

Competencies, education and training in the international animal transportation industry – sea transport

Rosanne M. Ransley

Summary

The health and welfare of animals is a major consideration throughout Australia's livestock export chain and requires the employment of skilled personnel. LiveCorp commenced in 1998 with animal welfare as part of its mission and immediately began work on delivering a training course for cattle stockmen. This work expanded to include sheep and goat stockmen and stevedores. As the Australian live export industry has grown, so too has the inherent level of risk. After incidents on two high-profile voyages, the live export industry was reviewed and the industry standards rewritten in an effort to prevent further mishaps. The new standards make reference to competent animal handlers and direct the Australian Quarantine Inspection Service (AQIS) to accredit veterinarians who accompany consignments of livestock overseas. An online course for veterinarians delivered by Animal Health Australia ensued. The standards also require exporters for each voyage to the Middle East to prepare a consignment risk management plan utilising the heat stress model. Training in the use of the model and preparation of the plans was provided by LiveCorp. The stockman training courses delivered by LiveCorp have been a success and are in continued demand from both AQIS and the live export industry.

Keywords

Australia, Export, Livestock, Long distance, Sea, Stockman, Training, Transport, Welfare.

Competenza, formazione e addestramento nell'industria internazionale del trasporto animale – trasporto via mare

Riassunto

La sanità ed il benessere animale sono una priorità nella catena del trasporto di bestiame in Australia e richiede l'impiego di personale specializzato. L'impegno di LiveCorp per la tutela del benessere animale inizia nel 1998 e da allora prosegue il suo lavoro nell'istituzione di corsi di addestramento per guardiani di bovini. Il loro lavoro si è ampliato sino ad includere guardiani di pecore e capre e stivatori. Con l'incremento dell'esportazione di bestiame vivo da parte dei mercati australiani è aumentato anche il livello di rischio. Dopo alcuni incidenti, l'industria per l'esportazione di animali vivi è stata messa sotto esame e i relativi standard riscritti ad evitare e prevenire futuri ulteriori incidenti. I nuovi standard fanno riferimento alla competenza degli addetti alla cura degli animali e sono diretti anche alla Australian Quarantine Inspection Service (AQIS) per la certificazione dei veterinari addetti alle spedizioni di bestiame via mare. Ne è derivato un corso online per veterinari dell'Animal Health Australia. Gli standard impongono agli esportatori per ogni viaggio nel Middle East di predisporre un piano di gestione del rischio per la spedizione utilizzando il modello per lo stress da calore. La formazione per l'uso dei modelli e la preparazione dei piani viene fornito da LiveCorp. I corsi di formazione per i guardiani istituiti da LiveCorp

sono stati un successo e sono sempre molto richiesti sia dalla AQIS che dall'industria per il trasporto di animali vivi.

Parole chiave

Addestramento, Australia, Benessere, Bestiame, Esportazione, Lunga distanza, Mare, Stockman, Trasporto.

Background to the Australian live export industry

In 2007 the live export industry in Australia comprised 58 exporters who utilised 23 livestock vessels to carry 723 072 head of cattle, almost 3.8 million sheep and 89 933 goats on about 240 voyages from Australia to 17 countries around the world (2). With a population of 21 million people, Australia produces enough to feed over 100 million each year and demand for livestock is a significant proportion of this excess.

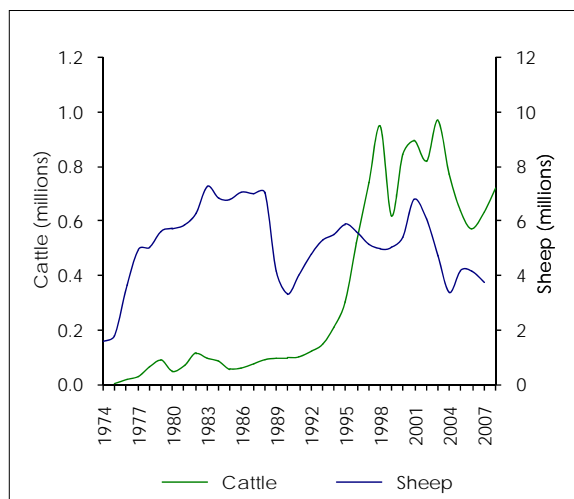
The insular geographic position of Australia has allowed the country to remain separate from many of the endemic diseases that have plagued most other continents. The country does not have rabies, bluetongue, foot and mouth disease, bovine spongiform encephalopathy, bovine tuberculosis or bovine brucellosis and as agriculture is a major industry, Australia aggressively defends its animal health status (4).

Reports of live export shipments date back to the mid 1800s but cattle exports did not grow appreciably until the early 1990s (T. Johnston, personal communication). Live cattle exports increased from less than 20 000 in 1975 to almost 1 million in 2002. Live sheep exports began to rise in the mid-1970s from an annual total of 1.5 million to 6.8 million in 2001/2002 (Fig. 1).

Expansion of trade

Many improvements to transportation vehicles were made in the 1980s, including the introduction of ships with pens planned specifically for sheep and better designed ventilation. The shipboard diet was changed

from hay to pelleted feed, delivered in raised troughs to eliminate contamination. The shipboard pelleted diet was modified to minimise the risk of acidosis (7). Specialised feedlots were introduced to assist the assembly and management of large numbers of livestock.



Source: Australian Bureau of Statistics (2)

Figure 1
Live cattle and sheep exports from Australia between 1974 and 2007

By 1997, the number of voyages had increased to over 600 per year but, as the level of experience had grown, so too had concern about animal welfare. Several voyages had disastrous outcomes and these focused attention on poor management and the occasional lack of exporter oversight on an expanding industry.

The industry faced certain closure by the government unless guarantees of better management and outcomes were forthcoming.

Need for better shipboard management

At the same time, the structure of the industry was changing and new leadership was emerging. In July 1998, the Australian Livestock Export Corporation (LiveCorp) came into being to implement the policies delivered by the Australian Livestock Exporters' Council (ALEC). LiveCorp is a company owned by exporter members of the industry. This was a

departure from an earlier structure under the umbrella of the Australian Meat and Livestock Corporation (AMLC).

LiveCorp provided the platform for industry independence which, in turn, enabled research for specific projects involving sea transport of livestock.

Training programme launched

The first programme launched after LiveCorp's inception was for better management of livestock at sea and was called the 'Shipboard management programme'. The aim was to ensure the availability of competent, qualified stockmen aboard long haul cattle shipments and the provision of independent monitoring and feedback on conditions during these voyages.

LiveCorp examined existing training courses in stockmanship to determine if the care of livestock at sea was covered at any level, tertiary or otherwise. Nothing suitable was found and it was decided that LiveCorp would produce its own course, specifically targeted to the needs of the industry.

Development of standards with stockman requirements

Initially, the training course was viewed with suspicion. Exporters were hesitant to endorse any programme that might increase their costs. The existing Australian livestock export standards (ALES) however, required that an accredited stockman accompany all consignments of cattle to long haul destinations and that the stockman remain with the stock until discharge at the final port of destination. Compliance with these directions by exporters was a condition of licence and this was an important aid to the eventual success of the training course.

Long haul destinations were those defined as lasting ten days or more. This meant that destinations in the Middle East, China, Japan and Mexico to the east were all considered long haul. Short haul voyages included shipments to South-East Asian countries and some Pacific islands.

Course construction

Course construction began with an extensive consultation with the Australian Quarantine Inspection Service (AQIS), the government body responsible for regulating the industry, a number of animal welfare organisations, industry bodies, such as the Cattle Council of Australia and the Sheepmeat Council of Australia, ALEC and many individual exporters. As a result of this consultation, a veterinarian was commissioned in late 1998, to draft a cattle stockman's handbook and a training course with the aim of lifting stockmanship to a minimum uniform standard.

The training programme covered the role of the stockman, pre-shipment procedures and factors, onboard management of the cattle, environmental factors, health problems and discharge (1).

One of the most important functions of an accredited stockman is the daily report on the health and welfare of the livestock in his care and the production of a complete end of voyage report after discharge has been completed. These reports were forwarded to the exporter who employed the stockman and they were then forwarded to AQIS and LiveCorp. In this way, LiveCorp could monitor the voyage for unwanted developments, provide veterinary advice from a distance if desired and later make available data for voyage analysis and continuous improvements.

LiveCorp advertised widely throughout the industry for stockmen to attend and the first training course for long haul cattle stockmen was held in Fremantle, Western Australia in November 1998.

The training course was conducted by veterinarians and experienced shipboard stockmen as well as by other interested parties, including feedlot operators, shipping companies and industry members. Entry to the course was and still is through a screening process to ensure applicants are experienced with animal handling and have the literacy and numeracy skills required for the role. The present course is open to both men and

women although there has always been a majority of men. The term ‘stockman’ applies to both sexes and is preferred to the more politically correct ‘stockperson’.

Course development

Four cattle stockmen courses were held in the next twelve months providing industry with a sufficient number of stockmen to allocate to all long haul cattle voyages. At each course, the volume of information that was returned from stockmen who had already sailed many voyages increased significantly and was included in subsequent editions of the stockman’s handbook.

Feedback was sought from industry on the content of the handbook and valuable comments were included from exporters, shipping companies, AQIS and animal welfare agencies.

By the end of 1999, the handbook had been expanded to include all the information a stockman might need to refer to while at sea. The stocking density charts for formulating load plans, taken from the Australian Maritime Safety Authority (AMSA) Marine Orders Part 43 (3), are provided, together with a recommended ship’s veterinary kit and ship’s equipment list. A complete list of veterinary drug names and usage including generic names and brand names are included and detailed instructions given for euthanasia.

The handbook includes the stockman’s personal check list and health issues, in addition to travel advice and details of the stockman insurance policy provided by LiveCorp to cover him for any contingency whilst away from home. The contact telephone numbers of all overseas embassies are included and updated regularly. Contact details for industry personnel working in the Middle East or in South-East Asia are provided for stockmen at all times as well.

There is information on shipboard protocols and terminology in the live export trade. The ranking of shipboard personnel, maritime terms and personal behaviour on board is included. The course also covers shipboard safety at sea and stockmen are encouraged to

get separate training in this plus first aid and the safe use of chemicals. LiveCorp subsidises further training in safety.

Special attention is given to the shipment of pregnant dairy animals or calves to long haul destinations. Pregnant animals have specific dietary needs and are given considerably more space for comfort. They are not shipped at certain times of the year to reduce the likelihood of heat stress.

Course expansion

Even before the commencement of the first training course for cattle stockman in November 1998, most exporters were already employing stockmen to accompany livestock on voyages. The mandatory use of accredited stockmen in long haul voyages made the system more transparent. The mortality rate of long haul cattle began to drop even further and industry decided of its own volition to extend the stockman programme to include training for sheep stockmen (Fig. 2).

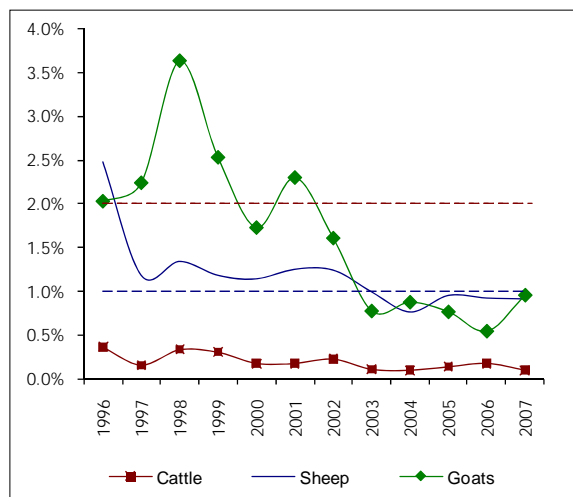


Figure 2
Livestock mortality rates since 1996

If the mortality rate on a shipment of sheep or goats rises beyond 2%, an investigation is held and future shipments are likely to be delayed. Similarly, with long haul voyages of cattle, if mortality exceeds 1% and with short haul cattle voyages mortality exceeds 0.5%, a full-scale investigation is conducted (3).

Ninety-nine percent of all sheep were exported to the Middle East, so almost all voyages transporting sheep were long haul. In early 2000, LiveCorp commissioned a team to draft a handbook for sheep and goat stockmen and develop a training course. The content included the preparation of sheep and goats, loading, onboard management, common health problems, responsible drug use, humane destruction, action in the event of a problem at sea, discharge, record keeping and reporting. Similar to the cattle stockman handbook, other details including personal check lists, emergency contacts, maps of the area and the stockman insurance policy were also listed.

Many stockmen decided to upgrade their accreditation to include both cattle and sheep. In this way, there would be no barrier to their continued employment should the rule to mandate a stockman on all voyages be issued. Indeed, by August 2001, the standards were amended to ensure that a LiveCorp accredited stockman who was not a member of the ship's crew, was present on all short and long haul voyages. The primary duty of the stockman is to protect the health and welfare of the livestock on board. He must accompany the consignment and remain with it until the ship has commenced discharging at the final port of discharge.

By this time, demand for stockman courses had increased and there was no problem filling them with suitable candidates. Interest in the courses extended to people from overseas with requests from Canada, Mexico and Argentina to send personnel or, conversely, allow the course material to be delivered in those countries.

Further expansion

It was also apparent that personnel other than stockmen were keen to attend the training course as they considered the information gained was relevant to their respective positions. Some livestock agents, suppliers, feedlot managers and stevedores attended the courses and industry began to realise the benefits that would accrue if similar training

were made available to other personnel in the supply chain.

In 2002, a course specific to the needs of stevedores was developed that comprised a theoretical section describing the way cattle move, followed by a practical demonstration of how to use this theory to facilitate efficient discharge from feedlot to truck and from truck to vessel. Approaches were made to the companies that employ stevedores at ports of loading and two courses were subsequently conducted. At other times, the notes were provided to the stevedore companies to conduct their own training.

More recently, LiveCorp has been approached to fund the implementation of a sheep stevedore training course. The course is under development and will be trialled at the Port of Fremantle in Western Australia as by far the majority of sheep depart Australia's shores at this port.

The current course – four stages of accreditation

There are four stages that lead to an applicant becoming a fully accredited stockman. The first requirement is provision of a curriculum vitae and a reference from either a licensed exporter or someone who can vouch for the candidate's animal handling skills. Once accepted onto the course, the level of input to discussion, questions and general contribution is measured as the second stage. The third stage is a written test that assesses the candidate's knowledge of subject plus his/her ability to calculate stocking density levels or fodder and water requirements.

On completion of the course, the stockman is regarded as probationary until he/she has completed two voyages with satisfactory outcomes as assessed by the exporter and the consultant veterinarian. This is the fourth stage and, once complete, the stockman is available to work for any licensed exporter.

To date, 283 cattle stockmen, 117 sheep stockmen and 25 stevedores have attended LiveCorp training courses. Sixteen stockman training courses have been held since 1998

plus several others with smaller numbers of personnel.

The Saudi sheep market

Exporting live sheep to Saudi Arabia has been a volatile activity. In 1990 exports were banned following repeated rejections of shipments ostensibly because of scabby mouth disease (7). In 1996, other countries which had now become major markets for Australian sheep also raised concerns about the high level of scabby mouth. Consequently, an extensive campaign was undertaken in Western Australia during 1997 and subsequent years to convince producers to vaccinate their sheep against scabby mouth. This has resulted in over 8 million doses of vaccine being used annually.

The success of the campaign has resulted in very low levels of scabby mouth and has also provided a basis to re-open discussions with Saudi Arabia regarding the resumption of direct exports of sheep. Trials began in 2000 and, when both countries agreed to a number of conditions, trade to Saudi Arabia rapidly expanded to become Australia's major sheep destination again. Live goat and cattle

shipments to Saudi Arabia followed in the wake of the successful sheep shipments (Fig. 3) (5).

The conditions of trade involved vaccinating the sheep twice for scabby mouth. An accredited vaccinator was assigned to perform the second inoculation within 56 days of export and validate that the first vaccination was administered within the timeframe. The sheep had their age determined by being 'mouthed' and only sheep with no more than four permanent teeth in wear were allowed to be exported. In addition, the sheep were required to be tagged separately, the tag indicating that the sheep had been mouthed and vaccinated by an accredited vaccinator. Tagging also allowed to trace back to the vaccinator should problems arise.

Training courses were conducted by the veterinarian responsible for coordinating the Saudi Live Export Programme (SLEP). The vaccinators had to demonstrate their scratching technique and pass a written test. Over 450 sheep vaccinators were trained and millions of sheep were prepared for market this way. The trade continued to prosper until August 2003 when the *MV Cormo Express* incident occurred. This was the second of two incidents that were to change the live export industry in significant ways (9).

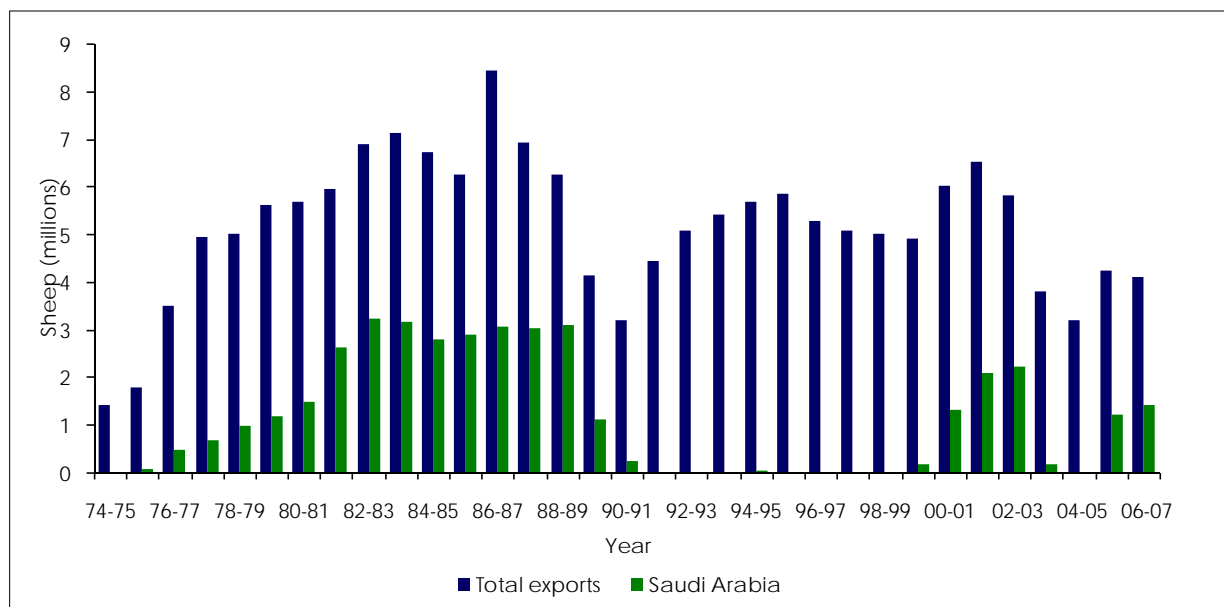


Figure 3 Proportion of live sheep exports to Saudi Arabia, 1974 to 2007 (2)

Two incidents

In July 2002, the *MV Becrux* on her maiden voyage experienced a high number of cattle mortalities due to heat stress (6) (Fig. 4). This occurred on a shipment that had been prepared as instructed by ALES, the current standards. It became apparent that the standards were not sufficiently prescriptive to prevent a major mortality incident.



Figure 4
The purpose-built *MV Becrux*

One response to this incident was the development of a computer-based model that quantified the risk of a heat stress incident. The model has been refined and is now a component of every voyage to the Middle East. Exporters must demonstrate that the risk of a heat stress incident is less than a 2% chance of 5% mortality.

Exporters required training on the use of the heat stress model (Fig. 5). and a number of courses were held to familiarise them with the details involved. Personnel from AQIS also required training on the use and interpretation of proposed shipments. Feedback on the programme from both parties helped remove any bugs from the system and led to new versions being developed to fine-tune the software until both exporter and AQIS were satisfied with the end product. The current version has been in operation for over two years.

The second incident which changed the direction of the live export industry was a routine voyage of the *MV Cormo Express* that departed from Fremantle, bound for Jeddah in Saudi Arabia with a cargo of 57 937 sheep in

August 2003 (Fig. 6). The vessel arrived in Jeddah without incident some 16 days later but its cargo of live sheep was rejected immediately. This action, and the events that followed until the sheep were successfully discharged in Eritrea as a gift to the latter government 80 days after loading (Figs 7 and 8), provoked a huge outcry from the media, community and animal welfare organisations.

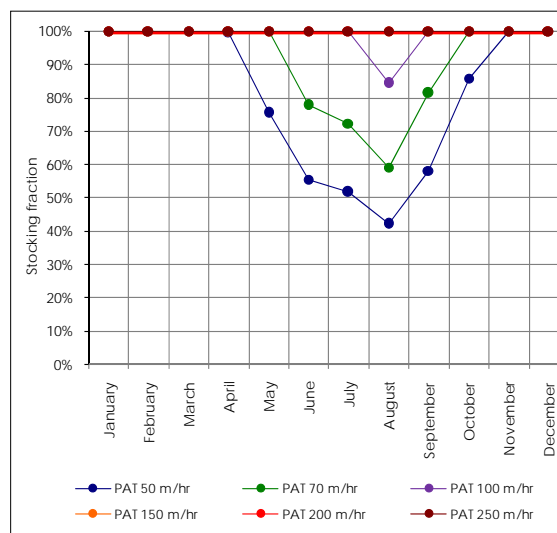


Figure 5
Allowable stocking fraction for 300 kg *Bos indicus*, fat score 3, acclimatised to 15°C (8)



Figure 6
The *MV Cormo Express*

The fact that the incident related to politics and did not involve any mismanagement by the shipping company or by the export company is usually lost. The consequence, however, was that trade with Saudi Arabia was again

suspended and not resumed until the Australian Government had successfully negotiated a memorandum of understanding with the Saudi Arabian Government to offload animals to a feedlot in the event of a similar rejection. In this way, the well-being of the animals would not be threatened during prolonged delays.



Figure 7
Unloading sheep at Eritrean feedlot



Figure 8
Sheep in the shade at feedlot in Eritrea

Resumption of trade in 2005 required the retraining of sheep vaccinators in accordance with the modified trade conditions. Some 280 sheep vaccinators have been retrained since July 2005; this has helped make the trade less tenuous in nature, thus preserving its important contribution to Australian agriculture.

The Keniry review

The voyage of the *MV Becrux* and the voyage of the *MV Cormo Express* a year later led to a complete review of Australia's livestock export industry under the chairmanship of John Keniry. Terms of reference were to examine the adequacy of welfare model codes of practice, the adequacy of current regulatory arrangements, the types of livestock suitable for export, the need for supervision of each export voyage and the specific factors that contributed to the excess mortalities on voyage 93 of the *MV Cormo Express*.

All but one of the committee's recommendations were accepted, including the requirement to have a new set of standards in place and finalised by the end of 2004. The strict time constraints stipulated by Keniry led to the formation of a number of technical working teams whose role it was to draft standards to apply to various parts of the export supply chain. These advisory working teams strongly supported and retained the stockman training that had been included in ALES and expanded the need for training to include veterinarians.

Training course for veterinarians

The new Australian standards were enforced on 1 January 2005 and were known as 'ASEL' (the Australian Standards for the Export of Livestock). ASEL required and made reference to competent animal handlers being present for animal selection, land transport, pre-export assembly, loading, shipboard and air freight. In the legislation that accompanies ASEL, reference is made to the need for accreditation of veterinarians. AQIS commissioned Animal Health Australia which manages national animal health programmes in Australia, to develop and deliver an online self-study training course that would adequately equip veterinarians with the necessary information to accompany and report on shipments of livestock by sea.

The aim of the course is to make veterinarians fully aware of the impact of the legislation governing the export of livestock, including

actions that should be taken, records that must be kept and the penalties involved for non-compliance. It also aims to heighten their awareness of the serious consequences to the entire industry should appropriate processes not be adhered to.

The course was two years in development due to the delay in the passage and endorsement of the underpinning regulations. Much of the course content was borrowed from the cattle and sheep stockman's handbooks. The AQIS accredited veterinarian (AAVet) course was launched online in November 2006. It provides a solid understanding of the legal requirements of AQIS and the role of the onboard veterinarian.

Participants of the AAVet course are required to score 100% in a quiz at the end of each module to demonstrate competency. The objective of the assessment is to ensure that AQIS can be assured that veterinarians have satisfactorily completed the course to a level that warrants certification but at the same time not be so onerous as to be a deterrent to potential participants. To date, 142 veterinarians have passed all modules of the course.

Further course expansion

The next step for LiveCorp training will be the production of video material that can be directed to a variety of target audiences. The onboard stockman and veterinarian are obviously English-speaking but they may well be the only personnel onboard who speak

English. It is not uncommon for the officers to be of one nationality while the crew who are responsible for feeding, watering and pen cleaning are of another nationality. It would be helpful if video material were supplied onboard ships for all to utilise.

The material would cover basic husbandry techniques for the safety of both animal and worker. Production of DVD material in different languages is now not a complicated matter and pictures often describe more fully than words what is required. Details on loading, identifying slippery decking, dark corners or jutting rails and the safe removal of these and other hazards might be the difference between a successful voyage outcome and one that is made more difficult from the start.

Training in the industry has been directed at cattle stockmen, sheep and goat stockmen, cattle and sheep stevedores, veterinarians and sheep vaccinators in Australia. Exporters also receive training to operate the heat stress model. Stockman training has also commenced in the Middle East at discharge ports in the Persian Gulf. LiveCorp has funded practical courses in animal handling and management, sometimes travelling between Middle Eastern ports, such as Muscat and Kuwait. At other times, the training takes place at the feedlots resulting in improved efficiency in throughput. Future targets include shipboard crew members and others yet to be identified in the live export supply chain.

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