedly implemented in the ASEL) state that the space allowance on a sea vessel 'should allow the necessary thermoregulation' for each animal.[22]

In addition, high stocking densities can negatively inhibit airflow in pens, and exacerbate heat stress by reducing the effectiveness of any available ventilation systems. It is for this reason that a reduction of stocking densities, of the kind discussed in our response to 6.1 (below), is necessary to reduce instances of heat stress.

Reduction of heat stress will in turn contribute to a reduction in the risk of sheep inanition.[23] For example, research by Phillips indicates that heat stress either exacerbates Persistent Inappetence Salmonellosis Inanition (**PSI**) or that some deaths from PSI may even be going misdiagnosed, and actually be heat stress deaths.[24] Therefore, it is fundamental that the ASEL incorporate measures

[20] Tristan Jubb, Nigel Perkins and Tony Mellor, *Veterinary Handbook for Cattle, Sheep and Goats* (Meat and Livestock Australia and Live Export Corporation, 1.0 ed, 2018) <http://www.veterinaryhandbook.com.au/>.
[21] Clive Phillips and Eduardo Santurtun, (2013) 'The welfare review of livestock transported by ship' 196(3) *The Veterinary Journal* 309.
[22] OIE, chapter 7.2 (Transport of Animals by Sea), Article 7.2.5, 7(b).
[23] Darryl Savage et al, *Post Discharge Induction Procedures for Sheep in the Middle East* (Meat and Livestock Australia) Project Code B.LIV.0127 (2008) 3.
[24] Clive Phillips (2016) 'The welfare risks and impacts of heat stress on sheep shipped from Australia to the Middle East' 218 *The Veterinary Journal* 78, 83.

to reduce heat stress, in order to reduce deaths associated with inanition. This could be achieved by:

1. Reducing stocking densities to reflect an allometric model with a k-value of 0.047;
2. Improving ventilation on vessels; and
3. Prohibiting known 'high risk' voyages (such as voyages to the Middle East during the northern summer)

4. Monitoring and control of aversive gases

In addition to the above, published research by Pines and Phillips draws a correlation between high ammonia concentrations and high temperatures/humidity and/or inadequate ventilation:

> At four sites, the mean ammonia concentration for the voyage was above the recommended maximum limit for the live export industry. These areas were localized and occurred particularly on closed decks, as well as the front of the vessel and near the engine block on open decks. Ammonia concentration on the open decks was correlated with cumulative wind during the voyage, air speed, dew point, wet bulb temperature and faecal pad depth, and on the closed decks with dew point, and wet and dry bulb temperature…The results suggest that high ammonia concentrations occur in those parts of the ship where there is insufficient ventilation and/or high temperatures and humidity'.[25]

Research by Phillips then further indicates that exposure to ammonia contributes to an animal's failure to eat, causes discomfort, and animals show aberrant behaviour indicating a failure to cope.[26] Extracts from this research demonstrate this direct correlation between increased ammonia concentrations and decreased food intake/decreased body weight:

> 'Ammonia increased macrophage activity in transtracheal aspirations, indicating active pulmonary inflammation...Feed intake decreased ($P = 0.002$) in proportion to ammonia concentration, and body weight gain decreased ($P < 0.001$) at the 2 greatest concentrations. Exposure to ammonia increased ($P = 0.03$) the frequency of sneezing, and at the greatest ammonia concentration, sheep were less active, with less locomotion, pawing, and panting'.[27]

As discussed in our response to 3.5 (above), the ASEL should therefore mandate that ammonia concentration (on both closed and open decks) are frequently monitored and reported on, with the ASEL mandating appropriate trigger values.

56. Additional monitoring and care during rough seas

Scientific literature is increasingly indicating that sheep may experience a form of 'sea sickness' that may contribute to inappetence.

For example, an article by Phillips and Santurtun published in 'Welfare Pulse' (published by the Ministry of Agriculture and Forestry in New Zealand) stated that:

> Most [sheep] manage to make their way to the feed and water troughs and tough out the journey. For some however, it is just too much, they can't face the added stress of getting their way through to the troughs and instead lie motionless, head crooked back, waiting for whatever fate is coming to them. The scientists call it 'learned helplessness'. Some will never reach their destination as inappetance, or 'shy feeding', is one of the main factors affecting

[25] MK Pines and CJ Phillips (2011) 'Accumulation of ammonia and other potentially noxious gases on live export ships from Australia to the Middle East' 13(10) *Journal of Environmental Monitoring* 2798.
[26] Clive Phillips et al (2012) 'Physiological and behavioural responses of sheep to gaseous ammonia' 90(5) *Journal of Animal Science* 1562.
[27] Clive Phillips et al (2012) 'Physiological and behavioural responses of sheep to gaseous ammonia' 90(5) *Journal of Animal Science* 1562.

> mortality of sheep on ships…Stockpeople on the ships tell you that mortality rates increase and sheep suffer to a larger extent during high seas. …Ruminant livestock cannot vomit from their mouths, which is probably because of the large size of their rumen, but they can experience 'internal vomiting' which is the shunting of abomasal and duodenal contents towards the rumen. We therefore have no real reason to expect that they do not experience motion sickness in the same way as other mammals'. [28]

Moreover, research by Santurtun and Phillips concludes thatL '[d]espite the paucity of data on livestock there is sufficient evidence to believe that motion might affect animal welfare when animals are transported by road of sea'.[29]

Research by Santurtun *et al* also tested whether exposing sheep to roll (side to side movement), heave (up and down movement) and pitch (front to back movement) with similar amplitude and period conditions to a commercial livestock transport vessel would affect their behaviour and physiology. The results showed that 'there was both behavioural and physiological evidence that heave and roll caused stress'. This research flagged the need for further research to determine if these sheep were experiencing 'malaise and inappetence'.[30]

As such, the ASEL should include a requirement for increased monitoring and care of sheep where environmental conditions are poor, with resultant rough seas.

5.5 (3) What would be the cost implications of any proposed changes to these requirements?

Animals Australia is not in a position to estimate the costs of reducing the stressors outlined above but notes that unless this multi-faceted approach is taken, inanition, salmonellosis and other causes of morbidity and mortality will not be adequately addressed

5.6 Pregnancy Test Requirements and Limits

5.6 (1) What is the risk of changing the pregnancy test requirement from all Damara sheep to only those that weigh over 40 kg?

We are advised that Damara sheep can conceive at much lower weights and so we do not support any change to the current ASEL requirement for all Damara female sheep to be pregnancy tested.

5.6 (2) Should the standards be expanded to include all fat-tailed sheep and not just Damara? Fat-tail sheep being: sheep distinguished by a genetic predisposition for the accumulation of fat in the tail and hindquarters.

Yes.

5.6 (3) Must pregnancy testing be undertaken by a veterinarian, or is a competent pregnancy tester acceptable? Should it be expanded to any livestock pregnancy tester as accredited by the state or territory?

Given the high number of births taking place on board vessels, Animals Australia is of the view that pregnancy testing should only be undertaken by a veterinarian skilled in the practice of pregnancy testing. A full enquiry into why births persist must be undertaken to inform and rectify this issue.

Further – any animals in the third trimester of pregnancy must be excluded from export.

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[28] Clive Phillips and Eduardo Santurtun (2012) 'Ship movement as a stressor of animals during live export' 10 *Welfare Pulse* 17.
[29] Clive Phillips and Eduardo Santurtun (2015) 'The impact of vehicle motion during transport on animal welfare' 100 *Research in Veterinary Science* 303.
[30] Santurtun et al, 'Physiological and behavioural responses of sheep to simulated sea transport motions' 93(3) *Journal of Animal Science.*

5.6 (4) Should the 30 day period prior to export for pregnancy testing be extended to 45 days as a blanket change? Should there be discretionary allowances for low-risk cases, such as unjoined heifers or a shipping delay, where adverse animal welfare outcomes are likely to result from re-testing.

No – there should be no 'blanket' change to 45 days prior. However, some discretion could be permitted under strict criteria which consider the risks involved in any exception. Any permitted exemption should be reported and justified publicly.

5.6 (5) Should the age that goat kids and ewe lambs are pregnancy tested be increased to more than five months? What would be an appropriate age for goat kids and ewe lambs to be tested?

No – such a change would lead to missed pregnancies as we are advised that lambs and kids can conceive as early as less than 5 months of age.

5.6 (6) Are the methods for carrying out pregnancy tests appropriate? Are there any appropriate national pregnancy testing criteria currently in place that should be adopted/referred to in the standards?

No – the history of regular births onboard – and the attendant suffering of mothers and offspring – clearly show that the methods and procedures currently used to rule out pregnancy are inadequate.

5.6 (7) Should breeder cattle and buffalo only be determined as too small to be manually palpated safely by a veterinarian accredited under the National Cattle Pregnancy Diagnosis Scheme (NCPD) or should this be any veterinarian?

Only skilled and accredited veterinarians should be used for any pregnancy testing. The standard should require testing be done by ultrasound only for small cattle and buffalo.

5.6 (8) What would be the cost implications for any proposed changes to these requirements?

Animals Australia is not in a position to provide information on costs of any changes.

6. On Board Stocking Densities

6 (1) Do you agree with the application of an allometric model for densities? What is the appropriate k value and why? Should the k coefficient value vary depending on the species and voyage length?

The space provided to animals on-board will be directly related to some key animal welfare outcomes. In determining appropriate stocking densities, Animals Australia strongly supports the use of an allometric model, which enables proper consideration of the space required by each animal to ensure their most basic welfare needs are met.[31]

To enable adequate movement, rest and other basic physical and social requirements the appropriate applicable allometric *k*-value is **0.047**, regardless of species or voyage length. This is the *k*-value that is required for all animals sharing a pen to be able to simultaneously rest in full recumbency.

Our position is also supported by the OIE animal welfare standards, which clearly state in the Guidelines for the transport of animals by sea that 'when animals lie down, there should be enough space for **every** animal to adopt a normal lying posture'.[32] A *k*-value of 0.047 also minimises the possibility of disturbance to neighbouring animals, at the same time as serving to increase the ease

[31] Carol Petherick and Clive Phillips (2009) 'Space allowances for confined livestock and their determination from allometric principles' 117 *Applied Animal Behaviour Science,* 1.
[32] OIE, chapter 7.2 (Transport of Animals by Sea), Article 7.2.5, 7(b).

of each animal's free movement and their ability to access food and water troughs. Importantly, the ASEL Position Statement also expressly provides that the animal welfare standards 'developed in Australia take into account OIE animal welfare guidelines and in most instances exceed these'.[33] Therefore, a *k*-value of *less* than 0.047 would be inconsistent with OIE standards and contrary to the stated objectives of the ASEL.

According to scientific research by Petherick and Phillips (2009), a *k*-value of 0.033 is the threshold below which 'behaviour, productivity and some indicators of stress are adversely affected'.[34] Animals Australia's view therefore is that a *k*-value of 0.033 should be read as a bare *minimum*, and that a higher k-value is required to achieve good animal welfare outcomes; a position often promised by the live export industry and a position expected by the Australian community.

Given that a *k*-value of 0.047 is required for *all* animals to simultaneously lie down, a lower *k*-value makes the problematic assumption that animals will comfortably time-share the available space for the purposes of resting, moving around and accessing food and water. Such an assumption is problematic when animals are exposed to the perils of live export. For example, adverse weather conditions may result in animals becoming heat stressed and needing increased rest and space to ensure adequate thermoregulation. In addition, during adverse weather and rough seas, as balancing becomes difficult for animals whilst standing, it is critical that all animals can comfortably and safely lay down at the same time without crushing others.

6 (2) Should the McCarthy Review application of a k coefficient of 0.033 be applied more broadly?

As outlined above, Animals Australia supports the use of a k coefficient of 0.047, on the basis that this coefficient ensures best animal welfare outcomes, and best reflects the OIE animal welfare standards and the ASEL objectives. Our strong view is that an allometric model (*k*-value of 0.047) for determining space allowances should be used for <u>all voyages and for all species</u> of exported animals.

6 (3) How would you standardise liveweights? Is it appropriate to apply a factor associated with curfew and anticipated weight during the voyage? How else can curfew and weight gains after leaving the registered premises be accounted for?

Animals Australia supports the current Orders[35] which require calculations based on likely weight increments due to curfew before loading and increased weight during voyages. These weight calculations are crucial to accurately apply the allometric model and thereby ensure adequate space for the duration of voyages.

6 (4) What is the financial impact of changing on board stocking densities?

Animals Australia is not in a position to provide any estimates. Costs are a matter for the commercial arrangements between the animal owners and exporters.

6.2 Registered Premises Stocking Densities

6.2 (1) Are stocking densities at registered premises an issue?

As already mentioned, stocking densities are inextricably linked to animal welfare outcomes and this is particularly pertinent when animals have been stressed and tired by transport and handling, time

[33] ASEL position statement. 4.2. Page 11.
[34] Carol Petherick and Clive Phillips (2009) 'Space allowances for confined livestock and their determination from allometric principles' 117 *Applied Animal Behaviour Science,* 1.
[35] 2018-06 - Legislation amendments for the export of sheep by sea (EAN 2018-06).

off food and water, and are then mixed with unknown animals in a new environment. As such, Animals Australia supports lowering stocking densities to improve animal welfare outcomes.

Lowering stocking densities at registered premises is important as it reduces the impact of 'cumulative stressors' on animals, which, as explained earlier, are known to contribute to high incidences of inanition/salmonellosis in sheep. Such stress is also known to contribute to higher levels of bovine respiratory disease in cattle, the primary cause of mortality in long haul cattle export.[36] In addition, reduced stocking densities improves the ability of animals to acclimatise to new feed. It also aids qualified persons in inspecting and monitoring animals in order to readily identify those who are unfit to load for export.

6.2 (2) What do you think about the options presented in the 2012-13 review? Should any of those options now be implemented?

Animals Australia is of the view that stocking densities at registered premises should be formulated with respect to current animal welfare science and should aim to reduce cumulative stress on animals prior to export. For this reason, we do not support the option of including departmental discretions to change stocking densities, as such changes could adversely affect animal welfare.

6.2 (3) What are the cost implications of changing stocking densities in registered premises?

Animals Australia is not in a position to provide any estimates. Costs are a matter for the commercial arrangements between the cattle owners, registered premises operators and exporters.

[36] Moore, Madin, Norman & Perkins; ''Risk factors for mortality in cattle during live export from Australia by sea' Australian Veterinary Journal, Volume93, Issue10. October 2015 – Pages 339-348

7.1 Management of Bedding, and Ammonia Levels

7.1 (1) What specific requirements (i.e. volume, usage, and components) should exist for bedding material for export consignments of cattle and sheep? Should these apply to all voyages or only some? Should it apply to all species or only some?

The existing ASEL bedding requirements are insufficient to ensure acceptable animal welfare outcomes. Appropriate bedding is necessary to safeguard against a number of possible poor welfare outcomes, including:

- Abrasions.
- Soft tissue damage and subsequent infection of wounds.
- Slipping.
- The release of aversive and harmful gases, such as ammonia.
- Faecal coating of animals, inhibiting thermoregulation and increasing the risk of contamination of food and water sources.
- Unavailability of a dry, comfortable and safe place to rest.

Given the role that adequate bedding plays in decreasing the chances of these poor animal welfare outcomes, it is unacceptable that the ASEL has no bedding requirements for cattle loaded from some ports or for cattle/buffalo on 'shorter' voyages of less than 10 days duration. No such exemptions should apply since bedding is integral to the welfare of the animals on any voyage.

The importance of bedding in contributing to better animal welfare outcomes is illustrated by the fact that numerous high mortality reports indicate that inadequate bedding led to reportable mortalities. For example:

- In April 2017: A total voyage mortality level of 7.69% was attributed to 'ineffective non-slip flooring in a new livestock export ship'. Remedial actions included a commitment by the exporter (SEALS) to doubling the amount of on-board bedding in each pen from the outset and ensuring hospital areas had a thick pad (probably consisting of sawdust).[37]

- In January 2014: A total voyage mortality level of 3.52% was attributed to euthanasia required as a result of injuries sustained during bad weather. The exporter (SEALS) committed to loading an additional amount of sawdust on future voyages.[38]

For this reason, Animals Australia is of the view that adequate bedding (akin to that proposed by option 3 in the Issues Paper) is necessary, in conjunction with the inclusion of additional requirements for the management of bedding, to ensure that:

- Bedding is appropriately managed and replaced, and decks are washed down as frequently as is required to ensure good animal welfare;
- Sufficient bedding material is available at all times on all surfaces; and
- The consistency and depth of the bedding material is subject to constant monitoring.

Adequate bedding material must always be loaded to enable frequent replacement, and apply to areas such as discharge points, ramps and traffic areas. Additional 'backup' bedding material should be loaded and available at all times.

[37] See high mortality report 68, available here: http://www.agriculture.gov.au/export/controlled-goods/live-animals/livestock/regulatory-framework/compliance-investigations/investigations-mortalities#consignment-68-cattle-exported-by-sea-to-brunei-darussalam-and-sarawak-april-2017.
[38] See high mortality report 50, available here: http://www.agriculture.gov.au/export/controlled-goods/live-animals/livestock/regulatory-framework/compliance-investigations/investigations-mortalities/cattle-vietnam-report-50.

With regard to sheep, Animals Australia notes that the general position is that a faecal pad 'makes for excellent bedding'.[39] However, it is fundamentally important that the faecal pad be appropriately monitored and maintained, such that a bogy and/or deteriorating pad can be remedied via application of sawdust or other means. The ASEL should include a clear requirement that a faecal pad is only considered an acceptable form of bedding for sheep where it is proactively monitored and maintained. A soggy or 'boggy' faecal pad can easily result from hot, humid conditions, with numerous serious adverse animal welfare outcomes. Thus, the ASEL should mandate that additional sawdust and/or other appropriate management or bedding materials always be available in sufficient quantities to provide for all animals on-board, particularly in contexts where the voyage itself is likely to encounter weather conditions that are known to compromise the suitability of the pad as a bedding material.

7.1 (2) Should the standards be amended to alter the specifications currently in place to manage provision of bedding for livestock and ammonia levels on vessels? If so, what would you suggest?

Ammonia levels (and other noxious gases) are a key welfare risk on voyages – leading to aversive experiences due to irritation of the mucous membranes, likely nausea and reduced feed intake. All practical measures (bedding, space allowance, ventilation) should be taken to avoid high levels (i.e. over 25 ppm). Regular and accurate measurements must be taken to ensure action can be taken to address high ammonia levels in livestock pens. Such measures must be taken at regular intervals (4 times a day) and on each deck at (multiple) positions so as to provide a true indication of the noxious gases in the animals' environment.

7.1 (3) Should there be a requirement that bedding is used to manage an appropriate faecal pad? Should a statutory reserve amount of bedding be required as a contingency amount to manage any flooded pens?

As explained above, the ASEL should mandate that the faecal pad is only considered 'acceptable' as a form of bedding where it is appropriately monitored and managed. A statutory reserve of bedding must always be available for cattle/buffalo pens to reduce slippage and avoid injury, and as a contingency to manage pads that have become flooded or fowled. Additional management materials (such as sawdust) should be carried on 'high risk' voyages such as those that encounter humid and hot conditions.

7.1 (4) What would be the costs of any changes to the current arrangements?

Animals Australia is not in a position to provide any estimates. Costs are a matter for the commercial arrangements between the animal owners and exporters.

7.2 Water, Fodder and Chaff Requirements on Vessels

7.2 (1) Should paragraph 3A.3.2 (c) be amended as follows:

> **'For all long-haul and extended long-haul cattle voyages, at least 1 per cent of the fodder required for cattle must be chaff and/or hay.'**

Animals Australia agrees that this is the minimum that should be loaded.

7.2 (2) There are a range of issues relating to shipboard fodder requirements being reviewed within Industry. In the interim, are there any other changes to water, fodder and chaff requirements that need to be addressed?

The issue of 'fines' (broken down pellets) should be immediately addressed. Whereby levels of fines should be reported by the AAV and Independent observer on a regular basis and steps taken to address this welfare issue.

7.2 (3) Should automated water systems be mandatory on all voyages? What would be the cost associated with this change and who should pay?

In accordance with the McCarthy Review, Animals Australia agrees that automated water systems must be mandatory on all voyages to the Middle East during the northern summer. Further, our view is that this requirement should be extended to all voyages and all species, since the consistent supply of fresh drinking water is a fundamental component of ensuring the most basic welfare needs of animals on export vessels are met. Further, automation of this basic service to livestock will then free the crew to undertake other important tasks such as identifying and treating ailing animals.

7.2 (4) Should there be extra fodder provisions for voyages longer than 10 days?

The ASEL currently only requires approximately three days of additional feed to be carried, unless the voyage is travelling through the Suez Canal in which case the statutory reserve must be increased to 'at least 7 days'.[40] However, high mortality investigation reports indicate that more than three extra days of fodder should be carried on board, and that higher contingency margins are essential to ensuring that all animals have free and equal access to food, or can be appropriately transitioned onto new fodder where required.

In 2014, a high mortality voyage was directly linked to ruminal acidosis as a result of a sudden change in fodder.[41] The change occurred when extra fodder had to be loaded en route to Israel, as a result of a mechanical failure which increased the length of the voyage from the anticipated 17 days to 36 days. Although in this particular instance the voyage length was significantly longer than originally anticipated, higher contingency margins could have enabled the animals to be properly transitioned onto the new fodder, thereby drastically reducing the chances that they would suffer ruminal acidosis and death. Indeed, as a result of inadequate contingency supplies, there was essentially no transition period to new fodder on this voyage, resulting in adverse animal welfare outcomes and mortalities due to first the absence of adequate food, and then inappropriate new food supply.

Following the Departmental investigation into this voyage, the Department required the exporter to load an additional seven days of fodder (four days more than existing ASEL requirements) on only the subsequent voyage, and advised that 'obtaining details and the composition of fodder on board and matching any fodder obtained en route will reduce the likelihood of recurrence of this event…a more appropriate choice of additional fodder and transitioning onto new fodder is necessary to address any similar issues in the future'. The Department also issued an Export Advisory Notice (2015-12) to remind exporters of the requirement of contingency plans to address food shortages during voyages.

Such instances of inadequate feed supply indicate that it is appropriate for voyages exceeding 10 days in duration to carry much more additional food than is currently required by the ASEL. Delays can and have occurred also due to trade disputes, extreme weather, pirate risks, and crew illnesses – all leading to altered routes and extended voyages. Higher contingency margins are essential to protect against high mortality events.

[39] See for example Recommendation 14 of the McCarthy Review.
[40] Revised ASEL 3A.3.2 (h).
[41] See high mortality report 51, available here: http://www.agriculture.gov.au/export/controlled-goods/live-animals/livestock/regulatory-framework/compliance-investigations/investigations-mortalities/cattle-sheep-israel-jordan-51#action-taken.

8. On Board Personnel, Animal Management and Care

8 (1) In addition to the ship's crew, which on board personnel should accompany livestock export consignments? Should this apply to all consignments? Please provide detail.

Animals Australia believes it is essential that a minimum of 2-3 veterinarians accompany all consignments. Whilst we note it is outside the remit of this review to consider the 'framework' by which veterinarians and stockpersons are engaged to work in the live export industry, it is essential to note that Animals Australia strongly believes that independent veterinarians should accompany all consignments of livestock. Such veterinarians should be directly employed by the regulator (and not the exporter).

In addition to this crucial change, independent observers must be present on all voyages to monitor and oversee the work of crew, stockpersons and veterinarians that are employed directly by the shipper or exporter. These observers must report directly to the regulator with accompanying visual and data evidence. A specialist and dedicated team within the regulator must then receive, assess, analyse and publicly report on each voyage.

This is of fundamental importance given that currently the role of an AAV is undermined (that is, compromised). On the one hand, they are answerable to the exporter, yet on the other, they have a legal obligation to report to the regulator/Department. In addition, they have a clear veterinary professional ethics obligation which requires them to act in the best interest of the animals whom they care for. Often, these priorities are at odds with one another.

In the face of competing priorities and up to 90,000 animals to oversee, inspect, treat and/or euthanise, the role of the AAV appears clearly untenable. At least two independent observers on all voyages is therefore integral to ensuring that reporting requirements are met, and that animal welfare is maintained. More than one independent observer is required to provide support and assistance, including security, and to ensure comprehensive monitoring of activities on such large vessels which operate 24 hours a day.

Therefore, as a minimum, Animals Australia's view is that all onboard veterinarians should be directly employed by the regulator, and there must be at least 2, if not 3 veterinarians on every shipment (to ensure 24-hour monitoring of the animals). Two independent observers should accompany each and every export voyage.

Evidence (obtained via media coverage and FOI-obtained voyage details) of the failure of onboard AAVs and stockmen/crew to detect suffering or moribund animals before death comes from the small portion of recorded mortalities that are euthanased. Examples include:

- A voyage of the Al Shuwaikh in September 2017 were 47 sheep were euthanased of a total of 659 recorded deaths;
- A voyage of the Al Shuwaikh in November 2017 were 67 sheep were euthanased of a total of 712 recorded deaths; and
- A voyage of the Al Messilah in April 2018 where 10 sheep were euthanased of a total recorded mortality of 154.

8 (2) Should the current requirements in the standards be amended and, if so, what elements should be changed?

As explained above, the standards should be amended such that:

- A minimum of 2 to 3 veterinarians accompany all consignments of animals;
- A minimum of 2 Independent Observers are present on all voyages; and
- Additional trained stockpersons are present.

Given that export voyages typically involve tens of thousands of animals, Animals Australia also recommends that s 8.1.1(b)(ii) be amended to require that persons who hold qualifications as both a stockperson and veterinarian cannot occupy these two roles simultaneously on a single voyage.

This is simply because all vessels require multiple trained persons to ensure thorough monitoring of a large number of animals at all times. A single person, no matter how qualified, simply cannot physically attend to such a large number of animals at once.

8 (3) What is your view of the three options for AAVs accompanying voyages proposed during the 2012-13 review, and why?

Animals Australia is of the view that of those options proposed during the 2012-2013 review, option 3 is the most appropriate: an accredited veterinarian must be appointed to accompany all consignments. Whilst stockpersons may play an important supplementary role, only veterinarians are sufficiently trained to appropriately monitor, diagnose and treat animals. Moreover, only veterinarians are equipped with the requisite training and experience to perform examinations on deceased animals in order to diagnose causes of death and to make decisions about disease control during a voyage.

8 (4) Does the requirement for Independent Observers now in place modify or change the need for AAVs to accompany some or all voyages?

An Independent Observer does not modify or change the need for AAVs to accompany all voyages. As already explained, all consignments of animals must be accompanied by more trained personnel who can monitor and attend to animal welfare. Independent Observers are important because they can report directly, with accompanying visual evidence (and without conflict), to the regulator. However, their presence does not remove the need for a minimum of 2-3 veterinarians on all voyages to attend to animal welfare matters.

8 (5) What do you believe the roles and responsibilities of the following personnel should be, and why?

(a) AAVs

As already discussed above, a veterinarian possesses the requisite training to observe, monitor, diagnose and treat animal welfare issues during a voyage. Moreover, they play a vital role in reporting, using their expertise to diagnose causes of death and/or illness, based on an assessment of deceased or euthanized animals.

(b) Stockpersons

The work of a stockperson on a vessel is supplementary to that of an accredited veterinarian. Their role is to assist in the monitoring and treatment of animals within the confines of their skill set and training.

Animals Australia is of the view that stockpersons should not be responsible for generating detailed reports on causes of morbidity and mortality during a particular voyage.

8 (6) If AAVs are to be placed on more or all voyages, what is the additional cost and who should pay?

Animals Australia is not in a position to provide any estimates. Costs are a matter for the commercial arrangements between the animal owners and exporters.

8 (7) Is it a practical requirement for stock handlers on board to be able to observe all animals at all times during a voyage? If not, what requirement should exist to ensure animal health and welfare is appropriately monitored during a voyage?

It is an essential component of ensuring good animal welfare outcomes that all animals can be monitored at all times during a voyage. It is for this precise reason that it is necessary to have most AAVs and stockpersons present on each voyage. Video monitoring of decks and the use of technology to monitor the movements of animals and time spent at water troughs could supplement in-situ observation but cannot replace the direct observation of animals

8.2 Requirements for Vulnerable / Special Classes of Animals

8.2 (1) Are there specific requirements that need to be in place for vulnerable or special classes of livestock, which are currently not addressed in the ASEL? Which categories of stock and what additional requirements are needed? Could these be managed under specific management plans, or departmental discretions?

The ASEL must be amended to ensure that vulnerable classes of animal – if still permitted to be transported – are afforded adequate welfare protections. Live export is already stressful and risky for healthy animals that are not deemed particularly vulnerable. Thus, exporting a particular class of vulnerable animal places them at particularly high risk to adverse welfare outcomes. As such, the ASEL should make further requirements to mitigate those. Where mitigation is not possible, the export of that class of animal must be prohibited.

Vulnerable species include:

- Fat *Bos Taurus* cattle.
- Young lambs and goat kids.
- Feral goats.
- Entire males; especially goats and dairy bulls.
- All deer, camels and alpacas.
- All pregnant animals.

We address each of these categories below.

Fat Bos Taurus cattle

As indicated above – large cattle (i.e. over 500kg) should not be exported at all.

Young lambs and goat kids

Animals Australia does not support the export of very young animals due to the heightened risk that they will experience adverse animal welfare outcomes.

Feral goats

Industry research explains that feral goats are at particular risk during export because they are unfamiliar with being handled, are prone to aggression and are also more prone to disease and death during export than goats sourced from intensive production systems.[42]

Animals Australia does not support the export of feral goats due to the high risk posed to their welfare. We therefore strongly agree with Option 1 of the 2012-2013 ASEL review, which proposed a total prohibition on the sea export of feral goats.

Entire males; especially goats and dairy bulls

If entire male animals are to be exported there would need to be consideration of exporting only those in familiar groups (raised together), or alternatively single penning or significantly decreased stocking densities to reduce competition, bulling and injury.

All deer, camels and alpacas

In 2011, the Farmer Review stated that animals with a 'nervous' temperament require 'special preparation to ensure they are transported successfully'.[43]

We oppose totally the export of these species due to their temperament and thus the heightened risk of suffering to which they will be exposed.

All pregnant animals

No pregnant animals should be exported.

8.2 (2) Should the requirements in the standards be amended to address concerns raised about safeguards for vulnerable/special classes of animals? If so, what changes should be made?

As above**.**

9 Minor Amendments

We submit that:

- Deer and camel should not be exported (by sea or air).
- The other interim recommendations are recognised as incremental improvements.

Thank you for the opportunity to provide input to this important review. Please contact me if you require any further information or clarification in relation to our submission.

Yours sincerely,

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Chief Executive Officer

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Appendix A

Mortality records by month:

The following table is collated from DAWR records (from Masters' reports)[44], showing the monthly death figures/percentages of sheep to the **Persian Gulf** (from 2005 – 2017): It clearly shows the overall death rate **escalating in May, and reducing only after October**. Similar figures, with the same pattern, are available for the Red Sea ports.

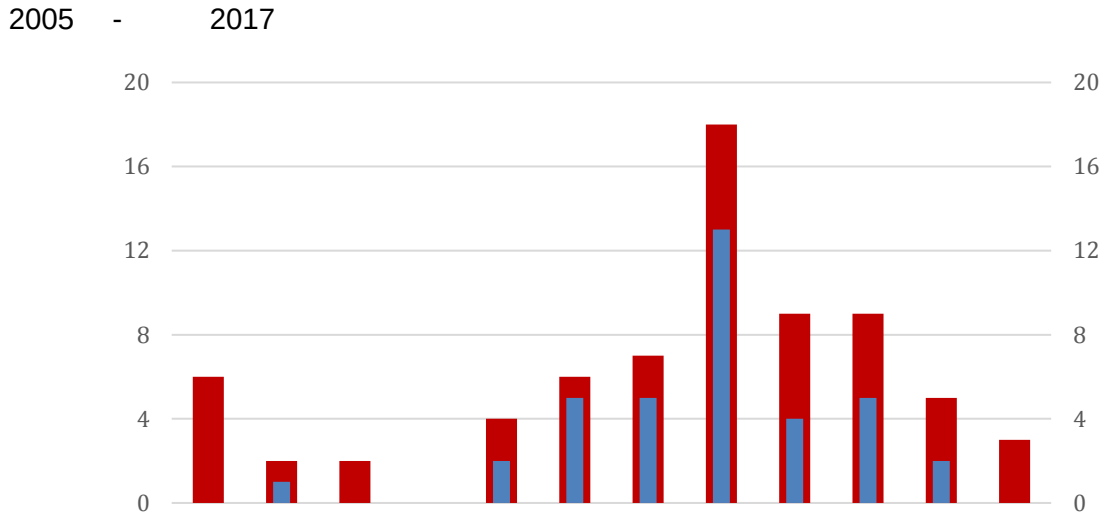
Departure Date (Month)	Count of Departure Date	Sum of Sheep Load	Sum of Sheep Loss	% Mortality
Jan	20	1,387,323	11,269	0.81%
Feb	20	1,328,866	10,098	0.76%
Mar	18	1,513,746	9,026	0.60%
Apr	22	1,753,119	9,572	0.55%
May	15	1,129,375	10,233	0.91%
Jun	15	1,152,907	12,488	1.08%
Jul	18	1,175,237	13,328	1.13%
Aug	26	2,043,785	28,816	1.41%
Sep	15	1,289,667	12,923	1.00%
Oct	23	1,648,512	16,600	1.01%
Nov	25	1,787,220	15,293	0.86%
Dec	21	1,649,088	11,021	0.67%
Grand Total	**238**	**17,858,845**	**160,667**	**0.90%**

[44] http://www.agriculture.gov.au/export/controlled-goods/live-animals/live-animal-export-statistics/reports-to-parliament.

Appendix B

Voyage mortality which exceeds 1,000 sheep deaths:

The following graph is also collated from DAWR records (from Masters' reports)[45] and shows how many sheep shipments per month have exceeded 1,000 reported sheep deaths (most of which were under the 2% reportable level). These high-risk shipments commence in May and only start to reduce significantly in November.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Emanuel/EMS/ILE: Mortalities >1000	0	1	0	0	2	5	5	13	4	5	2	0	**37**
All Exporters: Mortalities > 1000	6	2	2	0	4	6	7	18	9	9	5	3	**71**

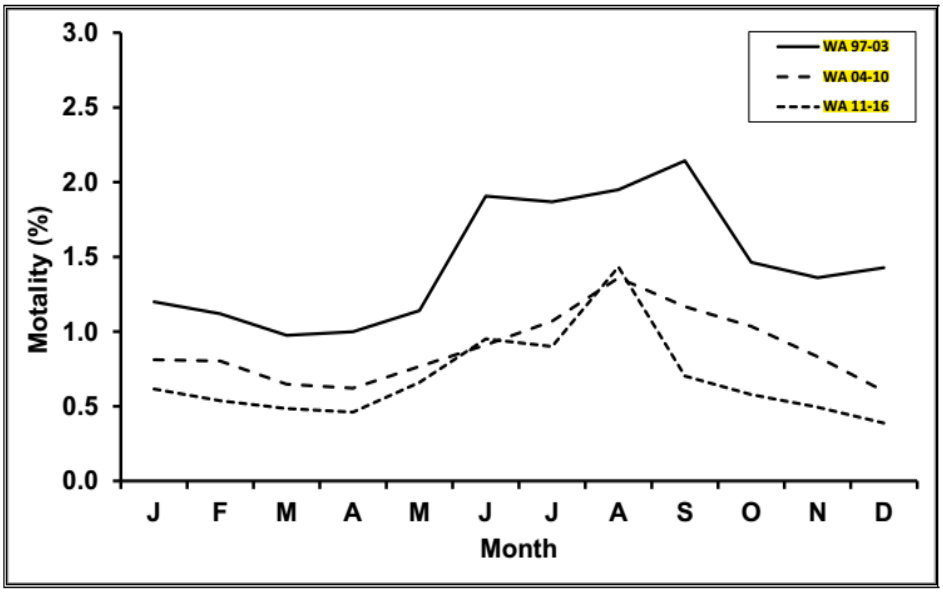
[45] http://www.agriculture.gov.au/export/controlled-goods/live-animals/live-animal-export-statistics/reports-to-parliament.

Appendix C

Historically - a similar almost doubling of the mortality on ships in those ME Summer months back in 1985 to 1990 is evident; the pattern has not altered. See this from the National annual 'Performance' report complied for MLA[46] (noting wethers are the predominant type of sheep exported) showing that the June – September period particularly has significantly higher mortalities (both before Hotstuff in 2003 and after), though mortality % ramps up in May, and only starts to reduce from October each year.

Figures 12 and 13 show monthly mortality rates (total mortality as a proportion of total loaded for each month) over three periods, 1997-2003, 2004-2010 and 2011-2016, for Adult Wethers and Adult rams respectively. While the overall pattern for Adult Wethers has reduced more noticeably over time, these periods demonstrate the enduring stability of the seasonal difference.

Figure 12 Average monthly mortality rate (%) for Adult Wethers for three periods



[46] Department of Agriculture and Food, Western Australia, *National Livestock Export Industry Sheep, Cattle and Goat Transport Performance Report*, Project Code W.LIV.0291 (2016) < https://www.mla.com.au/download/finalreports?itemId=3328>.

Appendix D

Ambient WBT temperature graphs have been provided in industry-funded research[47] during the development of Hotstuff. As seen below, the 50% mark (i.e. expected half the time) for WBT is close to 25 WBT degrees, rising to 28 WBT, for most ports from May to October. Industry research also indicated that 26 WBT degrees and over is a 'caution' zone for heat stress, and 29 and over is the 'danger' zone[48] (and Barnes et al indicates for wethers that danger zone commences at 28 WBT degrees).

This is particularly concerning when it is known that **these are ambient temperatures**, and the livestock deck temperatures are known to be up to 6 WBT degrees higher than the ambient temperatures (between the inlet air, and outlet air from the vessel, i.e. heated from the livestock deck).[49] As such only a few degrees increment pushes the temperature on the livestock decks into the danger zone for sheep throughout those six months.

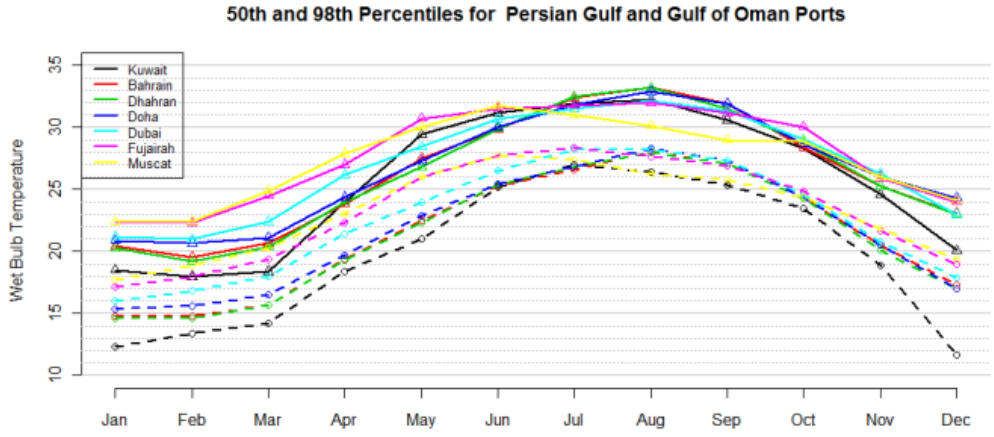


Figure 3-4: Annual port-specific wet-bulb temperature distributions for the Persian Gulf region

[47] Colin Eustance and Sonia Corry, *Revision of the Heat Stress Risk Assessment Methodology to Properly Incorporate Risk of Heat Stress While at Port* (Meat and livestock Australia) Project Code B.LIV.0249 (2009) <https://www.mla.com.au/download/finalreports?itemId=279>.

[48] MAMIC Pty Ltd, *Investigation of the Ventilation Efficacy on Livestock Vessels* (Meat and Livestock Australia) Project Number SBMR.002 (2001) <http://www.livecorp.com.au/research-development/reports/investigation-of-the-ventilation-efficacy-on-lives>.

[49] Ibid.