LiveCorp Submission

May 2019

ASEL Air Transport Review

Response to the Issues Paper on Review of the Australian Standards for the Export of Livestock: Air Transport

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LIVECORP

THE AUSTRALIAN LIVESTOCK EXPORT CORPORATION

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1 Introduction

LiveCorp welcomes the review of the Australian Standards for Export of Livestock (ASEL), as these standards apply to air transport of live animals, and the opportunity provided by the ASEL Technical Advisory Committee (TAC) to respond to its ASEL Air Transport Issues Paper.

1.1 LiveCorp and its activities

The Australian Livestock Export Corporation Limited (LiveCorp) is a not-for-profit industry body funded through statutory levies collected on the live export (including by air) of sheep, goats and beef cattle, and a voluntary levy collected on live dairy cattle exports. LiveCorp is one of the 15 Australian Rural Research and Development Corporations (RDCs).

LiveCorp works in partnership with other RDCs to achieve strategic outcomes for the industry and leverage higher returns for investments. Much of LiveCorp's investment occurs in partnership with Meat and Livestock Australia (MLA), through the joint Livestock Export Program (LEP). The partnership with MLA to deliver the LEP is widely recognised as the most efficient mechanism for delivering RD&E and in-market technical support.

Since the formation of LiveCorp, the LEP has funded a limited number of research projects into transport of live animals by air. Projects which directly address aspects of air transport of live animals are shown in Appendix A. On request copies of reports produced on any of these projects can be supplied to the TAC. In addition to the projects shown in Appendix A, many more reports have been produced by the LEP related to sea transport of livestock, pre-embarkation handling / transport of animals or live exports generally. Some material in these reports is also relevant to the TAC's consideration of air transport standards. References to these reports can be found in LiveCorp's submissions to the ASEL and Heat Stress Risk Assessment reviews that commenced last year.

In addition to partnering with other RDCs, LiveCorp works in close collaboration with its industry stakeholders. In this submission LiveCorp would like to acknowledge the contribution made by LiveAir. To assist in the preparation of this submission LiveAir established a consultative committee, which was able to supplement the research knowledge of LiveCorp with extensive practical and operational knowledge. Where research results did not exist or were ambiguous, the views of this consultative committee, based on practical and operational knowledge, have been embodied in this submission.

In the remaining chapters of this submission LiveCorp addresses many of the detailed questions raised in the *Issues Paper - Review of the Australian Standards for the Export of Livestock: Air Transport*. Before addressing these detailed questions, however, the following chapter focuses more broadly on livestock exports by air, providing vital background information for the Committee.

2 Background information for the Committee on air transport of Australian livestock

Animals have been successfully transported by air since the early 1930's. Nowadays, air transport is widely considered the most humane and expedient method of transportation over long distances.

In providing the TAC with relevant background information on transporting Australian livestock by air, this chapter highlights three fundamentally important factors when considering any revisions to be made to the ASEL standards:

- Air transport, although highly relevant for some small sectors of the livestock industry, also competes against other modes of transport to carry livestock.
- Excellent welfare outcomes have been achieved when transporting Australian livestock by air compared to other modes of transport.
- Significant requirements exist outside ASEL when transporting livestock by air.

2.1 Air transport in competition with other modes to carry livestock

Air transport occupies a small, but important, place in the shipment of Australian livestock to export markets. Compared to sea transport, few livestock are exported by air. Nevertheless, as can be seen from Table 1, in 2018, 1% of exported cattle and buffalo (representing almost 12,000 cattle) were transported by air and 4.6% of sheep and goats.

Table 1: Air and sea transport of exported livestock in 2018*

Species	Numbers shipped		% by air
	By sea	By air	
Cattle & buffalo	1,121,649	11,656	1.0%
Sheep & goats	1,143,508	55,187	4.6%
Total	**2,265,157**	**66,843**	**2.9%**

*Source: http://www.agriculture.gov.au/export/controlled-goods/live-animals/live-animal-export-statistics/livestock-exports-by-market, LiveCorp calculations.

Up until the current time, almost all cattle and buffalo shipped by air have been breeders – in 2018 over 98% of cattle exported by air were breeding stock. However, over the next few years the potential exists to export some slaughter and feeder cattle by air, particularly to China, as enquiries are emerging from this market.

For sheep and goats, a mixture of breeding and slaughter stock are shipped by air. In 2018, 24% of sheep and goats exported by air were breeders and 76% were for slaughter or feeding. Over the last five years, the corresponding proportions have been 16% and 84%.

Partly air is used for slaughter/feeder sheep and goat shipments due to tight regulations around sea transport of goats. However, this is not the complete reason. The regulations which prevent goats being shipped by sea do not apply to sheep. In 2018, 88% of the 33,281 sheep exported by air were for slaughter or feeding purposes, particularly to Malaysia.

The current carriage by air of sheep and goats for feeding / slaughter purposes, and the potential future growth in this trade for cattle, points to an important fact: that air transport is in competition against sea freight for significant market segments. As will be highlighted in the next section, high welfare outcomes are achieved for Australian livestock irrespective of mode of transport, with air transport delivering excellent welfare outcomes. This cautions against placing undue regulatory burden on air transport of livestock – as air transport already provides an effective method for safely

transporting livestock to export markets. If the regulatory burden on air transport is unreasonably increased, perverse welfare outcomes may result.

2.2 Excellent welfare outcomes achieved through use of air transport

A debate now surrounds the measures that should contribute to animal welfare outcomes for live exports. However, one important welfare measure has been consistently collected over many years: mortalities. The TAC, in its review of ASEL sea transport standards, while noting that "mortality alone is not suitable for assessing animal welfare outcomes" and recommending the collection of additional data, nevertheless used this measure as a basis for important decisions – since no other measure was available.

Mortalities for Australian livestock transported by air and sea for the period 2014 to 2017 are shown in Table 2. The years 2014 to 2017 were chosen as they represent available mortality data for air and sea on the DAWR website (at the time of preparing this submission complete 2018 data was not available on the website for sea transport - http://www.agriculture.gov.au/export/controlled-goods/live-animals/live-animal-export-statistics/livestock-exports-by-air and http://www.agriculture.gov.au/export/ controlled-goods/live-animals/live-animal-export-statistics/reports-to-parliament).

As can be seen from Table 2, substantially fewer mortalities occur with air shipment of livestock than when livestock are consigned by sea. For 2014 to 2017, when transported by air, calculated mortalities for cattle and buffalo were 0.0% of loadings. Similarly, when transported by air, calculated mortalities for sheep and goats in 2016 and 2017 were 0.0% of loadings and 0.1% for the period 2014 to 2017.

Table 2: Mortalities for livestock shipped by sea and air

Year	Mortalities (as a % of numbers shipped)			
	Cattle & buffalo		Sheep & goats	
	By air	By sea	By air	By sea
2014	0.0%	0.1%	0.1%	0.7%
2015	0.0%	0.1%	0.1%	0.6%
2016	0.0%	0.1%	0.0%	0.8%
2017	0.0%	0.1%	0.0%	0.7%
2014-2017 avg	***0.0%***	***0.1%***	***0.1%***	***0.7%***

It is unlikely that any other mode of transport would match the mortality record of air when transporting livestock. For instance, mortalities for cattle and buffalo transported by air during the years 2014 to 2017 was 0.0%. By way of comparison, the mortality rate from road transport for bobby calves in Australia has been calculated at 0.6%[1], while a survey of mortality among cattle transported by rail in Queensland in the late 1970s revealed a rate of 0.4%[2].

[1] Cave J.G., Callinan A.P.L., Woonton W.K., 2005, "Mortalities in bobby calves associated with long distance transport", *Australian Veterinary Journal*, Vol 83, pp:82–84.
[2] Tobin J., 1981, *Railed-cattle losses in Queensland*, Report produced by the Queensland Meat Industry Organization and Marketing Authority.

Similarly, for sheep:

- The mortality rate for sheep transported by road in Queensland in 1988 was found to be 0.7% to 1.6%, considerably higher than the rates experienced in air transport[3]
- In southern Australia, when travelling relatively short distances by road to deliver sheep to a depot, Makin et al determined a mortality rate of 0.1%. However, the authors noted that, within this average, the risk of mortality for sheep that had travelled 800 km or more was 3.4 times greater than for sheep that had travelled less than 200 km.[4] [5]

The excellent animal welfare performance record of air transport, as highlighted in this section, reinforces the point made at the end of the last section on the risk of perverse outcomes from any changes to ASEL that add to regulatory burden for air transport. Community and regulatory objectives are served by ensuring as many animals as reasonably possible travel by air. They are not served by placing unreasonable, bureaucratic impediments in front of air travel for livestock.

2.3 IATA Live Animals Regulations (LAR)

The previous section has highlighted a history of excellent welfare performance in air transport of Australian livestock exports. In part, this performance record can be attributed to a well-engrained quality culture within the air transport industry and a long history of developing and enforcing standards for air transport of livestock. It is important that the ASEL Technical Advisory Committee recognises that well developed international standards for air transport of livestock exist and are enforced by the airlines. There is significant merit in aligning the Australian standards, where possible and reasonable, with these international standards. This section briefly discusses the history and ongoing development of these international standards.

The International Air Transport Association (IATA) is a global association, representing the vast majority (over 290) of the world's airlines. Over 60 years, IATA has developed the commercial standards upon which a strong, quality conscious global air transport industry has been built.

IATA's Live Animals Regulations (LAR) are the worldwide standards for transporting live animals by commercial airlines. The objective of the LAR is to ensure all animals are transported safely and humanely under a harmonized system. IATA first published the LAR in 1969 in the form of voluntary guidelines; however, five years later, the LAR became mandatory for all airline IATA members.

Amongst other things the LAR includes standards for:

- reservations and advanced arrangements;
- scheduling and routing;
- design, construction and dimension of crates, including provisions for ventilation;
- documentation requirements, including a live animal acceptance check list;
- preparation of live animals before dispatch;

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[3] Shorthose W.R., Wythes J.R., 1988, "Transport of sheep and cattle", *34th International Congress of Meat Science and Technology* as cited in Knowles T.G., 1998, "A review of the road transport of slaughter sheep", *The Veterinary Record*, Vol. 143 No 8, pp:212-9

[4] Makin K.J., Perkins N., Curran G., House J.K., Road Transportation of Sheep – Mortality during Transport and Rejection on Arrival, https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjCyK2AmfnhAhWWfCsKHcSvAkQQFjAAegQIBBAC&url=http%3A%2F%2Fwww.sciquest.org.nz%2Felibrary%2Fdownload%2F67829%2FT2-4.3.4%2B-%2BRoad%2Btransportation%2Bof%2Bsheep%253A%2Bmortality%2Bduring%2Btransport%2Band%2Brejection%2Bon%2Barrival&usg=AOvVaw3DYdYlR3Og5CVJ1p9qomAM.

[5] LiveCorp notes, in passing, that while mortality rates for live exports are readily available not only in Australia but for a number of other countries, the same statistics do not exist for domestic transport operations.

- labelling / marking of crates;
- stocking densities;
- ground handling of animals and loading procedures, including restrictions on nearby loads;
- use of air conditioning units; and
- feed and water provisions.

The LAR is amended on an annual basis by IATA's Live Animals and Perishables Board (LAPB), which meets twice a year to consider proposals vis-à-vis new technologies and changing requirements in the area of live animal transport.

In continually updating the LAR, the LAPB relies on advice provided by a panel of experts (the IATA Advisory Panel) comprising representatives of government agencies involved in the regulation of animal transportation and non-governmental organizations with an interest in animal transportation issues. The Advisory Panel has the aim of promoting good animal care and welfare by keeping the Live Animal Regulations updated, as well as advising the LAPB regarding animal care and regulatory oversight. The World Organisation for Animal Health (OIE) is a member of the Advisory Panel.

For more detailed technical knowledge relevant to the development of the standards, the LAPB works closely with relevant specialist bodies as well as an Animal Care Team composed of vets and other animal care professionals.

IATA welcomes comments, proposals for improvement and editorial suggestions from interested parties, organizations and stakeholders involved in the humane transportation of live animals. In order to analyse, evaluate and assess such proposals, the LAPB has put in place procedures and templates to follow. Each proposal must be supported with facts and data which could include scientific studies, field tests, or observational data. All proposals for changes to the LAR undergo an initial screening by the Animal Care Team and the Advisory Panel.

Many countries, including member states of the European Union and the United States of America, have adopted the LAR, either in whole or in part, in their own regulations for animal transportation by air. As further demonstration of the respect with which the LAR standards are regarded:

- Pursuant to the United Nations conservation initiative, the Parties to the Convention on International Trade in Endangered Species (CITES) have resolved to encourage all Parties to implement IATA standards for the export and import of endangered species.
- IATA is one of a limited number of organisations that has a cooperation agreement with the OIE. The cooperation between IATA and the OIE is evident in the close alignment between the LAR and Chapter 7.4 of the OIE Terrestrial Animal Health Code which provides welfare standards for animals transported by air.

2.4 OIE welfare standards for animals transported by air

Similar to the IATA LAR, the OIE also produces international welfare standards for animals transported by air. In many cases these standards cross reference one another – i.e. the OIE code refers to the IATA LAR in particular areas and vice versa.

Included in Chapter 7.4 of the OIE Terrestrial Animal Health Code are provisions covering:

- principles of crate / container design, including ventilation;
- standards for the carriage of pregnant animals;
- stocking densities;
- animal preparation; and

- disinfection and disinfestation.

Possibly because of the long-standing nature of the IATA LAR, Chapter 7.4 of the Terrestrial Animal Health Code contains more specific requirements than many of the OIE animal welfare standards.

Again, where possible, there is significant merit in aligning the Australian standards with the OIE standards. Not aligning Australian standards with accepted international standards (to which Australia is a signatory) may result in potential violation of World Trade Organisation rules. More importantly, not to do so would place Australia out of step with well accepted international rules. It is understood that Australia accepts these rules for animal imports – except in exceptional circumstances the same should apply for animal exports.

3 Sourcing and preparation of livestock

Sourcing and preparation of livestock is crucial for the successful execution of any form of livestock transport, including by air. In this chapter we comment on a number of questions posed in the Issues Paper on sourcing and preparation of livestock for air transport.

3.1 Liveweight and body condition score

3.1.1 Minimum liveweights

Current ASEL standards specify the following minimum weights for livestock to be accepted for carriage by air:

- lambs - 20 kg (S6.9);
- goats – 14 kg (S6.9); and
- cattle - 150 kg (S6.9A).

The Committee has asked whether the minimum liveweight of sheep should be increased from 20 kg to 24 kg and for goats from 14 kg to 18 kg.

LiveCorp recognises that very young, light animals may require a higher level of care in an intensive management system, such as when being transported. No doubt it is these considerations that resulted in ASEL 2.3 specifying minimum weights for cattle, sheep and goats when transported by air. Notwithstanding a recognition by LiveCorp that light animals may require a higher standard of care, it is the general view of LiveCorp that blanket prohibitions on transporting animals with certain characteristics should only be imposed when it is concluded that, no matter what is done, poor welfare outcomes will undisputedly result from carrying such animals.

Other relevant standards do not impose minimum weights. For instance, the Land Transport Standards contemplate calves between 5 and 30 days old being transported by road and rail in certain circumstances – and even calves of less than 5 days old, including premature calves, in more restricted circumstances. Similarly, in these standards, no minimum weight requirements are specified for sheep and goats, although a more restricted time off water requirement is specified for young lambs (less than 4 months old) and young goats (less than 6 months old).

Likewise, the IATA and OIE standards do not impose prohibitions on the transport of cattle, sheep and goats by air based on weight or age. Both standards explicitly contemplate calves with weights as low as 50 kg being transported by air.

For sheep imposing a minimum weight requirement is particularly problematic as characteristics differ significantly between breeds. Depending on breed, a minimum weight of 24 kg, as has been suggested, may either refer to a recently weaned animal (e.g. in the case of a Dorper) or a well mature animal (in the case of Merinos). Exporters who routinely transport sheep by air have reported that no welfare issues have arisen that are systematically related to weight. Exporters have noted that past consignments, involving sheep weighing 20 kg, have resulted in good welfare outcomes, and no additional care was necessary.

Reference to other standards and the experience of live air exporters indicates a case for increasing minimum weights for sheep is unnecessary.

A greater case may exist to increase the minimum weight of goats from 14 kg to 18 kg, since a 14 kg goat is very small. However, rather than imposing a blanket prohibition, it may be preferable to address any proven increased risk through provisions in a risk management plan.

Irrespective of whether the current minimum weights are retained, or new minimum weights recommended, there is a need for clarity around whether these weights are those collected as livestock leave their farms or after curfew (and if so where). It is proposed that the weights be referenced as after curfew in pre-export quarantine (as the livestock leave the PEQ to be transported to the airport).

3.1.2 Body condition scores

For consistency with body condition scores that are generally used throughout the livestock industries, LiveCorp supports the use of updated body condition scores in ASEL Standard 6, as recommended by the TAC when reviewing the sea transport standards.

It also supports the definitions of emaciated or over-fat body conditions, but with the following comments:

- The new ASEL standards need to clearly state that, when dairy cattle are exported, the dairy body condition scores are to be used.
- Bos indicus animals tend to be leaner than their Bos taurus counterparts and this needs to be recognised. A score of 4 for Bos indicus represents a well-conditioned animal. Unless differences between Bos taurus and Bos indicus breeds are recognised unnecessary issues may arise when exporting healthy Bos indicus pregnant heifers.

3.2 Pregnancy testing requirements

There is merit in appropriately aligning pregnancy testing for air transport of livestock with those to apply for sea transport. This would include:

- extending the pregnancy testing requirements currently applied to Damara sheep (certification via ultrasound) to all fat tailed sheep.
- allowing pregnancy testing for particular classes of animals to be conducted by persons permitted to undertake pregnancy testing by law in any state or territory jurisdiction, not just veterinarians.

The reason for extending the provisions for Damara sheep to all fat tailed sheep is that Damaras and fat tail sheep are smaller and leaner, with similarities in this regard to goats, and are difficult to detect as pregnant. Fat tail sheep also seem to mature sexually earlier than Merinos.

In terms of the maximum days of gestation, a strong case can be made for retention of existing provisions, based on uniformity with international regulations. It is to be noted that the OIE provisions state:

> *Heavily pregnant animals should not be carried except under exceptional circumstances. Pregnant animals should not be accepted when the last service or exposure to a male prior to departure has exceeded the following time given here for guidance only: Cows 250 days, Ewes 115 days.*

It is to be noted that OIE *guidance* matches *requirements* under ASEL V2.3.

3.3 Non-farmed animals

The requirement that "*Goats must not be sourced for export unless they have become conditioned to being handled and to eating and drinking from troughs for a minimum of 21 days before transfer to registered premises*", although repeated under the air transport standards of ASEL (S6.13), primarily

arose from the sea transport of goats to South East Asia and the Middle East late last century and early this century (and appears in clause S1.20 for this purpose).

In the context of air transport, the benefits of a requirement for goats to spend a minimum of 21 days in groups eating and drinking from common troughs, in a feedlot type environment, is questioned by LiveCorp. The provision is clearly applicable to sea transport because shy feeders during journeys typically lasting one to several weeks, are associated with numerous problems. Air transport, however, typically entails journeys lasting hours, not weeks, even when time in PEQ is taken into account.

A number of studies have shown that for sheep (and, presumably, by extension for goats) time in registered premises (i.e. in a group feedlot type environment) can be a source of risks in itself.

For sea transport, research has clearly identified a trade-off in terms of time in Registered Premises: this trade-off involving mitigating the risks of inanition (feed transition) against increased disease exposure (particularly to *Salmonella enterica*).

A number of reviews have suggested that shortened feedlot times may be beneficial in terms of reducing exposure risk to *Salmonella enterica*:

- In 2002 Dr Simon More identified welfare benefits from minimising time spent in feedlots based on a reduction in opportunities for sheep to be exposed to potential pathogens such as salmonella, and reduced opportunities for exposure to other stressors, including extreme weather events. A specific strategy recommended by Dr More was "*Holding sheep in paddock-based feedlots for the shortest time possible*"[6].
- Statistical analyses of large-scale industry data involving sheep prepared at southern ports (Adelaide and Portland) by Kate Makin and her co-authors in 2009 indicated that while mortality rates in RP feedlots are generally very low, the overall daily mortality rate shows a linear increase for each subsequent day in the Premises[7].
- More recently, work undertaken by Murdoch University, concluded that Salmonella, combined with inappetence/inanition, was the most common cause of death of sheep in the Registered Premises (61.4% of all deaths)[8].

Slaughter goats transported by air to Malaysia (the main current trade) are processed within a few days of arrival – and goats showing any signs of issues are processed first (as is, also, the practice domestically).

We conclude that the *optimal* time spent in paddock type feedlots for non-farmed goats will almost certainly be different when the transport method is air rather than sea – there is no reason to believe that the two periods should be the same (as the current ASEL provisions do). Moreover, there are sound reasons to conclude, based on research, and the characteristics of the slaughter goat trade to Malaysia, that time spent in paddock type feedlots should be kept to a minimum.

[6] More S., 2002a, *Salmonellosis control and best-practice in live sheep export feedlots*, Final Report for Project LIVE.112, Meat and Livestock Australia, October.
[7] Makin, K., House, J., Perkins, N. & Curran, G., 2009, *Investigating mortality in sheep and lambs exported through Adelaide and Portland*, Final Report Project LIVE.123, Meat & Livestock Australia, August.
[8] Barnes A., Wickham S., Stockman C, Miller D., Fleming T., Collins, T., 2017, *Strategies to reduce inanition in sheep*, Final Report for Project W.LIV.0142, Meat and Livestock Australia.

3.4 Vulnerable or special classes of livestock

In order to examine arguments for additional safeguards applying to high risk and vulnerable animals, such as livestock with young at foot, LiveCorp attempted to refer to submissions made in Stage 1 of the ASEL Review as encouraged by the Panel. However, neither of the two hyperlinks provided in Issues Paper worked and a Google search also did not provide links to the Stage 1 submissions.

However, LiveCorp generally accepts that special attention is required for "high risk" animals, which include those that have recently given birth.

The LiveAir committee consulted by LiveCorp in the preparation of this submission accepted the proposition contained in the Issues Paper, that the standards be amended to remove existing references to livestock with young at foot and be replaced by a provision for a consignment specific management plan.

3.5 Livestock with horns

LiveCorp is of the view that ASEL provisions relating to livestock with horns would benefit from a number of adjustments.

Current provisions are that, unless otherwise approved by the relevant Australian Government agency:

- Horned cattle must only be sourced for export as slaughter and feeder animals if the horns are 12 cm or less in length and tipped;
- Horned buffalo must only be sourced for export as slaughter and feeder animals if the horns are no longer than the spread of the ears and are blunt;
- Horned sheep or rams must only be sourced for export if the horns:
  - are not turned in so as to cause damage to the head or eyes;
  - would not endanger other animals during transport;
  - would not restrict access to feed or water during transport; and
  - are one full curl or less, or are tipped back to one full curl or less;
- Goats must only be sourced for export if the horns:
  - are not turned in so as to cause damage to the head or eyes;
  - would not endanger other animals during transport;
  - would not restrict access to feed or water during transport; and
  - are no more than 15 cm long and are blunt or are no more than 22 cm long with tips no more than 20 cm apart.

3.5.1 Cattle

Nowadays few cattle with horns are offered for live export by either air or sea.

Dehorning mature cattle is not good animal welfare practice. When well-developed horns are cut to less than 12 cm in length, the vascular portion of the horn is invariably exposed, with extensive bleeding. This is not good animal welfare practice.

The only reference to horned cattle in the *Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock* is a requirement that 'Horned bulls should have the nonvascular horn tip removed to a diameter of three cms.'

There would be merit in achieving harmony between ASEL and the *Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock*, with a common requirement for horns to be tipped to a diameter of three centimetres (and no other requirements).

3.5.2 Goats

The basis for these horn length and width measurements in ASEL as they pertain to air transport are not clear.

Required outcomes are:

- Other goats are not endangered by goats that have long horns with sharp tips.
- Handlers are not endangered by goats that have long horns with sharp tips.

For goats with large horns, these outcomes can be achieved with tipping, to remove the sharp horn points, and with only the solid non-vascular horn cut. Dehorning that exposes the vascular horn tissue is undesirable for animal welfare reasons.

The provision that "goats must only be sourced for export if the horns would not endanger other animals during transport" involves subjective judgements being made by DAWR staff. We understand there have been occasions when animals have been refused on the basis that any horn represents a danger to other animals. Regulations that involve high levels of subjectivity should be avoided.

The only reference in the Land Transport regulations regarding horned goats is as a guideline (not a standard) and states:

> *"Horn trimming or removing sharp horn points is recommended to minimise injury to other goats. Where tipping is applied for bucks, horns should be tipped within 2.5–5 cm from the tip (no further down than two cm diameter horn) and for does less than two cm from tip to avoid sensitive zones. Tipping, where applied, should be done at least seven days before transport".*

3.5.3 Sheep

Similar comments apply to sheep as apply to goats.

It is to be noted that some Departmental officers have considered the scur to be a horn and applied additional space provisions because of this (see Chapter 4). It needs to be made clear that scurs are not horns as they are not attached to the skull.

There are no references in the Land Transport regulations regarding horned sheep, apart from a guideline for increased space allowance.

3.6 On-farm preparation of livestock

LiveCorp, and the LiveAir committee consulted by LiveCorp in preparing this submission, accepts that a number of adjustments could be made to ASEL provisions relating to the preparation of livestock.

3.6.1 Maximum travel time from Approved Premises to Airport

LiveCorp notes comments made in some submissions to ASEL Stage 1 that a maximum time should be specified between Approved Premises and an airport, on the basis that an eight-hour maximum time is specified from Registered Premises to a seaport. Currently the general land transport provisions under ASEL apply to journeys from Approved Premises to the airport. These are a maximum time off water for cattle of 48 hours and 38 hours for sheep and goats.

When transporting livestock by air it is common for the travel time from Approved Premises to the airport to be greater than 8 hours, sometimes significantly so. This is because for air transport, consignments are often assembled at an Approved Premises near where livestock are sourced.

Assembling livestock at Approved Premises that are consistently changing (from consignment to consignment) and are located near when livestock are sourced eases the logistical challenges faced by air transport (and therefore, improves the economics of air transport). It also results in better health and welfare outcomes for livestock, including in terms of disease management (e.g. spelling of yards).

As noted in Section 3.3, channelling animals constantly through a limited number of facilities, as currently occurs with Registered Premises for sea transport (and as would occur with Approved Premises for air transport if a maximum 8 hours of land travel time was imposed), can be problematic as these facilities can potentially increase the risk of disease exposure.

Rather than imposing an eight-hour travel time from Approved Premises to an airport, it would be more relevant to impose a maximum time (in terms of water deprivation) for the entire journey (i.e. from where curfew starts to unloading at the destination airport). The issue of a maximum journey time is addressed in Section 5.2.

In recognition of the importance of total water deprivation time, it is common practice for many exporters to spell livestock along the trucking route from Approved Premises to the airport, at properties which have been cleared by authorities for the diseases listed on relevant country importing protocols. Provided livestock are adequately spelled, fed and watered along the route animal welfare outcomes remain high which means that any requirement relating to distance/time travelled to airport should be from loading point where animals were last fed and watered.

An 8-hour maximum travel time from Approved Premises to an airport is not supported by LiveCorp as it would substantially affect the economics of air transport and not result in improved welfare outcomes.

3.6.2 Minimum rest period for livestock returned from the airport

Livestock that are returned from an airport due to unforeseen delays, such as a flight cancellation, inevitably have spent a period of time off food and water (irrespective of the distance from the pre-export depot to the airport). Because of this, it is proposed that a minimum rest period of 24 hours apply in such circumstances. Typically, many exporters and departmental officers follow this practice now.

3.6.3 Should the standards be amended to require preparation for export by air to be completed at a registered premise?

Currently preparation of livestock exported by air is allowed to occur at an Approved Premise rather than at a Registered Premise as is the case for sea transport. The Committee has asked whether a registered premises requirement should be applied to exports by both air and sea.

A requirement to only use registered premises when livestock are exported by air would result in substantially increased economic and logistical costs and would, almost certainly, result in a deterioration of animal welfare outcomes.

Air transport of livestock involves a substantially different operating environment to sea transport. Important differences relevant to a consideration of the use of premises for preparation of livestock include:

- Sea freight relies on use of specialised vessels that mostly operate from ports outside capital cities. Airfreight, on the other hand, utilises standard freighter aircraft mostly operating from capital city airports in highly urbanised areas. For many of these airports, including for the highest volume air freight hub in Australia, Sydney, well located Registered Premises do not exist.
- Sea freight typically involves large volumes of animals and is focussed on just two species. Airfreight, on the other hand, involves carriage of a much broader range of species in small consignments. It would be difficult to establish a Registered Premise to cater for all types of livestock carried by air or that would be commercially viable for such inconsistent and small throughputs. In fact, one of the reasons that, in recent years, exports of deer, camelids and goats have not occurred by sea is that Registered Premises are set up for volume-based export species (cattle and sheep) and do not have the necessary infrastructure to cater for alternative livestock classes.

An obvious question is also: why impose further regulatory requirements in an area that is working well? In this context the following should be noted:

- The majority of importing countries do not mandate the use of a registered premise. If an approved premise is able to meet the required diseases status for the particular protocol – what difference does a registered premise make?
- Approved Premises are provided for under the Export Control Animals Order. Section 3.06 of this Order specifies that "*for the purposes of considering whether premises may be approved …. the Secretary may request the exporter:*
  a. to provide further information; and"
  b. *to arrange for an authorised officer to be allowed to inspect the premises*".
  It is submitted that provisions under this Order and under the Department's Approved Arrangements provide the Department adequate scope to ensure the suitability of Approved Premises without imposing a requirement to only use Registered Premises. A premise is not able to be approved without a physical inspection.
- A requirement to use only Registered Premises for the preparation of livestock for air transport is likely to result in the perverse outcomes mentioned in Chapter 2. Given the extremely low mortality and morbidity rates in the export of livestock by air the imposition of extra impediments on air will almost certainly result in inferior overall welfare outcomes in the export of livestock. Matters raised in Section 3.6.1 are also relevant to this consideration.
- A move to require use of Registered Premises is likely to lead to a situation where it is not operationally possible to meet all regulatory requirements from particular locations. As a result, trade in classes of livestock or from particular locations would cease.

4 Penning arrangements and crate design

4.1 Appropriateness of the current stocking density and penning arrangements

With the exception of observations on stocking densities used for alpacas and in the lower hold (which are addressed separately in the following sections of this submission), the current density and penning arrangements for livestock consigned by air are considered appropriate in that:

- they conform with international standards;
- they broadly conform with comparable standards in Australia; and
- have resulted in excellent welfare outcomes in terms of morbidity and mortalities.

Tables 4.1 and 4.2 show space allocations for livestock transported by air as specified in standards that apply either internationally or in major countries. The space allocations under the Australian land transport standards are also shown. Table 4.1 shows space allocations for cattle of selected weights and Table 4.2 shows similar information for sheep.

It needs to be noted that the ASEL allocations shown in Tables 4.1 and 4.2 are the base allocations. Under ASEL additional space is required for:

- sheep with more than 25 mm of wool and fibre goats with more than 25 mm of fibre – 10 per cent;
- horned cattle, buffalo, and sheep – 10 per cent;
- goats with long horns – 10 per cent;
- mixed cargo in lower holds – 10 per cent; and
- total journey times scheduled in excess of 24 hours – 10 per cent.

Table 4.1: Space allocations for cattle when transported by air under various standards

Cattle liveweight (kg)	Air transport standards / regulations space allocated (m per head)					Australian land transport guidelines
	ASEL	US	EU	OIE	IATA	
300	0.84	0.84	0.84	0.84	0.84	0.86
500	1.27	1.27	1.27	1.27	1.27	1.23
600	1.48	1.45	N/A	1.45	1.45	1.47
700	1.70	1.63	N/A	1.63	1.63	N/A

Table 4.2: Space allocations for sheep when transported by air under various standards

Sheep liveweight (kg)	Air transport standards / regulations space allocated (m per head)					Australian land transport guidelines
	ASEL	US	EU	OIE	IATA	
25	0.17	0.17	0.20	0.17	0.17	N/A*
50	0.27	N/A	0.30	N/A	N/A	0.25
70	0.36	0.36	N/A	0.36	0.36	N/A

* Under the Australian Land Transport Animal Welfare Standards and Guidelines a space allocation of 0.17 sq m is specified for sheep weighing 20 kg and 0.19 sq m for sheep weighing 30 kg.

As can be seen from Tables 4.1 and 4.2, the application of international standards has generally resulted in uniform space allocations across countries. For trade, involving international operators such as airlines, there are significant advantages in applying the one set of international standards.

The current ASEL standards, as well as being reasonably aligned with international standards, also align closely with the Australian land transport guidelines. It should be noted that space allocations in the Australian Land Transport Animal Welfare Standards and Guidelines are specified as guidelines, not as standards.

As has been noted previously, in important aspects, conditions experienced by livestock when being transported by road are harsher than those applying in an aircraft. Especially on rural roads, some of which are not paved, livestock will inevitably be jolted on a very regular basis. Also, during the Australian summer, extremely hot temperatures will be experienced. Based on these observations there are sound reasons to conclude that, to achieve the same welfare outcome, lower stocking densities should be used for road transport than for air transport. Supporting this conclusion, on the limited information available (for land transport), significantly lower mortality rates occur when livestock are transported by air.

Any change to ASEL that would result in space allocations at substantial variance with current international standards, such as might result from the use of allometry (adopted in the sea transport review of ASEL), is not supported. If the Australian Government wants different space allocations to those currently accepted internationally, then arguments should be presented to change the standards in international forums. As explained in Chapter 2, submissions can be made to IATA to change the LAR standards. Mechanisms are also available to change the OIE standards.

4.2 Space allocations in the lower hold

The current ASEL standards require an additional 10% of space be allocated to animals when loaded into the lower hold of aircraft. LiveCorp knows of no justification for this increase.

Research undertaken by LiveCorp in fact indicates that, on modern aircraft, ventilation in the lower hold can be superior to the main hold. In a 2010 study to develop Version 2 of the Live Air Transport Safety Assessment (LATSA) model, the authors concluded:

> *If systems are correctly set by flight crews and airflows are not restricted by other cargo then the capacity of ventilation systems in lower holds of aircraft are generally better than main holds*[9].

This conclusion was reached following digitisation of drawings of main and lower holds provided in the aircraft manufacturer's publications (e.g. Boeing's 2002 747-400 Airplane Characteristics for Airport Planning or Airbus' 2009 A380 Airplane Characteristics). Ventilation specifications were then used to calculate the volumetric flow rate of air given cross sectional areas within the hold at the loading positions.

These calculations showed that the ratio of gross airflow to the volume of the hold was greater in the lower hold than in the main hold. In all cases more air per animal could be achieved in the lower hold than on the main deck provided there are no restrictions to air flow from other cargoes.

4.3 Rounding up of current stocking densities

Both the OIE and IATA standards allow for rounding up to appropriately fit animals in a crate. The OIE standards point to the danger of increased injuries if animals are loaded too loosely within a crate: "*Animals confined in groups, especially in pens, should be stocked at a high enough density to prevent injuries at take-off, during turbulence and at landing, but not to the extent that individual animals cannot lie down and rise without risk of injury or crushing*". For cattle of 600 kg the OIE

[9] EnviroAg Australia Pty Ltd, 2010, "Upgrade of LATSA software", Final Report for Project W.LIV.0269, Meat & Livestock Australia, June.

standards state that 4-5 animals can be loaded in 234cm x 308 cm single tiered crate, a crate with an internal area of about 6.3 sq m. Five animals would result in a space allocation of 1.26 sq m per head, compared to the rate of 1.45 sq m specified for this animal weight.

Rounding effectively recognises that animals are different shapes and sizes and specifying loading densities is an imprecise science. Tall, skinny animals occupy a different amount of two dimensional space than do short, fat animals. In establishing appropriate stocking densities, the important factors to take into account are not theoretically calculated space allocations but that the allocation should be set to prevent injury for take-off and landing or when turbulence is encountered. For take-off and landing and when turbulence is encountered it is important that each animal is supported by other animals and / or by the sides of the crate (recognising that these animals are standing, unlike humans, who are seated and typically restrained by belts during such events).

It seems highly likely it is in recognition that animals, within the one species, of different body shapes, occupy different amounts of two-dimensional space that the Australian Land Transport Animal Welfare Standards and Guidelines only specify stocking densities as a guideline. Indeed, major livestock states, such as Queensland, have adopted a practice known as volumetric loading of livestock for road transport because of the welfare and other benefits that stem from this practice. There is no evidence that this practice has resulted in inferior welfare outcomes for Queensland livestock. To the contrary, based on the research and evidence amassed when volumetric loading was first introduced, this practice will almost certainly have resulted in improved welfare outcomes (bruising, for instance, was shown to be lower when livestock were loaded volumetrically rather than using densities calculated on a per unit area basis).

Current stocking densities, including the practice of rounding, is not proven to have resulted in inferior welfare outcomes for air transport. Low morbidity and mortality levels experienced for air shipments suggests that welfare has not been compromised. On the other hand, preventing rounding would substantially affect the economics of air travel.

The disadvantage of not allowing rounding up can be illustrated by using a consignment of 350 kg cattle loaded into single tier medium size crates (214 cm x 308 cm):

- ASEL provides a space allocation of 1.06 sq m per head for such cattle.
- The medium sized crate (214 cm x 308 cm) assumed for this consignment has an internal area of about 6.3 sq m (air transport crates are built to standard sizes to allow docking within the aircraft).
- Given the fixed crate size and the ASEL space allocation per head, if it were possible to infinitely divide cattle, 6.943 cattle could fit within this crate. Clearly, however, cattle are not divisible.
- Without rounding (effectively by applying truncation), 5 cattle can be loaded into this crate with a per head space allocation of 1.26 sq m.
- With rounding 6 cattle can be loaded into the crate with a per head space allocation of 1.05 sq m – very marginally below the ASEL specification.
- For this consignment applying truncation, rather than rounding, when loading cattle, results in a 20% increase in air freight costs per head.

Since air freight costs are the largest element of the total costs of transporting animals by air, not allowing rounding up would severely affect the economics of air freighting livestock.

LiveCorp is likewise of the view that no additional space is required for pregnant animals. LiveCorp notes that the Australian Land Transport Standards make no additional space provision for pregnant cattle, goats and sheep – only guidelines are provided. For example, the guideline for cattle is that

"*cows in their eighth month of pregnancy or later, excluding the last two weeks of pregnancy ….. additional space should be provided on the vehicle*". Eight months of pregnancy equates to about 243 days which is very close to when a prohibition is placed on the air freight of cows (250 days). Similarly, the guidelines for providing extra space for sheep and goats are only two to three weeks below the point at which prohibition is triggered for air transport. LiveCorp also highlights previous points made that:

- Journeys generally will be less stressful for pregnant livestock by air than by road.
- It is important to load animals appropriately for conditions encountered in air transport rather than to artificially calculated space allocations.

4.4 Stocking density and penning arrangements for alpacas

LiveCorp does not undertake research for the alpaca industry (research for this industry is undertaken by AgriFutures Australia, formerly the Australian Government's Rural Industries and Research Corporation, which may make its own submission to this Review). However, the LiveAir committee consulted by LiveCorp in the preparation of this submission suggested that on the basis of its practical experience the sheep space allocations could be used multiplied by 1.2 (i.e. with 20% additional space). Further discussions are occurring with exporters specifically involved with alpaca exports and further advice may be provided in the future.

4.5 Stocking density and penning arrangements for camels

LiveCorp does not undertake research for the camel industry (some research for this industry has been undertaken by AgriFutures Australia). LiveCorp also notes that neither the OIE nor IATA standards provide specific guidance on space allocations for camels. However, the Australian land transport standards and guidelines does include space provisions for camels.

4.6 A standard for head height?

LiveCorp notes that the Australian land transport standards and guidelines do not include a standard, or even a guideline, for the height of crates.

The OIE principle for crate design is that the height of the crate:

> *"allow the animal to stand in its normal position without touching the roof of the container or, in the case of open containers, the restraining nets, and provide at least 10 cm (4 in.) clearance above the animal's head when standing in its normal position".*

The IATA standard in terms of height is that "*the animals must be able to stand up in a natural position*". In terms of height IATA further <u>*recommends*</u> that:

> *"10 cm (4 in) overhead space is provided for small farmstock and 20 cm (8 in) for large stock. For pigs 10 cm (4 in) and cattle 20 cm (8 in) over the shoulder or loin, whichever is the highest is suitable for both single and multiple deck containers".*

The recommendation of IATA is currently under discussion and, possibly, will be changed. The IATA definition, however, embodies more clarity in its requirements than does the OIE.

If a standard for head height is to be included in ASEL, it is recommended that a general reference be made to the IATA provision (particularly given they may change) – for example:

> *"Crates must meet the height requirements specified in the IATA LARs".*

4.7 Mixed sex loading?

Livecorp notes that neither the Australian land transport standards and guidelines, nor the OIE air transport standards nor the IATA LARs contain specific provisions for mixed sex consignments. The experience of live air exporters is that the following shipments have been made with no issues being encountered:

- several shipments of mixed heifers and small bulls;
- many mixed sex shipments of sheep and goats.

If a standard is to be developed in this area it should clearly distinguish between animals that have been housed together on farm (in which case the mixed consignment would be acceptable) and those that have not.

4.8 Costs of changes?

Airfreight and the associated costs of crate construction are by far the most substantial costs when transporting livestock by air. For cattle, even to nearby Asian destinations, these costs represent almost 50% of the CIF sale value of the animal. For goats the proportionate contribution of these costs is even greater – about 70%.

This means that even minor changes to regulations can have major cost or market share / access ramifications. For instance, changes to the rounding up provisions could cost more than $180 / head (adding costs of around 10 – 20 % per head), representing a significant change to the viability of air transport. Such a cost increase would be more than many exporters' current margins, and would be enough to make Australia uncompetitive with the USA and Canada to many markets.

5 Fodder and water requirements

In this chapter several questions raised by the Committee in terms of feed and water provision to livestock during export by air are addressed.

Managing feed and, especially, water deprivation times is an issue of which air exporters are extremely aware. These exporters have a demonstrated history of working closely with importers to ensure livestock are not put at risk of an adverse outcome.

To respond generally to the Committee's questions on feed and water provisions, it is LiveCorp's view that current standards are working well. Because of this, no reason exists to add to regulatory burden with additional layers of ASEL requirements.

To the contrary, logistical and welfare benefits might result from relaxing some current ASEL requirements. One area that might benefit from some adjustment is the 12-hour maximum water deprivation time (specified in ASEL S2.8 b) for goats. The experience of exporters is that 12 hours can be insufficient time for animals to empty out prior to trucking. In summer this does not create welfare problems. In winter, however, trucks can become overly wet and this can be lethal to animals when colder weather is encountered during trucking.

The potential detrimental welfare impacts of applying a maximum 12-hour water deprivation period for sheep and goats has not only been observed by air exporters, but also by others. The Australian Livestock Transporters Association's Guide to Best Practice contains the following statement:

> *"Mature sheep destined for slaughter should be taken off water at least 12 hours and no more than 24 hours prior to the journey. In winter, when urine stains can lead to severe wind chill in sheep in transit, the time off water should be longer than 12 hours, provided that overall times off water … are not breached"*[10].

Over the years several mortalities can be attributed to goats becoming wet due to inadequate curfew combined with unexpectedly cold conditions. Goats carry less body fat than other livestock species and are less equipped to tolerate cold wet conditions.

5.1 Submission of consignment specific management plans?

The Committee has questioned whether plans should be submitted for provision of water during transit stops.

For the purpose of considering this issue three types of transit stops can be identified:

- Short transit stops to allow the aircraft to take on fuel or cargo with livestock then continuing their voyage on the same aircraft. These stops can be as short as an hour. In these instances, livestock are not unloaded and aircraft systems remain operational. Under these circumstances it would be completely impractical to provide feed and water to livestock; nor would it be desirable.
- Transit stops over a number of hours with livestock held at the airport and then transferred to a connecting flight. The standard practice under this sort of transit is for livestock to remain in the air pallets which are stored in a shaded and ventilated area - almost always a large warehouse. Where livestock may have been water deprived for some time, the standard practice is to provide water during these stops (by placing containers of water inside the crate).

[10] Australian Livestock Transporters Association, 2007, "Stock Preparation Pre-Transport – A Guide to Best Practice", http://www.alpa.net.au/UserFiles/File/Documents/ALTA-_Stock_Preparation_Guide%200709.pdf.

- Another, but rarer, type of transit is where an airport has facilities which allow the unloading of livestock into purpose-built livestock yards that have water and feeding facilities and that are able to satisfy importing country requirements in regard to quarantine, etc. With this type of facility, a transit can last several days. In such instances a management plan does need to be submitted to the Department of Agriculture and Water Resources (DAWR) and express approval must be granted by the authorities in the country of transit and the importing country.

Air transits can present a risk to an export consignment in the event there is a technical problem and the outbound aircraft is delayed or even cancelled:

- Cancellations due to technical issues are exceptionally rare. Under such circumstances airlines have a contractual responsibility to urgently rectify the situation and experience has demonstrated they can and do act quickly.
- Delays are less rare and at different times the Department has sought mitigation plans from exporters in the event a delay is experienced.

The provision of consignment specific plans as raised by the Committee seems to be directed at providing water and, possibly, feed during transit stops. As explained above, depending on the nature of the stop, there is no surety that the provision of water will result in improved welfare outcomes – depending on the nature of the transit stop inferior welfare outcomes might occur. As a result, a requirement for consignment specific plans directed at providing water during transit stops is not supported. However, for journeys requiring a transit stop, there may be merit in requiring a risk mitigation/management plan to ensure the provision of feed and water in the event it became likely that deprivation times would exceed those associated with maintaining animal welfare.

5.2 Requirement for a consignment specific management plan to manage water deprivation time for the entire journey and maximum water deprivation time

As noted above, current standards are working well and exporters are very aware of potential water and feed deprivation issues. As a result, preparation of consignment specific management plans for the entire journey may be viewed as adding to regulatory burden without proven benefits.

The current land transport standards allow a 48-hour period off feed and water for cattle and sheep. Cattle and sheep, due to their four stomach chambers, one of which, the rumen, represents a store for fluids, can go without water for a longer period than humans without adverse physiological effects. Hecker and his co-authors deprived sheep of food and water for up to eight days. The greatest decrease in rumen fluid volume occurred during the first 2–3 days. After the third day, the rate of loss of rumen fluid became slower as the rumen fluid volume became depleted. Heckler noted:

> *"These results support the view that in the sheep, the water balance of the body proper is kept virtually unaltered by fluid drawn from the alimentary tract during the first days of water deprivation. The animal does not become dehydrated, in the physiological sense, until this reserve is depleted. For this reason, the rumen may be regarded as a water 'store' in sheep."*[11]

[11] Hecker JF, Budtz-Olsen OE, Ostwald M, 1964, "The rumen as a water store in sheep", *Australian Journal of Agricultural Research*, Vol. 15, No 6, pp.961-8.

It is also to be noted that Drewe Ferguson and Andrew Fisher and their co-authors concluded that:

> *"The current maximum transport durations, which are based on the maximum period of water deprivation (48 h), within the welfare codes for cattle and sheep are acceptable on animal welfare grounds."*[12]

The Ferguson and Fisher comments were made with reference to land transport within Australia. As has been observed throughout this submission there are sound reasons to conclude that road and rail transport within Australia in many circumstances will be more stressful for animals than air transport.

Exporters currently effectively adopt a 48-hour maximum water deprivation time. Given that no issues have arisen from current practice, arguably additional regulation is unnecessary. On the other hand, arguments may exist for codifying an explicit requirement for a 48-hour water deprivation time for the entire journey (from the property where livestock were last spelled to the importing country).

[12] Ferguson D. and Fisher A., 2008, Animal Welfare Outcomes of Livestock Road Transport Practices, *Final Report for Projects AHW.055 and B.AHW.055*, Meat and Livestock Australia, May.

6 Inspection of livestock

There were difficulties in LiveCorp responding to the inspection questions posed by the Committee as it was not clear in each instance whether the inspection being suggested was by the exporter, the Government or some other responsible person. In general, the evidence is that current inspection procedures are sufficient to ensure good animal welfare outcomes.

6.1 Are the current requirements for inspection practical?

Section 6.22 of ASEL V2.3 requires that:

> *Livestock for export by air must be checked to ensure they remain fit to travel:*
>
> *a) immediately before departure;*
> *b) where feasible:*
> *(i) within 30–60 minutes of commencement of the journey;*
> *(ii) at least every 2–3 hours as conditions warrant; and*
> *c) immediately prior to departure after any transit stops.*

As emphasised by the Australian Livestock Exporters' Council (ALEC) in their Stage 1 ASEL submission, checking livestock as specified above is not standard operating practice, generally not possible given the constraints of aircraft operations, and not best animal welfare practice.

- Livestock in the lower holds, (forward and aft), of a passenger or freighter aircraft are not accessible during flight. They cannot be physically checked during flight.
- Livestock on the main deck of a freighter can be physically checked during flight, but this is generally not recommended for both human safety and animal welfare reasons.
- Entry to the main deck of a freighter to check livestock during flight is a safety risk if there is turbulence (no safety belt), loss of pressure (no oxygen, unless a portable oxygen bottle and mask are taken in), no buddy support and minimal lighting.
- Access to livestock in a netted crate is extremely limited.
- During flight, stress on the livestock is least if they are not disturbed but left quietly alone with the main deck lights turned off.

Livestock travelling in the lower hold of an aircraft should be checked as late as possible before the animals are loaded into the aircraft and as soon as possible after they are unloaded.

Livestock travelling on the main deck of a freighter aircraft should be checked when the crates are loaded onto the aircraft and monitored until the main door of the aircraft is closed. They should be checked again as soon as possible after the aircraft lands.

The temperature in each cargo hold can and should be monitored in the cockpit throughout the flight, with adjustments to the environmental control system as necessary to enhance animal comfort.

6.2 Are the facilities available at airports adequate to allow proper inspection?

Limited space is available at airports to provide the facilities typically used for inspecting livestock.

Exporter representatives thoroughly inspect animals at the departure airport, but this is typically undertaken by climbing into the truck crates during the unloading process.

Government inspection is typically undertaken as animals are unloaded from truck or, at a later stage, when animals are in the crates being loaded onto the aircraft.

It is the strong view of exporters involved in both the sea and air trade that more stringent criteria are applied to the acceptance / rejection of livestock freighted by air than by sea.

6.3 Should the standard be amended to require inspection at other points in the supply chain

The welfare record of Australian livestock transported by air results in the conclusion that current inspection procedures are adequate – no further addition to regulatory burden is required in the area of pre-export inspection.

Livestock are thoroughly inspected by an AAV in the pre-export authorised premises. They are also inspected daily by exporter representatives and on load out from these premises.

Inspection of livestock exported by air is much greater than occurs domestically for livestock transported by land (even though risks for the latter are greater and consignments might, in several cases, involve similar numbers of livestock).

6.4 Should the standards require a competent person to accompany all or some consignments?

A requirement that a competent person accompany air consignments, in the view of air exporters, is a step that could be taken to further mitigate welfare risks from air freight of livestock (small as these risks might be).

As has already been mentioned in this submission, it must be appreciated that a person accompanying the consignment will have limited access to animals during flight. Even on the main hold of a freighter aircraft, for a variety of reasons, access should be used sparingly. Moreover, no access is available for the lower hold or on passenger flights. But even with no access to the animals in some situations the person can monitor gauges and influence decisions being made during flight.

Importantly, the greatest risks to animal welfare when transport is by air is during loading, unloading, at transit stops or if an aircraft is diverted. A person accompanying the consignment can ensure that handling and other aspects of loading and unloading are completed appropriately and in ways that protect animal welfare. Similarly, during transit stops or if an aircraft is diverted, a person accompanying the consignment can ensure appropriate provisions are made for the animals.

Such a requirement, however, would be costly ($2,000 – 4,000 per consignment) and, therefore, should be introduced with some caution and after careful cost benefit analysis given the outcomes that are achieved currently by the air export industry.

In the first instance, it is suggested that consideration focus on a requirement for an exporter appointed attendant for freighter charters, where an accompanying person can make a larger contribution and where the scale of the shipment could support such a measure. If applied, the effectiveness of this measure could be monitored for these type of shipments and a decision then made on the continuation of the measure and / or whether to extend the provision to other shipments. It was also the view of air exporters expressed to LiveCorp that at this stage, because of access and the inability to monitor gauges etc., an accompanying person should not be considered at the present time for passenger aircraft consignments. Rather, it has been suggested that there would be greater support for requiring an exporter to develop a shipment management plan, with a

recommendation that appointed agent(s) be responsible for the transit check / care of the consignment on route if transit or transhipments occur.

7 Reporting requirements

7.1 Adjustment of reportable mortality rates

For consistency, it is proposed that the mortality rates for cattle, sheep and goats be adjusted to align with recommendations made by the TAC for sea transport – that is:

> *That the notifiable mortality level for sheep, goats, camelids and deer should be set at 1 per cent, or three animals, whichever is the greater.*
>
> *That the notifiable mortality level for cattle and buffalo should be set at 0.5 per cent, or three animals, whichever is the greater.*

For air transport it does not seem sensible that a threshold average daily mortality rate also apply (as was recommended by the Committee for sea transport).

Air shipments of species other than cattle, sheep and goats are at minimal levels. Over the last five years (2014 to 2018) there have been 170 deer shipped by air, 295 camels and 4,742 alpacas, compared to 47,750 cattle, 233,369 sheep and 262,484 goats. During the last five years not a single deer, camel or alpaca has died while being transported by air.

7.2 End of journey reporting requirements

The current end of journey report is comprehensive and includes information on:

- the flight (airline, aircraft type, flight number, departure airport / date, disptch airport / date, flight conditions, transit stops);
- conditions under which the animals were kept and handled (feed and water, temperature where the livestock were kept, ventilation, discharge operations); and
- welfare outcomes (health and welfare of livestock, number of livestock born during the journey, number of abortions, number of mortalities).

LiveCorp notes that this level of reporting is not replicated for land transport of livestock which, on available evidence, has greater risks comapred to export by air (because the level of reporting on land does not exist, it is impossible to accurately confirm comparative performance levels). LiveCorp suggests that this level of reporting has only arisen due to the association of export by air with export by sea. This is an important consideration when deciding whether reporting requirements should be further increased.

LiveCorp notes that further standardisation of reporting may be beneficial – but, at this stage, this should be left as a matter for industry research.

In this context, LiveCorp advises the Committee that in April this year the LEP contracted research to explore the potential application of sensors to measure and store data on environmental conditions during air transport of livestock by air, focussing initially on carbon dioxide and ammonia. It needs to be noted that this work has yet to commence and there are substantially heightened levels of sensitivity over the use of electronic sensors in aircraft as opposed to on ships (for a variety of reasons, but particularly safety and navigation).

7.3 Contingency planning to cover more issues?

As noted in Section 5.1 of this submission, it is the view of air exporters that contingency plans should cover unexpected delays during transit stops. Other than this, no further expansion of contingency plans is considered necessary.

7.4 Current definition of a notifiable incident

The current definition of a notifiable incident is extremely wide and ill-defined, leading to possible confusion of when an exporter should notify the department. Standard 6.27 requires the exporter to notify the department whenever a notifiable incident occurs:

> *If a notifiable incident occurs at any time during the export of livestock by air, a report must be provided to the relevant Australian Government agency as soon as possible after the notifiable incident occurs.*

The definition of a notifiable incident is provided under 6.5:

> *Notifiable incident with regard to export of livestock by air includes, but is not limited to:*
>
> *a) loss of aircraft;*
> *b) disablement of ventilation systems on an aircraft carrying livestock causing a serious adverse effect on animal health and welfare;*
> *c) rejection of livestock at an overseas airport;*
> *d) a mortality rate equal to or greater than the reportable level; or*
> *e) any other incident that has an adverse effect on animal health and welfare.*

Evidently, a notifiable incident is not merely confined to incidents which have an adverse impact on animal health and welfare, since it is explicitly stated that it is **not** limited to this. Furthermore, provision e) requires notification of any incident that has an adverse effect on animal health and welfare whether 'serious' or not. This provision, taken literally, would require notification of an animal knocking its leg on unloading since this may cause minor bruising.

The following points are made:

- Loss of an aircraft is redundant since this will presumably result in an "*adverse effect on animal health and welfare"* (not to mention the impact on human health and welfare).
- Disablement of ventilation systems is redundant as this will result in an "*adverse effect on animal health and welfare".*
- The definition of notifiable incident could then be restricted to *c)*, *d)* and, perhaps, *e)* (if this is considered necessary by the Government), but with the word "serious" being inserted before "adverse" in *e)*. It is accepted that this still results in some subjectivity (since "serious" is open to interpretation), but at least some guidance is being provided through the use of this word. Supporting the use of the word "serious", under ASEL for sea transport of livestock a notifiable incident is defined as "*an incident that has the potential to cause <u>serious</u> harm to the health and welfare of animals*" (our emphasis).

Again, LiveCorp points out the significant differences apparent in the regulatory approach to livestock transported by air versus on land. Three animals dying is rare in both air and road transport but happens occasionally (more commonly for road than for air). If three animals die during air transport a full-scale Federal Government investigation is triggered (depending on the size of the load). If three animals die during road transport no investigation routinely occurs. There is a substantial gap in the regulatory consistency on these matters.

8 General questions

8.1 Reference to international standards

As was pointed out in Chapter 2 of this submission, the IATA Live Animal Regulations undergo annual review. As a result, contingent on review outcomes, the IATA regulations, can be changed on an annual basis. The OIE standards also undergo review, but on an irregular basis.

A recurring theme in this submission is that there are benefits in aligning Australian standards with international standards. Given the certain lack of synchronicity between reviews of Australian and international standards, it is recommended that international standards, where applicable, be referenced, rather than reproduced, in the Australian standards.

8.2 Level of regulatory detail

The industry has consistently argued that an outcomes based regulatory approach is far superior to the input based approach adopted by the Committee in most of its recommendations on ASEL sea transport changes. For many years, economists have shown that efficient regulations involve the imposition of outcomes – they do not involve telling firms exactly what technologies and procedures to use. This is particularly relevant where an industry has shown itself capable of regulating itself and achieving good performance without intervention – such as is largely the case with live air exports.

An even more important regulatory principle, however, than specifying outcomes rather than inputs, is regulatory consistency across related areas. Given that the Committee, with one notable exception, has applied an input based regulatory approach to sea transport, we acknowledge that the same should apply to air transport. There are many reasons for consistency of approach including efficiencies for those operating across both modes and public confidence in the regulator (inconsistency erodes confidence particularly in the event of an incident).

The significantly better record of air, however, does suggest that caution should be followed in adding to the input based regulatory burden already in place. As will be evident in this submission, in very few areas does LiveCorp believe that regulatory adjustment is required.

Appendix A: LEP reports specifically addressing transport of livestock by air

Code	Project Title	Summary	Finish Date
W.LIV.0261	Best practice design of crates for livestock export by air	This report details the developed best practice document for stock crate design together with recommendations for a system of self-regulation of stock crate design and manufacture to ensure the quality of stock crates.	20/07/2009
W.LIV.0269	Upgrade of LATSA software	This report details the development of version 2 of the Livestock Air Transport Safety Assessment (LATSA) software that provides estimates of environmental hold conditions for a diverse range of livestock exported in freighter and passenger aircraft from Australia.	15/06/2012
W.LIV.0283	LATSA 2.1 Monitoring and validating model	The purpose of this project was to validate the predictions of the LATSA 2.0 software through the acquisition of real time data.	1/05/2013
W.LIV.0289	Within Crate Ventilation on board aircraft	This project was initiated to improve the data incorporated into the Live Air Transport Risk Assessment (LATSA) model. The aim of the project is to monitor and assess the ventilation conditions (Carbon dioxide, ammonia, temperature and relative humidity) within animal crates during air transport.	Ongoing
W.LIV.2003	Inflight Environmental Monitoring and Management	This project is looking to validate environmental measures and measurement opportunities on aircraft – including the use of sensors and network functions to provide for monitoring, alerts and responses.	Ongoing