



LIVESTOCK EXPRESS

REVIEW OF THE AUSTRALIAN STANDARDS FOR THE EXPORT OF LIVESTOCK

SUBMISSION STAGE 2



Submitted to : Technical Advisory Committee

Submitted by : Livestock Express B.V.

Date of submission : 27th of November 2018



1.	Company Introduction	3
2.	Scope of submission	3
3.	Onboard stocking densities	4
3.1.	Feedback	4
3.2.	Key data	4
3.3.	Vessel design	5
4.	Onboard personnel	7
4.1.	Feedback	7
5.	Heat Stress Risk Assessment	8
5.1.	Feedback	8
6.	Concluding Note	8

1. Company Introduction

Livestock Express is the world's largest independent seaborne livestock carrier with more than 50 years' experience on a worldwide basis and have been the main pioneer in the development of modern livestock carriers since the start of the commercial market. We have researched and brought to fruition numerous revolutionary measures. Fewer than 20 purpose-built livestock carriers have entered the worldwide fleet throughout history of which 13 were designed and built by Livestock Express. We pride ourselves for being industry leaders when it comes to the safe and humane carriage of livestock and this responsibility is reflected in the daily decisions in operating our vessels. Our philosophy and commitment is to provide sustainable and reliable livestock transportation services without compromises when it comes to safety and welfare of crew and livestock.

In 2016 we completed our newbuilding programme consisting of seven vessels delivered to the company in the period 2013-2016. Today we operate fully in-house (ownership, technical, operational, crewing, commercial) a young, well-maintained fleet of 14 livestock carriers in line with the most stringent international rules/regulations for the transportation of livestock. 13 of our livestock carriers are approved to trade from Australia and all these vessels are purpose-built.

In 2017 Livestock Express vessels transported 48% of all cattle exported from Australia.

2. Scope of submission

We want to thank the Technical Advisory Committee for the opportunity to submit our feedback on the draft report 'Review of the Australian Standards for the Export of Livestock'.

As an independent tonnage provider specialised in oceanic livestock transportation, we would like to provide feedback on the following specific recommendations

- **Onboard Stocking densities (Chapter 3.2 of draft report – starting page 28)**
- **Onboard personnel (Chapter 7 – starting page 53)**
- **Heat Stress Risk Assessment (Chapter 4 – starting page 35)**

3. Onboard stocking densities

3.1. Feedback

Livestock Express is of the opinion that the current on-board stocking densities for cattle serve the industry well based on the evidence and track-record. There is no scientific proof that gives a definitive answer with regards to minimum space allowance on board and therefore do not see a justification for a 7.9% increased space allocation (400kg cattle).

When it comes to animal welfare indicators it is clear that further (on-board) research is required before one is able to conclude that extra space (above and beyond current requirements) will further reduce cattle mortality during voyages and improve animal welfare. An increased space requirement not backed by clear evidence will penalise stakeholders by reducing margins and affect the commercial viability of the trade without an obvious reason/justification. This will clearly reduce the incentive for investors like ourselves to continue heavy investments in the assets/vessels serving the trade. These investments are required to maintain on the path of continuous improvement when it comes to animal welfare. Indeed, an increased stocking density may not result in animal welfare improvements (there is no scientific justification) whilst it is obvious that it will cut margins and reduce the incentive for vessel owners to invest.

Further supportive information is provided in the next 2 paragraphs.

3.2. Key data

Measures for animal welfare have not yet been clearly identified and described for on-farm assessment, nor adequately validated to determine thresholds to act as trigger for action. We believe new IT technology on-board modern livestock carriers creates the opportunity to investigate this depth, but research is required before conclusions can be drawn. Overall, there is consensus that for the time being mortality rate for the time being remains the most relevant evidence for the performance of the industry.

Looking at the track record (see table below obtained from DAWR published data) for cattle shipments it is obvious that the industry has been performing extremely well under the current stocking density requirements.

There were no reportable incidents for cattle mortalities to the 3 key markets (Indonesia, Vietnam, and China). If we would apply the new recommended mortality rates (draft report page 41) none of the consignments to Indonesia and China would be classified as a reportable incident. For Vietnam 3 out of 56 consignments would classify as reportable incident which should be investigated to establish the reason for an above average mortality rate.

When looking at previous published reportable incidents for cattle on the trade to Indonesia, Vietnam and China it is clear that issues were not related to the space allowance, but rather as a result of bloat, vessel design (flooring), weather conditions prior shipping or animal selection.

Cattle exported to Indonesia 2017	533,881
Average mortality Indonesia 2017	0.05%
Cattle exported to Vietnam 2017	164,973
Average mortality Vietnam 2017	0.16%
Cattle exported to China 2017	72,394
Average mortality China 2017	0.12%

3.3. Vessel design

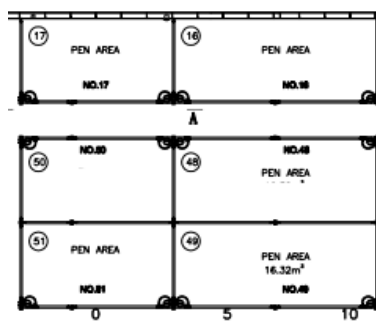
As mentioned in the introduction only 20 purpose-built livestock carriers have entered the worldwide fleet throughout history of which 13 were designed and built by Livestock Express. In 2016 we finalised an extensive new build-programme under which 7 new vessels were delivered that raised the bar when it comes to the safe and humane transportation of livestock. To continue investing in this industry a sustainable environment needs to be created that support vessel owners in taking investment risks and provides an incentive to look for better solutions.

We recommend the Technical Advisory Committee to take into account the individual specifications of vessels when it comes to stocking densities. More specifically, to look at the pen design and actual capabilities of the ventilation systems rather than the compliance with a minimum. This will provide an incentive to ship-owners to continue improvements rather than just meeting the minimum requirement.

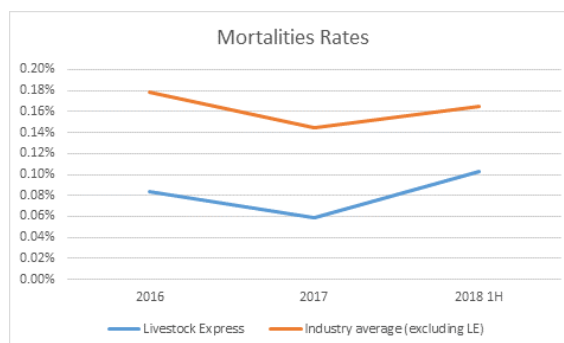
We would like to explain in more detail areas where ship-specifics can make a difference in our view.

Pen design & cargo holds

- Livestock Express uses longer rather than the typical square-sized pens to allow better access to water and fodder for cattle, especially shy cattle. Whilst this lay-out reduces the total loadable square metres on the vessel (as additional alleyways are required) it positively affects cattle outturn. It is our understanding that one of the reasons to recommend an increase of stocking densities is to provide better access to feed and water¹. This does however not take into account pen-design.



- Light-colour flooring/ducting creates a bright environment achieving a minimum of 40 lux versus AMSA requirement of 20 lux;
- We have decided to limit the noise levels in the cargo holds to 80 dB(A) which is mainly achieved by the centrifugal fans located outside the cargo-holds. Calculations have indicated that the noise level of 80dB(A) will only be reached in the direct environment of the exhaust grills (within +/- 2 meter). Once further from this location noise levels drop down to values between 76-78 dB(A);



¹ Page 31 of draft report refers to the k coefficient 0.027 "which allows for all animals to lie down simultaneously but may not provide adequate room for access to feed and water troughs"

Ventilation – air changes per hour and cross deck airflow

Our newest vessels are provided with 6 centrifugal supply and 6 centrifugal exhaust fans with ducts used to ensure even air distribution and flows. Frequency controlled fans allow 30 air-changes with an airflow of minimal 0.5m/sec (on/around 55 air-changes). Controlling air flows in enclosed environments like on our G-class vessels is easier when compared to open decks where prevailing weather conditions may negatively impact effectiveness of the ventilation system on specific locations. Whilst complying with AMSA requirements at low-speed setting the ventilation system has a high-speed operation mode that is sometimes used on voyages passing the equator when humidity levels increase. Also the majority of our fleet allow for a longitudinal distribution of air which allows for air blowing from the deckhead (ceiling) into each individual pen. This allows for a more even distribution of air in the holds and ensures that there is no blocking effect. Also having a fully enclosed cargo space allows for accurate air flow modelling and reality as external influences have no effect on the internal distribution and air flow.

Design and stability

The wave-piercing bow is designed to minimize the accelerations experienced by the vessel in bad weather offering more comfort for livestock and crew and at the same time enabling the ship to maintain high-speeds even in bad weather. The revolutionary design allowed Livestock Express to obtain a comfort-rating for these vessels; a notation to acknowledge the level of comfort on a ship (i.e. vibration/noise/motion) previously only used for yachts and cruise ships. These are the first and only livestock carriers with a comfort rating. Motion sensors allow real-time online monitoring of the pitching and rolling of the vessel with a pilot-system currently being tested on-board one of our G-class vessels.

Our fleet is also equipped with weather routing software so the vessels can avoid areas with high waves and bad weather as to ensure cattle travels better..



4. Onboard personnel

4.1. Feedback

Draft recommendation 42 proposes one competent stock handler per 3,000 cattle and buffalo, and/or one per 30,000 sheep. Based on cattle/buffalo consignment sizes we would like to see this amended to 'one stock handler per 4,000 cattle and buffalo'. The difference between the 2 numbers is fairly limited, but it makes a big difference when the total supply chain cost is considered. Based on 2017 data, 49 cattle consignments to Indonesia (out of a total of 105) were in the range of 3,000-4,000. The impact for consignments to Vietnam and China is smaller. Especially considering the excellent track record of the Indonesian trade it appears unneeded to have additional stock handlers on these voyages.

The majority of the Livestock Express crew have sailed on-board our Livestock vessels for many years and have extensive experience. At 31/Dec/2017 our top 4 officers had an average of 12.8 years with experience in the company. We operate a matrix to ensure that at any one time we do not have more than 30% of inexperienced crew on-board. Each Crew member is also provided with a livestock handling manual to ensure that OIE standards on the welfare are complied with.

5. Heat Stress Risk Assessment

5.1. Feedback

Draft recommendation 23 proposes a heat stress risk assessment for all voyages crossing the equator. The number of voyages affected are significant (Vietnam / China) whilst it is evident that the voyage outcomes to these particular markets are good (see also paragraph 3.2). The mortality incidents that did occur (i.e. on a number of recent slaughter cattle shipments to China) appear to be related to the process prior shipment rather than on-board conditions. This is further supported by the fact that other exporters shipped in the same period without mortality issues. In 2017 there were no mortality incidents (highest mortality level was 0.29%) on 19 China shipments that crossed the equator.

We also refer to paragraph 3.3 and in particular the ventilation systems where we believe there should be more consideration for individual ship capabilities. Our newest vessels have the ability to run ventilation systems in a high-power mode which has proven to be of assistance when humidity levels increase.

Overall, we believe there is no strong basis or evidence that justifies the introduction of an Heat Stress Risk Assessment for all voyages crossing the equator. Moreover, it is agreed by most parties that the Heat Stress Model requires a review/revision and we believe such review should first be completed before implementing the current model to trade-lanes which are operating successfully.

6. Concluding Note

As shipowner/operator we have built and provided the Australian live export industry with vessels that go above and beyond the current regulatory requirements. We are always open to discuss opportunities to further improve animal welfare in the supply chain.

