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Code of practice

SABS 0331

**Translocation of certain species of wild  
herbivore**

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**SOUTH AFRICAN BUREAU OF STANDARDS**

**CODE OF PRACTICE**

**TRANSLOCATION OF CERTAIN SPECIES OF WILD HERBIVORE**

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## **Acknowledgment**

The South African Bureau of Standards wishes to acknowledge the valuable assistance derived from the publications listed in the bibliography.

## **Notice**

This standard was approved in accordance with SABS procedures on 18 February 2000.

NOTE 1 In terms of the Standards Act, 1993 (Act 29 of 1993), no person shall claim or declare that he or any other person complied with an SABS standard unless

- a) such claim or declaration is true and accurate in all material respects, and
- b) the identity of the person on whose authority such claim or declaration is made, is clear.

NOTE 2 It is recommended that authorities who wish to incorporate any part of this standard into any legislation in the manner intended by section 31 of the Act consult the SABS regarding the implications.

This standard will be revised when necessary in order to keep abreast of progress. Comment will be welcome and will be considered when the standard is revised.

## **Foreword**

Annexes A to J are for information only.

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## **Translocation of certain species of wild herbivore**

### **1 Scope**

This code of practice covers aspects of the translocation, such as the capture, transportation, temporary accommodation and release, of wild herbivores, such as antelope, elephant, rhino, hippo, giraffe and zebra.

### **2 Background**

**2.1** This code of practice covers different aspects of the humane translocation (see 3.17) of certain species of wild animal in the game ranching and wildlife industry. The code is set to minimize the occurrence of stress, pain, injury and death in wild animals during the translocation process, and to ensure that the welfare of the animals can be protected. As a bare minimum, the provisions of the Animals Protection Act, 1962 (Act 71 of 1962) shall apply to all phases of translocation.

**2.2** Because of the technical nature of the procedures used in translocation, only competent individuals and competent capture teams shall perform the procedures. It is envisaged that the SA Veterinary Council will establish a training and registration body, and individuals involved in the translocation of wild animals shall be trained and registered with that body, which shall issue an appropriate licence. Registration shall only take place once an individual has fully satisfied the body that he has undergone sufficient formal training, and has sufficient relevant experience of the species of wild animal he intends to translocate. Such a person shall apply appropriate capture and transportation techniques, and shall hold the relevant animals in adequate and suitable enclosures.

**2.3** Permits shall be obtained from provincial nature conservation and agricultural authorities for the transportation and holding of wild animals (see annex A). Permits shall be obtained from the Directorate of Veterinary Services, National Department of Agriculture, Pretoria, when animals are imported, exported or moved from any of the disease-controlled areas as defined in the Animal Diseases Act, 1984 (Act 35 of 1984) (see annex B). The CITES (Convention on International Trade in Endangered Species) regulations shall be adhered to when importing or exporting wild animals covered by these regulations.

**2.4** During all stages of the translocation process, the welfare (wellbeing) of the animals shall be considered, and the cruel, inhumane or negligent handling of captured animals shall be avoided. The welfare of captured wild animals can be ensured if they are handled with patience and tolerance, and with understanding for their instinctive and natural behaviour and their basic needs. Every reasonable effort shall be made to protect the animals from physical injury, undue stress or suffering and deprivation of essential needs.

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**2.5** The habitat to which the animals are relocated is important to the welfare of the animals, and the advice of a competent ecologist shall be sought in this regard. The responsibility for the care and well-being of all animals being translocated rests with the legal owner as defined in the Animals Protection Act, as follows: "owner" in relation to an animal, includes any person having the possession, charge, custody or control of that animal".

### **3 Definitions**

NOTE The meaning of definitions is determined by the context, but in cases of dispute, the decision of the authority that administers this code will be final with regard to meaning.

#### **3.1**

##### **acceptable**

acceptable to the authority administering this code

#### **3.2**

##### **adequate**

sufficient and suitable for the intended purpose

#### **3.3**

##### **blindfold**

a soft, non-abrasive material equipped with straps, large enough to tie around the head of the animal so that it cannot be accidentally dislodged and that is not restrictive to movement or breathing

#### **3.4**

##### **boma**

a temporary or permanent corral that is constructed of suitable materials and that is used

a) during the herding of animals being captured, or

b) for the holding of captured animals in captivity

#### **3.5**

##### **competent**

descriptive of a person who is deemed, by the registration body, to be sufficiently trained, qualified and experienced to carry out a translocation

NOTE At the time of publication of this edition of this standard, such registration body was still to be established by the SA Veterinary Council.

#### **3.6**

##### **holding pen**

an enclosure suitable for the confinement of an animal

#### **3.7**

##### **hyperthermia**

abnormally high body temperature

#### **3.8**

##### **hypothermia**

abnormally low body temperature

**3.9**

**induction time**

the time taken for a tranquillizer or narcotic to take effect

**3.10**

**narcotic**

a chemical substance that can be injected to anaesthetize, or immobilize (or both) an animal

**3.11**

**piping**

the placing of removable rubber or plastics pipes on the horns of an animal to prevent it from goring or injuring other animals

**3.12**

**reversal**

the neutralization of the effects of a narcotic by the injection of an antidote

**3.13**

**shelter**

protection from rain, sun and wind

**3.14**

**sternal recumbency**

a resting position in which the body of the animal is upright while the animal is lying on its chest and belly

**3.15**

**suitable**

appropriate for the intended purpose

**3.16**

**tranquillizer**

a short 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

**3.17**

**translocation**

the capture, holding, transportation and relocation of wild animals

**3.18**

**veterinarian**

a qualified person registered as a veterinarian with the South African Veterinary Council

## **4 Capture of wild animals**

### **4.1 General**

**4.1.1** Any person or capture team involved in the translocation (see 3.17) of wild animals in South Africa shall possess a capture licence and be registered, by the registration body to be established by the South African Veterinary Council, as qualified to translocate wild animals.

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**4.1.2** The capturer shall keep detailed records of every capture operation in a register. These records shall include the following:

- a) the date of capture and details of the capture site, for example the name of the farm and its location, the name, address, telephone number or fax number of the farm owner;
- b) the date and details of the environmental conditions during capture, for example ambient temperature, daylight conditions (clear or overcast), wind strength;
- c) details of the animals captured, for example species, number, sex, age;
- d) details concerning chemical capture, for example drug mixture and dosage, induction time (see 3.9), estimated distance that the animal was chased before darting, rectal temperature after induction and just before reversal (see 3.12), recumbency time, side effects observed, injuries sustained; and
- e) the results of the capture procedure, for example the number and condition of animals delivered.

**4.1.3** The capture and transportation of wild animals that have a short (concentrated) birthing cycle shall not be undertaken immediately before, during or immediately after the lambing, calving or foaling cycle of each species. It is therefore essential to know the breeding patterns or seasons and variations in breeding cycles of each species.

**4.1.4** Animals shall not be captured when the ambient temperature exceeds 25 °C or in rainy weather or when the ground is soaked. Factors that exacerbate stress include capture on days that are hot or humid (or both) and when the ambient temperature exceeds 25 °C, chasing animals for long distances to the capture site, repeatedly forcing unwilling animals into capture sites, and chasing heavily pregnant animals, young animals and animals in poor body condition.

## **4.2 Physical capture**

### **4.2.1 Mass capture** (see annex C)

#### **4.2.1.1 General**

**4.2.1.1.1** The general principle of mass capture involves using a helicopter or motorcycles or motor vehicles (or any combination of these) to herd selected animals into a funnel-shaped boma (see 3.4) that leads to a loading ramp onto a truck containing mass crates that might be compartmentalized. For the capture of plains antelope, such as springbok, blesbok and bontebok, motorcycles, motor vehicles and beaters can be used instead of a helicopter to herd the animals, and it might be necessary to position nets in the boma to facilitate the capture.

**4.2.1.1.2** Subject to the suitability of the terrain, the competency of the helicopter pilot, the climatic conditions and the wind direction, a large number of animals of a particular species can be captured in a short time with minimal stress and physical handling.

**4.2.1.1.3** At all times during the translocation process, the animals shall be subjected to the minimum amount of stress and overexertion. It is recommended that, if necessary, the animals be tranquillized with an appropriate tranquillizer (see 3.16) immediately after capture and before transportation.

**4.2.1.1.4** The capturer shall be responsible for orphaned, disabled or injured animals.

#### **4.2.1.2 Mass capture using nets**

**4.2.1.2.1** Animals are herded by a helicopter or motor vehicles or motorcycles or beaters (or any combination of these) into either fixed nets or drop nets or a combination of fixed nets and drop nets. They are then disentangled from the nets, physically restrained, tranquillized, loaded and transported.

**4.2.1.2.2** Animals shall be held or restrained and supported by a sufficient number of assistants to prevent their escape, and shall preferably be blindfolded (see 3.3) and tranquillized before loading. Blindfolds shall be removed before transportation. Only trained persons who have been briefed before the procedure and know how to handle captured wild animals shall be involved in the process.

**4.2.1.2.3** The number of animals herded into the nets shall preferably not exceed the number of assistants available to hold and disentangle the animals from the nets. The entangled animals shall be disentangled and loaded as soon as possible.

**4.2.1.2.4** Animals that are not entangled shall be allowed or urged to escape.

**4.2.1.2.5** After the tranquillizers have been administered the animals shall be held quietly until the tranquillization takes effect. The entire capture shall be carried out with minimal disturbance and noise.

**4.2.1.2.6** The use of appropriate stretchers (sleds) is recommended for moving the animals from the capture site and for loading them onto the transport vehicle.

#### **4.2.2 Passive capture**

##### **4.2.2.1 Passive capture using pop-up corrals and drop nets**

Capture using pop-up corrals is based on the principle that animals are trapped in a corral of plastic sheeting which is hidden in a ditch around the capture site (for example, a water hole). Alternatively, drop nets can be used. After capture, the animals are herded towards the transport vehicle, their horns are piped where necessary, they are loaded, tranquillized or immobilized if necessary, and transported.

##### **4.2.2.2 Passive capture at permanent capture sites**

Animals are trapped in a previously enclosed area, either around a watering point or where supplementary feeds or mineral licks are provided. When the required number of animals has entered the area a gate is closed behind them. The animals are then herded through a funnel-shaped crush where they are tranquillized, their horns are piped where necessary, and they are either loaded into a mass crate or into nearby pens. Unwanted animals are released.

#### **4.2.3 Individual capture**

##### **4.2.3.1 Individual capture using net guns**

**4.2.3.1.1** Net guns are used from a helicopter or motor vehicle to discharge a net that traps an individual animal. The animal is then physically restrained and tranquillized or immobilized and transported.

**4.2.3.1.2** This method is especially useful where bomas (see 3.4) and mass capture cannot be used and to capture individual medium-sized to small-sized antelope in open or mountainous terrain.

**4.2.3.1.3** Capture teams shall be experienced in the use of net guns, tranquillizers (see 3.16) and narcotics (see 3.10) and shall possess a sound understanding of the behaviour, before and during capture, of the target species.

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### **4.2.3.2 Individual capture using spotlights**

Spotlights are used on dark or moonless nights to temporarily blind medium-sized antelope, such as impala and nyala, which are then physically restrained, tranquilized or immobilized, loaded and transported.

## **4.3 Chemical capture** (see annex D)

### **4.3.1 Safety**

**4.3.1.1** Because wild animals are usually captured in remote areas the capture teams shall know how to treat emergencies associated with the accidental exposure of humans to dangerous capture drugs such as narcotics.

**4.3.1.2** Appropriate medical and veterinary experts shall be consulted on the dangers posed by narcotics (see 3.10), tranquilizers (see 3.16) and darting equipment.

**4.3.1.3** Appropriate training (including training in basic cardiopulmonary resuscitation (CPR)) of at least one member of the capture team, who shall accompany the darter, is mandatory whenever dangerous narcotic drugs are used for immobilization.

**4.3.1.4** Emergency kits shall include appropriate antagonists (antidotes), sterile syringes and needles and clear, written instructions for their use.

### **4.3.2 General**

Chemical capture involves the immobilization of the target animal by the administration, by means of a dart, of narcotics (see 3.10) and tranquilizers (see 3.16) to allow safe handling and moving of the animal.

### **4.3.3 Methods of chemical capture** (see annex D)

Depending on the circumstances, the following methods can be used:

- a) darting on foot;
- b) darting from a road vehicle;
- c) darting from a hide; and
- d) darting from a helicopter.

NOTE Immobilized animals in inaccessible areas can be air-lifted for short distances using an appropriate cargo net.

## **5 Transportation of wild animals** (see annex E)

The welfare and comfort of the animals being transported are of the utmost importance. Animals shall be transported in suitable, roadworthy, game transport vehicles or in individual or mass crates (see annexes E and F) by road, sea or air. Transportation by rail is not recommended.

## **6 Accommodation of wild animals during translocation** (see annex G)

Adequate shelter (see 3.2 and 3.13), suitable feed and clean water shall be provided for all animals held in captivity.

## **7 Accommodation of wild animals at auctions**

**7.1** The owner of the auction bomas (see 3.4) shall ensure that each boma is suitable for accommodating the species of wild animal to be auctioned.

**7.2** The issuing of a permit to hold an auction shall be subject to an inspection of the auction facilities by the authority administering this code, or the relevant provincial or agricultural conservation authority, or consultants appointed by such authority (or any combination of these).

**7.3** The owner of the auction bomas shall be responsible for ensuring the welfare of all the animals accommodated in the bomas. This means that veterinary care for and treatment of the animals shall be provided when required.

## **8 Release of wild animals** (see annex H)

**8.1** The destination should be investigated by a competent person, preferably a qualified ecologist, to determine whether

- a) the area and the habitat are suitable for the particular species. A suitable habitat provides animals with sufficient space for movement, shelter, food and water to which they are naturally adapted and enables them to reproduce successfully, and
- b) the condition of the habitat is adequate to sustain the animals in the short to medium term, and, if necessary, in the long term, given proper management and taking into account environmental conditions (especially rainfall).

**8.2** The perimeter fence of the property should be sufficiently high and strong to contain the released animals. Special fencing is required to prevent the escape of, for example, giraffe and antelope known to be high jumpers, including eland, kudu, waterbuck and impala. Electric fences or cables or both are required for fencing in elephant and rhino.

Fences shall be inspected and repaired when necessary and before new animals are released. Certain antelope, such as hartebeest, tsessebe, gemsbok, sable antelope and nyala, tend to escape by crawling underneath the fences.

**8.3** The translocation regulations of the various provincial conservation authorities that govern the movement of wildlife within or into the respective provinces shall be adhered to.

## **9 Euthanasia**

NOTE Euthanasia in this context refers to the humane killing of animals.

**9.1** Animals that become terminally ill or are severely injured during translocation and that cannot be given veterinary treatment shall be euthanased, either by administering an appropriate euthanasing drug, where available, or by being shot through the brain with a firearm of suitable calibre and energy to cause instant death. For this eventuality, suitable euthanasing drugs (where available) or firearm(s) (or both) should form part of the equipment carried by the translocating team.

**9.2** If the euthanasing agents mentioned in 9.1 are not available, the throat of the animal shall be cut with swift cuts of a very sharp knife of length at least 250 mm and without any nicks along the cutting edge. The cuts shall be made across the throat of the animal, severing both the jugular vein and carotid artery. This procedure shall be executed with minimal disturbance to other animals in the immediate vicinity.



## Annex A

(informative)

### Nature conservation permits for the transportation of wild animals

**A.1** Each province has its own conservation body and each body has its own permit requirements.

**A.2** Each conservation body (as listed below) prescribes that an export/import permit from both the province of origin and the province of destination be obtained from the conservation office closest to the point of origin and the destination. These permits together with the transport permit acquired from the same office, should enable the legal transportation of wild animals from one province to another. Any relevant veterinary regulations shall be complied with. The transportation of wild animals within a particular province requires only a transport permit.

**A.3** Most conservation offices (except those of the Free State) allow their local officers/zone officers to issue a transport permit within a particular province. Import/export permits between provinces should be obtained from the regional head offices of both provinces.

**A.4** The permit application should be in writing. A fax copy is normally sufficient.

**A.5** The application should specify the following:

- a) name of the farm of origin and owner's name and telephone number;
- b) name and address of transporter;
- c) size of farm of origin and certificate of adequate enclosure;
- d) destination of animals (name of farm or reserve and name and address of owner);
- e) species of animal(s), number and sex; and
- f) period for which the permit is valid.

**A.6** The telephone and fax numbers of the regional offices that issue permits are as follows:

#### EASTERN CAPE

Bisho ..... Tel. (0437) 411-9942  
Fax (0437) 635-0511

#### FREE STATE

Bloemfontein ..... Tel. (051) 447-0407  
Fax (051) 447-5240

#### GAUTENG

Johannesburg ..... Tel. (011) 355-1225  
Fax (011) 355-1239

#### KWAZULU-NATAL

Pietermaritzburg ..... Tel. (0331) 845-1324  
Fax (0331) 845-1747

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### MPUMALANGA

Nelspruit ..... Tel. (013) 759-5300  
Fax (013) 759-5490

### NORTHERN CAPE

Kimberley ..... Tel. (053) 832-2143  
Fax (053) 831-3530

### NORTHERN PROVINCE

Pietersburg ..... Tel. (015) 291-1276  
Fax (015) 291-1840

### NORTH WEST PROVINCE

Potchefstroom ..... Tel. (018) 348-1024  
Fax (018) 384-8244

### WESTERN CAPE

Cape Town ..... Tel. (021) 483-3539  
Fax (021) 483-4158

## **Annex B** (informative)

### **Veterinary movement permits for the translocation of certain animals, with reference to disease**

#### **B.1 Buffalo**

Under the Animal Diseases Act, 1984, special veterinary conditions apply in South Africa for the movement and keeping of all Cape buffalo anywhere in South Africa. Buffalo that are designated disease free by the Directorate of Veterinary Services, Pretoria may only be moved on a special permit to properties specially registered by the Directorate of Veterinary Services, National Department of Agriculture, Pretoria, for the keeping of buffalo. Diseased buffalo may not be moved from the veterinary control areas specified in the Act. The nearest State Veterinary Officer should be contacted for more details.

#### **B.2 Warthogs and bushpigs**

Warthogs and bushpigs in South Africa may only be moved on a permit. Warthogs and bushpigs in the designated African Swine Fever Control Area may not be moved to disease-free areas. Information on these control areas is obtainable from state veterinarians or the Directorate of Animal Health, National Department of Agriculture, Pretoria.

#### **B.3 Other animals**

Animals susceptible to disease may only be moved on a permit into, out of or within a disease-controlled area as declared in terms of the Animal Diseases Act, 1984 (Act 35 of 1984).

## **Annex C**

(informative)

### **Mass capture**

#### **C.1 Mass capture using bomas**

This method is suitable for the capture of herd animals such as blesbok, bontebok, buffalo, eland, gemsbok, giraffe, hartebeest, impala, kudu, mountain reedbuck, sable antelope, springbok, tsessebe, waterbuck, blue and black wildebeest, and also zebra in family groups.

Adult impala rams should not be chased into the boma (see 3.4) with the herd since they will injure the other animals, and should be removed from the group as soon as possible. Adult impala rams can be transported with other impala provided that their horns have been piped (see 3.11) and that they have been sufficiently tranquillized, in other words for the duration of the journey.

Adult or mature eland bulls should not be captured together or with females and calves.

The horns of adult blesbok, eland, gemsbok, tsessebe and impala rams should be piped before being transported.

#### **C.2 Mass capture using nets**

This method is suitable for the capture of blesbok, bontebok, duiker, fallow deer, hartebeest, impala, nyala, oribi, reedbuck, mountain reedbuck, springbok, steenbok, tsessebe and black wildebeest.

## **Annex D**

(informative)

### **Chemical capture guidelines**

#### **D.1 Equipment**

##### **D.1.1 Dart guns**

The dart gun should be suitable for the species to be darted. The darter should be familiar with the specific dart gun. The dart gun should be sighted in each time before it is used.

##### **D.1.2 Darts**

The following types of dart are used:

- a) highly accurate darts, for long-range darting; and
- b) lightweight darts, for animals with thin skins.

### **D.1.3 Needles**

The length and thickness of the needle should be appropriate for the species to be darted. This facilitates the recovery of the dart and the identification of darted animals.

Specially long and strengthened needles are needed for elephant, hippo and rhino.

### **D.1.4 Rangefinder**

For long-range darting it is recommended that a rangefinder be used to accurately determine the distance of the animal.

## **D.2 Circumstances when darting is inadvisable**

**D.2.1** It is not advisable to dart animals when the ambient temperature exceeds 25 °C, or when the animals have been chased too fast or too far (or both), causing hyperthermia (see 3.7) and exhaustion (or both), or when cold weather and the wind-chill factor (see annex I) during immobilization or transportation can cause hypothermia (see 3.8).

**D.2.2** It is not advisable to dart heavily pregnant animals or females with suckling young.

**D.2.3** It is not advisable to dart just before sunset in case animals get lost in the dark and cannot be found.

## **D.3 Darting from a motor vehicle**

**D.3.1** Get as close to the target animal as reasonably and safely possible.

**D.3.2** Use vehicles with which the animals are most familiar.

**D.3.3** Do not frighten the animals by leaving the vehicle.

**D.3.4** The capturer should be familiar with the natural behaviour of the target species before attempting to approach it.

**D.3.5** Use roads to approach the animals whenever possible.

**D.3.6** Do not drive directly towards the animals. Use a tangential approach, and stop often enough to make the animals feel at ease. If it is necessary to turn and head in the opposite direction, do so by circling away from the herd, not towards it.

**D.3.7** Modify the approach according to the reaction of the animals.

**D.3.8** Be patient. Select the target animal and wait until it is within range. Fire only if the target animal is not obscured by other animals.

**D.3.9** Good darting sites are the muscles of the shoulder or of the hindquarters. The neck (except in the case of certain species, for example rhino, blue wildebeest, buffalo), abdominal and chest regions should be avoided.

**D.3.10** Ensure that the darting site on the animal is not obscured by vegetation.

**D.3.11** Dart the animal as soon as possible after the vehicle has stopped.

**D.3.12** Be patient and quiet once the animal has been darted.

**D.3.13** After the animal has been darted keep it in view without chasing after it.

**D.3.14** If the animal is lost from sight in thick vegetation wait for several minutes for the drug to take effect and then locate the animal by tracking.

## **D.4 Darting from a hide**

**D.4.1** Utilize a hide when animals are likely to be attracted by either food or water.

**D.4.2** Study the target animal and its habits to ascertain the time of day when the animal comes to the food or water.

**D.4.3** Use bait such as green or baled lucerne hay or antelope or horse cubes, that are known to attract herbivores.

**D.4.4** Use a rangefinder to accurately determine the distance between the hide and the bait area. Allow the animal to approach to within this predetermined darting range before firing the dart.

**D.4.5** Be patient and quiet.

**D.4.6** Have darting equipment and darts ready.

**D.4.7** Do not allow smoking in or near the hide.

**D.4.8** Do not take non-essential personnel into the hide.

**D.4.9** Good darting sites are the muscles of the shoulder or of the hindquarters. The neck (except in the case of certain species, for example rhino, blue wildebeest, buffalo), chest and abdominal regions should be avoided.

**D.4.10** A competent tracker should be used to track the darted animal.

## **D.5 Darting from a helicopter**

**D.5.1** Use a reliable and manoeuvrable helicopter that is suitable for darting the target species.

**D.5.2** The helicopter pilot should possess a commercial pilot's licence and have a game rating, and be competent in the capture of wild animals.

**D.5.3** Prepare the darts, including the spare and top-up darts that contain the immobilizer and the appropriate antidote, before lift-off. Darts should not be prepared in the helicopter except in case of emergency.

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- D.5.4** Use sturdy darting equipment that is not affected by the downdraught of the rotors.
- D.5.5** The darter should establish effective communication with the pilot in the helicopter and should communicate with him using the intercom system of the helicopter.
- D.5.6** The pilot should be in radio contact with the ground crew to notify them of the exact location of the darted animal and to inform them when to move in.
- D.5.7** The pilot should search for clearings or open spaces, and try to herd the target animal(s) towards these areas. Identify rivers, dongas, and other problem areas to be avoided.
- D.5.8** Dart guns with settings should be set to the appropriate range, considering that the height at which darting will take place depends on the terrain, and particularly on the extent of tree and bush cover.
- D.5.9** The pilot should indicate when to get ready to dart the animal, when obstacles are approaching, when the animal is likely to veer off, etc. Use single word commands, for example "ready", "aim", "tree", "obstacle", "break".
- D.5.10** Be prepared to make split-second decisions regarding the firing of the dart. Do not fire until the helicopter is correctly positioned relative to the darting site(s) on the animal.
- D.5.11** Good darting sites are the muscles of the shoulders or of the hindquarters. The neck (except in the case of certain species, for example rhino, blue wildebeest, buffalo) abdominal and chest regions should be avoided.
- D.5.12** Allow the helicopter pilot to come within darting distance above and behind the animal.
- D.5.13** Do not attempt to dart beyond the downdraught of the rotors.
- D.5.14** Fire the dart when the helicopter and the animal are moving at the same speed and in the same direction.
- D.5.15** Once the animal has been darted, the pilot should hang back or gain height to observe the animal.
- D.5.16** If the animal becomes recumbent before the ground crew has it in sight, the pilot should drop the darter off as close to the animal as possible so that he can give assistance to the animal and ensure that it is in sternal recumbency (see 3.14) (in the case of ruminants). Be on the lookout for large predators and other dangerous animals.
- D.5.17** The darter should wear brightly-coloured clothing or overalls (for example yellow, orange, red) in order to be easily visible from the helicopter when he is on the ground.
- D.5.18** If the animal has gone down in a place that is inaccessible to the ground crew and the animal is too large to be lifted by the helicopter used for darting, it might be necessary to have a larger helicopter on standby to airlift the animal. If this is not possible the animal should be revived and released.

## **D.6 Chemical capture of certain species**

### **D.6.1 African elephant**

The capture of elephant is a specialized procedure and should only be undertaken by competent persons equipped with the necessary equipment.

### **D.6.2 White and black rhino**

The capture of both white and black rhino is a specialized procedure and should only be undertaken by competent persons equipped with the necessary equipment. Adaptation in holding pens (see 3.6), before and after relocation to the final destination, is recommended.

### **D.6.3 Hippo**

The capture of hippo is a specialized procedure, and should only be undertaken by competent persons equipped with the necessary equipment.

### **D.6.4 Cape buffalo**

**D.6.4.1** The normal drinking times of the buffalo should be established, since a buffalo should not be captured shortly after it has drunk water in order to prevent regurgitation while it is immobilized.

**D.6.4.2** Prevent bloat by ensuring that the animal is in sternal recumbency (see 3.14) and the head is raised with the muzzle pointing downwards to ensure the escape of accumulated gas in the rumen. Have a stomach tube and trocar available for emergency treatment of bloat.

**D.6.4.3** In order to prevent the excessive accumulation of saliva while the animal is immobilized the muzzle should point downwards and the tongue should be drawn from the mouth to allow the saliva to escape.

### **D.6.5 Giraffe**

The capture of giraffe is a specialized procedure, and should only be undertaken by competent persons equipped with the necessary equipment.

## **D.7 Care of immobilized animals**

**D.7.1** When the immobilized, recumbent animal has been located, it should be approached carefully and checked that it is satisfactorily immobilized. Loud noises, talking and shouting close to the animal should be avoided. It might be necessary to supplement the initial dose of narcotic with additional doses to facilitate safe handling of the animal.

**D.7.2** The animal's respiration shall be checked to ascertain that it is breathing regularly and deeply. In case of severe respiratory depression, a respiratory stimulant, such as doxapram hydrochloride or nalorphine, can be given intravenously to stimulate respiration, or the effect of the narcotic shall be reversed by injecting the antidote.

**D.7.3** Apply a regular saline solution to prevent the eyes from drying out, cover the eyes with a blindfold (see 3.3) for protection against light and dirt, and plug the ears with cotton cloth as soon as practically possible. The blindfold and earplugs should be removed before the animal is released.

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**D.7.4** Guard against the effects that inclement weather and extreme temperatures could have on the immobilized animal. On cold, rainy days the animal should be kept warm and dry. On hot, sunny days shade should be provided or the animal moved to a shady area, and cool water should be available to wet the animal. Shade should be provided, for example by using shade cloth, in the case of large animals that cannot be moved to a shady area.

**D.7.5** During immobilization and until recovery, all herbivores except elephants should be kept in sternal recumbency (see 3.14), with the limbs under the body (the natural resting position). The head should be lifted with the muzzle pointing downwards to prevent the inhalation of regurgitated ruminal fluids and to reduce the possibility of bloat. Non-ruminant species can be kept in lateral recumbency (resting on the side). Ensure that the airways are kept open. Black and white rhino may be left in lateral recumbency if loading is delayed and care shall be taken to keep the head higher than the rest of the body.

**D.7.6** A stretcher or sled is recommended for moving the immobilized animal from the capture site to the transport vehicle. The immobilized animal should not be manoeuvred or moved or transported in an unnatural position. Animals should not be carried upside-down by the legs. Never lift the immobilized animal by the appendages, such as the tail or ears or the horns, in the case of small antelope. The head, neck and legs should be protected from injury during handling and transport.

**D.7.7** Persons who immobilize animals should know how to monitor the animal's vital signs. A rectal thermometer and a stethoscope should form part of the field kit.

**D.7.8** The animal's vital signs, such as pulse, respiration, body temperature, colour of the mucous membranes and capillary refill time, should be checked frequently. Any deviation from the normal parameters indicates that supportive treatment should be commenced.

**D.7.9** Cool water should be available to wet an animal that becomes hyperthermic in order to cool it down or if there is a delay in moving an animal that is recumbent in direct sunlight.

**D.7.10** The normal colour of the mucous membranes of the eyelids is pink. White or grey, or a bluish colour suggests a circulatory deficiency. The capillary refill time is checked by pressing a finger against the gum above the teeth. If, when removing the finger, it takes more than two seconds for the normal pink colour to return, circulatory depression and possible shock should be suspected.

**D.7.11** When collared or barbed dart needles are used, the dart should be removed by cutting the skin with a sterile scalpel. The dart wound should be disinfected with an antiseptic solution and filled with antibiotic ointment. A long-acting antibiotic of the recommended type and dosage should be injected to prevent the dart wound from forming an abscess.

**D.7.12** Immobilized ruminants should only be transported in sternal recumbency. Immobilized elephants should be transported on their sides. The animal should be supported so that movement of the vehicle does not cause it to be tossed around or injured or moved into an unnatural position.

**D.7.13** Immobilized animals should be accompanied by trained personnel.



## **Annex E**

(informative)

### **Transportation**

#### **E.1 General guidelines for mass crates**

NOTE Crate dimensions are given in annex F.

##### **E.1.1 Design**

The proper design of crates is vitally important to the successful transportation of wild animals. The crate should be strong enough to contain and prevent the escape of the largest and strongest animal that has to be transported, and should be constructed so as to withstand the normal rigours of transportation. Wooden planks of thickness approximately 30 mm to 50 mm and that are reinforced with flat iron straps on the outside are usually strong enough to contain most wild animals.

##### **E.1.2 Interior**

The sides of the interior should be smooth and free of sharp edges and projections, splinters, nails, wires and any other foreign objects which might injure the animal in any way. Thick rubber material (such as conveyor belting) can be used to line the sides of the interior. This will provide insulation and also a smooth surface that will prevent injury when animals chafe against the sides of the crate. The rubber material should be attached so as not to hinder the airflow through the crate.

##### **E.1.3 Size**

Sufficient floor space should be provided to prevent overcrowding. The size of the crate will depend on the area of the floor space of the vehicle. The following guideline can be used: a mass crate of length 4,5 m and of width 2,5 m is large enough to hold 10 adult blue wildebeest, or a family group of 10 zebra, or 20 impala ewes.

##### **E.1.4 Floor**

The floor of the crate should be constructed of or covered with a non-slip material. Woven rubber matting bolted to the floor of the crate and that is maintained in good condition is recommended. The floor should have openings to allow for the drainage of urine. Floors and rubber matting should be washed to remove manure and soiled bedding after each usage of the crate. Good sanitary practice should be maintained at all times.

##### **E.1.5 Roof**

The roof should be high enough to allow free movement of the animal(s), including animals with long horns such as kudu bulls, gemsbok and eland. A roof height of 2,5 m is suitable for most antelope and zebra. Roofs can be solid with built-in trapdoors above each compartment. Such trapdoors allow for observation and for easy access in case of emergency if a person has to enter the crate. If the roof is slatted, the spaces between the cross-beams and the planks should be wide enough to facilitate piping (see 3.11) of selected animals and to allow for the administration of tranquillizers or medication. In rainy weather a tarpaulin that is firmly tied down and secured to prevent flapping during the journey should be used to cover a slatted roof. The tarpaulin should not in any way impede the airflow through the crate.

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### **E.1.6 Doors**

Crates should preferably have two laterally sliding doors, one on the side near the front of the truck and the other at the back of the truck to facilitate the loading of animals. The doors should move freely and be locked for safety during the journey.

Compartmentalized mass crates should have lockable laterally sliding doors between compartments.

### **E.1.7 Air vents and ventilation**

Ventilation openings in the form of holes, adjustable vents or slits should be provided at low and high levels on the front and sides of the crate to allow free airflow at all times, in other words when the vehicle is travelling and when it is stationary. The lower ventilation openings should be at least 200 mm above the floor level to avoid injury to animals' legs accidentally caught in the openings.

### **E.1.8 Inspection apertures**

Inspection hatches should be conveniently positioned in such a way on the sides of the crate that the animals in each compartment can be inspected from the floor level without being disturbed. If they are conveniently placed, ventilation openings can be used for inspection.

### **E.1.9 Compartments**

Mass crates can be divided into compartments to separate aggressive animals or adult males and to enable the simultaneous transportation of different family groups and species of animal. Interleading doors between the compartments should be of the sliding type, operate on rollers and be controlled from the sides of the mass crate. Crates with adjustable panels are recommended to allow the size of each compartment to be adjusted so as to accommodate comfortably the size of the animal(s) to be transported in that compartment.

## **E.2 General guidelines for individual crates**

### **E.2.1 Design of crates** (see also annex F)

**E.2.1.1** Crates should be constructed of wooden planks and reinforced with metal straps.

**E.2.1.2** Specialized crates should be used to transport elephant, rhino, hippo and giraffe.

**E.2.1.3** The sizes of standard individual crates should be in accordance with table F.1. In general, the width of the crate should allow the animal to move freely without allowing it to attempt turning around in the crate.

**E.2.1.4** The floor should have appropriately spaced wooden slats to provide a firm foothold and to prevent the animal from slipping, even on rough roads. The floor should have openings to allow for the drainage of urine. The floor should be covered with sand, untreated wood shavings or straw bedding before loading. On journeys longer than 48 h, faeces should be removed twice a day through a hatch at the back of the crate.

**E.2.1.5** Sufficient ventilation openings in the form of round holes or slits should be provided at the lower and the upper front, back and sides of the crate to allow for adequate airflow at all times. The lower ventilation openings should be at least 200 mm above floor level.

**E.2.1.6** Doors should slide vertically and the mechanism should be free sliding to prevent jamming. The crate should have doors at both ends to facilitate loading and release of the animal.

**E.2.1.7** An adequate number of durable handles should be provided on the outsides of the crate for lifting and moving the crate.

**E.2.1.8** Soiled bedding should be removed and the crate should be washed after each usage of the crate.

## **E.2.2 Transportation of antelope in individual crates**

The crates should be placed transversely on the transport vehicle, so that the heads of the animals face outwards.

## **E.2.3 Transportation of rhino in individual crates**

In order to prevent injury to and breaking of the horns if the vehicle brakes suddenly or sharply, the crates should be placed on the transport vehicle so that the rhino face backwards.

## **E.3 Transporting different types of wild animal**

The temperament and sex of the animal ultimately determine the most appropriate method of transport. The following information is useful:

- a) The majority of the larger-sized antelope and zebra family groups can be transported in mass crates.
- b) Aggressive animals or adult bulls or rams of the same species should never be loaded together in a mass crate.
- c) Wild animals that live in small herds or in family groups in nature should be kept together and preferably be transported and released as a family group.
- d) The horns of adult animals such as gemsbok, eland, tsessebe, impala rams, blesbok and bontebok should be piped (see 3.11) soon after capture and before the animals are transported. The pipes should be removed before the animals are released at their destination.
- e) Wild animals should not be transported in sacks unless they are tranquillized.
- f) Wild animals should not have their legs tied with ropes or twine or other means that could cause distress or injury.

### **E.3.1 Transport methods for various types of wild herbivore**

NOTE 1 Tranquillization is recommended to relieve stress and prevent aggression and fighting during the transportation of most animals.

NOTE 2 Tranquillizers should be administered with care and the person administering them should be familiar with the effect(s) of the preparations that are used.

NOTE 3 Tranquillization will not necessarily prevent animals from escaping through or over fences when they are released after transportation.

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### **E.3.1.1 Blesbok**

Transport young animals and ewes in a mass crate and adult males in separate compartments in a mass crate. Tranquillized adult males may be transported with tranquillized females in the same compartment, provided that the horns of all the adults are piped (see 3.11).

### **E.3.1.2 Bontebok**

Transport young animals and ewes in a mass crate and adult males in separate compartments in a mass crate. Tranquillized adult males may be transported with tranquillized females in the same compartment, provided that the horns of all the adults are piped (see 3.11).

### **E.3.1.3 Bushbuck**

Transport a ewe and her lamb in an individual crate with branches suspended from the roof to provide an environment of security. Pipe the horns of rams and transport them in individual crates.

### **E.3.1.4 Cape buffalo**

Transport family groups in mass crates. Transport tranquillized adult bulls in separate compartments in a mass crate.

### **E.3.1.5 Duiker (common)**

Transport singly, or a ewe and her lamb together in an individual crate. Tranquillization is recommended.

### **E.3.1.6 Duiker (red and blue)**

Transport singly, or a ewe and her lamb together in an individual crate. Tranquillization is recommended.

### **E.3.1.7 Eland**

Transport young bulls, cows and calves in mass crates. Piping (see 3.11) is recommended for adults even if tranquillizers are used. Transport each adult bull in a separate compartment.

### **E.3.1.8 Elephant**

Transport in special crates under tranquillization. Special loading facilities are required and expert assistance from experienced nature conservation staff or a capture team is essential.

### **E.3.1.9 Gemsbok**

The horns of subadult and adult animals should always be piped if animals are to be transported in mass crates. The horns should be piped immediately after capture. Family groups should be transported in a mass crate high enough to allow free movement of the piped horns. Tranquillization is recommended.

### **E.3.1.10 Giraffe**

Use crates specially designed for the transportation of giraffe. Giraffe should only be transported by competent and experienced capture teams.

**E.3.1.11 Grey rhebuck**

Transport adult males in individual crates, and a female and her young in an individual mass crate. Tranquillization is recommended.

**E.3.1.12 Grysbok**

Transport singly in individual crates. Tranquillization is recommended.

**E.3.1.13 Hartebeest (red and Lichtenstein's)**

Transport cows, young bulls and calves in a mass crate. Adult bulls should have their horns piped and should be tranquilized and transported separately.

**E.3.1.14 Hippo**

Tranquillize and transport bulls and aggressive cows separately in individual compartments in a mass crate. Several calves of approximately the same size can be transported in a single compartment under tranquillization. The roof of the crate should be solid and low ( $\pm 1,6$  m) to prevent the animals from rearing up on their hind legs.

**E.3.1.15 Impala**

Transport family groups of females and lambs in mass crates without adult rams. Transport adult rams in individual crates or together in compartments in a mass crate, tranquilized and with the horns piped (see 3.11).

**E.3.1.16 Klipspringer**

Transport singly or in known compatible pairs together in individual crates. Tranquillization is recommended.

**E.3.1.17 Kudu**

Transport cows, calves and young bulls in mass crates. Transport adult bulls individually in separate compartments in a mass crate. Tranquillization is recommended.

**E.3.1.18 Lechwe**

Transport cows and calves in mass crates. Tranquillize adults. Transport bulls separately in compartments in a mass crate under tranquillization.

**E.3.1.19 Nyala**

Transport adult bulls separately. Transport cows, calves and young bulls together in mass crates. Branches with leaves can be hung from the top of crates to provide the animals with extra security. Nyala should preferably be placed in bomas (see 3.4) for at least three weeks for habituation before long-distance transportation is undertaken. The administration of a combination of a short- and long-acting tranquilizers is recommended during transportation and habituation.

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### **E.3.1.20 Oribi**

Transport rams and ewes separately in darkened crates. Tranquillization is essential.

### **E.3.1.21 Reedbuck (common)**

Transport rams and ewes separately in darkened crates. Tranquillization is essential.

### **E.3.1.22 Reedbuck (mountain)**

Transport in mass crates under tranquillization.

### **E.3.1.23 Rhino (white and black)**

Transport in special rhino crates under tranquillization. Professional assistance from competent nature conservation staff or an experienced capture team is necessary for loading and transportation since special facilities are required.

### **E.3.1.24 Roan antelope**

Adult roan antelope are particularly difficult to transport and should preferably be totally immobilized or anaesthetized for the duration of the journey. A family group can be transported under tranquillization after a few weeks of adaptation in a boma (see 3.4). The horns of the adults should be piped (see 3.11). Transport adult roan antelope in individual crates. The roof of the crate should be of height sufficient to be clear of the height of the piped horns.

### **E.3.1.25 Sable antelope**

Transport adult bulls separately under tranquillization. Transport cows, calves and subadult bulls in mass crates under tranquillization.

### **E.3.1.26 Springbok**

Transport under the influence of a short-acting tranquillizer in darkened mass crates with a thick layer of sand or bedding on the floor. For long journeys a combination of short- and long-acting tranquillizers is recommended.

### **E.3.1.27 Steenbok**

Transport individually in individual crates under tranquillization.

### **E.3.1.28 Suni**

Transport individually in individual crates. Tranquillization is essential.

### **E.3.1.29 Tsessebe**

Transport tranquillized females with juveniles in family groups in mass crates. Adult males should be tranquillized and transported individually. Pipe (see 3.11) the horns before releasing the animals into enclosures.

### **E.3.1.30 Warthog**

Transport in mass crates with sufficient cut grass. There should be no more than 15 animals per compartment and no juveniles should be transported with adults.

### **E.3.1.31 Waterbuck**

Transport tranquillized cows with their calves in family groups in mass crates. Transport adult bulls individually under tranquillization.

### **E.3.1.32 Wildebeest (black and blue)**

Transport young bulls, cows and calves together in a mass crate. Transport adult bulls in separate, individual compartments. Tranquillization is recommended.

### **E.3.1.33 Zebra**

Transport family groups in mass crates. Transport individual stallions in separate, individual compartments in a mass crate. If fighting occurs, separate dominant and aggressive stallions and mares and transport them under tranquillization in individual compartments in mass crates. Since fighting usually begins when different family groups are captured and transported together, this should be avoided at all costs. If a few selected animals are transported over a short distance, transportation under chemical immobilization should be considered.

## **E.3.2 Recommendations for road transportation**

**E.3.2.1** For all journeys exceeding eight hours, two competent drivers should be used. It is recommended that a competent assistant accompany the drivers to assist in caring for the animals and for opening gates.

**E.3.2.2** The necessary conservation, veterinary, and import/export permits required for each consignment of animals should be available at all times. These aspects are the responsibility of the driver.

**E.3.2.3** The driver should have detailed road maps, instructions about preferred routes and specified locations at the destination for off-loading the animals.

**E.3.2.4** The transport vehicle should depart with a minimum of delay after the animals have been loaded and should follow the shortest practical route to the destination using the best available roads.

**E.3.2.5** The truck should pull away slowly, the gears should be changed smoothly and the driver should exercise caution at all times, especially on bad roads.

**E.3.2.6** Brakes should always be applied gently and smoothly. This will prevent the animals from losing their balance and falling on top of one another. Sudden braking should be avoided at all times, but should this occur, the vehicle should be stopped so that the condition and welfare of the animals can be checked.

**E.3.2.7** When animals are transported for several days over long distances, the first stop should be made within an hour after departure to check the condition of the animals. Stops should be made regularly, at intervals of three to four hours, to ensure that the animals are well and calm. All stops should be made on a level surface.

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**E.3.2.8** All inspections should be done with a minimum of disturbance to the animals, using the inspection windows provided especially for this purpose on the sides of the crates.

**E.3.2.9** On night journeys a flashlight is required to facilitate inspections. The flashlight should be checked before the journey and an extra bulb and set of fresh batteries should be carried.

**E.3.2.10** For journeys of less than 24 h *en route* feeding and watering is not necessary.

Feeding with the appropriate feed is essential during unexpected delays during the journey. Animals that are conditioned to captivity can be fed and given water in the crate. The feed given should be the same as that to which they are accustomed. A rhino accustomed to feeding in its crate can be fed to calm it during the journey.

**E.3.2.11** Fixed water containers are not permitted in crates since they might injure the animals. Water spilt on the floor makes the floor slippery and could result in serious injury to the animals.

**E.3.2.12** If the animals are looking well and calm, fewer stops are necessary, but the driver should never rush, or drive when tired.

**E.3.2.13** Large towns and cities should be avoided as far as possible. Stops for inspection and resting should be made at quiet places away from inquisitive onlookers.

**E.3.2.14** Use a reliable, roadworthy vehicle that has been thoroughly serviced and is adequately ventilated.

**E.3.2.15** Loose items, such as wire, field capture equipment, spare wheels, baggage, tool boxes and fuel containers, should not be loaded in the vehicle together with the animals.

**E.3.2.16** A tarpaulin and sufficient rope should be carried in case the animals have to be protected against cold and rain. Tarpaulins should be tied so as to prevent flapping and interference with airflow.

**E.3.2.17** The driver should have a reliable, functional (fully charged) cellphone and the telephone numbers of the owner of the animals and the person to whom the animals are being delivered. This is required so that the owner can be informed of emergencies or the estimated time of arrival (or both) in order to ensure that the necessary preparations for the arrival, off-loading and release of the animals can be made in good time, and also to keep the owner informed as to the whereabouts of the transport vehicle.

**E.3.2.18** Possible cold fronts and the wind-chill factor (see table I.1) should be taken into consideration. Even at low speeds, hypothermia (see 3.8) can occur and animals can develop pneumonia or freeze to death (or both). Transporting animals in extremely cold weather over long distances should be avoided. The daily weather reports on radio and television should be routinely monitored for information on pending weather conditions, and the information applied to ensure that animals are not transported in inclement weather.

**E.3.2.19** The crates should be thoroughly cleaned after each journey and before re-use.

**E.3.2.20** The accident reporting procedure given in annex J can be used in the event of a traffic accident.



### E.3.3 Transportation of animals by air

**E.3.3.1** Animals that are imported or exported are often transported by air. Depending on the veterinary health regulations of the importing or exporting country, most wild animals should be placed in quarantine for a specified period of time before being transported to their ultimate destination. Some countries insist on quarantine at the point of origin and at the final destination.

**E.3.3.2** The import and export of all wild animals are strictly controlled by the Directorate of Veterinary Services, National Department of Agriculture, Pretoria, and the relevant provincial conservation or environmental authority.

**E.3.3.3** Leak-proof individual crates, mass crates or modified containers that are used should conform to the size of standard aircraft facilities and should comply with the Live Animals Regulations of the International Air Transport Association (IATA).

**E.3.3.4** In the case of international transportation of animals by air, the following regulations should be observed:

- a) the most recent edition of the Live Animals Regulations of IATA (the information is also available from the cargo section of South African Airways, Johannesburg International Airport, Kempton Park, or the major international airlines that undertake the air transportation of animals);
- b) the regulations of the Convention on International Trade in Endangered Species (CITES) (information can be obtained from provincial conservation authorities (see annex A) and from the Department of Environmental Affairs and Tourism, Private Bag X447, Pretoria, 0001);
- c) the veterinary health requirements of the importing country; and
- d) where practicable, certification by a registered animal welfare inspector (wildlife) should be obtained.

**E.3.3.5** It is essential that the exporter and the airline that transports the animals verify and ensure that suitable off-loading facilities and transport vehicles are available at the destination. The number of *en route* stops should be known beforehand.

**E.3.3.6** The importer and the exporter should be aware of existing and impending weather conditions at the destination so that appropriate precautions can be taken to ensure the wellbeing of the animals at their destination. If a charter aircraft is used, the exporter should ensure that the aircraft has sufficient space for the animals and that the ventilation will be adequate. At airports in many African countries additional portable generators might be required to provide power for forced ventilation in the event of delays in take-off and off-loading.

Delays before loading and after off-loading of the aircraft should be prevented by preplanning of the operation and by prior consultation and co-operation with the airline and airport officials.

**E.3.3.7** The exporter should ensure that all the animals intended for export are healthy and fit for transportation. The animals should be inspected by a competent wildlife veterinarian before loading.

**E.3.3.8** Sick, injured or heavily pregnant animals should not be transported.

**E.3.3.9** Tranquillization is advisable for most species and long-acting tranquillizers should be used for long-distance transportation which, even by air, could take more than 72 h to the final destination.

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**E.3.3.10** Rare and endangered animals and large consignments of animals should, where possible, be accompanied by competent attendants who are suitably equipped for emergency treatment and euthanasia if required.

### **E.3.4 Transport by sea**

**E.3.4.1** Before loading animals for transport by sea, each animal should be inspected for signs of ill health or injury (or both) by competent, trained individuals. Sick, disabled or injured animals should not be transported. All facilities relevant to the welfare of the animals should be inspected and certified suitable by a registered wild animal welfare inspector.

**E.3.4.2** Animals should be habituated to the crate by feeding and watering them in the crate for approximately five days before departure.

**E.3.4.3** Before departure from a holding area to the docks, the exporter should establish that there are appropriate loading and off-loading facilities at both the port of departure and the port of destination.

**E.3.4.4** Suitably ventilated mass crates that allow for the inspection, feeding, watering and cleaning of the animals should be used. These crates should be safely secured to the deck or hatches on which they are positioned to prevent them from capsizing or being washed overboard.

The crates should be subdivided to facilitate cleaning and to enable the isolation and treatment of any sick, disabled or injured animals.

**E.3.4.5** Special care should be taken with regard to the handling, feeding and watering of the animals before and during transportation to the harbour, before loading on the ship, during the voyage and after arrival at the destination.

**E.3.4.6** It should be ensured that feed and fresh water, protected from rain, pollution and sea spray, were loaded and are safely stored in quantities sufficient for the duration of the journey. The feed and water should be available to all animals, as required, throughout the journey. Piping for the filling of drinking troughs should be of sufficient length to reach the troughs. The water pressure in the pipes should be sufficient to enable the filling or replenishing of water troughs in the time available, and also to flush the floors of crates that cannot be otherwise cleaned.

**E.3.4.7** A sufficient supply of absorbent, dry bedding should be available. Manure and soiled bedding should be removed daily to maintain a high level of sanitation.

**E.3.4.8** Eighty per cent shade cloth should be available to cover on-deck containers in hot weather, and provision should also be made to protect the animals from inclement or cold weather and sea spray.

**E.3.4.9** Provision should be made for additional ventilation and shade when ships stand over in conditions of high temperature and humidity at ports *en route* and during loading and off-loading.

**E.3.4.10** Sufficient quantities of the appropriate tranquillizers, immobilizing drugs, medication, sterile syringes, pole syringes, antiseptics, bandages, surgical equipment, and equipment for performing post mortems which might be required during the journey should be taken on board and kept safe by a responsible attendant.

**E.3.4.11** Competent attendants who are experienced in the care of captive wild animals should supervise and manage the entire transportation procedure from the start of the journey and accompany the animals to their final destination. They should ensure that sick, injured and disabled animals are treated or, if necessary, euthanased.

**E.3.4.12** Provision should be made for post mortem examination to ascertain the cause of death and to collect organs for histopathological examination. Dead animals should be disposed of appropriately.

**E.3.4.13** An appropriate checklist should be drawn up by the animal welfare authorities to cover all the above requirements and any other points considered to be important for the welfare of the animals.

## **E.4 Tranquillizers used in the transportation of wild animals**

NOTE The correct use of tranquillizers does not guarantee humane translocation procedures, and tranquillizers should not be used in an attempt to cover up sloppy and substandard procedures. The use of tranquillizers facilitates humane translocation and reduces stress and anxiety in the animals.

**E.4.1** It is generally accepted that it is better to tranquillize animals before transportation because this reduces stress, fighting and injury. Tranquillization should however be done with caution, because the injudicious use of tranquillizers can be detrimental. An animal that receives an overdose of tranquillizer, or that is sensitive to the effects of a certain tranquillizer could, for example, lose its balance during transportation and remain lying in an abnormal position and eventually die of suffocation or bloat. It could also be trampled and injured by other animals in the group and might not be able to protect itself. Before administering a tranquillizer, the type, dosage and necessity of using a tranquillizer should be discussed with a competent, trained individual who is experienced in the translocation of wild animals.

**E.4.2** Very young and old animals are often sensitive to the effects of tranquillizers such as haloperidol or acetylpromazine and might show aberrant behaviour. Haloperidol could have unexpected, adverse nervous side-effects in individual animals that might become hyperactive and disturb other animals in the group. Such animals should be treated with the appropriate medication (for example, biperiden) to reverse the side-effects. Animals that are stressed owing to heat or over-exertion should not be tranquillized.

**E.4.3** Tranquillizers should not be administered to animals that are overexcited and overheated or were driven for long distances before capture. Such animals should be tranquillized only after they have settled and cooled down.

**E.4.4** Depending on the type of tranquillizer and the dose, the sedative effects of short-acting tranquillizers, such as diazepam, azaperone and haloperidol, can last from 6 h to 14 h.

Long-acting (depot) tranquillizers, such as perphenazine enanthate, reach their maximum effect after 72 h and can have a calming effect lasting from 7 d to 10 d after injection. Long-acting tranquillizers, such as perphenazine enanthate and zuclopenthixol acetate, are in an oil base and should be injected intramuscularly; they should never be administered intravenously.

**E.4.5** Short-acting tranquillizers that are injected intramuscularly take from 5 min to 30 min to have a visible effect. After the animals have been injected, they should not be disturbed unless aggressive behaviour is observed, in which case the aggressive animals should be separated from the other animals.

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**E.4.6** Animals that have been captured in nets and are easily handled can be injected either intravenously or intramuscularly with tranquillizers by competent, trained individuals before transportation. Sterile syringes and needles should always be used. Multi-dose syringes are recommended for intramuscular injections when many animals are captured in nets.

**E.4.7** Short-acting tranquillizers may be injected intravenously. The following veins can be used for the intravenous injection of tranquillizers:

- a) the main vein (jugular vein) on either side of the neck;
- b) the large vein (anterior cephalic vein) on the front upper side of the front leg;
- c) the prominent vein (saphenous vein) which runs laterally immediately above the hock; or
- d) one of the ear veins (use a small-gauge 22 g or 23 g needle).

Before the injection is administered all air bubbles should be expressed from the syringe and pressure applied immediately above the injection site to raise and identify the vein. When the vein has been penetrated, the syringe plunger should be drawn back to aspirate blood and ensure that the needle is in the vein. The pressure above the injection site should be released before the injection is administered.

**E.4.8** Pole syringes are used to inject animals in crates.

**E.4.9** Tranquillizers are classified under schedule 5 and are not freely available, but can be obtained either from a registered veterinarian or from a pharmacist on a prescription from a registered veterinarian.

**E.4.10** The leader of the capture team should ensure that all tranquillizers and sterile syringes are stored safely in a cool, dark place and are not exposed to direct sunlight.

**Annex F**  
(informative)

**Dimensions of crates**

**Table F.1 — Internal measurements of individual crates for transporting antelope (see E.2)**

Dimensions in metres

1	2	3	4
Animal	Length	Width	Height
Blesbok, bontebok, impala, reedbuck and female nyala	1,4	0,4	Sufficient to allow the animal to stand erect with 2-3 cm free space above its head
Black and blue wildebeest bull, waterbuck bull, gemsbok and roan antelope	1,9	0,7	Sufficient to allow the animal to stand erect with 2-3 cm free space above its head
Eland bull and kudu bull	2,3	0,8	Sufficient to allow the animal to stand erect with 2-3 cm free space above its head
Nyala bull, sable antelope, blue and black wildebeest cow, waterbuck cow, tsessebe, red hartebeest cow and kudu cow	1,8	0,6	Sufficient to allow the animal to stand erect with 2-3 cm free space above its head
Oribi, duiker, steenbok and klipspringer	1,0	0,3	Sufficient to allow the animal to stand erect with 2-3 cm free space above its head

**Table F.2 — Internal measurements of individual crates for transporting white and black rhinos**

Dimensions in metres

1	2	3	4	5
Crate No.	Age of animal	Height	Length	Width
1	Yearling	1,4	2,6	0,9
2	Subadult	1,6	3,0	1,1
3	Adult	1,8	3,3	1,3
4	Large bull	2,2	4,0	1,5

**Annex G**  
(informative)

**Temporary accommodation of wild animals**

**G.1 Holding pens**

**G.1.1 Shelter**

Animals should be protected from sun, rain, hail and snow by a roof that covers not less than one third of the holding pen (see 3.6). The roof should be high enough for the animals to move and stand comfortably under it. A weatherproof roof slanted to the outside and provided with gutters for drainage of rainwater away from the pen and passageways is recommended. Where possible, so-called safe or flight zones should be provided in the pens to protect the animals from undue disturbance by people.

**G.1.2 Locality**

Holding pens for live auctions should be constructed in a quiet area, away from human activity, buildings, domestic animals, main roads and railways. The pens should be so situated and orientated that the animals are protected from strong prevailing winds, to allow for drainage and runoff of rainwater, and to provide sun and shade for the animals, as required.

**G.1.3 Construction**

The wooden planks and poles used to construct the walls and gates of the pens should be sufficiently sturdy to contain each species of animal. Specially reinforced pens are required for elephant, rhino and hippo.

**G.1.4 Floor area of holding pens**

Holding pens for most antelope and zebra should provide an area of at least 2 m<sup>2</sup> per 50 kg live mass.

**G.1.5 Height of holding pens**

The recommended height for the walls is at least 3 m. Pens for giraffe should be of height at least 4 m.

**G.1.6 Spare pens**

A number of spare pens should be available for holding animals while the other pens are being cleaned or for accommodating sick, disabled, injured or irritable animals.

**G.1.7 Passageways**

All pens should be connected by passageways to expedite the movement of animals within the facility and for loading and off-loading. The passageways should be connected with the terminal loading bay and with the loading platform. The passageways should be of width at least 1 m. Wooden ladders should be placed at strategic places against the walls of the passageways to provide escape routes for the personnel involved in moving the animals. The loading of animals is facilitated if the passageways that lead to the loading ramp are curved.

### **G.1.8 Ventilation**

Free airflow through the pens is essential. In pens constructed from wooden poles or planks this can be achieved by having openings of approximately 20 mm between the planks or poles of the walls of the pens.

### **G.1.9 Gates of holding pens**

The gates should have the following features:

- a) they should be at least as strong as the walls of the pens;
- b) they should be wider than the passageways; and
- c) they should be hung on metal hinges on each end in such a way that they can be used as barriers to animal movement in the passageways and to form a funnel to guide animals into and from pens.

### **G.1.10 Ramps for loading animals**

**G.1.10.1** Loading ramps should be sturdy and fully height-adjustable for loading animals into and from any transport vehicle of suitable type and height.

**G.1.10.2** The floor of the ramp should be strong enough to carry the weight of the animals being loaded.

**G.1.10.3** The surface of the ramp should be of a non-slip material.

**G.1.10.4** A thick strip of rubber or a wooden plank should be secured between the edge of the vehicle and the ramp floor to prevent the animals' feet from slipping in between the gap between the side of the vehicle and the ramp.

**G.1.10.5** The sides of the ramp should be strong and sturdy to prevent animals from falling off, or being injured, or escaping.

**G.1.10.6** The slope of the ramp should not exceed 30°.

### **G.1.11 Water provision**

**G.1.11.1** Each pen should be provided with a water trough that is of capacity approximately 50 l and manufactured from material that cannot injure the animals. The trough should preferably be rectangular in shape to allow horned animals access to the water. It should be positioned so that it can easily be cleaned and refilled, preferably from outside the pen.

**G.1.11.2** If permanent water troughs are built, they should be elevated about 100 mm above the ground. One third of the trough should be outside the pen to facilitate cleaning and filling from the outside. The troughs should have rounded edges to prevent animals from being injured and a round bottom to facilitate cleaning.

**G.1.11.3** Troughs should be kept filled with clean, fresh water at all times when in use and emptied when not in use.

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**G.1.11.4** A water supply that runs on a reliable ball-valve system, that supplies water to all the troughs and that is controlled from outside the pens, is recommended.

**G.1.11.5** The water trough should be situated away from feeding areas to prevent contamination of the water with feed.

**G.1.11.6** Rubber water containers of capacity 20 R to 50 R, that are regularly and easily cleanable and that are kept full of clean water at all times can be used instead of fixed troughs for most species, except elephant, rhino and hippo.

### **G.1.12 Feeding areas**

**G.1.12.1** Feeding areas should preferably be under a weatherproof roof and should be separate from the watering troughs. Feed should be introduced at the ground level and should not be thrown into the pen from the catwalk.

**G.1.12.2** Feeding racks inside the pens are not recommended (except in the case of giraffe) because of the possibility of injury to the animals. The height of feeding racks for giraffe should be adjustable to accommodate all sizes and ages of giraffe.

**G.1.12.3** Feeding hatches that allow feeding from outside the pen are recommended to minimize disturbance of the animals.

**G.1.12.4** The space provided for feed should allow for all the animals to feed with minimum difficulty at any time.

**G.1.12.5** In large pens feed should be placed in different parts of the feeding area to prevent animals from competing for feed. Uneaten and soiled feed should be removed daily.

### **G.1.13 Feed**

**G.1.13.1** Feed that is of the best quality and suitable for the different species should be available. Sufficient feed for at least two weeks for the number of animals to be held should be obtained well before the auction.

**G.1.13.2** Feed should be placed in the pens before the animals are introduced into the pens for the first time. For browsers, such as nyala, kudu and impala, natural vegetation should be provided. Black rhino should be fed natural vegetation for the full duration of confinement.

**G.1.13.3** All the feed should be stored on pallets off the ground in a roofed, dry area and should be protected from rain and pollution.

**G.1.13.4** Each bale of hay or lucerne should be inspected and be free of mould, noxious weeds and other potential sources of contamination before being put into pens. Baling wire or twine should be removed from the bales before feeding.

### **G.1.14 Drainage**

Efficient drainage of runoff water should be considered before pens are erected. Pens should, where possible, be constructed on the highest possible elevation on a slope so that water drains out and away from the pens and not into the adjacent pens or the passageways.



### **G.1.15 Parasite control**

The spread of internal parasites and ectoparasites, such as ticks, lice and mange, should be prevented and all the animals should be treated on arrival at the auction site against internal and external parasites with appropriate anthelmintics and acaricides.

### **G.1.16 Sanitation and bedding**

Straw should be provided as bedding for the animals and the pens should be cleaned daily and all soiled bedding and unused feed removed. Animals that are likely to be stressed should be moved into spare pens or passages while their pens are cleaned.

### **G.1.17 Overhead catwalks**

Catwalks above the passageways are useful for handling, moving and sorting animals, but are not recommended for viewing of the animals by the public unless the animals have been suitably tranquillized. The viewing of animals should ideally be done from the ground level through observation windows. Feed should not be thrown into the pens from the catwalk.

### **G.1.18 Handling and sorting of animals**

A crush with sliding doors to control the movement of animals, and a platform at a convenient height outside the crush for the handlers to stand on, are necessary for the safe handling and treatment of animals.

### **G.1.19 Observation apertures**

Apertures should be included in the walls of pens to facilitate convenient viewing of animals. They should be so designed and placed as to cause minimum stress or disturbance to the animals.

### **G.1.20 Supervision of animals**

The supervision, management, proper feeding and watering of the animals in the pens and the cleaning of the pens should be undertaken by reliable, trained attendants. The custodianship of animals at auctions is legally delegated to the persons who are in charge of and care for the animals.

### **G.1.21 Viewing of animals**

Only prospective buyers should be allowed to view the animals. Rapid movement, loud talking and smoking should be strictly prohibited around bomas, and the buyers should be subject to adequate supervision.

## **G.2 Game auctions**

### **G.2.1 Information on animals offered for sale at auctions**

The following information should be provided, either on the wall of each pen or in the sale catalogue:

- a) the number, species, age group and sex of the animals;

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- b) the date of capture and the date of arrival at the auction facility;
- c) the name(s) of the seller or of the capture team (or both);
- d) the origin of the animals (nearest town and province); and
- e) details on tranquillization (type and date administered).

### **G.2.2 Inspection of animals at game auctions**

NOTE At live auctions animals are sold without guarantee ("voetstoots"). At the drop of the auctioneer's hammer the ownership of the animals is immediately transferred from the previous owner or seller to the buyer. Buyers can insure their animals against mortality during transportation but have no guarantee as to the health of the animal. The "*caveat emptor*" principle prevails at auctions. This is translated as "let the purchaser beware", in other words, the buyer must be certain that he knows what he is buying. The bid and the purchase are legally binding. Sick, injured and unfit animals should not be offered for sale.

To safeguard the buyers and ensure that only fit and healthy animals are sold at auctions, a wildlife veterinarian should visually inspect the animals in the holding pens a day or two before the auction.

The veterinarian should check the following:

- a) the general condition, state of health, and level of apparent stress of the animals;
- b) signs of listlessness and weakness;
- c) skin wounds caused by fighting, which could indicate internal injuries;
- d) signs of diarrhoea;
- e) sick, disabled or injured animals;
- f) tick or mite infestation so that the appropriate acaricidal treatment can be prescribed; and
- g) lameness and stiffness caused by foot rot, capture myopathy or injury to the hooves or the legs.

A checklist (see table G.1) for each pen and that deals with the above should be filled in and signed by the wildlife veterinarian who conducted the inspection and presented to the auctioneers and organizers before the auction.

**Table G.1 – Checklist for inspection of holding facilities**

Date of inspection . . . . . Date of auction . . . . .			
Name, address and tel. No. of veterinarian or inspector . . . . .			
Name of owner of auction pens . . . . .			
Postal address . . . . .			
. . . . .			
Tel. No. . . . .			
Name of supervisor of auction pens . . . . .			
Auctioneering company . . . . .			
Postal address . . . . .			
. . . . .			
Tel. No. . . . .			
<b>1 Supervision of animals</b>	<b>Details</b>		
	Who is supervising and managing the animals in the pens? . . . . .		
	Who feeds and waters the animals? . . . . .		
Name of veterinarian who attends to the animals . . . . .			
<b>2 Locality</b>	<b>Yes</b>	<b>No</b>	<b>Details</b>
			Are the pens in a quiet area? . . . . .
			Are the pens situated away from human activity? . . . . .
			Specify distance from human habitation . . . . .
			Specify distance from domestic animals (barking dogs) . . . . .
			Specify distance from main roads . . . . .
		Specify distance from railway lines . . . . .	
<b>3 Shelter</b>			Is there adequate shelter from rain? . . . . .
			Is there adequate shade from sun? . . . . .
			Specify the type of shade at midday . . . . .
			Is the roof of sufficient height (for example for giraffe)? . . . . .
<b>4 Construction</b>			Specify the materials used in the construction . . . . .
			Are the pens sufficiently robust to contain each species of animal? . . . . .
<b>5 Size of pens</b>			Is the area at least 2 m <sup>2</sup> per 50 kg live mass? . . . . .
			Are special pens available for elephant, giraffe, rhino and hippo? . . . . .
<b>6 Height of holding pens</b> (recommended height for the walls is 3 m)			Specify the height of the pens . . . . .
<b>7 Spare pens</b>			Are there spare pens for sick or injured animals? . . . . .

**Table G.1** (continued)

<b>8 Passageways</b>	<b>Yes</b>	<b>No</b>	<b>Details</b>
Are passageways connected to the terminal loading bays and ramps ? . . .			
Are passageways easily accessible for removing injured or sick animals? .			
<b>9 Ventilation</b>			
Is the airflow through the pens sufficient? . . . . .			
<b>10 Gates of holding pens</b>			
Are the gates strongly made? . . . . .			
Are the gates wider than the passageways? . . . . .			
<b>11 Loading ramps</b>			
Are the loading ramps sturdy and fully adjustable for loading animals from and into suitable transport vehicles? . . . . .			
Is the surface of the ramps made of non-slip material? . . . . .			
Is the ramp strong enough to carry the weight of the animals being loaded? . . . . .			
Are the sides of the ramp strong and sturdy enough to prevent animals from escaping, falling off the ramp or being injured during loading? . . . . .			
<b>12 Water provision</b>			
Does each pen have a permanent (fixed) or a loose water trough? . . . . .			
Specify the capacity of the drinking trough . . . . .			
Can the trough injure the animals? . . . . .			
Can the trough be cleaned easily? . . . . .			
Can the trough be refilled with clean water easily? . . . . .			
Specify the water source . . . . .			
Is the water close to the feeding area? . . . . .			
How is water provided for giraffe? . . . . .			
<b>13 Feeding areas</b>			
Are the feeding areas under a roof? . . . . .			
Are the feeding areas near the watering area? . . . . .			
Are there feeding racks inside the pens? . . . . .			
Are the feeding racks on the side of the pens? . . . . .			
Is there provision for special feeding (for example, are areas for giraffe at the correct feeding height)? . . . . .			
Are there feeding hatches? . . . . .			
Are the animals disturbed when feed is provided? . . . . .			
Is there sufficient feeding space for the number of animals? . . . . .			

Table G.1 (continued)

	Yes	No	Details
<p><b>14 Feed</b></p> <p>Specify the kind of feed provided .....</p> <p>Specify the quality of the feed .....</p> <p>Is the feed provided correct for the specific animals fed? .....</p> <p>Where is the feed stored? .....</p> <p>Is the feed protected from rain and dampness? .....</p> <p>Are the animals feeding? .....</p>			
<p><b>15 Drainage</b></p> <p>Does the water drain out and away from the pens and not into adjacent pens or passageways? .....</p> <p>Is there adequate drainage of rain water? .....</p>			
<p><b>16 Parasite control</b></p> <p>Have the animals been treated for ticks and mites? .....</p> <p>Have the animals been treated for internal parasites? .....</p> <p>Date of treatment .....</p> <p>Which acaricide/anthelmintic was used? .....</p> <p>Have the animals been physically inspected for ticks (neck, ears, anal region)? .....</p>			
<p><b>17 Sanitation and bedding</b></p> <p>Has straw or hay been provided as bedding? .....</p> <p>How often are the pens cleaned? .....</p>			
<p><b>18 Overhead catwalks</b></p> <p>Are there catwalks above the passageways? .....</p> <p>What are the catwalks used for? .....</p>			
<p><b>19 Handling and sorting of animals</b></p> <p>Is there a crush with sliding doors for handling and restraining animals? ..</p> <p>Can sick or injured animals be removed with minimum disturbance? .....</p>			
<p><b>20 Observation windows</b></p> <p>Are there observation windows to facilitate viewing of the animals? .....</p>			

**Table G.1** (concluded)

	Yes	No	Details
<p><b>21 Information on animals to be auctioned</b></p> <p>Is the following information provided on pens or in the auction catalogue:</p> <p>a) the number and sex of animals (No. of juveniles) . . . . .</p> <p>b) the date of capture . . . . .</p> <p>c) the name of the seller or the capture team (or both) . . . . .</p> <p>d) the origin of the animals (nearest town and province) . . . . .</p> <p>e) details on tranquillization (type, dose and date administered) . . . . .</p>			
<p><b>SIGNATURE OF INSPECTOR</b> . . . . .</p> <p>Date of signature . . . . .</p>			

**G.3 Quarantine pens**

NOTE 1 Permission to quarantine animals for import and export can be obtained from the Directorate of Animal Health, National Department of Agriculture, Pretoria.

NOTE 2 All animals in quarantine fall under the jurisdiction and control of the nearest state veterinarian.

Pens similar to the holding pens described for auctions (see G.1) can be used for the quarantine of wild animals intended for export or import, with the following additional conditions:

- a) The quarantine area should be enclosed by a 3 m high security perimeter fence at least 10 m from the nearest pens. This is to prevent any direct contact between the animals in quarantine and other animals and to restrict the possible escape of quarantined animals from the pens and the quarantine area.
- b) Stables might be required for accommodating animals in areas with cold winters.
- c) Spare pens should be available for the isolation of animals that are sick or disabled or injured (or any combination of these).
- d) Adequate veterinary facilities should be provided for the isolation and treatment of sick animals, and for the collection of blood samples if this is required to comply with import and export regulations.

**G.4 Temporary field holding pens**

**G.4.1 Size of the pens**

The size and strength of the pens depends on the type and number of animals to be accommodated. A minimum of 2,0 m<sup>2</sup> per 50 kg of body mass is recommended. A number of separate enclosures of 3 m x 3 m should be available to accommodate aggressive, dominant, disabled, sick or injured animals.

### **G.4.2 Materials**

The materials used for the walls should allow for adequate ventilation, provide protection from strong prevailing winds, and prevent the escape of animals.

### **G.4.3 Location**

The pens should be situated away from human activity, buildings, domestic animals, main roads and railways.

### **G.4.4 Shelter**

Artificial shelters with weatherproof roofing should be provided for shade and for protection from the sun, rain and hail.

### **G.4.5 Ramp**

The ramp used for loading and unloading the animals should have a non-slip surface, a maximum gradient of 30° from the height of the transport vehicle to the ground level, and sides that prevent the animals from escaping and protect them against injury. Any gap between the vehicle and the ramp should be closed to protect the animals from injury. The ramp should be adjustable to the height of the transport vehicle.

### **G.4.6 Provision of feed and water**

#### **G.4.6.1 Feed**

Feed that is suitable for the particular species of animal should be provided and available at all times.

#### **G.4.6.2 Water**

Rubber or plastics containers of capacity 20 l to 50 l and that are cleaned daily and kept filled with clean water at all times can be used for most species, except elephant, rhino and hippo, in which case concrete troughs must be used.

## **Annex H** (informative)

### **Release of wild animals**

#### **H.1 Release of wild animals into a new habitat**

**H.1.1** Before any rare and endangered animals, and large animals such as rhino, hippo and elephant are relocated and released on any property, the suitability of the habitat and the strength of the perimeter fence should be determined in consultation with wildlife specialists and ecologists.

Cognizance should be taken of the translocation regulations and adequate enclosure specifications of the respective provinces.

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**H.1.2** Special care should be taken not to introduce and release animals that are known to be susceptible to tick infestation and tick-borne diseases into areas and habitats known to be potential risk areas. Animals such as springbok, gemsbok, roan antelope, sable antelope and Cape eland from arid and semi-arid habitats and areas with low tick density should not be released in bushveld areas.

Animals captured in the veld and transported immediately may generally be released immediately in the veld at their destination, with the proviso that the habitat is suitable for the particular species.

**H.1.3** Animals bought at an auction, or held in quarantine or in a pen for any reason, can be kept in a pen at the final destination for a suitable period before release (see clause 6 for guidelines on temporary captivity). When these animals are finally released, they should be allowed to leave the pen at their own pace. Within and near the pen, food and water should be provided for several weeks, since some animals might return periodically to the vicinity and security of the pen until they have become accustomed to their new habitat.

## **H.2 Off-loading at the new habitat or location**

The off-loading of animals should always be supervised by a competent and responsible person.

### **H.2.1 The off-loading area**

Animals should never be off-loaded near the outer perimeter fences, internal cattle fences, dongas, dams, river banks, rivers or streams, electrical pylons or any other obstructions which might injure the animals.

### **H.2.2 Off-loading ramp**

Each property where wild animals are destined to be off-loaded should have a permanent, safe, well-constructed, suitable off-loading ramp or off-loading platform. A raised ground platform of height equal to that of the floor of the off-loading vehicle, of gradient not exceeding 30E and to which the vehicle can safely back up is sufficient for the off-loading of most species of antelope and zebra. Depending on the type of transport crate, special off-loading facilities might be required for elephant, rhino and giraffe.

**H.2.2.1** A well-constructed off-loading ramp is necessary to prevent injury to the animals off-loaded at a new habitat.

**H.2.2.2** The ramp should have a non-slip surface.

**H.2.2.3** Any openings or gaps between the vehicle and the ramp should be closed up to prevent accidental injury to the animals that leave the vehicle or the crate.

## **H.3 Off-loading**

**H.3.1** Any pipes that protect the horns of any animals should be removed before the animals are released at the final destination.

**H.3.2** Animals should be released from the crates as quietly and as calmly as possible.



**H.3.3** Electric prodders should only be used as a last resort with stubborn animals. Prodders should never be used on the face, genitalia or anus.

**H.3.4** When they are released in areas where predators are present, animals that are tranquilized should be kept in a boma (see 3.4) until the effect of the tranquilizer has worn off.

## H.4 Off-loading at night

**H.4.1** Off-loading should, unless considered expedient, never take place at night. Off-loading at night is disadvantageous to the animals since they are disoriented in new and strange surroundings, and also to the person who receives the animals since he cannot see or inspect them properly. Animals might also have to be treated for injuries sustained during the journey, and this cannot be done at night.

**H.4.2** Exceptions to this rule include the following:

- a) when the animals have travelled for several days, are exhausted and it would obviously be to their advantage to release them immediately from the crates or the vehicle;
- b) if the animals are particularly restless or the effects of tranquillizers have worn off; and
- c) if the animals are to be kept in a holding pen (see 3.6) under adequate tranquillization.

## Annex I (informative)

### Wind-chill factor

**Table I.1 — Wind-chill factor at various speeds and ambient temperatures**

1	2	3	4	5	6	7	8	9	10
Speed km/h	Ambient air temperature EC								
	25	20	15	10	5	0	-5	-10	-15
8	25	19	14	9	4	-2	-7	-12	-17
16	23	17	11	3	-2	-7	-13	-18	-24
24	21	15	8	2	-5	-11	-17	-24	-30
32	20	13	7	0	-7	-13	-20	-26	-33
40	19	12	6	-1	-8	-15	-22	-29	-35
48	18	11	4	-3	-10	-17	-24	-31	-38
56	17	10	3	-4	-12	-19	-26	-33	-40
64	16	9	2	-5	-13	-20	-28	-35	-42
72	16	8	1	-6	-14	-21	-29	-36	-44
80	15	8	0	-8	-15	-23	-30	-38	-45

1) These parameters are applicable to dry animals only. The wind-chill factor is exacerbated when animals are wet. The danger of pneumonia and death is greatly increased where the animals are transported in wet conditions while insufficiently protected.

**Annex J**  
(informative)

**Driver's accident reporting kit**

**J.1 What to do in case of an accident**

**IMPORTANT**

**1: PREVENT THE ACCIDENT FROM BECOMING WORSE**

- a) STOP immediately – STAY calm – TURN off your engine.
- b) Place emergency warning signs (see below).
- c) Call an ambulance or a doctor, if necessary.
- d) Notify police in case of injury, death or property damage to the other party. If none, and the vehicle(s) is(are) obstructing traffic, you may move the vehicle(s) without permission, but first mark the position(s) of the vehicle(s) so that you can take measurements later on.
- e) Telephone your employer.
- f) Do not take any liquor to treat shock.

**2: OBTAIN AND RECORD ALL FACTS** (see J.2)

- a) Draw a diagram of the accident scene and secure all the information requested (see J.2).
- b) Do not argue about the facts. Be courteous, but do not sign anything or discuss the accident with anyone except the police or your employer.
- c) Make no settlements or offers of settlements to anyone at any time.
- d) Report the accident to the nearest police station within 24 h if no such report has been made at the scene of the accident. Provide a copy sketch of the scene, indicating the measurements obtained on the scene.

**3: SPECIAL COMPANY REGULATIONS**

If the other vehicle involved in the accident was parked and you cannot find the owner, leave your name and address and the name and telephone number of your employer on the windscreen of the other vehicle.

**4: PLACING OF WARNING SIGNS**

Red triangular warning signs must be placed not less than 40 m behind and in front of the vehicle(s) involved in the accident.

## J.2 Sketch details and on-the-scene accident report

### DIAGRAM OF ACCIDENT SCENE

(Sketch the scene of the accident here.)

**DAMAGE** (explain type and extent):

.....  
.....  
.....

**PROPERTY DAMAGE** (other than to vehicle):

.....  
.....  
.....

### DRIVER'S ON-THE-SCENE ACCIDENT REPORT

NOTE This report is to be completed in detail at the scene of the accident. The driver should submit this form when he makes his written report upon completion of the journey.

#### EMPLOYER'S VEHICLE

Driver's name .....

Tractor No. .... Trailer No. ....

Place of accident .....

Date of accident ..... Time .....

Injuries:

Driver .....

Assistant(s) .....

Name of attending police officer: .....

Police station .....

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**WITNESSES:**

Names and addresses of all witnesses

.....  
.....  
.....  
.....

**SECOND PARTY**

Owner of vehicle .....

Address ..... Tel. ....

Driver .....

Address ..... Tel. ....

Driver's licence No. ....

Number of passengers in vehicle .....

Names and addresses of passengers .....

**INJURIES** (name(s) of victim(s) and nature of injuries)

.....  
.....  
.....  
.....

**VEHICLE**

Make ..... Model ..... Licence No. .... Year .....

Insurance company .....

Description of damage .....

If additional vehicles are involved, obtain the information above for each vehicle, using a separate sheet of paper.

**DESCRIBE HOW ACCIDENT OCCURRED**

.....  
.....  
.....  
.....  
.....

..... (Driver's signature)

**J.3 Exchange of identification information**

(This form is provided for you to furnish identification to other driver(s) involved in an accident. Have other parties complete the same form for you.)

Your name ..... Tel. ....  
Address .....  
Location of accident .....  
Driver's licence No. ....  
Date of accident ..... Time .....  
Make of vehicle ..... Licence No. ....  
Owner's insurance company .....

**J.4 Emergency request** (to be filled in by driver)

(This is to be filled in and given to a passing motorist in case of an accident or breakdown when you cannot leave your vehicle or get to a telephone.)

Your cooperation will be appreciated in relaying the information indicated below:

Inform nearest police station .....

Obtain medical aid. Ask the police to send a doctor to the scene of the accident .....

Inform ..... (employer's name)  
at ..... (tel No.) reverse charges  
of the following:

Location of vehicle: .....

Type of trouble: .....

Needs of driver: .....

Date ..... Time .....

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