The Sea-going Stockman - Livestock Carriers

By Geoff Walker

Often, when entering a port, the existence of a **"Livestock Carrier"** can be detected by the nose before that of the eyes, or indeed, before the ship is detected on Radar some may say. Especially in ports where there may be holding pens or yards adjacent to the livestock wharf, which, is frequently the case. Not only are the main considerations during the transport of livestock adequate ventilation; food and water important, but also the capacity of the handling facilities at both the export and import ports, to accommodate the live animals, efficiently, quickly, and humanely, causing the minimum of stress to the animals. Australia, as one of the largest exporters of Cattle, Sheep and Buffalo, on the hoof; its exporting ports fall into this pungent category.

Various types of animals have been transported by sea, but by far the most numerous are the domesticated breeds of sheep, cattle, and buffalo. During the latter half of the twentieth century, millions of sheep and many thousands of cattle were transported on livestock carriers. Other domesticated types of animals transported, although in fewer numbers, include horses, camels, deer, pigs, and goats. Livestock carriers are a key part of the multibillion-dollar live export industry, dominated by Australia, South America, and Europe.

It is a huge international trade, in 2017, almost 2 billion animals were exported in a trade worth $21bn, with the significant proportion travelling by sea. One of the busiest routes for the livestock trade is Australia and New Zealand, to the Middle East, where the demand is high as the middle east countries import most of their meat live, on the hoof, in order that they can comply with their religious beliefs for the slaughtering of beasts.



(Joy Loughnan)

The converted Livestock Carrier **"Ocean Shearer"** 50,947 GRT, 23,262 DWT, ex - **Deneb Prima**. Seen arriving at Portland, Victoria, Australia in 2011. She started life as a container ship the **Ming Universal**

built in 1980. At the time of the photograph, she was Panama flagged and more than 30 years of age. She was sent for demolition in 2012 and has since been replaced by a new vessel bearing the same name and registered in Singapore (see below). However, it is reported that in December 2021 arrangements were made to sell the vessel to Kuwait interests



(Unknown Copyright)

In broad terms, there are two main types of Livestock Carrier; those that have been purpose built for the trade and those that have been converted for the trade. In the case of the later, the tendency is for the tonnage to be much older than in the purpose-built group, and they are often equipped with pens to permit the carriage of larger numbers of animals. In fact, some livestock carriers are claimed to have the capacity to carry 120-130,000 sheep. This converted category is by far the larger in number, with the more modern purpose-built sector of ships being much fewer. It is alleged by some "Animal Activist Groups" that the live export trade carrying millions of sheep and cattle across the seas each year is beset by "old" and "substandard" ships that are a threat to animal welfare, but National authorities, which permit the export or import of live animals, regulate, and monitor the ships and the associated aspects of the trade very closely, to the highest international standards. Therefore, often such claims by some activists can be baseless and without foundation.

The two main sub-types of livestock carriers are:- **"Open Livestock Carriers"** and **"Closed Livestock Carriers**".

Open livestock carriers – where all or most, of the animal pens are installed on open decks. In theory, and in practice to a large degree, this provides continuous natural ventilation of the pen or onboard corralling areas and reduces reliance on forced ventilation systems. Ventilation is a key factor in the transport of live animals. When animal pens and corrals become poorly ventilated, oxygen depletes and causes a build-up of toxic gases from animal excrement, which can accumulate very quickly. Circumstances can vary according to ambient conditions, but a breakdown of ventilation systems, especially in tropical conditions, can result in the rapid asphyxiation of animals. In practice, natural ventilation alone isn't adequate for all situations.

One obvious limitation is in the event of following wind conditions at sea, particularly when the air moves at the same speed as the ship. Under such circumstances the natural air flow ventilating the animal pens or corrals can be insufficient or even cease to exist. Therefore, on most open livestock carriers there is also a back-up mechanical ventilation system installed in zones considered critical, along with appropriate supplementary equipment for use in case of emergencies. Maintaining positive stability can also be another sensitive issue associated with converted Open Pen livestock carriers, requiring close monitoring and careful management by the vessel's command.

Closed livestock carriers – These are ships in which most, if not all, of the animal's pens are confined within the holds and internal decks of the ship. This system offers a more controlled environment in which the animals and their feeding and watering arrangements are sheltered from adverse weather.

However, ventilation is almost entirely dependent on mechanical systems and construction rules require specific ventilation standards for all the internal animal spaces. These usually stipulate the minimum number of air changes per hour. Regulations also require an emergency system and auxiliary power arrangements which are in a machinery space separated from the main engine room. This is to ensure that adequate ventilation, lighting, watering, and feeding can be maintained for the animals in the event of fire or machinery failure, within main engine complex.

The sizes of Livestock carriers vary, according to market demands in different parts of the world at different times, which can be seasonal. Vessels engaged in the trade have ranged in size from 2,000 DWT to 30,000 DWT. The limiting factors on ship size are complex. Bigger vessels do generally achieve economies of scale in their operations but also require more extensive port facilities to handle the larger numbers of livestock likely to be loaded or discharged at one time. Livestock carriers, for example employed in the Australia to middle east trade are traditionally much larger than those used on the Australia to Asia trade.

Livestock carriers carry more crew members than conventional cargo or container ships of a similar size. Experienced stockmen make up an essential element of the larger crew. The total number of stockmen required, varies according to the number of animals being carried and, depends on components such as the arrangement of the livestock pens or corrals, and the extent of automated systems installed for feeding and watering. Furthermore, modern day livestock carriers carry qualified veterinarians to oversee the health and wellbeing of the livestock during transit and treat any outbreaks of disease amongst the animals. This is necessary since animals may be on board and in transit from anywhere between 5 days to 4 weeks or more.

During the last three decades of the twentieth century, there was a progressive trend towards large vessels carrying greater numbers of animals. Prior to that, a significant limiting factor had been freshwater storage capacity aboard ships. To maintain prime condition, average-sized cattle require at least forty liters of water per head, per day. Sheep require at least four liters per head, per day. Eventually, saltwater evaporators or reverse-osmosis systems led to livestock carriers with equipment capable of producing up to 600 tons of fresh water per day. Sheep and cattle also require fodder amounting to at least 2% of their body weight per day. Livestock carriers are required to carry sufficient feedstuffs for the maximum length of the voyage, as well as adequate reserves for emergency contingencies.

Medium-sized vessels with capacity for about 30,000 to 40,000 sheep (or 3000 to 4000 head of cattle) are the most common size of ship within the industry. However, during the last two decades of the twentieth century, there were a few sheep carriers which had capacity for 130,000 sheep. There were at least two other large livestock carriers which specialized in combined cargoes of cattle and sheep. One had capacity for about 7,000 cattle and 70,000 sheep and the other could carry 14,000 cattle and 20,000 sheep.

The space allocated to animals on livestock carriers is officially regulated according to their size and weight ranges. Larger and heavier animals are allocated proportionately more space per head, but despite worldwide national authorities imposing strict regulation and governance, a high number of livestock carriers slip through the safety net every year. A significant number of livestock-carrying ships are also sailing under flags of convenience, which adds to their high level of notoriety, when it comes to ship safety and the motivation of animal activists. However, it must be stated that there are some first-class Livestock carrier operators, who operate both under their national flags and FOC's, which have built themselves high reputations and excellence of operations, so not all should be tarred with the same tainted brush.

Out of the 129 ships listed as active, 52 are flying flags from countries currently blacklisted by the port inspection body the **Paris MOU**, which conducts many thousands of inspections on ships every year in ports around the world. In addition, 10 of the companies that own or manage converted vessels built before 1975 are listed as "low or very low-compliance" by the **European Maritime Shipping Agency**. Australia imposes one of the strictest Safety regimes which is enforced by their Port State Control division of **AMSA** (Australian Maritime Safety Authority), which focused a campaign during 1921 on Livestock vessels to ensure compliance with **Marine Order 43,** which is a document issued by AMSA (2018 and revised 2019) which includes regulations and requirements for the Livestock carriers operating in Australian waters. So, it cannot be argued that surveillance of these ships is lacking. **AMSA** is like the UK **MCA** (Maritime and Coastguard Agency), the rules are specific, to be complied with – no grey areas. Not only is this necessary from a ship safety and animal welfare aspect, but also because the sector is notoriously sensitive, and frequently in the public spotlight.



(Dave Leonard)

The "**MV Becrux"**, one of the larger purpose-built Livestock Carriers 29,770 GRT, 13,463 DWT. Built 2001 and placed under Panama flag. In 2009 changed name to **"Ocean Drover"** and reflagged Marshall Islands.



The **"Gulf Livestock 1"**, 6,370 GRT, 8,372 DWT, Panamanian-registered livestock carrier which sank 100 nautical miles west of Amami Ohshima Island in southwest Japan, on 2 September 2020 due to category 4 Typhoon, Maysak. A distress message was sent by the vessel prior to her loss.

The ship was originally constructed as a container ship (Maersk Waterford) and had several different owners before being converted to a Livestock Carrier in 2015. (South China Morning Post)

At the time of the foundering the vessel was carrying 5,800 cows and 43 crew members. She had departed from Napier, New Zealand on 14 August, and was scheduled to arrive in the Port of Jingtang, Tangshan, China on 3 September 2020. Sadly, only two survivors were ever found. According to one of the survivors, the ship experienced an engine issue and was struck by a huge rogue wave before it capsized and went missing. At the time of her loss the ship was owned by the UAE-based Gulf Navigation Holding shipping company.

All vessels of the "Open Pen" category are, more often than not, significantly older. Such vessels are mostly converted to livestock carriers from a parent hull after an earlier operating life of perhaps 15–20 years with its original built hull. The average life of an operating livestock carrier today is in the region of 37 years. As the vessel gets older, the fatigue, strength of the structure reduces, and enhances the chance of catastrophic failure. Moreover, the main engine, propulsion system and other machinery are seldom substantially upgraded during the conversion process, which can cause the strong possibility of frequent failure at sea. Unfortunately, this may have been a significant element contributing to the loss of Gulf Livestock 1.



A typical situation on board a Livestock Carrier – the discharge of animal effluent in the open ocean, a never-ending trail. Does this pose harmful factors towards the marine pollution of our oceans? However, shipmasters nowadays take a very cautious approach and comply precisely with Marpol Annex IV regulations which, state that the excrement can be discharged, at a distance of more than 12 nautical miles from the nearest land, and at a moderate rate when the ship is underway and proceeding at not less than four knots. (Dr. Lynn Simpson)

Some Livestock Carrier shipmasters even go to the extreme of only allowing overboard discharge of effluent during the hours of darkness, so that it cannot be detected by satellites, even though ships are fitted with sewage treatment plants under Marpol Annex IV regulations.

We will have to wait and see what the future holds for the live animal trade, particularly from Australia. The huge revenue earned by the live , on the hoof, animal export trade carries a lot of weight regarding future decision making but animal activists will no doubt continue to have their say in this commercially, and politically, sensitive world trade.



(Unknown copyright)



(Australian Broadcasting Corporation)

Left, sheep corralled on a Livestock Carrier, and right, empty animal pens on a modern livestock carrier.

Some of the larger Livestock Carriers are being consistently under-utilized in the current, very volatile, live animal export environment. Will recently proposed new Australian government regulations jeopardize the viability of this mega, live export industry, and regulated it out of existence?

These days, Australia remains one of the largest players in this live export trade, shipping nearly three million animals per year across the land, and sea to international markets. It's safe and sustainable trade has created the worldwide gold standard of the industry. To date, Live animal exports in Australia have continued to raise the levels on ethical and animal welfare standards, keeping both livestock and activists satisfied. Let us trust this will continue.

End

Bibliography:

Various sources on Livestock exports from Australia, the public domain from which additional information has been obtained, RSPCA, Dr. Lynn Simpson, Australian Broadcasting Corporation, Joy Loughnan, Dave Leonard, South China Morning Post, Australian Maritime Safety Agency (AMSA).

Disclaimer: Unless otherwise specified, images are from various unknown sources on the Public Domain and used under the Fair Use category for review, commentary, and educational purposes only. Photographs of unknown copyright – All reasonable attempts made to source copyright holders have proved fruitless. Owners of these images should make themselves known by contacting me via oceanicsolutions@gmail.com and I will be pleased to give due accreditation. No infringement of copyright is intended.