1. This document has been prepared by the Secretariat.

2. At its 14th meeting (CoP14, The Hague, 2007), the Conference of the Parties agreed to recommend that the Parties promote the use by Management Authorities of the International Air Transport Association (IATA) Live Animals Regulations (LAR) for the transport of live animals and the IATA Perishable Cargo Regulations (PCR) for the transport of plants through a revision of Resolution Conf. 10.21 on Transport of live specimens. At the same time, the Conference agreed that the IATA Regulations should also be used as a reference to indicate suitable conditions for transport by means other than air, where appropriate. Finally, the Conference recommended that the LAR and the PCR be incorporated into Parties’ domestic legislation or policies and that applicants for export permits or re-export or travelling exhibition certificates be notified that, as a condition of issuance, they were required to prepare and ship live specimens in accordance with the IATA LAR or the IATA PCR.

3. At the 16th meeting (CoP16, Bangkok, 2013), the Conference adopted the CITES Guidelines for the non-air transport of live wild animals and plants primarily intended to address the non-air transport of live specimens of animal species included in the CITES Appendices which could be applied in addition to or as an exemption from those found in the IATA Live Animals Regulations for transport other than by air. The Conference also adopted a revision of Resolution Conf. 10.21 (Rev. CoP16) on Transport of live specimens inter alia to include references to the new Guidelines in conjunction with the IATA LAR and the IATA PCR and to incorporate a reference to the Guidelines in national legislation and as a condition of issuance of permits as reflected in Box 5 of the standard CITES form, contained in Annex 2 to Resolution Conf. 12.3 (Rev. CoP18) on Permits and certificates.

4. At the same time, the Conference of the Parties decided to delegate the authority to regularly review, revise and approve amendments to the CITES Guidelines for the non-air transport of live wild animals and plants. Thus, in paragraph 2 e) of Resolution Conf. 10.21 (Rev. CoP16), the Conference of the Parties recommends that:

   e) the Standing Committee and the Secretariat, in consultation with the Animals and Plants Committees and IATA, regularly review, revise and approve amendments to the CITES guidelines for the non-air transport of live animals and plants;

5. The Secretariat recalls that transport of live animals by air is always recommended for longer journeys, where possible. The CITES Guidelines for the non-air transport are intended to be used together with the LAR in certain instances when animals are not transported by air, for instance because there is no airport or airstrip in the area where the animal needs to be transported from or to. Animals may always be transported according to the LAR and, in case of multimodal transport, it is recommended to use the LAR. However, in some instances certain deviations from the LAR may be appropriate. For instance, a zebra may be transported in a crate according to the LAR but if the transport is only by road, it may be more
appropriate to use a horse trailer; a crate is not necessary. Further, as the animal may be accessed during transport by road, access to water and food can be provided at stops and do not need to be accessible by the animal during the transport. These are the types of deviations the *CITES Guidelines for the non-air transport of live animals* contain.

6. The *CITES Guidelines* have not been amended since they were adopted by CoP16 in 2013, whereas the LAR is revised every year. The *CITES Guidelines for non-air transport* are included in the IATA LAR as Annex G and the IATA Live Animals and Perishables Board (LAPB) therefore was interested in contributing to the revision of the Guidelines. In 2020, the LAPB established a CITES Task Force to review the *Guidelines* in collaboration with the CITES Secretariat. A draft of the revised guidelines were circulated (in English only) to the members of the Animals and Plants Committees for comments on 29 September 2021 with a deadline for comments of 22 October 2021.

7. On 22 November 2021, the Secretariat issued a Notification with the draft revised guidelines incorporating comments from the Animals Committee and invited Parties and other stakeholders to provide comments on the draft guidelines by 13 December 2021. Germany and the United Kingdom of Great Britain and Northern Ireland submitted comments on the draft, as did Born Free on behalf of the Species Survival Network’s Working Group on Animals in Captivity.

8. Based on the comments received, the CITES Secretariat, in consultation with members of the IATA LAPB CITES Task Force, has further revised and updated the draft guidelines. Some of the comments submitted by Parties and stakeholders were outside the purpose and scope of the guidelines summarized above and were therefore not incorporated in the revised draft.

9. The latest draft guidelines are contained in the Annex to the present document with amendments indicated. The amendments are based on the 2013 version of the Guidelines. In accordance with the Resolution, the Standing Committee is invited to review and approve the revised draft guidelines.

**Recommendations**

10. The Secretariat recommends that the Standing Committee review and approve the *CITES guidelines for the non-air transport of live animals and plants* as set out in the Annex to the present document.
CITES GUIDELINES FOR THE NON-AIR TRANSPORT OF LIVE WILD ANIMALS AND PLANTS

Contents

Introduction.................................................................................................................................... 4
General Conditions ........................................................................................................................ 5
  1. General conditions for plants ................................................................................................. 5
  2. General conditions for animals ............................................................................................... 6
     2.1 General conditions for the transport of live animals .......................................................... 6
     2.2 Planning obligations for the transport of live animals ......................................................... 7
     2.3 Means of transport............................................................................................................... 8
     2.4 Marking and labelling......................................................................................................... 9
     2.5 Persons accompanying transports................................................................................... 9
     2.6 Loading and unloading..................................................................................................... 10
     2.7 During Transport........................................................................................................... 11
Technical Specifications .............................................................................................................. 12
  3. Technical specifications for plants ........................................................................................ 12
  4. Technical specifications for animals ...................................................................................... 12
     4.1 List of taxa......................................................................................................................... 13
        4.1.1 Invertebrates .............................................................................................................. 13
        4.1.2 Crustaceans ............................................................................................................... 13
        4.1.3 Fish ............................................................................................................................ 13
        4.1.4 Amphibians................................................................................................................. 13
        4.1.5 Reptiles ...................................................................................................................... 13
        4.1.6 Birds ........................................................................................................................... 13
        4.1.7 Mammals.................................................................................................................... 13
     4.2 Fish species CR51/52A/59/60 ........................................................................................... 13
     4.3 Ratite species CR24 .......................................................................................................... 14
     4.4 Flamingo species CR17 ..................................................................................................... 14
     4.5 Stork and Crane species CR17 .......................................................................................... 15
     4.6 Penguin species CR22 ..................................................................................................... 15
     4.7 Pelican species CR21 ........................................................................................................ 15
     4.8 Big cat species CR72 ........................................................................................................ 16
     4.9 Bear species CR72 .......................................................................................................... 16
     4.10 Wild horse and ass species CR73 .................................................................................... 16
     4.11 Antelope species CR73 ................................................................................................... 16
     4.12 Sheep species CR73 ....................................................................................................... 17
     4.13 Buffalo and cattle species CR73 ....................................................................................... 18
     4.14 Giraffe CR73A ............................................................................................................... 18
Introduction

At the first meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Bern, 1976), it was resolved that guidelines on the care and shipment of live specimens of species listed under the Convention should be prepared. At the special working session of the Conference (Geneva, 1977), it was agreed that such guidelines should apply to all animals and plants, not just those currently listed under the Convention. It was further agreed that such guidelines should cover all forms of transport, be practical, and should be directed to the use of persons actually handling the consignments as well as the enforcement authorities.

The resulting Guidelines for the transport and preparation for shipment of live wild animals and plants were broadly based upon the “Live Animals Regulations” (LAR) of the International Air Transport Association (IATA) and were finalized and made available to Parties in 1981.

At the 12th meeting of the Conference of the Parties (Santiago, 2002), Parties determined that the Guidelines were out of date and directed the Animals Committee to consider their replacement. The Animals Committee’s Transport Working Group (TWG) subsequently determined that the IATA LAR provided appropriate guidance in most situations for the transport of live wild specimens of all CITES-listed species, regardless of the mode of transport.

At the 13th meeting of the Conference of the Parties (Bangkok, 2004), the Parties adopted a Decision directing the Animals Committee, in consultation with the Plants Committee and the Secretariat, to develop up-to-date guidance on the transport of live animals and plants of CITES-listed species to replace the 1981 CITES Guidelines. The subsequent work of the TWG led to a revision of Resolution Conf. 10.21 (Rev. CoP14) at the 14th meeting of the Conference of the Parties (The Hague, 2007). The revised Resolution recommended that Parties promote the use of the IATA LAR and IATA Perishable Cargo Regulations (PCR for the transport of Plants) by Management Authorities, and that these IATA Regulations be used as a reference to indicate suitable conditions for transport by means other than air where appropriate. The Resolution also recommended that the LAR and PCR be incorporated into Parties’ domestic legislation or policies.

At the 15th meeting of the Conference of the Parties (Doha, 2010), the Animals Committee was directed to develop a supplement to the IATA LAR for CITES-listed taxa that required non-air transport conditions different from those listed in the IATA LAR. The Conference also agreed to delete the reference to the use of the Guidelines for the transport and preparation for shipment of live wild animals and plants in box 5 of the CITES permit, leaving references only to the use of the IATA LAR and PCR.

The envisaged supplement to the IATA LAR is presented here.

Articles III, IV, V and VII of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) requires the CITES Management Authorities to be satisfied, before granting export permits or re-export or travelling exhibition certificates that the specimens be so prepared and shipped as to minimize the risk of injury, damage to health or cruel treatment. Similarly, Article VIII of the Convention requires Parties to
ensure that all living specimens, during any period of transit, holding or shipment, are properly cared for so as 
to minimize the risk of injury, damage to health or cruel treatment.

The need for guidelines on the care and shipment of live specimens of wild animal and plants was recognized 
at the first meeting of the Conference of the Parties to CITES (Bern, 1976). It was decided that such guidelines 
should be prepared, and the first set of guidelines were adopted in 1981.

Over the years, various versions of such guidelines have been prepared, based on the Live Animals 
Regulations (LAR) of the International Air Transport Association (IATA), and adopted by the Conference of the 
Parties. At the 14th meeting of the Conference of the Parties (The Hague, 2007), the CoP decided to 
recommend that Parties promote the use of the IATA LAR and IATA Perishable Cargo Regulations (PCR) for 
the transport of plants by Management Authorities, and that these IATA Regulations be used as a reference 
to indicate suitable conditions for transport by means other than air where appropriate through a revised 
Resolution on Transport of live specimens. The revised Resolution also recommended that the LAR and PCR 
be incorporated into Parties’ domestic legislation or policies and, that applicants for export permits or re-export 
or travelling exhibition certificates be notified that, as a condition of issuance, they are required to prepare and 
ship live specimens in accordance with the IATA LAR and the IATA PCR;

At the 16th meeting (CoP16, Bangkok 2013), the Conference adopted new CITES Guidelines for the non-air 
transport of live wild animals and plants primarily intended to address the non-air transport of live specimens 
of certain animal species included in the CITES Appendices which required transport conditions additional to 
or deviating from those found in the IATA Live Animals Regulations. The Conference also adopted a revision 
of Resolution Conf. 10.21 (CoP16) inter alia to include references to the new Guidelines in conjunction with 
the IATA LAR and the PCR including with regard to the incorporation of reference to the Guidelines in national 
legislation and as a condition of issuance of permits as reflected in Box 5 of the standard CITES form, 

At the same time, the CoP decided to delegate the authority to the Standing Committee and the Secretariat, 
in consultation with the Animals and Plants Committees and IATA to regularly review, revise and approve 
amendments to the CITES guidelines for the non-air transport of live animals and plants.

The present document has been revised and amended as a result of collaborative efforts by the Ad Hoc Task 
Force on CITES-related matters established at the 44th IATA meeting of the Live Animals and Perishable 
Board (LAPB) in 2020. It contains the revision of the CITES Guidelines that incorporates relevant amendments 
to the IATA LAR adopted since 2013.

It is a two-part document. The first part covers “General Conditions” for the transport of live animals. The 
second part deals with the “Technical Specifications” that deviate from the IATA LAR in respect to the non-air- 
transport of certain taxa and only apply to the species listed therein.

Like the IATA LAR, non-air transport methods are continually evolving, and this supplement may continue to 
be amended over time as innovations in live wild animal transport are made. CITES will collaborate with the 
IATA Live Animals and Perishables Board to determine whether and how this supplement may be included in 
future IATA editions of the LAR and then made available to Parties.

This supplement was developed to indicate where complements the IATA LAR where it is not entirely sufficient 
for the non-air transport of for certain CITES-listed species. Therefore, the deviations only apply to the non-air 
transport provided in the supplement include specific instructions for added security and safety applicable to 
non-air transport of the identified taxa. All wildlife, including the identified taxa herein, may be transported by 
air, road, rail or ship according to the methods listed in the most current edition of the IATA LAR.

General Conditions

1. General conditions for plants

For the shipment of plants the IATA PCR apply.
2. General conditions for animals

The IATA LAR are appropriate, in most cases, for the non-air transport of all species of animals. However, for transports exceeding 48 hours, additional provisions may be necessary. Such provisions may not be appropriate for all species. Examples of such provisions include but are not limited to:

- increase of space available per animal;
- decrease of density of animals;
- measures that prevent fecal build-up;
- additional lighting modifications;
- behavioral enrichment;
- temperature and ventilation modifications.

However, for some taxa, deviations from the LAR are equally appropriate and may be the preferred method chosen by the person responsible for the shipment of live animals.

For taxa and deviations refer to the “Technical Specifications”.

2.1 General conditions for the transport of live animals

The transport of an animal constitutes an unnatural situation for the animal and is most likely to cause it some degree of stress. High levels of stress may increase metabolic rates, hazardous behavior, chances of injuries and susceptibility to diseases.

For reasons of animal welfare, animal transport should be quick, efficient and strive to avoid as much stress as possible to the animal.

The transport of live animals must be well planned, well prepared and effectively executed!

For long distances (travel exceeding 48 hours), air transport should be the first consideration and most desirable option.

Animals must:

- never be transported in a way likely to cause them unnecessary fear, injury, damage to health or undue suffering well-being;
- be checked for fitness for transport before loading.

An animal that is injured or that has physiological weaknesses or pathological problems should not be considered fit for transport especially if:

- it is unable to move independently without pain;
- it has a severe open wound, or prolapse;
- it is a pregnant female for whom 90% or more of the expected gestation period has already passed;
- it is a female that has given birth in the previous week;
- it is a new-born mammal in which the navel has not completely healed;
- it is a cervid in velvet;
- it is a male elephant in rutting.

However, sick, weak and/or injured animals may be transported if:

- the illness or injury is part of a research programme;
- the animals are transported under veterinary supervision/direction/guidance for or following veterinary treatment or diagnosis, (i.e. the animal is being transported to receive medical treatment for its condition, etc.).

Sedatives should not be used on animals to be transported unless strictly necessary to ensure the welfare of the animals and should only be used under veterinary supervision/direction.

In cases where anaesthesia sedation, or other calming drugs are used has been given, the animal must be completely awake, alert and able to balance itself before the transport commences. Detailed information must be clearly noted on the container and accompanying documentation. Paperwork.

Local, national and international animal health regulations must be observed, and appropriate measures shall be taken to minimize the risks of a pathogen spillover, including potential zoonoses.
2.2 Planning obligations for the transport of live animals

Transports and organizers of transports (shippers) have an obligation to plan the transport to ensure that the welfare of the animals is not compromised.

Sound knowledge of the species in transport is of greatest importance. Comprehensive information, when available, about the animal should contain M. Transporters, organizers and animal handlers should have knowledge and experience of the behavioral and physical characteristics of the species transported. In addition, many species-specific factors can impact the journey and should be considered when known. The following are some examples:

- age;
- sex;
- reproductive stage;
- social structure;
- hydration, nutrition and feeding requirements;
- animal's health and medical history;
- environmental requirements including lighting, humidity and temperature;
- imprinting;
- genetic background as it relates to adverse physiologic or metabolic changes;
- pedigree;
- behavior profile including individual characteristics and peculiarities;
- species-specific sensibilities to stressors such as vibrations, light, sound and smell.

It may not be possible to provide species-specific animal requirements during transport, but they should be considered in constructing the journey plan.

Weather conditions, status of transport routes, potential causes for delays, border wait times, legal obligations that may include commercial licenses, driver's rest, traffic bans, truck scales weighing stations, chase vehicles, passport requirements, visas, locations of fuel and repair services, etc. should be investigated and must be taken into account prior to the onset of transport. must be considered as part of journey planning and well before the transport occurs. Emergency contingency plans should also be developed that consider the factors listed here.

Local, national and international laws and regulations as applicable in the countries of origin, transit, and destination must be investigated researched and complied with. Before preparing a live animal for transport, shippers must always obtain full information well in advance concerning import/export, in-transit permits, veterinary health certificates, veterinary import/export permits, CITES import/export/re-export permits or certificates, veterinary examinations, pre-arrival declarations, and clearance times, quarantine arrangements, ports of entry, border inspection posts and prohibitions or restrictions, which may include traffic transportation bans or likely disruptions, veterinary restrictions as well as restrictions for food and bedding provided for the animal.

Customs and veterinary clearances, as well as other relevant services may not be available on weekends and holidays.

It is the shipper's responsibility to ascertain what national legislation regarding the protection of animals during transport is in force for all countries through which the animals are being transported, and to obtain all necessary documents, permits, certificates and licenses prior to departure. All necessary advance arrangements in compliance with applicable laws and regulations must be made to minimize the duration of the transport and to meet the animals' needs during and after transport. Arrangements must be made for animals to be delivered to the consignee upon arrival at its destination. The shipper is obliged to inform the consignee of the anticipated time of arrival and the receiver should make every effort to be present at the time the animal arrives at its destination.

The shipper is responsible for all necessary marking and labelling regarding the transport and/or containers. Additionally, transporters should identify a natural person responsible for the transport and

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1 The 'transporter' is the natural or legal person undertaking the transport of animals on their own account, or for the account of a third party
2 The 'shipper' (consignor) is the natural or legal person responsible for organizing the transport of the live animal; if the shipper is not also the transporter, it is the person who signs the contract with the transporter.
ensure that information on the planning, execution and completion of the part of the journey under their control can be obtained at any time.

Contingency plans in the event of an emergency are strongly recommended.

Contingency plans should consider and contain, as appropriate, information on:

- appropriate measures to be taken if an animal escapes;
- locations and contact details of appropriate repair facilities for ground transportation along the route;
- locations and contact details of appropriate veterinary services able to address the health of the species being transported along the route;
- locations and contact details of intermediate animal holding facilities such as zoos, or aquariums or animal sanctuaries along the route in the case of those animals normally maintained in such specialized facilities;
- 24-hour emergency telephone codes contact information: for those that have consigned the shipment and/or the shipper in the event decisions affecting the animal's health and well-being need to be made;
- contact details of appropriate authorities;
- alternative routes;
- locations and contact details of appropriate services along the alternative route;
- measures in case of rejection at borders;
- any other information that may be appropriate.

2.3 Means of transport

The means of transport, containers and their fittings should be designed, constructed, maintained and operated so as to:

- avoid unnecessary fear, stress, injury, or damage to health and well-being, suffering, cruel treatment, and to ensure the safety of the animal throughout the journey;
- protect animals from inclement weather and adverse changes in climatic conditions;
- provide ambient temperatures appropriate for the transported species at all times during the transport;
- be easily and properly cleaned and disinfected;
- prevent the animal from escaping or falling out and be able enable it to withstand the stresses of movements;
- ensure that air quality and quantity appropriate to for the species transported can be maintained;
- animals must not be exposed to exhaust gases;
- present a slip-resistant flooring or perching surface;
- present a flooring surface that absorbs urines, contains faeces and minimizes the leakage of either;
- outside of the container, retains feces, is leak-proof and incorporates a means to absorb urine such as the use of bedding;
- provide a means of lighting sufficient for visual inspection and care of the animal during transport; and
- avoid unnecessary noise and disturbance

Provide comfort or protection from discomfort for animals kept in a container for over 48 hours: surfaces should not rub, abrade or scratch, and should offer thermal and textural comfort, for example by using rubber matting instead of bare metal; provide adequate feed and water for the duration of the journey, including possible delays that may occur.

Special consideration must be given to measures to prevent adverse impacts from climatic changes in the case of transportation over long distances and travel exceeding 48 hours or over major differences in elevation.

Partitions and compartments must be strong enough to withstand the weight of the animal. In instances where predator and prey species are permitted to travel in the same vehicle, there should be robust separation/compartmentalization to minimize visual, auditory and olfactory awareness.
Access to each individual compartment, without disturbing other animals, should be provided in case an animal is in distress or injured.

Animals should be provided with appropriate bedding or equivalent material which ensures their comfort and is appropriate to the species, the number of animals being transported, the transportation time, and the weather. The material should be sufficient in amount and type to absorb urine and absorb moisture from feces and must not contravene legislation prohibiting its use or import.

Particularly for birds, who are prone to jumping when stressed, softer materials to pad the roof are useful to prevent injury to their beaks and skulls. For some bird species, the enclosure should include a perch (e.g., for birds of prey).

A sufficient supply of bedding material should be carried on the vehicle or should be available en route as required or contained within the shipping container to last throughout the journey.

The means of conveyance transport should be equipped with a roof of light colour and sides that are able to prevent animals from escaping.

Containers must always be kept upright and severe jolts or shaking should be minimized.

Containers must be secured throughout the transport so as to prevent displacement due to the movements and/or vibrations of the conveyance.

Vehicles should be equipped with appropriate-sized fire-extinguishers that are appropriately serviced and maintained in good working order.

Shippers should crate-train or otherwise acclimate animals to be transported with transport containers and vehicles.

Surveillance systems to monitor animals during transport may be useful in some transport situations but cannot interfere with the safe operation of the aircraft/vehicle. are highly recommended.

Poisonous or venomous animals should be double packed to prevent escape (based on local and/or national regulations, vehicles) while ensuring they are provided with sufficient space and ventilation.

2.4 Marking and labelling

Based on local and/or national regulations, vehicles in which animals are transported should need to be clearly marked indicating the presence of live animals, except. There may be exceptions to such vehicle labeling when the animals are transported in containers that are clearly marked indicating the presence of live animals within the container and with a sign indicating the top of the container.

All markings and labels must be legible, durable and printed or otherwise marked on or affixed to the external surface of the container or vehicle.

Containers carrying animals which can inflict poisonous or venomous bites and stings must be boldly marked “POISONOUS” or “VENOMOUS”. Where appropriate, the following documents shall accompany the animals: (a) a notice indicating that the animals are wild, timid or dangerous; (b) written instructions about feeding, watering and any special care required.

Poisonous or venomous animals should be double packed to prevent escape. Vehicles or containers carrying animals that can possibly inflict injury must have an additional warning label, such as “This Animal Bites” or “Dangerous Animal”.

2.5 Persons accompanying transports

Personnel accompanying and handling animals should be appropriately trained and competent for this purpose and should carry out their duties diligently without using methods likely to cause unnecessary fear, stress, injury or damage to health or suffering well-being of the animal(s) or any personnel connected with the transport.

It is strongly recommended that appropriate training and experience with the respective species be a prerequisite for any person accompanying shipments of that animal and any person handling that animal during and after transport.
No person should transport animals or cause animals to Animals must not be transported in a way likely to cause unnecessary fear stress, injury, damage to health, suffering or cruel treatment.

An individual deemed competent to accompany a shipment of live animals should possess the following, as appropriate to the species:

- knowledge of transport regulations as applicable;
- knowledge of animal health and welfare regulations, and document requirements applicable to the countries of origin, transit and destination;
- knowledge of the handling and care of animals before, during and after loading/unloading and transport;
- ability to recognize an animal which is ill or becomes unfit for transport;
- ability to recognize signs of stress, pain, suffering, injury and their causes, and how to reduce these;
- ability to handle emergency situations.

All accompanying personnel should possess a valid passport with visas or equivalent identifying documents as required, and means of communication.

2.6 Loading and unloading

The loading and unloading facilities should be adequately designed, constructed, maintained, and operated so as to avoid unnecessary fear stress, injury, damage to health, suffering, cruel treatment, and to ensure the safety of the animals.

Appropriate surfaces and appropriate protections shall be provided so as to prevent animals from escaping.

If ramps are used in the process of loading and unloading animals outside of their shipping container, they should be installed at a height and angle appropriate for the species, and be so designed as to ensure that the animals can traverse it without risks or difficulties. Ramps shall have slip-resistant surfaces and be easy to clean and disinfect.

All necessary facilities and equipment for crating, hoisting of containers, loading and unloading should be in place and readily available to minimize the time for loading and unloading, to ensure the animal's welfare, and to minimize the risk of unnecessary fear, injury, damage, adverse affects to health, suffering and cruel treatment or well-being of the animal(s).

Goods such as feed which are being transported in the same conveyance as animals must be positioned and secured so that they do not interfere with the transport of the animals and cause unnecessary fear stress, injury, damage to health or suffering to the animals.

Advance arrangements should be made so that all appropriate equipment and personnel are in place at the place of destination at the estimated time of arrival to ensure quick and safe unloading of all animals.

Appropriate lighting should be provided during loading and unloading.

It is essential that specific measures are implemented to safeguard the health and welfare of animals and all personnel during and after loading and unloading.

When Containers loaded with animals are stacked on top of each other on the conveyance, should be avoided. If used, the necessary precautions shall be taken, i.e.:

- to avoid that urine, and feces or any other fluid falling on the animals placed underneath – this will help minimize zoonotic risks;
- to ensure stability of the containers;
- to ensure that ventilation is not impeded.

Animals must be handled and transported separately in the following cases: Animals must not be transported in the same primary enclosure under the following circumstances:

- animals of different species;
- animals of significantly different sizes or ages;
- sexually mature males;
- animals with horns;
- animals aggressive to each other.
This may not apply to animals from proven compatible groups, animals that are acclimated to each other and/or where separation will cause distress, or females accompanied by dependent and/or unweaned young.

In those instances above, where transportation in the same primary enclosure is not recommended, multiple primary enclosures may still be transported together within the same secondary enclosure or within the same conveyance as long as the animals are maintained within their own individual primary enclosures.

All animals should be checked upon their arrival at the place of destination by experienced and trained handlers and/or veterinary personnel, especially if they were injured, or contaminated by body fluids of other species during travel. Animals that are determined to have been injured or contaminated by bodily fluids of other species during travel should be immediately examined by qualified veterinarians and treated as appropriate.

Animals must be moved with care at all times.

Appropriate provisions should be taken at the destination to allow transported animals to adapt to their new environment.

2.7 During Transport

Space allowances shall comply with IATA LAR for transport of live animals in all modes of transport for up to 48 hours.

For taxa described in the “Technical Specifications” of this non-air transport supplement, space allowances should comply with the figures guidance laid out therein.

Sufficient ventilation without injurious drafts and adequate protection from the elements must be provided at all times during the transport to ensure that the needs of the animals are fully met. Transporters must take into account the particular species and number of animals transported, the expected weather conditions during the transport and provide appropriate environmental conditions and controls that must be maintained throughout the transport taking into consideration possible heat and wind chill factors, weather conditions, and the possibility of unexpected stops.

Ventilation within shipping containers and conveyances is the principal means by which animals lose or retain heat. Shipping container design affects ventilation and minimum standards for ventilation openings are provided in the LAR. The temperature and velocity of the ambient air surrounding the shipping container affects heat transfer from the animal to the external environment of the shipping container. Therefore, extremes in either parameter can adversely affect the animal being transported. Protecting the animal container and hence the animal from harsh environmental conditions such as very low or very high temperatures, rain, snow, ice, high winds, or prolonged exposure to intense sunlight will minimize the likelihood of adverse effects to the animal’s health and well-being.

Containers should be stored in a way in which ambient conditions are stable and appropriate, and be placed within the vehicle/aircraft in a way that does not impede ventilation.

Food and water provided for animals should be appropriate for the species and the individual’s size and age. It should be made available, at appropriate intervals, depending on ambient temperature and humidity climatic conditions encountered during transport.

Food and water should always be offered in a way that is familiar to the animal and that also minimizes contamination.

The conveyance should carry a sufficient quantity of appropriate food for the animals during the transport. The food must be protected from the weather and from contaminants such as dust, fuel, exhaust gases and animal excrements. Providing additional contingency food supplies should also be considered for emergencies and delays.

Where specific feeding equipment is used for the feeding of animals, that equipment should be transported in the conveyance.

Where feeding equipment is used, it should be so designed so that it is not hazardous to the animals and if necessary should be affixed to the container or conveyance to prevent its contents from spillage. When the equipment is not in use, it should be stored away from the animals.
In the case of two or more animals per compartment, the natural behavior of the animals, particularly social aspects, must be considered, and food and water should be offered in a way as to be accessible to every animal.

**An adequate supply of water is essential for most species.**

The watering devices should be in good working order, verified before the travel begins, and be appropriately designed and positioned for the animal in transport.

**Sufficient and appropriate floor area and height should be provided for the animals.** The space provided for the animals should be appropriate for their species, their size, number of animals transported, and the anticipated duration of the transport.

The transport should be carried out without delay to the destination. The health and safety and the welfare conditions of the animals must be regularly checked and appropriately maintained by competent personnel.

In case of a delay during transport, all necessary actions required to safeguard the welfare of the animals and reduce the risk of unnecessary fear, injury, and damage to health and suffering welfare should be taken by the transporter.

In transit, care guidelines should be provided to transporters, i.e. feeding/watering regime, requirement for light provision to feed certain bird species, as well as specific environmental and welfare considerations.

**Appropriate climate conditions and control must be provided with respect to the particular species and must be maintained throughout the transport taking into consideration possible heat and wind chill factors, weather conditions, and the possibility of unexpected stops.**

Where possible, appropriate surveillance systems should monitor the temperatures of the compartments of the transported animals at all times and alert the transporter when the temperature in the compartments where animals are located falls outside of the recommended maximum or minimum ranges.

Where possible, appropriate camera surveillance systems should be used to monitor the containers, especially on routes where there is high container damage risk.

Animals should be offered a rest period at suitable intervals depending on the species and length of transport, and offered appropriate food and water.

When animals fall ill or are injured during transport, they should receive appropriate veterinary treatment as soon as possible by qualified personnel and, if necessary, undergo emergency euthanasia in a way which does not cause them any unnecessary suffering, in compliance with legislation as applicable.

Waste material that contains urine, feces or secretions—organic material produced by the animal, animal feed or bedding material, must be handled, collected and disposed of in compliance with applicable legislation/regulation. The legislation/regulation of some countries may prohibit the use of certain organic materials such as hay, straw, and certain other animal bedding or feed. Unloading organic waste may be restricted or prohibited in some countries. Appropriate measures may be taken to store such waste safely and securely for the duration of transit.

**Technical Specifications**

3. **Technical specifications for plants**

   For the shipment of plants the IATA PCR apply.

4. **Technical specifications for animals**

   The IATA LAR apply to the non-air transport of all taxa.

   However, in addition, the technical specifications contained in this chapter may also be followed for, and only apply to the non-air transport of the taxa listed below.

   For the purposes of the technical specifications the term “trailer” refers to a vehicle used to transport animals that is pulled by a car, truck, or train.
For the purposes of the technical specifications the term “compartment” refers to a separate part, section or chamber within a means of transport.

4.1 List of taxa

4.1.1 Invertebrates

No deviations from the LAR apply.

4.1.2 Crustaceans

No deviations from the LAR apply.

4.1.3 Fish

- Fish species (CR 51, CR 52, CR 52A, CR 59, CR 60).

4.1.4 Amphibians

No deviations from the LAR apply.

4.1.5 Reptiles

No deviations from the LAR apply.

4.1.6 Birds

- Ratite species (CR 24)
- Flamingo species (CR 17)
- Stork and crane species (CR 17)
- Penguin species (CR 22)
- Pelican species (CR 21)

4.1.7 Mammals

- Big cat species (CR 72)
- Bear species (CR 72)
- Antelope species (CR 73)
- Buffalo and cattle species (CR 73)
- Deer species (CR 73)
- Elephant species (CR 71)
- Hippopotamus species (CR 7471)
- Kangaroo species (CR 83)
- Pig species (CR 74)
- Pinniped species (CR 76)
- Rhinoceros species (CR 7471)
- Sheep species (CR 73)
- Small camelid species (CR 73)
- Tapir species (CR 7473)
- Wild ass species (CR 73)
- Wild horse species (CR 73)

4.2 Fish species CR51/52A/59/60

General Care and Loading

Fish tanks for road transport should be designed so that the lids do not completely seal and can release excess gases without compromising water loss.
4.3 Ratite species CR24

General Care and Loading

Ostriches, emus, and rheas may be transported loose in trucks, trailers or rail cars. Non-slip floors need to be provided. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Birds may not be shipped together in groups if they:
- are unfamiliar with each other;
- display aggression in close quarters;
- are of significantly different sizes or ages;
- are sexually mature males;
- are aggressive to each other;
- are a group of more than 15 individuals.

This shall not apply to animals from proven compatible groups, animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

Only one (1) male per container or compartment.

Cassowary

Cassowary may be transported singly in crates, but it is preferable to transport sexually mature, adult cassowaries free standing in a trailer compartment.

Sexually mature animals must always be shipped singly.

Dimensions and stocking density

For total transport times up to 48 hours, follow density specifications described in the Container Requirements for Ratites.

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. For total transport times over 48 hours, air transport is preferred.

Floor space requirements for emus apply to rheas and cassowaries equally.

Food and water containers

Containers may not be affixed inside trailer or compartment.

4.4 Flamingo species CR17

General care and loading

Flamingo species may be transported loose in trucks, trailers or rail cars. Flamingos should be transported in clusters or groups rather than in individual compartments as long as they come from an established flock and are familiar with each other. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Floor

Floor covering must be firmly fixed to the floor so birds do not slide or lose footing. Soft damp bedding must be provided to prevent the foot webbing from drying out during transportation; e.g. soaked carpeting or 5 cm (2 in) foam rubber.

Dimensions and stocking density

For transport times up to 48 hours, allow a minimum of 0.2 m² (2 sq. ft.) per bird for a compatible group of flamingos. For total transport times over 48 hours, the number of rest stops should be increased, and additional space offered while not in motion. For longer transport air transport is preferred.

Food and water containers

Containers may not be affixed inside trailer or compartment.
4.5 Stork and Crane species CR17

General care and loading

Stork and crane species may also be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size. Birds may not be shipped together in groups if they:

- are unfamiliar with each other;
- display aggression in close quarters;
- are of significantly different sizes or ages;
- are aggressive to each other.

This shall not apply to animals from proven compatible groups, animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

Large and/or aggressive species of storks and cranes should always be transported in single compartments or crates.

Floor

Floor covering must be firmly fixed to the floor, so birds do not slide or lose footing.

Dimensions and stocking density

For transport times up to 48 hours, allow a minimum of 0.2 m² (2 sq. ft.) per bird for a compatible group of storks or cranes. For total transport times over 48 hours, the number of rest stops should be increased, and additional space offered while not in motion. For total transport times over 48 hours, air transport is preferred.

Food and water containers

Containers may not be affixed inside trailer or compartment.

4.6 Penguin species CR22

General care and loading

Temperature is a major concern and cool substrates are needed.

Plastic totes allow better temperature control and avoid leakage of any cooling substrates. Plastic totes may be used instead of other types of containers. Plastic totes must be secured at all times during transport.

Penguin species should not be shipped loose in a trailer.

Penguin species from a warmer climate can be transported as long as they can be sprayed with water and providing transport does not exceed 8 hours. It is recommended that Penguin species from Antarctic or sub-Antarctic climates should be shipped in a climate-controlled vehicle.

For long transportations, air transport is recommended.

4.7 Pelican species CR21

General care and loading

Pelican species may be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Birds may not be shipped together in groups if they:

- are unfamiliar with each other;
- display aggression in close quarters;
- are of significantly different sizes or ages;
- are sexually mature males;
- are aggressive to each other.
This shall not apply to animals from proven compatible groups, animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

Animals may be offered tubs of water during transport stops.

Dimensions and stocking density

For total transport times up to 48 hours, allow a minimum of 0.6 m² (7 sq. ft.) per bird for a compatible group of pelicans.

*Dalmatian pelican (Pelecanus crispus)*

For total transport times up to 48 hours, allow 0.9 m² (10 sq. ft.) per bird for a compatible group of pelicans.

For total transport times over 48 hours, the number of rest stops should be increased, and additional space offered while not in motion. For total transport times over 48 hours, air transport is preferred.

### 4.8 Big cat species CR72

Big cats may be transported loose in compartments within a truck, trailer or rail car. Compartments must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

### 4.9 Bear species CR72

Bear species may be transported loose in compartments within a truck, trailer or rail car. Compartments must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

*Polar bears require specific temperature conditions.*

### 4.10 Wild horse and ass species CR73

**General care and loading**

Wild horse and ass species may be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Sexually mature males must be shipped individually and must not be in the same trailer with females. Females accompanied by unweaned foals may be shipped together if approved by a certified veterinarian. All other weaned juveniles and mature animals should be transported singly in individual compartments or containers.

*Animals must be transported with either head facing forward or backwards and never transversely.*

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

**Food and water containers**

Containers may not be affixed inside trailer or compartment.

Feeding of wild horse species should be reduced during the 24-hour period before loading. Wild horse species should not be offered food within three hours before loading.

### 4.11 Antelope species CR73

**General care and loading**

Antelope species may be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.
Antelope may not be shipped together in groups if they:

- are unfamiliar with each other;
- are different species;
- display aggression in close quarters;
- are significantly different sizes or ages;
- are sexually mature males;
- have horns;
- are aggressive to each other.

This shall not apply to animals from proven compatible groups, animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

Sexually mature males must not be transported in the same trailer with females unless they are in a separate container or a completely segregated compartment.

Antelope species that must be shipped singly include:

- Duiker species;
- Klipspringer;
- Redbuck;
- Rhebok;
- Sable antelope.

It is recommended that all animals be shipped singly in compartments.

Smaller antelope species and antelope species whose normal behavior includes vertical jumping (e.g. klipspringer) should be transported in containers and not loose in compartments.

Covering the ends of the animal's horns with tubing, elastic material, or other protective devices should be considered.

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

**Food and water containers**

Containers may not be affixed inside trailer or compartment.

### 4.12 Sheep species CR73

**General care and loading**

Sheep species may be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Sheep may not be shipped together in groups if they:

- are unfamiliar with each other;
- are different species;
- display aggression in close quarters;
- are significantly different sizes or ages;
- are sexually mature males;
- have horns;
- are aggressive to each other.

This shall not apply to animals from proven compatible groups, animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

Sexually mature males must not be in the same trailer with females unless they are in a separate container or a completely segregated compartment.

It is highly recommended that all animals be shipped singly in compartments.
Sheep species whose normal behavior includes vertical jumping (e.g. bighorn sheep) should be transported in containers and not loose in compartments.

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

**Food and water containers**

Containers may not be affixed inside trailer or compartment.

### 4.13. Buffalo and cattle species CR73

**General care and loading**

Buffalo and cattle species may be transported loose in compartments within trucks, trailers or rail cars. Compartments must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Sexually mature males must be shipped individually and must not be in the same trailer with females. Females accompanied by unweaned calves may be shipped together if approved by a certified veterinarian. All other weaned juveniles and mature animals should be transported singly in individual compartments or containers.

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

**Food and water containers**

Containers may not be affixed inside trailer or compartment.

### 4.14 Giraffe CR73A

**General care and loading**

Giraffe may be transported loose in compartments within trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety and size.

Sexually mature males must be shipped individually and must not be in the same trailer with females.

Females accompanied by unweaned calves may be shipped together if approved by a certified veterinarian.

All other weaned juveniles and mature animals should be transported singly in individual compartments or containers.

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops may be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

**Food and water containers**

Containers should not be affixed inside trailer or compartment.
4.1544 Deer species CR73

General care and loading

Deer species may be transported loose in compartments within trucks, trailers or rail cars. Compartments must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Deer may not be shipped together in groups if they:

- are unfamiliar with each other;
- are different species;
- display aggression in close quarters;
- are significantly different sizes or ages;
- are sexually mature males;
- are bearing hard antlers;
- are aggressive to each other.

This shall not apply to non-antler-bearing animals from proven compatible groups, non-antler-bearing animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

It is recommended that all animals be shipped singly in compartments.

Deer in hard antlers Although transport of deer in hard antlers is not recommended, they may be transported without their antlers shed or removed, provided that the animals are individually segregated, and the primary container or compartment has been designed and constructed to prevent the antlers from becoming trapped or injuring the animal itself, other animals nearby, attendants, or cargo handlers. Trailers may be used with extreme care.

It is preferable and highly recommended to ship antler-bearing animals after shedding antlers.

Deer in velvet must not be transported.

Muntjacs

Muntjac species should be shipped according to the LAR.

Dimensions and stocking density

For total transport times over 48 hours, the number of rest stops should be increased, and additional space offered while not motion. Additional conditions may be required to meet general transport conditions.

Food and water containers

Containers may not be affixed inside trailer or compartment.

4.1615 Small camelid species CR73

General care and loading

Small camelid species may be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Small camelids may not be shipped together in groups if they:

- are unfamiliar with each other;
- are of different species;
- display aggression in close quarters;
- are significantly different sizes or ages;
- are sexually mature males;
- are aggressive to each other.

This shall not apply to animals from proven compatible groups, animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

Sexually mature males must not be transported in the same trailer with females.
Dimensions and stocking density
For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

Food and water containers
Containers may not be affixed inside trailer or compartment.

4.17. Tapir species CR73

General care and loading
Tapirs may be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Tapirs may not be shipped together in groups if they:

• are unfamiliar with each other;
• display aggression in close quarters;
• are significantly different sizes or ages;
• are sexually mature males;
• are aggressive to each other.

This shall not apply to animals from proven compatible groups, animals that are accustomed to each other, animals where separation will cause distress, or females accompanied by dependent young.

Dimensions and stocking density
For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

Food and water containers
Containers may not be affixed inside trailer or compartment.

4.18. Pig species CR74

General care and loading
Pigs may be transported singly loose in compartments within trucks, trailers or rail cars. Compartments must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Dimensions and stocking density
For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

Food and water containers
Containers may not be affixed inside trailer or compartment.

4.19. Elephant, rhinoceros and hippopotamus species CR71

General care and loading
Elephants, rhinos and hippos may be transported in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.
Mothers and calves should be crated together.

*Hippopotamus*
Animals should be sprayed at regular intervals throughout transport, depending on ambient conditions.

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions. The container must have sufficient room to allow the animal to rock itself into a standing position.

**Food and water containers**
Containers should not be affixed inside trailer or compartment.

### 4.2019. Pinnipeds CR76

**General care and loading**
Pinnipeds may be transported loose in trucks, trailers or rail cars. Trucks, trailers and rail cars must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Skin moisture and appropriate body temperature should be maintained by e.g. water sprayers or dripping ice.

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

*Walrus*
Walrus must always be shipped in an individual container.

**Food and water containers**
Containers for food and water do not need to be provided.

### 4.2120. Kangaroo and wallaby species CR83

**General care and loading**
Kangaroo and wallaby species may be transported in padded compartments within a truck, trailer or rail car. Compartments must meet the minimum requirements for container construction regarding strength, stability, safety, and size.

Kangaroos should be shipped singly. This shall not apply to animals, where separation will cause distress or females accompanied by in pouch young attached to nipple.

**Dimensions and stocking density**

For total transport times over 48 hours, the number of rest stops should be increased and additional space offered while not in motion. Additional conditions may be required to meet general transport conditions.

**Bedding**
To avoid the hazard of necrobacillosis, prickly material such as straw must not be used.

**Food and water containers**
Containers may not be affixed inside trailer or compartment.

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Andreas Kaufmann (Austria)  

Co-chair  

Michael Kiehn (Austria)  

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IGOs and NGOs  

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