Ministry for Primary Industries
Manatū Ahu Matua

Guidance Material For the Transport of Cattle by Sea

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1. Introduction

Good management of animal welfare is fundamental to the successful transport of cattle by sea. High standards of welfare are required by the Animal Welfare Act 1999, are important for the cattle's well-being, and have direct economic benefits that ensure continued success in the international market.

The following physical, health, and behavioural needs of animals, as described in the Animal Welfare Act 1999, have been considered in developing this guidance material:

- Proper and sufficient food and water
- Adequate shelter
- Opportunity to display normal patterns of behaviour
- Physical handling in a manner which minimises the likelihood of unreasonable or unnecessary pain or distress
- Protection from, and rapid diagnosis of, any significant injury or disease

2. MPI's Legal Obligations when considering an application for an animal welfare export certificate (AWEC)

According to Section 43 of the Animal Welfare Act 1999, the Director-General of the Ministry for Primary Industries (MPI) must, in considering any application for an AWEC, have regard to such of the following matters as are relevant:

(a) the manner in which the welfare of any animals previously exported by the applicant was attended to on the journey between New Zealand and the country to which they were exported:

(b) the capability, skills, and experience of the applicant in relation to the export of animals:

(c) the species or type of animal and the number of animals proposed to be exported:

(d) the ages, and the physiological state, of the animals proposed to be exported:

(e) the mode of transport proposed and the facilities provided:

(f) the length and nature of the journey proposed:

(g) the susceptibility of the animal to harm and distress under the conditions of transport proposed:

(h) any New Zealand requirements in relation to the export of the animal:

(i) any requirements of the country into which the animal is being exported:

(j) any relevant international standard:

(k) the date on which it is intended that the animal leave New Zealand:

(l) any other matters that the Director-General considers relevant to the welfare of the animal.

Each application for an AWEC will be considered on a case by case basis.

This document contains guidance material relating to the export of live cattle. It has been jointly developed by the Livestock and Animal Germplasm Trade Association (LAGTA) and MPI, and includes relevant portions of, or cross references to, animal welfare, animal products, and maritime legislation. MPI is responsible for administration of the Animal Welfare Act 1999, the Animal Products Act 1999, and the Agricultural Compounds and Veterinary Medicines Act (1997).

Exporters that adhere to the guidance in this document will be well placed to assure MPI that controllable animal welfare risks have been managed to the extent required.

Similarly, MPI acknowledges that there are likely to be means of assuring particular risks to the welfare of exported cattle that are not covered in this guidance material. Any exporter using these means would be well advised to engage with MPI early in the process of preparing an export consignment, to ensure that there is agreement on how the assurances MPI requires prior to issuing an AWEC will be provided.

Lastly, all parties should be aware that there are certain factors, eg sudden change in the animal health status of New Zealand, sudden change in the importing country's trade policy, events of a Force Majeure nature, which can preclude the issuing of an Export Health Certificate or AWEC on the intended day of export, even if the guidance material is strictly adhered to. MPI will maintain communication with affected parties, in as timely a manner as possible, concerning events or factors of this nature.

This guidance material may be reviewed from time to time, and any amendments that are of a material nature will not be made until adequate consultation has been undertaken.

3. Definitions

The following terms used in this document have the following meanings:

Term	Meaning
Authorised Person	A veterinarian with delegated authority under the Animal Products Act 1999 to sign official assurances (Export Certificates) and to sign, under delegated authority from the Animal Welfare Act 1999, Animal Welfare Export Certificates (AWECs)
Class	A category of cattle differentiated by sex, age, whether they have been castrated, or another characteristic
MPI Director-General	The person appointed to that position within MPI
Director MNZ	The person appointed to the position of Director of Maritime New Zealand under section 439 of the Maritime Transport Act 1994
MPI	The Ministry for Primary Industries
MNZ	Maritime New Zealand
MNZ Approved Surveyor	A surveyor of ships appointed or recognised as such under Maritime Rule Part 46
Notifiable incident	An abnormal event that has the potential to cause serious harm to the health and welfare of the cattle
Recognised Person	A person recognised under section 103 of the Animal Products Act 1999 for the purpose of performing specified functions and/or activities. In the context of this standard, refers to an AsureQuality veterinarian managing the consignment during pre-export preparation
Stockperson	A person who has been approved by MPI (refer Appendix 1 for approval process). Approved stockpersons will be documented as part of the conditions that may be imposed, under section 45 of the Animal Welfare Act 1999, as part of the AWEC for the particular voyage.
Voyage	The period of time from departing the New Zealand port until unloading of the cattle at the port of arrival in the importing country.

4. Responsibilities

Many different people and groups are involved in the transport of cattle by sea. Each has specific responsibilities, which are outlined below.

MPI is responsible for:

- regulating the export process to ensure the risks are managed
- giving the exporter a prompt indication of whether an export is likely to proceed

- being satisfied that the cattle are fit for transport prior to loading, the importing country's requirements have been met, and the conditions of the AWEC have been met (Authorised Person)

MNZ is responsible for the inspection of ships to monitor their compliance with safety and environmental protection standards, including the safe carriage of cattle as cargo.

The **vessel owner** is responsible for ensuring that the vessel is appropriately designed, constructed, equipped, maintained and certified to carry cattle as cargo.

The **Master of the ship** (hereafter referred to as **"the Master"**) is responsible for:

- the vessel's loading configuration
- ensuring the safety of the vessel, crew and cargo during loading
- the tending, feeding and watering of the cattle at all times during the ship's voyage
- ensuring the crew of the vessel is of sufficient number, skill, and experience to be able to assist the stockperson(s) and/or veterinarian(s) during the voyage as required
- ensuring contingency plans are in place, as described under section 6.6 of this Standard

The **exporter** is responsible for:

- making a timely and complete application to MPI for an AWEC, at least 20 working days before the date the cattle are due to be exported; this is the minimum period required by the Animal Welfare Act 1999 and earlier applications are highly recommended
- obtaining an AWEC from MPI
- notifying the Recognised Person and Authorised Person of the intended export, and any issues requiring special consideration
- establishing a communication plan and ensuring that it is followed
- ensuring compliance with all AWEC conditions
- ensuring the facilities at the port are suitable so that the cattle can be inspected during loading
- ensuring contingency plans are in place, as described under Section 6.6 of this guidance material
- providing or obtaining declarations requested by the Recognised Person and Authorised Person
- ensuring stocking densities meet MPI's requirements
- ensuring there are adequate provisions on the vessel before departure (including feed, water and veterinary supplies) and that stockperson(s) and /or veterinarians have been engaged

- ensuring that the cattle meet the importing country(s) requirements, are loaded in accordance with the approved loading plan, and meet all other specifications of this guidance material
- ensuring that a voyage report is sent to MPI within 20 days of the completion of the voyage
- reporting notifiable incidents
- being actively engaged with MPI in the instance of consignment rejection
- ensuring the Master is fully aware of their responsibility for animal welfare during the voyage.

The **Recognised Person** is responsible for verifying the following animal welfare specifications during the pre-export preparation period:

- Yard and loading facilities
- Physical perimeter barriers/fencing
- Supply of fodder and water
- Stocking density
- Dietary pre-conditioning to the ship-board diet (if applicable)
- Age
- Pregnancy status
- Weight of the cattle at load out
- Fitness for travel

The **veterinarian(s) and/ or stockperson(s)** accompanying the shipment are responsible for the health and welfare of the cattle throughout the voyage, including unloading.

4.1. Responsibility for the Cattle during the Voyage

The Master assumes responsibility for the management and care of the cattle upon completion of their loading. It is strongly advised that the exporter provides details to the Master, veterinarian or stockperson of anything that may affect the future health and welfare of the cattle. This includes any notifiable incident that may have occurred during the pre-export preparation period and any relevant instructions for the care of the cattle during the voyage.

The responsibility of the Master ceases on completion of the cattle's disembarkation at the port of the importing country.

5. Communication Plan

Guiding principle:

Good communication between all parties is an important aspect of managing risk.

It is strongly advised that a documented communication plan, involving all responsible parties, be established as early as possible and before the cattle enter pre-export preparation, or at least 30 days prior to the scheduled export (whichever is longer). The plan should cover communication before, during and after the export.

6. Planning the Consignment

Guiding principle:

Proper planning of the consignment is essential to ensure the safety of the ship, crew and cattle being transported. There are several legislative requirements, under different legislation, to be met.

For consignments under 200 head of cattle, MPI recommends that a formal consignment plan be developed. For consignments over 200 head of cattle, the consignment plan in the Official Assurance Programme (OAP), which can be found at http://www.biosecurity.govt.nz/regs/exports/animals/oap applies.

MPI recommends that the following requirements be met before the cattle can be loaded. These requirements apply to all ships involved in the transport of cattle from New Zealand at all stages of the transport process.

6.1. Notice of Intention to Load Cattle

A notice of intention to load cattle must, as per clause 24C.18 1(b) of the Maritime Rules Part 24 C 1998, be made to a MNZ Approved Surveyor no less than 48 hours before the ship is available for inspection.

This notice should include:

- the name of the ship;
- the date the ship will be available for inspection;
- the port where the ship will be available for inspection;
- a description of the cattle to be carried, including the number and estimated average weight of the cattle by class; and
- details of the proposed voyage, including estimated passage time, intermediate stop-over ports for replenishing fodder and freshwater and/or discharging cattle (if any), and the final destination.

6.2. Record of Equipment and Arrangements

MPI recommends that all ships intending to transport cattle from New Zealand have a *Record of Equipment and Arrangements,* based on the format found in the Australian Maritime Safety Authority's Marine Orders Part 43, which can be found at: http://www.amsa.gov.au/vessels/standards-regulations/marine-orders/

The Master should produce the *Record of Equipment and Arrangements,* and any supporting information, at the request of an MNZ Approved Surveyor or Authorised Person.

6.3. Loading Plan

A loading plan provides specific details about the loading and location of the cattle on board the ship.

A loading plan should take into account:

- consideration of ship stability during the voyage;
- the positioning and management of the cattle during their time on the ship; and
- the fodder loading plan for the voyage, including a statement from the feed manufacturer regarding feed quality and quantity (refer Section 9.8).

6.4. Permit for the Carriage of Livestock

Section 36 of the Maritime Transport Act 1994 and Maritime Rule Part 24C require the Master of a ship to carry livestock in accordance with the terms of a permit issued to the Master by the MNZ Approved Surveyor at the time of export, stating:

- the type and number of livestock that may be carried;
- matters that the surveyor considers necessary to ensure the safety of the ship;
- matters that the surveyor considers necessary to ensure the welfare of the livestock; and
- requirements for inspection of the ship considered necessary for ensuring compliance with the permit.

6.5. Animal Welfare Export Certificates (AWECs)

Section 40 of the Animal Welfare Act 1999 states that is an offence to export animals from New Zealand other than under the authority, and in accordance with the conditions, of an AWEC. Application forms can be obtained from MPI at: http://www.biosecurity.govt.nz/regs/animal-welfare/stds/awecs

Please note that where a condition of an AWEC, placed on a specific consignment, provides for an action which is contrary or different to the ***Guidance Material for the Transport of Cattle by Sea***, the AWEC condition prevails.

Also note that the export of cattle for slaughter is prohibited by the Customs Export Prohibition (Livestock for Slaughter) Order 2010 unless consent has been provided by the MPI Director-General.

Exporters should contact MPI as early in the export planning process as possible to discuss their proposed voyage and prospective application. Exporters may seek, at

this pre-application stage, an indication of any concerns the MPI Director-General could have about the proposed voyage, and ascertain what additional information the MPI Director-General may require as part of the application process.

Section 42 (2)(d) of the Animal Welfare Act requires, at a minimum, that applications for an AWEC are made at least 20 working days before the date the cattle are scheduled to be exported. MPI strongly encourages exporters to apply earlier if at all possible.

6.6. Contingency Planning

Contingency planning is important to ensure that adverse events are dealt with quickly, practically, and effectively by the appropriate people. It is strongly advised that Contingency plans accompany the Consignment Plan, and be made available for inspection, when requested.

The **exporter** is responsible for preparing contingency plans describing the actions that the relevant parties will take in the event of:

- cattle being unable to be loaded at the port of departure from New Zealand,
- outbreak of a disease, which has been specified as one for which New Zealand country freedom is required by the importing country, during the voyage,
- the stockperson requiring veterinary advice when a veterinarian is not on board the ship, or
- other notifiable incidents.

The **Master** is responsible for preparing contingency plans describing the actions that the relevant parties will take in the event of:

- mechanical breakdown of the vessel during the journey
- feed or water shortage or contamination during the voyage
- illness or incapacity of the veterinarian or stockperson accompanying the ship
- extreme weather conditions during the voyage
- delay in unloading the cattle at the overseas port of arrival

7. Pre-Export Period

7.1 Loading and Unloading Facilities

Loading and unloading facilities should be constructed, maintained and operated, to allow the steady and safe transfer of cattle. As a minimum, It is strongly advised that they:

- be fitted with side panels of sufficient strength and height to prevent the escape of cattle;

- be fitted with a walking surface with cleats suitable for cattle;
- be fitted with a closing arrangement at the point of entry to the yards or truck; and
- be free of any protrusions.

It is strongly advised that the cattle are moved with the least amount of force possible.

During loading and unloading, it is strongly advised that cattle are moved at a steady rate to minimise unnecessary stress, and supervised at all times.

If electric prods are used, it is strongly advised that they are not applied for more than one second at a time, and abandoned if the animal does not move after four or five attempts. It is strongly advised that electric prods are not applied to the head or genital regions of the cattle at any time. Other means of moving cattle, including the use of flags and backing boards, is to be encouraged instead of goads.

7.2 Physical Perimeter Barriers/Fencing/Yards

It is strongly advised that fittings and internal surfaces including fences, chutes, restraint facilities, gateways, and holding yards are constructed, and maintained, to minimise the possibility of distress or injury to the cattle.

7.3 Shelter

It is strongly advised that all cattle are provided with the means to minimise the effects of adverse weather eg windbreaks, shade, shelter, water sprinklers.

7.4 Water

It is strongly advised that:

- all cattle have access to a daily supply of drinking water sufficient for their needs, is palatable, and that is not harmful to their health.
- the water delivery system is reliable, and maintained, to meet daily demand.
- In the event of a water delivery system failure, remedial action should be taken to ensure that daily water requirements are met.

7.5 Fodder

It is strongly advised that:

- The exporter/operator has a documented feed plan for the Pre-Export period.
- The fodder is fit for purpose as described in the ACVM (Exemptions and Prohibited Substances) Regulations 2011.
- All cattle receive sufficient quantities of food and nutrients to meet their physiological requirements, and minimise metabolic and nutritional disorders.
- Automated feeding systems are monitored, and any deficiencies corrected, at least once every 24 hours.
- Feeding is managed so that any injury and/or conditions resulting in ill health, as a consequence of the fodder or feeding methods, are minimised.

7.6. Feed Pre-Conditioning

Nutritional management in the pre-export preparation period that results in cattle that are adapted to the shipboard diet is strongly recommended.

7.7. Drainage and Effluent Removal

It is strongly advised that the surfaces the cattle rest upon, while in the pre-export phase, have sufficient drainage, and are kept in a sufficiently clean state, that the cattle can lie on them comfortably.

7.8. Stocking Density

It is strongly advised that the stocking density during the pre-export preparation ensures that the cattle can:

- lie down freely without risk of injury
- move freely around the paddock, and escape any bullying by dominant cattle
- easily access feed and water.

7.9. Export of Pregnant Cattle

Cows should be shipped as early in pregnancy as possible. It is highly unlikely that heifers more than six months pregnant at the date of shipment would be granted an AWEC. Confirmation of the stage of pregnancy should be determined as early as possible (refer Appendix 2).

The Recognised Person will assess pregnant cattle's eligibility for export by:

a) the use of owner declarations stating the first date of mating and/or

b) the results of a pregnancy test, supplied by a veterinarian or appropriately qualified paraprofessional on practice letterhead, stating the date and method of testing, and the stage of pregnancy for each animal at the time of testing.

7.10. De-horning

It is strongly recommended that cattle with horns are not shipped. Where de-horning occurs prior to export, de-horning wounds should be given at least three weeks to heal before export. Pain relief must be used when dehorning any cattle over nine months of age[1]. If cattle with horns are to be exported, the ends of the horns should be removed, using appropriate pain relief[2], so that the resulting stub is no more than 7.5cm in length. Cattle with bleeding horns should not be transported.

7.11 Selection of Cattle for Export

Guiding Principle

Selection of appropriately prepared cattle that are fit to travel is critical to achieving successful health and welfare outcomes during export. (Section 43 (d) of the Animal Welfare Act 1999 refers).

7.11.1 Final Inspection during Pre-Export Preparation

Before being transported to the embarkation port, the cattle must be inspected on-farm by a Recognised Person, in accordance with the time frame indicated in the relevant country of destination export certificate.

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[1] Refer to the New Zealand Code of Welfare for Painful Husbandry Procedures: http://www.biosecurity.govt.nz/animal-welfare/codes/painful-husbandry/index.htm

[2] Refer to the New Zealand Code of Welfare for Painful Husbandry Procedures: http://www.biosecurity.govt.nz/animal-welfare/codes/painful-husbandry/index.htm

Determining fitness for travel is a matter of professional judgement by the Recognised Person. Table 1 below lists examples of factors which, if one or more apply, could result in rejection of that animal for transport. Table 1 is not comprehensive, as there could be other factors also leading to a decision to reject that individual for transport to the port.

Table 1: Rejection criteria for cattle on-farm or at the embarkation port	
Category	**Rejection Criteria**
General requirements	• Fail to meet requirements specified in Export Certificate or AWEC • Pregnancy status not confirmed as appropriate for journey • Lactating cattle • Unweaned calves
Systemic conditions	• Emaciated or over fat (refer Appendix 3 and 4) • Anorexia (inappetence) • Uncoordinated, collapsed, weak • Unwell, lethargic, dehydrated • Ill-thrift
Musculoskeletal system	• Lameness
Gastrointestinal system	• Dysentery or profuse diarrhoea • Bloat
Nervous system	• Abnormal neurological signs indicative of disease or injury (e.g. head tilt, circling, lack of coordination) • Abnormal or aggressive behaviour/animal is intractable or violent
External/skin	• Generalised skin abnormality or pathology • Severe and/or generalised facial eczema • Visible external parasites • Significant lacerations • Discharging wounds or abscesses • Abdominal hernia • Blood/discharge from reproductive tract (vulva/prepuce)
Head	• Blindness in one or both eyes • Cancer eye • Serious eye injury • Excessive salivation • Purulent nasal discharge • Respiratory distress • Bleeding horn stumps • Woody tongue or lumpy jaw

Other	• Mobs with unusual mortalities during pre-export preparation • Any other evidence of clinical disease • Large disparities in size, age, or other physical or physiological incompatibilities (redraft animals in this case)

7.11.2 Age

The approximate ages of the cattle can be determined, at the discretion of the Recognised Person, by any of the following means:

- Exporter, farmer, or stock agent declaration
- Examination of the teeth
- Lifetime ID tags
- MINDA database

7.11.3 Weight

It is recommended that the weight of the cattle should be measured as close as possible to the cattle leaving the pre-export facilities in order to assist with the development of the loading plan for the ship. The means of determining the weight is at the discretion of the Recognised Person.

8. Transport to the Port

Cattle transported within New Zealand are to be moved in accordance with the ***Animal Welfare (Transport within New Zealand) Code of Welfare 2011***: http://www.biosecurity.govt.nz/animal-welfare/codes/transport-within-nz

9. Condition of the Ship and Onboard Facilities

Guiding principle

The ship and the facilities for managing the cattle is well maintained and fit for purpose.

MPI will take into account information from previous voyage reports when determining the adequacy of a ship.

Evidence that a ship is well maintained and fit for purpose can be demonstrated by the Master providing copies of the following documents to the Authorised Person:

- a valid ship Classification Certificate, and evidence that the surveys are up to date; **and**
- a valid Cargo Ship Safety Construction Certificate, and evidence that the surveys are up to date; **or**
- a current Australian Certificate for the Carriage of Livestock (ACCL), issued by the Australian Maritime Safety Authority (AMSA) under Marine Orders Part 43 (for ships permanently equipped for the carriage of livestock), or an equivalent level of functionality for the livestock support systems acceptable to MPI.

It is strongly advised that all fittings, fixtures and objects on a ship that may come into contact with the cattle be manufactured, assembled and positioned to avoid causing injuries to the cattle, and should be visibly clean.

It is recommended that records, for disinfection and disinsection since last carrying livestock, are available for review by the Authorised Person.

It is strongly advised that back-up systems be in place to ensure that the welfare of the cattle can be maintained in the event of disruption to, or breakdown of, primary feeding, watering, and ventilation systems.

The effective maintenance of the power, propulsion and ventilation systems of a ship rests with the owner and Master of the ship.

9.1. Inspection

Before the cattle may be loaded on the ship, the MNZ Approved Surveyor and the Authorised Person must be satisfied that the requirements of Maritime New Zealand, and the conditions of the AWEC, have been met. The MNZ Approved Surveyor will then issue a *Permit for the Carriage of Livestock* to the Master.

If the Master loads the ship before receiving the *Permit for the Carriage of Livestock*, he/she will be committing an offence under Maritime Rule Part 24C.18 1(a).

The owner, Master, or agent of the ship must notify the MNZ Approved Surveyor at least six hours before loading is expected to be completed. After loading, the MNZ Approved Surveyor and the Authorised Person will undertake a final inspection of the ship. If they are satisfied that the cattle have been loaded in accordance with the requirements of MNZ, the conditions of the AWEC, and the permit, the MNZ Approved Surveyor will notify the Master in writing that the cattle have been satisfactorily loaded.

An AWEC will be issued by the Authorised Person upon verification that all the appropriate supporting documentation has been provided, and all relevant conditions of the AWEC have been met.

The Director MNZ or MPI Director-General may, on the advice of an MNZ Approved Surveyor or Authorised Person, require the Master of a ship to take additional precautions to ensure the safety of the crew or the cattle.

Where additional precautions of a physical nature are required, e.g. fixtures, fittings, appliances, etc., the Director MNZ or MPI Director-General may allow equivalent devices to be used, as long as they are shown to be as effective as those originally required.

The Master must not take the ship to sea until any additional requirements have been met, the final inspection has been completed, and the AWEC has been issued.

9.2. Ventilation

It is essential to the welfare of the cattle that uniform, and adequate, air movement is maintained on all areas of the ship where the cattle are located, at all times, including loading and unloading. This includes provision of enough free air space above the heads of the cattle to allow 'foul' air to move towards the exhaust exits. It is strongly advised that ammonia levels do not exceed 25 parts per million (ppm). As a guide, a level of 10-15 ppm of ammonia in the air can be detected by smell, and an ammonia level over 25 ppm will cause eye and nasal irritation in humans.

The MNZ Approved Surveyor, or Authorised Person, will require the mechanical ventilation to be tested prior to loading the ship, to ensure that the appropriate ventilation requirements are met.

9.3. Power Sources

It is strongly advised that a ship has primary, and secondary, sources of power.

It is recommended that power sources are maintained in good working order at all times and these may be required, by the Authorised Person or Marine Surveyor, to be test-run prior to the loading of the cattle.

9.4. Drainage

It is strongly advised that cattle areas are effectively drained.

9.5. Design and Arrangement of Cattle Pens

It is strongly advised that the construction and design of all equipment take into account that ship motion, and the effects of the wind and sea, can impose considerable strain on cattle containers, fittings and equipment. As a minimum requirement, cattle pens and any adjacent passageways must comply with the

construction details specified in the current requirements of the Maritime Rule Part 24C.

9.6. Container Design and Positioning on the Ship

Modified shipping containers are sometimes used to transport small numbers of cattle onboard general purpose cargo ships. The following requirements apply to the design of containers modified for livestock transport.

Containers must, under Maritime Rules Part 24C, Appendix 2, 2.8:

- not be used for the carriage of cattle unless it is approved by a MNZ Approved Surveyor with the agreement of the Authorised Person.
- be positioned on the ship in a manner that protects the cattle from the elements/machinery exhaust, and
- ensures ability to inspect/feed/water the cattle, and
- be secured to prevent movement, and
- adequately lit and ventilated

In addition, it is strongly advised that modified containers meet the following criteria:

- Non-slip flooring
- External doors that cannot be accidentally opened
- Ability to contain waste material
- No protrusions or openings that could potentially cause injury
- Displays a clear sign on the outer surface indicating that it:
  A) contains live animals;
  B) be handled with care; and
  C) be kept in an upright position at all times.
- Partitions in containers, used to separate large cattle, have a quick release mechanism, to enable the partition to be dismantled in the event of the animal becoming trapped
- Hospital space for a minimum of one animal

9.7. Stocking Density

It is strongly advised that the breed, conformation, sex, and pregnancy status be taken into account when determining stocking density. These factors may indicate that more space per animal is required than is usually the case.

It is strongly advised that one percent of the total pen space be made available for use as a hospital pen, and utilized in a manner which isolates, as appropriate, sick/injured animals from the balance of the consignment.

Maritime Rules Part 24 C, Appendix 2, 2.2(3) requires that a record of the aggregating totals of the weight, and number of cattle, is made available to the MNZ Approved Surveyor and Authorised Person during the loading of the ship, however it would expedite the loading process if this information is made available prior to the start of loading. The method used to determine the average weight of the cattle in the consignment is at the discretion of the Authorised Person.

It is strongly advised that the distribution of cattle in a ship be such that:

- they are grouped according to weight, class, and gender
- aggressive animals are segregated
- the floor area per animal is not less than the minimum permissible, as stated in Table 2 below
- cattle are separated from other species by a barrier that meets the satisfaction of the Authorised Person.

Table 2 presents the **minimum** space allowances required by cattle for export. Factors that may require animals to be given more space include: age, sex, breed, pregnancy status, voyage length and the likely environmental conditions that will be encountered (e.g. temperature and humidity).

Table 2: Minimum pen area per head for cattle exported by sea

Live weight (kg)	Pen area (m^2) per head
100	0.77
150	0.84
200	0.90
250	1.04
300	1.18
350	1.31
400	1.45
450	1.62
500	1.79
550	1.90
600	2

[Intermediate values can be extrapolated in a linear manner]

Important Note:

1. All animals must be able to lie down and be able to rise without risk of injury.
2. Animals in excess of 600kg may need extra space and additional bedding.
3. Trough spaces should be evaluated on a per head basis before finalising the number of animals to be housed in each pen.

9.8. Fodder

It is strongly advised that food (fodder) be provided:

- at a rate no less than what is required for body maintenance for the expected period of the voyage;
- to provide a reserve of a further 12.5 per cent of the total; and
- that is fit for purpose as described in the ACVM (Exemptions and Prohibited Substances) Regulations 2011.

The Authorised Person, prior to signing an AWEC, must be satisfied that the calculations used to arrive at the amount of fodder being loaded are correct. To support these calculations it is strongly advised that a copy of the feed testing laboratory's certificate, confirming the metabolisable energy (ME) values of the feed, is presented, by the exporter or exporter's agent, to the Authorised Person.

Feed from a previous voyage, that is suitable for cattle consumption, may remain in a feed storage tank provided that:

- each tank is completely emptied at least once every 90 days; and
- all feed that is no longer suitable for cattle consumption is emptied in its entirety before new feed is added; and
- accurate records are maintained of the emptying of feed storage tanks and are made available for inspection upon request.

Feed management should ensure that all the cattle in each pen have access to food at all times during feeding.

It is strongly advised that feeding be done in a manner that prevents serious digestive disturbance, e.g. acidosis, prolonged scouring, or bloat. Where cattle are fed only pellets, particular care must be paid to pellet composition.

Cattle feed requirements should be calculated on the basis of daily requirements for metabolisable energy (ME), as shown in Appendix 5.

9.9. Water

It is strongly advised that adequate amounts of clean, palatable, and safe water be available at all times, to all cattle, throughout the voyage.

In order to accomplish this it is strongly advised that the ship's watering system has sufficient storage and generation capacity to provide water for the duration of the voyage plus 10%, based on the minimum requirements presented in Table 3.

It is also strongly advised that the following monitoring principles are employed to ensure that the vessel's freshwater production equipment is performing adequately:

- The freshwater production facilities ideally should have an alarm system, connected to a central monitoring panel, which is activated upon failure of the facilities.

- Testing at the point of exit from the freshwater production facilities should be supplemented by random checks of all water troughs throughout the voyage.

- Testing can be performed in any number of ways, eg placing a handful of water from the trough to the lips, or swishing it around in the mouth, or using a portable gauge that measures salt content.

- The pattern of testing should ensure that all troughs are tested regularly.

- The testing, and results, should be documented.

Table 3: Minimum daily water requirements according to cattle weight

Live weight (kg)	**Litres per day (per head)**
Up to 200	20
200 – 300	25
300 – 400	30
Above 400	35

In assessing the quantity of water the ship can provide, allowance may be made for the amount of fresh water that can be generated by the ship's equipment during the voyage, subject to the agreement of the MNZ Approved Surveyor.

It is recommended that automatic fresh water systems, if used, should be constructed to minimise spillage, and prevent the return of water from a receptacle to the freshwater tank.

9.10. Flooring and Bedding Materials

It is recommended that the cattle are provided with suitable flooring and bedding material, to ensure that underfoot conditions are relatively dry and the surface is non-slip. Flooring and bedding materials should be changed or replenished as often as required to maintain these functions.

10. Loading Arrangements and Facilities

Guiding principle

The cattle are loaded in a manner that prevents injury and minimises stress.

It is strongly advised that loading arrangements take into consideration the following aspects:

- port facilities, including lighting, shelter, and facilities for containment of the cattle
- contingency plans covering interruptions to loading

Loading and unloading facilities should be designed, constructed, and maintained to allow the steady and safe transfer of cattle. As a minimum, It is strongly advised that they :

- be fitted with side panels of sufficient strength and height to prevent the escape of cattle;
- be fitted with a walking surface with cleats suitable for cattle;
- be fitted with a closing arrangement at the point of entry to the ship; and
- be free of any protrusions.

It is strongly advised that loading and unloading facilities are designed to prevent gaps occurring between the ship and the means of access during loading and unloading.

The height of the tide at the berth should be considered when planning loading or unloading, as this will affect the gradient of the ramp. The dock surface should be level with the floor of the vehicle that the animals are being unloaded from.

Where cattle are lifted on to and off the vessel, e.g. in modified shipping containers, a suitably constructed, strong and secure loading box should be used. It is strongly advised that the crane driver is made aware that they are lifting live cargo and should ensure that the operation is undertaken steadily, and without unnecessary swaying or jolting.

It is recommended that the cattle are loaded according to the Loading Plan referred to in section 6.3.

10.1. Stockmanship during Loading and Unloading

Guiding principle

Cattle are moved with the least amount of force possible.

A stockperson with good knowledge of the behaviour of the cattle he/she is working with can significantly reduce the amount of handling needed to move, load, or unload the cattle.

Knowledge of flight zones, the visual capabilities of cattle, their social behaviour and probable responses to stimuli can all help to reduce the amount of stress experienced by the cattle when loading and unloading.

When cattle are presented for loading, it is strongly advised that they be segregated according to size, sex, age, breed or any other characteristic which will encourage adaptation and normal behaviour.

During loading and unloading, it is strongly advised that the cattle are moved at a steady rate to minimise unnecessary stress, and supervised at all times.

If electric prods are used, it is strongly advised that they are not applied for more than one second at a time, and abandoned if the animal does not move after four or five attempts. It is strongly advised that electric prods are not applied to the head or genital regions of an animal at any time. Other means of moving the cattle, including the use of flags and backing boards, is to be encouraged instead of goads.

10.2. Standard Operating Procedures for the Ship's Master

Prior to departure, it is strongly advised that the Exporter provide the Master, or their representative, with clear, written instructions or standard operating procedures that cover:

- the quantity and type of feed to be provided, and the frequency of feeding required for each class of cattle during the voyage;
- pen cleaning requirements;
- procedures for contacting the Exporter and MPI in the event of an animal health or welfare emergency (It is strongly advised that the Master is able to contact the Exporter, or their authorised representative, by phone 24 hours a day, 7 days a week); and
- reporting procedures during and on completion of the voyage.

11. Management of the Cattle during the Voyage

Guiding principle

The health and welfare of the cattle is maintained throughout the sea voyage.

11.1 Veterinarian presence

The decision whether a veterinarian is required to accompany the cattle will be discussed between MPI and the Exporter prior to the voyage. In the case of a proposed export to an established market by an Exporter with a good track record of successful voyages, it is unlikely MPI would require a veterinarian on the ship. However, it is strongly advised that the stockperson(s) accompanying the cattle have continual ability to communicate with a veterinarian who has practical experience in cattle.

The Director-General may make it a condition of an AWEC that a veterinarian accompanies the cattle if there has been a notifiable incident(s) on previous voyage(s), the port of destination is a new market, or if there are any other factors in the proposed voyage that would warrant a veterinary presence.

11.2 Number of Stockpersons

It is strongly advised that one stockperson be provided for every 1500 cattle. If a veterinarian is accompanying the shipment he/she may also act as a stockperson.

11.3 Inspection of the Cattle

It is strongly advised that the cattle are inspected at least four times a day, at evenly spaced intervals. The frequency of inspection should increase in proportion to environmental demands such as extreme heat and humidity. Appropriate remedial action must be taken if the cattle are showing signs of distress.

12. Veterinary Equipment

Guiding principle

The ship is equipped with enough veterinary equipment for the number of cattle being carried.

It is strongly advised that veterinary equipment (including non-expired medicines, instruments and stores), suitable for the number of cattle being carried, is provided. An Authorised Person will approve this equipment as part of the initial inspection of the ship. Refer to Appendix 6 for a description of the recommended equipment.

13. Humane Destruction

Guiding principle

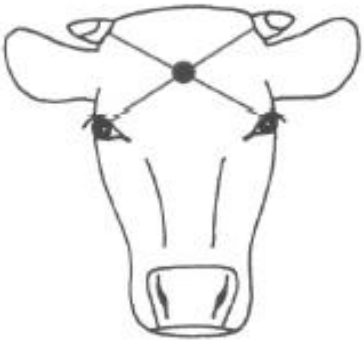
Where required, euthanasia of an animal is carried out promptly and humanely.

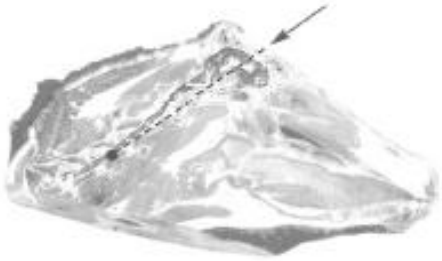
It is strongly advised that a minimum of two humane killing devices, approved by the Authorised Person and upon visual inspection appearing to be in good working order, are provided. It is strongly advised that the stockperson is proficient in their use, and he/she may be required to demonstrate this to the Authorised Person (knowledge of the safe operation of the device and the correct target site on the animal would be enough to demonstrate proficiency).

Where it is necessary to destroy an animal to prevent further suffering, euthanasia must be carried out promptly and humanely, by either the stockperson or veterinarian, using one of the acceptable methods listed below:

- Use of a captive bolt pistol with a **penetrating** bolt, placed in direct contact with the head, followed by an immediate bleed out (thoracic or neck stick). The captive bolt pistol, calibre and cartridge size must be appropriate for the animal according to the manufacturer's recommendations.
- Use of a .22 calibre rifle or larger, with a 'magnum' bullet; discharged between 5cm and 25cm from the head.
- A lethal dose of general anaesthetic, administered by a veterinarian.

The two pictures below indicate the correct target for the humane destruction of cattle by captive bolt pistol or .22 calibre rifle, which is the intersection of two imaginary lines, running from the rear of the eyes to the opposite horn buds.





13.1. Disposal of Dead Cattle

Cattle that die before loading, or that are dead on arrival at the port of embarkation, must be removed from the port and disposed of in compliance with local health and environmental requirements. The decision as to whether a post-mortem is required rests with the Authorised Person.

No carcass may be disposed of unless the animal has been confirmed as dead by the stockperson or a veterinarian.

In the event of cattle dying at sea, it is strongly advised that ear tags be removed before disposal of the carcass.

It is strongly advised that carcasses are not disposed of within 12 nautical miles of the coastline of any country. It is further advised that carcasses being disposed of between 12 and 100 nautical miles of land have been comminuted, ground up, or have had their thoracic and abdominal cavities cut open.

14. Voyage Reporting

Guiding principle

Timely and accurate reporting throughout, and upon completion of, the voyage is an essential component of ensuring continuous improvement in the export of cattle by sea.

It is strongly advised that a voyage report (see Appendix 7) be completed and signed by the exporter, based on the reports from the ship veterinarian or stockperson. It is the exporter's responsibility to provide the report to MPI, preferably within 20 working days of the completion of the journey. As the information contained in this report is essential for the consideration of a subsequent AWEC application from that exporter, MPI will not be in a position to complete the assessment of any further applications until it has received the report from the previous journey.

14.1. Notifiable Incidents

A notifiable incident includes, but is not limited to:

- a shipboard mortality rate equal to or greater than 0.5%
- rejection of the consignment at the overseas port of arrival
- suspicion or diagnosis of a contagious disease in a consignment of cattle
- marine casualty of the vessel
- breakdown of the vessel, requiring assistance for return to port
- an act of terrorism or piracy

It is strongly advised that the exporter report all notifiable incidents to MPI as soon as practical after the incident has been resolved, or within a maximum of 24 hours after its occurrence.

Appendix 1: Process for Approving a Stockperson

1. Stockperson signs a Declaration of Competency, detailing their experience and qualifications, including training and competency in the use of veterinary medicines, and restricted veterinary medicines.
2. Registered exporter endorses the Declaration of Competency.
3. MPI approves the endorsement.
4. MPI holds a database of approved stockpersons. Any further queries will be directed back to the exporter.

Declaration of Competency for Stockperson

Accompanying Livestock Export Shipments

Exporter

Name:

Contact details:

Applicant

Name:

Contact details:

Qualifications:

Previous Voyages:

(Details of last five export voyages, including date of export, ports exported from and to, length of voyage, species and number of animals exported, any health and injury problems encountered and mortality rates)

Applicant Declaration

I confirm that the above information is true and correct.

Signature:

Name: Date:

Exporter Declaration

I endorse the applicant as having the necessary competency to be declared an approved stockperson to accompany shipments of cattle for export.

Signature:

Name: Date:

MPI Declaration

I confirm that MPI accepts the recommendation of the exporter for this stockperson to be approved to accompany shipments of cattle for export.

Signature:

Name: Date:

Appendix 2: Key Signs Used in Cattle Pregnancy Diagnosis and Ageing of the Foetus

Days Pregnant	Foetal weight	F. length Crown rump.	Positive signs of pregnancy	Comments
30	0.5 g	1 cm	Slip membranes >28-30 days * Amniotic vesicle > 30 days	Enlargement toward tip of pregnant horn, fluctuant feel
60	15 g	7 cm (mouse)	Slip membranes	Pregnant horn obviously enlarged (2x normal). Non pregnant horn beginning to increase, foetus rarely felt
90	250 g	15 cm (rat)	Slip membranes placentome (5 cent piece) Foetus (small rat)	Pregnant horn size small football (beware bladder). Enlargement middle uterine artery (m.u.a). to pregnant horn.
120	1 kg	30 cm (small cat)	placentome (walnut) Foetus (small cat)	Fremitus in enlarged (m.u.a).
150	3 kg	40 cm (large cat)	placentome (bantam's egg) Foetus (large cat)	Foetus often not felt, fremitus m.u.a. (Hair on eyes and lips of foetus)
180	6 kg	50 cm	placentome (hen's egg) Foetus (Fox terrier)	Foetus often not felt, fremitus m.u.a. (Hair on tip of tail and around horn pits)
210	12 kg	65 cm	placentome Foetus	Foetus usually palpable, fremitus becoming "continuous" (Fine hair on body, hair on legs)
240	20 kg	75 cm	placentome Foetus	Foetus usually palpable, assess size from head and legs (Hair coat complete, incisors beginning to erupt)
270	30 kg	85 cm	placentome Foetus	Foetus may be up in pelvic inlet (Incisor teeth erupted)

Appendix 3: Body Condition Scoring for Dairy Cattle

A good source of information about body condition scoring for dairy cattle is the 2008 DairyNZ publication "*Condition Scoring Made Easy*", by Kevin Macdonald and John Roche.

The table below provides a guide on how to assess body condition score. Body condition scoring of dairy cows is based on palpation, as looks alone can be deceiving. At lower condition scores the weight of assessment is more on the back bone, ribs and short ribs (loin), pin bones and tail-head, while at higher scores the assessment also includes the rump and thigh (see figure below). Body condition score ranges from 1 to 10, with 1 being extremely thin and 10 being extremely obese. In assessing body condition score, each point should be assessed individually and then an average score arrived at because different breeds carry their weight on different parts of the body.

When assessing the various parts, consider:

- Back bone – is it flat or a ridge, and are the joints easily seen or felt between?
- Ribs and short ribs (loin) – can you see and feel them easily?
- Hip bones – are they flat or pointed?
- Pin bones – are they rounded or pointed and have a tap-like appearance?
- Rump area – is it flat?
- Thigh area – is it depressed or rounded?

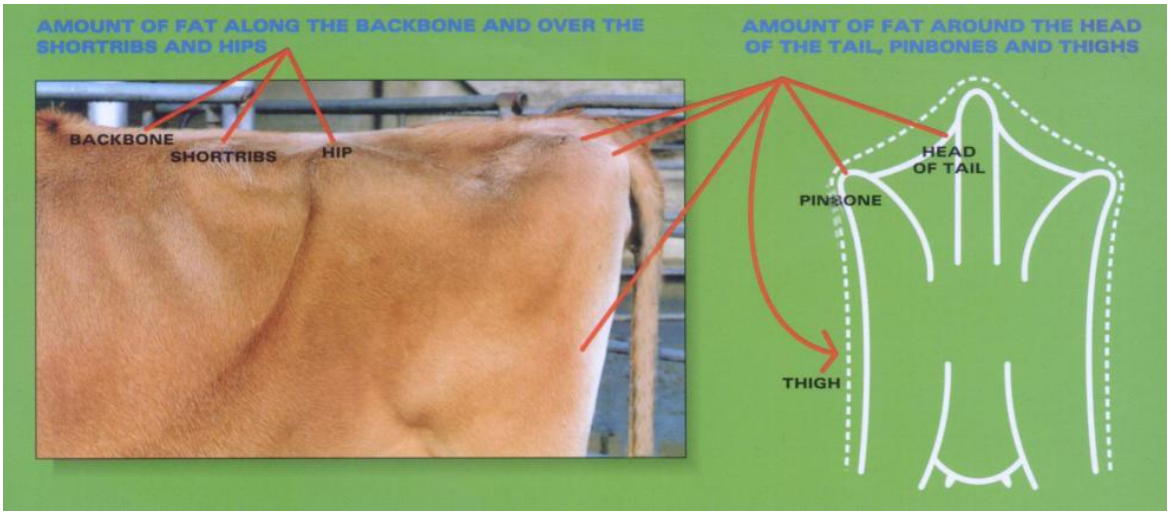
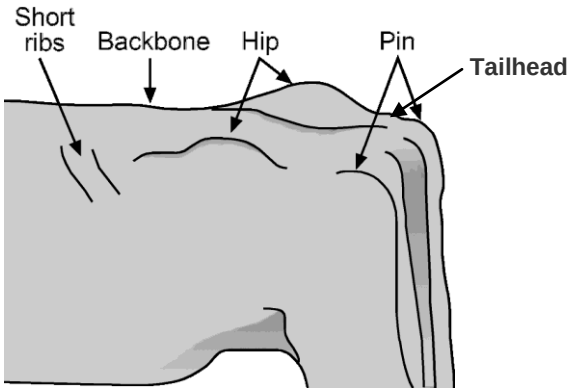


Table of characteristics of points at each score (items in bold are the critical assessment points for each score)

BCS 1		**No internal or external fat reserves**
BCS 2	**Back bone**	**Notches distinct, easy to count**
(emaciated)	**Ribs**	**All easily counted from a distance**
	Short ribs	Very sharp edges
	Pins	**Three-pronged tap formation very evident**
	Hip bones	Deep depressions on side of hooks
	Tail-head	**Very prominent, angular and sunken**
	Rump	Severe depression
BCS 3	**Back bone**	**Prominent and notches distinct**
	Ribs	**Easily seen, no discernable cover**
	Short ribs	Deep indentation and sharp ends
	Pins	**Three-prongs discernible but no sharp edges**
		Sharp edges; depression on sides appearing
	Hip bones	**Prominent with a deep V shape**
	Tail-head	Slight depression
	Rump	Indented – no visible fat
	Thigh	
BCS 4	**Back bone**	**Slightly risen and tops of notches visible**
	Ribs	**Rounded but easily felt**
	Short ribs	Rounded at ends
	Pins	**Triangle shape with no sharp edges**
	Hip bones	Depressions in side appearing, no sharp edges
		Sunken with shallow "U" shape
	Tail-head	Slight depression
	Rump	Slight depression
	Thigh	
BCS 5	**Back bone**	**Smooth**
	Ribs	**Rounded to touch and not individually visible**
		Rounded edges
	Short ribs	**Slightly rounded**
	Pins	Rounded
	Hip bones	**Even cover, no sharp edges**
	Tail-head	Flat even cover
	Rump	Smooth and flat
	Thigh	
BCS 6	Back bone	Rounded across the loin
	Ribs	Rounded and fat cover felt
	Short ribs	Smooth edge to ends and starting to round
	Tail-head	**Fat cover appearing**
	Pins	**Fat cover bulging**
	Rump	**Flat**
	Thigh	**Starting to round**
BCS 7	Back bone	Flattened out across loin
	Tail-head	**Fat folds appearing either side**
	Pins	**Not discernable**
	Hip bones	Well rounded and buried in fat
	Rump	**Well rounded**
	Thigh	**Rounded outwards with rolls of fat**
BCS 8	Ribs	Very flat
	Short ribs	Flat without indentation
	Hip bones	Flat edges to hooks
	Pins	**Large folds of fat on either side**
	Thigh	**Rolls of fat easily felt**
BCS 9	Back bone	Buried in fat
(obese)	**Rump**	**Fat protruding**
BCS 10		**Excessive internal and external fat**

Appendix 4: Body Condition Scoring for Beef Cattle

The table below provides a guide on how to assess body condition score in beef cows. The condition scoring system is simply based on the amount of fat cover over an animal's bones. Note the focus on observing the rear half of the animal. Further information on body condition scoring is available from Beef + Lamb NZ.



BCS	Description
0	Emaciated, and on the point of death
1	Very thin with no fat detectable over spine, hips, or ribs. Tailhead and ribs project prominently.
2	Borderline condition, ribs still identifiable but not as sharp to the touch. The spine is still prominent but feels round rather than sharp. Some fat over the hip bones and tailhead.
3	Good overall appearance. Firm pressure must be applied to feel the spine. Fat cover over the ribs feels spongy and areas on either side of the tailhead have fat cover.
4	Good, beef cattle appears fleshy and carries some fat. Spongy fat cover over the ribs and around the tailhead. Fat patches are becoming obvious.
5	Fat. Spine almost impossible to palpate. Large fat deposits over ribs, around tailhead, and below vulva. Bone structure no longer visible.

Appendix 5: Recommended daily energy requirements for maintenance and growth

Live weight (kg)	Live weight gain (kg/day)			
		0	0.25	0.5
100	ME	19	24	32
200	ME	30	38	49
300	ME	40	50	64
400	ME	48	61	77
500	ME	57	70	89

Metabolisable energy (ME) is expressed as megajoules of energy (MJ).

Important Notes:

1. This table represents requirements for in-calf export heifers of breeds of a medium mature size. For entire males, increase energy values by 15%. Crude protein should form 10% of the dry matter (DM) of the complete ration and should be increased to 12% for young growing animals.

2. The average ME values of various feeds are given below:
   - lucerne hay = 9 MJ/kg DM
   - meadow hay = 8 MJ/kg DM
   - oaten hay = 7 MJ/kg DM
   - wheat straw = 6.1 MJ/kg DM
   - maize = 12.4 MJ/kg DM etc
   - concentrate cattle pellets = 10 MJ/kg DM

The following table shows average DM intakes for maintenance and growth for cattle of differing live weights. Shipboard diets can be designed initially on DM intakes. This can then be checked to ensure it meets the ME requirements indicated in the previous table.

Average daily DM requirements in kilograms (based on fodder rations equal to 10MJME/kg DM)

Liveweight (kg)	Liveweight gain kg/day		
	0	0.25	0.5
	Kilograms DM Required/Day		
100	1.9	2.4	3.2
200	3.0	3.8	4.9
300	4.0	5.0	6.4
400	4.8	6.1	7.7
500	5.7	7.0	8.9

Appendix 6: Recommended Restraint and Veterinary Equipment to be included on the Ship

Restraint equipment

- Adjustable head bale (1 per ship)
- Rope halter (1 per ship)
- Nose grip pliers (1 pair per ship)

Drugs and equipment (per 1000 cattle)

- Injectable antibiotics
  - 30 doses penicillin (short acting)
  - 30 doses oxytetracycline (long acting) or equivalent

- Antibiotic(s) appropriate for the treatment of bovine respiratory disease[3]
  - 30 doses

- Anti-inflammatory drugs
  - 30 doses Dexadreson or equivalent
  - 30 doses flunixin or equivalent

- Topical wound treatment sufficient to treat 20 minor wounds

- An effective pink eye treatment system 1 box of 20 tubes

- Sedative - 10 doses Xylazine

- Thermometers – 3 per ship

- Needles (18 G, 1½") or equivalent (1 box of 100)

- Hypodermic syringes (40 × 20 mL, 10 × 5 mL)

- Postmortem kit - 2 postmortem knives plus steel and sharpening stone per ship

- Remotely triggered syringe device - 1 syringe plus spare parts per ship, plus 10 spare needles per 1000 animals

- Captive-bolt gun - 2 per ship, plus 40 cartridges per 1000 animals

- Mastitis treatment and obstetrical supplies for pregnant cows

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[3] The following antibiotics can be used for the treatment of bovine respiratory disease, subject to availability in New Zealand: Florfenicol, Tilmicosin, Tulathromycin, Cetiofur, Tylosin

Note: Any Restricted Veterinary Medicines, such as Xylazine, antibiotics, anti-inflammatory drugs must be authorised for sale and use by a New Zealand registered veterinarian in accordance with the requirements of the Agricultural Compounds and Veterinary Medicines (ACVM) Act 1997, and the New Zealand Veterinary Council's Code of Professional Conduct.

Appendix 7: Voyage Report Template

Reporting Form		
Exporter		
Date of Shipment		
Name of Vessel		
Port of departure		
Date of departure		
Port and Country of Arrival		
Date of arrival		
Voyage Veterinarian		
Voyage Stockman		
Total number of cattle		
Classes and numbers:		Weight
Voyage mortality (by class):		
Total number:		
Loading Densities (i.e. space per animal)':		
Feed loaded:		
No. bales of hay		
Amount of pellets		

Please provide a full description under the following headings:

Feeding

Include:
- number of times fed per day
- description of how carried out
- feed quality
- were there sufficient supplies?

Watering

Include:
- description of how supplied
- any problems with supply
- total amount taken on board
- total amount produced during voyage
- amount remaining at completion of voyage

Drainage and the Manure Pad

Include:
- nature of bedding
- description of pad condition throughout voyage

Ventilation

Include:
- description of ventilation system
- adequacy of system e.g. airflow, ability to remove heat and gases

Temperature

Include:
- record of daily minimum and maximum temperatures
- description of management techniques available and/or used throughout voyage

Weather Conditions

Include:
- description of weather patterns throughout voyage

Autopsy Summary

Include:

- numbers and dates of deaths, and class of animal
- cause of death

Animal health issues

Include:
- abortions and or birth of viable calves
- fractures
- leg and feet problems
- conjunctivitis
- respiratory problems
- heat stress
- other health issues

The report needs to include the date of diagnosis, prevalence, treatment(s), and results.

Arrival and Discharge

Include:
- time and date of arrival
- any problems associated with disembarkation

Future Improvements that could be made to:
- This guidance material
- Facilities on board the ship

References

Animal Welfare Act 1999, New Zealand

Animal Welfare (Dairy Cattle) Code of Welfare 2010, MPI Biosecurity New Zealand

Animal Welfare (Sheep and Beef Cattle) Code of Welfare 2010, MPI Biosecurity New Zealand

Maritime Rules Part 24C Carriage of Cargoes – Specific Cargoes, 1999, Maritime New Zealand

Version 2.2 Australian Standards for the Export of Livestock