# **SOUTH AFRICAN NATIONAL STANDARD**

The welfare of wild animals transported by sea

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### Table of changes

Change No.	Date	Scope

#### **Abstract**

Specifies requirements to ensure the welfare of wild animals transported by sea.

# Keywords

animal breeding, herbivores, sea water, specifications, transportation, transportation safety, wildlife.

### **Foreword**

This South African standard was approved by National Committee StanSA SC 5140.38A, Steering Committee for nature conservation – Translocation of wildlife, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

## Introduction

This standard is intended as a guide for the effective and humane translocation of wild animals internationally, using ocean-going vessels as mode of transport. Due to the diverse range of destinations associated with exported wild animals, the standard considers the utilization of different types of existing ocean-going vessels such as coasters, cellular ships and bulk carriers, and does not attempt to specify design requirements for a vessel for the sole purpose of transporting wild animals.

Good animal welfare practices are concurrent with the aims and objectives of the exporter and importer in securing the successful export of wild animals. This standard outlines the processes necessary to minimize undue stress and injury, distress, suffering and death of animals. These factors are of economic, as well as ethical and legal importance to international trading entities.

The Animals Protection Act, 1962 (Act No. 71 of 1962) (see 4.1) applies everywhere in South Africa, aboard South African vessels situated anywhere in the world, and aboard foreign vessels within South African territorial waters (twelve nautical miles from land). In accordance with this Act, offences in respect of animals relate to:

- any person who causes, procures or assists in the committing of an offence;
- any person who, by wantonly or unreasonably or negligently doing or omitting to do any act or causing or procuring the commission of any act, causes any unnecessary suffering to any animal; and
- any person who has possession, charge, custody or control over an animal, and does not exercise reasonable care and supervision of that animal.

### Introduction (concluded)

This standard is intended to enable all persons involved in the export of wild animals to gain an understanding of their responsibilities, and to specify and utilize improved channels of communication regarding the requirements of wildlife in transit. Some of the problems currently experienced with wildlife exports are:

- · animals are confined to crates without the correct acclimatization period;
- incorrect crate design;
- failure to coordinate shipments with transport schedules;
- unsuitable positioning of animals on vessels and unacceptable protection from environmental conditions;
- · lack of access to animals for day-to-day management;
- inadequacies in vessel equipment and facilities such as watering resources; and
- · en-route stopovers and delays.

All these problems can result in unnecessary stress, suffering, injury and even the death of wild animals. In the context of wild animals being perceived as cargo, this standard seeks to afford wild animals a greater degree of recognition as a specialized article of trade, similar to that of dangerous and perishable goods.

Although this standard seeks to ensure the safe and humane export of wild animals by sea, it is advisable to transport wild animals by air, as the process is generally more rapid and efficient. Should certain species or individual animals be reasonably expected to experience distress and be less adaptable than others to being transported by sea, sea export should not be considered.

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# The welfare of wild animals transported by sea

# 1 Scope

This standard specifies requirements to ensure the welfare of wild animals transported by sea.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. All normative documents are subject to revision and, since any reference to a normative document is deemed to be a reference to the latest edition of that normative document, parties to agreements based on this standard are encouraged to take steps to ensure the use of the most recent edition of the normative documents indicated below. Information on currently valid national and international standards may be obtained from Standards South Africa.

### 2.1 Standards

ISO 1496, Series 1 freight containers – Specification and testing.

SANS 10331, Translocation of certain species of wild herbivore.

### 2.2 Other publication

CITES Guidelines for transport and preparation for shipment of live wild animals and plants. Secretariat of the Convention IUCN, Gland, Switzerland, 1980.<sup>1)</sup>

### 3 Definitions

For the purposes of this standard, the following definitions apply:

#### 3.1

### adequate

fulfilling the intended purpose

#### 3.2

### amidships

in or into the middle of a vessel

<sup>1)</sup> A manual for shippers, handlers and importers of wild live animals and plants, with particular reference to the species protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Obtainable from cites@unep.ch or smeintjies@deat.gov.za.

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#### 3.3

#### boma

permanent or temporary structure designed for the capture or holding of wild animals

#### 3.4

#### bow

front end of a vessel

#### 3.5

#### **CITES**

Convention on International Trade in Endangered Species

#### 3.6

#### crate

structure, including standard ISO seafreight containers, designed for the confinement and conveyance of wild animals

#### 3.7

#### distress

state of suffering caused by continuous inescapable stress events

### 3.8

### freeboard

part of the vessel's side, between the waterline and the deck

#### 3.9

#### Incoterm

International commercial term

### 3.10

#### ISO containers

seafreight containers, specified by the International Organization for Standardization, including customized 6 m and 12 m general purpose containers, open top containers and flat rack containers (see ISO 1496)

### 3.11

#### neutral axis

mid-line of a vessel

### 3.12

### pitching

plunging of a vessel in a longitudinal direction

### 3.13

#### qualified

competent

experienced

capable of executing given tasks

### 3.14

#### rolling

swaying to and fro of a vessel on an axis parallel to the direction of motion

### 3.15

#### ruminant

animal that chews the cud regurgitated from its rumen

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#### 3.16

#### stevedore

person who loads and unloads vessels

#### 3.17

#### stowage

positioning of cargo aboard a vessel

#### 3.18

#### suitable

appropriate for the intended purpose

#### 3.19

### tranquillizer

short-acting or long-acting chemical substance which, when injected into an animal at the prescribed dose, has a calming or sedative effect on the animal for a limited period of time

#### 3.20

#### vessel

ship

### 4 General

- **4.1** The export of wild animals shall comply with the existing national legislation. This standard shall be read in conjunction with the Animal Protection Act, 1962 (Act No. 71 of 1962).
- **4.2** Any part of the export translocation process taking place in South Africa shall comply with SANS 10331, where applicable. The references to piping of horns are of particular importance.
- **4.3** Responsibilities for the health and wellbeing of animals shall have a direct bearing on the particular stage the animals are at in the export process and the entity having custody of such animals. When animals are in the custody of an entity such as a seller, an agent, freight forwarder, carrier or consignee, the health and wellbeing of such animals shall be the responsibility of those entities. For example, the ship's captain and carrier will have specific health and welfare responsibilities whilst animals are at sea aboard a vessel.

The exporter's responsibilities for the welfare of animals shall not be determined by the Incoterm governing the specific export transaction.

# 5 Pre-shipment requirements

- **5.1** Planning shall be coordinated between the exporter, agent, freight forwarder, shipping company and other appropriate organizations and authorities before the animals are prepared for transportation. Each party shall understand what is required of it throughout the translocation procedure.
- **5.2** The shipping company/agent shall make provision for the correct positioning of the animals aboard the vessel at the earliest stages of planning, and the shipping company's abilities to route-plan for cargo stowage shall be taken into consideration. The shipping company shall be aware that the shipment of wild animals will require specialized stowage attention.
- **5.3** All valid administration documentation such as import and export permits, veterinary health certificates, CITES permits and provincial nature conservation permits shall be obtained before the animals are moved to a port.

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- **5.4** The most suitable route to the final import destination shall be determined. Factors that shall be considered in determining the most suitable route include:
- a) adequate loading conditions at the port of despatch;
- b) adequate off-loading facilities at the port of discharge;
- c) the length of time taken to reach the port of discharge and the final destination;
- d) the number of stops en route;
- e) expected environmental conditions en route at any particular time of year; and
- f) the suitability of the vessel.

A voyage plan shall be made available by the shipping company to assess the intended route.

### 6 Condition of animals

- **6.1** All export animals shall be healthy and in good physical condition. Sick, disabled or injured animals shall not be transported. Factors such as vaccinations and parasites shall be considered in relation to animal health and to national and international requirements.
- **6.2** Animals that are known or reasonably expected to be pregnant, shall not be exported.

NOTE When exporting adult females, information regarding mating seasons, gestation periods and expected times of births may be obtained from publications such as *Game Ranch Management* by J du P Bothma.

- **6.3** All animals shall be weaned, and be of a suitable age to manage the conditions and stresses associated with the export process.
- **6.4** A suitably qualified and experienced person shall assess each and every wild animal before export, and identify any animal which might not be expected to reasonably withstand the conditions and stresses associated with the export process. These animals shall not be exported.
- **6.5** Accurate written records shall be kept of all treatments, procedures and occurrences for each animal.

# 7 Pre-export confinement and crate training

- **7.1** Except under defensible emergency conditions, wild animals shall never be removed from their natural wild environments and immediately exported. Wild animals shall be allowed a period of adaptation to new stimuli, feeding, routines and environmental pressures.
- **7.2** Animals captured from the wild and placed in bomas will be exposed to stresses outside of their optimum range of tolerance and as such, shall be suitably tranquillized and managed to ensure the reduction of unavoidable stress and the elimination of unnecessary stress.
- **7.3** At least one attendant shall accompany the shipment of animals to their final destination. The attendant shall be suitably qualified, experienced and competent in matters relating to the transportation of wild animals by sea and be entirely familiar with the circumstances surrounding the shipment.

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- **7.4** The attendants accompanying the animals shall begin caring for the animals 5 d to 10 d before transportation to the port of departure. This will allow the attendants time to implement a routine for the animals' care which shall be maintained up to and including the adaptation period at the final point of import. This time will also allow the attendants the opportunity to familiarize themselves with the various requirements of the transportation process such as feeding considerations, the necessary equipment, and the behaviour and temperament of the animals.
- **7.5** It is extremely important that animals be comfortable and familiar with their transport crates before transportation to the vessel. The habituation process shall begin at least 14 d before the animals are transported from their holding boma.
- **7.6** The designated transport crate shall be placed in, or adjacent to, the boma where the animals are confined. The animals shall be encouraged to enter and be comfortable in the crate. The most effective way to achieve this, is to encourage the animals to feed and drink in the crate.
- **7.7** Food and water shall gradually be placed in the crate over a number of days instead of at the normal feeding and watering points in the boma. Species-specific requirements, such as hanging branches for some animals, may also be placed in the crate to create a sense of security. Once the animals are comfortable inside the crate, they should be confined inside the crate 2 d to 3 d before transportation, and introduced to the routine which will be implemented aboard the vessel.
- **7.8** During the crate habituation process, incompatible animals which shall not be placed into mass crates shall be identified. **Mass crates shall contain only compatible and stable groups of animals.**

# 8 Crate design and construction requirements

- **8.1** The crate's design and its positioning aboard a vessel is crucial to the effective management and survival of the animals.
- **8.2** The following design and construction factors shall be considered:
- a) The crate shall be designed and constructed in such a manner as to be able to withstand the forces and stresses exerted by loading and off-loading, pitching and rolling and the effects of animals being thrown against the sides, the general movement of the vessel under extreme conditions, as well as conditions and stresses resulting from securing the crate to the vessel.
- b) The crate shall be able to withstand damage from other freight and buckling or bending.
- c) The crate shall be designed in such a manner as to prevent injury to animals, prevent escape or attempts to escape by animals, and allow for the smooth administration of health care and feeding and watering.
- d) The crate shall be constructed in such a manner that it is protected from unauthorized access and accidental opening, either from the inside or outside. The crates shall be provided with locks and shall be locked during transportation.
- e) The structure and joints of a wooden crate shall be designed in such a way as to ensure that the animal inside the crate does not chew or damage the crate. Wooden crates shall be reinforced with metal straps, and shall be treated with non-toxic material. Consideration shall be given to import restrictions in certain countries prohibiting or restricting the import of wooden crates and products.
- f) Provision shall be made for crate handling. Suitable and adequate forklift spacers, hoisting and lashing rings and handling devices shall be provided.

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- **8.3** The selection of the crate in relation to the animals being transported is equally important. Animals can be transported in mass crates or in individual crates and the following criteria might assist in determining which type of crate is the most suitable:
- a) the behavioural and social requirements of certain species or individuals;
- b) the temperament of the animal;
- c) the species, as the majority of antelope species can be transported in mass crates;
- d) the age and gender, as adult males of any species shall never be transported together in a crate; and
- e) the size of the animals, as animals generally larger than the large antelope species (for example, a Nyala bull) are usually handled more effectively individually.
- **8.4** The stocking density and group composition of animals in any crate shall be such that the animals are compatible and stable and each animal allowed the following:
- a) freedom to eat and drink at will, or at least at regular intervals according to their biological requirements and prevailing environmental conditions;
- b) freedom from continual fear and defence reactions, distress and injury;
- c) a suitable environment:
  - 1) where each animal can stand comfortably, with a height clearance available to the roof of the crate above the highest point of the animal's head/horns that will allow free head movement;
  - where each animal can lie down in a natural, relaxed recumbent position, unhindered by other animals or structures;
  - 3) where each animal is able to turn around in a crate. Where animals are required to be individually crated and where they pose a risk from turning around in a crate, they shall be transported using a more rapid mode of transport such as air;
  - 4) where each animal can access appropriate shade and shelter from rain, heat, cold, wind and sea spray;
  - 5) where each animal can have access to suitable temperature conditions and ventilation in relation to ambient and extreme weather and environmental conditions; and
  - 6) where each animal can reasonably express its social and behavioural requirements, or be prevented from these for the shortest period of time possible.
- **8.5** Crates shall be designed in such a manner that they protect animals from extreme weather conditions, but are nonetheless suitably ventilated to ensure adequate airflow. Suitable ventilation can be provided as follows:
- a) Trapdoors and openings should ideally be situated at the bottom end and top end of the crate to allow cooler air to enter the crate at the bottom end and the warmer air to escape at the top end. Trapdoors and openings shall be positioned in a manner that will prevent animals being injured. Ventilation openings at the bottom end of the crate shall be 20 cm above the floor level to prevent leg injuries.

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- b) Ventilation openings should ideally be placed on all sides of the crate and shall be capable of being closed whenever necessary, such as in bad weather. It is essential that the structure of the crate always protect the animal from environmental conditions. Crates shall also have inspection apertures positioned to allow a full inspection of both animals and the crate, and in a position where animals will not be unduly disturbed. The positioning of ventilation openings and inspection apertures can be combined. Animals should also be able to see out of their crates as this assists with their adaptation and lowering of stress levels.
- **8.6** Shade cloth (60 % to 80 %) shall be taken on board to erect over the crates in hot weather.
- **8.7** The sides of the interior of the crate shall be smooth and free from projections which could cause injury to an animal. Rubber conveyor belting or similar materials could be used to smooth a rough surface.
- **8.8** The floor of the crate shall be solid and have a non-slip surface. The use of substrates such as straw is recommended as a non-slip surface and as bedding. The use of substrates such as sawdust or sand shall be monitored carefully to prevent health problems and injury. Wooden strips shall be spaced and adjoined along the length and breadth of the crate to provide animals with a firm foothold, but shall be of a density that does not cause discomfort to recumbent animals.
- **8.9** The crate shall be designed in a manner that allows the efficient daily cleaning of soiled bedding and uneaten food. Soiled bedding shall be scraped out of the crate at ground level and the crate floor washed. Fresh bedding shall be supplied.
- **8.10** The animal attendants shall have the ability and equipment to facilitate the isolation of individual animals within a mass crate for management or emergency purposes. These purposes could include administering tranquillizers or medication, the separation of animals or the removal of an animal from a crate.
- **8.11** The roof of a crate shall be solid to offer protection from rain. The roof shall have a trapdoor to assist with extra ventilation and facilitate animal management. The trapdoor shall be covered with securely fastened plastic sheeting or tarpaulin during bad weather.
- **8.12** Crates shall have doors on a minimum of two sides, preferably at both ends. Depending on the animals being exported, doors shall be protected from damage on the inside by horizontal or vertical bars positioned according to species-specific requirements. Doors may be sliding or swinging and shall be designed in accordance with the requirements of the animals, as well as practical considerations relating to the management of animals and their stowage aboard the vessel. It is therefore of vital importance that the stowage position of the animals aboard the vessel be identified at the earliest stages of planning.
- **8.13** Provision shall be made in the crates to offer suitable food and potable water in receptacles, or by other means which will allow the species to eat and drink. Where feeding troughs are utilized, they shall not be of materials that could cause injuries, shall be durable, be positioned in sufficient numbers to accommodate all the animals and be positioned in such a manner that they can be cleaned by the attendants.
- **8.14** Crates shall be marked and labelled in accordance with the relevant national and international requirements.
- **8.15** For CITES-listed species, the CITES Guidelines for transport and preparation for shipment of live wild animals shall be used in conjunction with the requirements of this standard.

# 9 Transportation to the port

- **9.1** The transportation of animals to the port of departure shall be accurately coordinated with the arrival of the vessel. Animals shall not be kept at the port for more than 8 h before loading.
- **9.2** Suitably competent attendants shall accompany the animals to the port and shall check the condition and behaviour of the animals at regular intervals.
- **9.3** The transportation of wild animals shall be in accordance with SANS 10331, where applicable.

# 10 Vessel and stowage requirements

- **10.1** The exporter and animal attendants shall ensure that they are fully familiar with the stowage position of the animal crates aboard the designated vessel. The shipping company shall pay particular attention to where animal crates are stowed aboard a vessel, and the ship's captain shall be made fully aware of the export requirements of the animals before the loading of the vessel.
- **10.2** The exporter shall ensure that a suitable holding area has been designated for the animal crates to be stored at the port until the port stevedores are ready to load the vessel. Animals shall not be left indefinitely at the dockside and subjected to the noises, traffic, people and other stresses normally found in this area. A suitable area shall be an area with restricted access, an area that is quiet, of suitable temperature and ventilation, and which allows access to animals for feeding, watering, and general management.
- **10.3** Suitable loading and stowage details shall be confirmed with the ship's captain and stevedores before the animals arrive at the dockside.
- **10.4** Only vessels conforming to the following criteria shall be considered for the transportation of wild animals:
- a) for stability reasons, vessels exceeding 7 500 t dead weight;
- b) vessels with a large enough freeboard to reasonably ensure the prevention of flooding of the crates and excessive sea spray wash caused by pitching and rolling, in accordance with reasonably expected voyage conditions;
- c) vessels fitted for the carriage of standard ISO containers (see 3.10) and which only utilize the following securing mechanisms:
  - 1) container shoes and twist locks,
  - 2) locking and securing rods, and
  - 3) securing chains.

It is recommended that vessels which have the accommodation stack as close to amidships as possible be used.

- **10.5** Consideration shall be given to the stowage location of the animal crates aboard the vessel as this can have a direct bearing on the welfare of the animals. The following location factors shall be considered:
- a) Crates shall be located behind the accommodation stack to afford as much protection as possible from adverse weather conditions. Flue gas emissions from the ship's exhaust funnels might be blown into the animal crates under calm weather conditions and might present ventilation problems. Every precaution shall be taken to protect the animals should this occur.
- b) Where crates are to be located in front of the accommodation stack, they shall be placed as close to amidships as possible.
- c) Crates shall be located as close to the vessel's neutral axis as possible, as this will reduce the effects of rolling.
- d) Under no circumstances shall animal crates be positioned toward the bow of the vessel in a location where the vessel will take on water.
- e) Container stacks shall be positioned around the animal crates to afford the animals protection from the elements, sea spray, and to form a windbreak, but in such a manner that will allow suitable ventilation.
- f) Crates shall not be stowed below deck aboard container vessels. Crates shall only be stowed above deck at first tier level, and other containers or crates shall not be stacked upon them.
- g) Crates shall be accessible to the animal attendants at all times. The attendants shall be able to comfortably feed and water the animals as well as manage the cleaning and disposal of waste matter. Access shall allow for the removal of dead animals. Lashing and securing fixtures shall not obstruct access to the crates.
- h) A dry leak-proof and secure storage crate shall be positioned as closely as possible to the animal crates. The crate shall contain all the food, bedding and materials required for the journey to the final destination.
- **10.6** The vessel's pumping and water pressure systems shall allow for the effective supply of fresh water under any conditions likely to be encountered at sea, including rough weather and breakdowns. Hosepipes and connectors shall be of suitable design, length and capacity to supply the quantities of water required by the animals. Watering facilities shall always be checked and tested by the animal attendants before the vessel sets sail.
- **10.7** Suitable lighting shall be available on deck for the inspection of crates and the management of animals.
- **10.8** The vessel's crew shall not be allowed free access to the animals and access shall always be under the supervision of the animal attendants.

### 11 Food and water

**11.1** Dietary considerations are of the utmost importance when planning the export of wild animals, both from a quality and a quantity point of view. Lack of consideration for the dietary needs of wild animals can result in suffering and even death.

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- **11.2** Animals captured from the veld for export shall be gradually introduced to their new diet and shall not be forced into an abrupt change in diet. Wild animals, particularly ruminants, can take between four weeks to six weeks to successfully adapt to a new diet. Wild animals shall be fed their normal natural diet during the first few days of boma introduction. The new and suitable diet can be gradually introduced with the natural diet, with the natural diet being gradually reduced over time.
- **11.3** The same principle applies to the introduction and release of wild animals at their point of destination. A suitable diet shall be supplied at their destination and gradually introduced to their existing diet over time. Before departure from the country of export it shall be ascertained, that import regulations in the country of import will not prevent the importation of the animals' existing foods.
- **11.4** The amount of food required for the journey shall be calculated from the following factors:
- a) the amount of food consumed per day by each animal;
- b) the number of days the animals are expected to be in transit including all land and sea stages;
- c) the number of days expected for the animals to acclimatize at their new destination;
- d) an amount of 10 % allocated for loss or wastage, i.e. from wind or sea spray; and
- e) an amount of extra food for 5 d allocated for unexpected delays en route.
- **11.5** Dietary considerations shall incorporate behavioural requirements as much as practically possible. The manner in which an animal's food is presented can have both a positive and a negative effect on that animal's welfare, i.e. the height level of food presentation for browsers (hay racks) and grazers (floor fed). Feeding receptacles and food distribution as well as group composition within the crate shall ensure unrestricted food access to all the animals. The feeding behaviour of the animals shall be monitored continually by the attendants.
- **11.6** The food supply shall be kept free from contamination, sea water and rain.
- **11.7** Commercial concentrate shall be presented in cube or pellet form to prevent wastage and feed blowing into the eyes of the animals.
- **11.8** The amount of potable fresh water required for the journey shall be calculated from the following factors:
- a) the amount of water consumed by each animal per day, including extra rationing for hot weather conditions;
- b) the number of days the animals are expected to be aboard the vessel, including loading and offloading periods in port; and
- c) an estimated amount required for the hosing down and cleaning of crates. Sea water shall not be used for this purpose.
- **11.9** The vessel shall be able to store or produce (or both) and make available to the animals, **double** the amount of fresh potable water calculated in 11.8 for the duration of the journey.
- **11.10** Feeding, watering and cleaning shall be incorporated into a routine as this should assist in the reduction of stress.

# 12 Equipment

- **12.1** Animal attendants shall be prepared for any reasonable eventuality and shall have suitable equipment available. The vessel's crew shall not be relied upon to supply any equipment unless an arrangement to this effect has been made.
- **12.2** The general equipment required will be dictated by the requirements of the particular shipment but would normally include cleaning materials and equipment, gloves, boots and waterproof clothing, torches, buckets, tarpaulins and shade cloth, rope, tools and knives. Provision shall be made for equipment loss through damage and accidents, and spare equipment shall be provided.
- **12.3** Supplies and medicines shall be available and shall consist of appropriate tranquillizers, antiseptics, topical treatments and sprays, immobilization and reversal agents, suture packs, bandages and plasters, general antibiotics, anti-inflammatory agents, eye ointments, etc. Provision shall be made to store medicines and veterinary products according to manufacturer's instructions. The appropriate administration equipment, such as pole syringes and surgical equipment, shall also be available. The attendants shall be trained, experienced and competent in identifying the nature of the veterinary problem and administering the appropriate treatments. A medical first aid kit for humans shall also be available.

The presence of all the medication and drugs on board require the approval of the captain.

Tranquillizers and immobilizing drugs in possession of the attendants shall be legally approved of and provided by a registered veterinarian.

All medication and drugs shall be stored in a safe place that is readily accessible to the attendants at all times.

The captain should approve darting equipment (guns) before the journey.

**12.4** Provision shall be made for the euthanasia (humane destruction) and immediate removal of sick or injured wild animals. Where it is not possible to utilize a firearm, a captive bolt pistol with suitable cartridges shall be available for this purpose as well as an appropriate knife for bleeding the immobilized animal. Immobilization of an animal using a captive bolt pistol shall result in exsanguinations being carried out no more than sixty seconds from immobilization.

# 13 Transhipments

Due to the stresses imposed upon animals during the loading and off-loading of vessels and the unknown elements associated with international ports, animals shall not be transhipped through different ports en route to their final destination. Sea exports shall be direct to the final destination.

# 14 Contingency plans

Contingency plans shall be developed for reasonably expected or possible problems that may occur at various stages of export.

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