



Original: English
July 2006

REPORT OF THE FIFTH MEETING OF THE OIE WORKING GROUP ON ANIMAL WELFARE

Paris, 4-6 July 2006

The OIE Working Group on Animal Welfare held its fifth meeting at the OIE Headquarters in Paris on 4-6 July 2006.

The members of the Working Group and other participants are listed in [Appendix A](#). The Agenda adopted is given in [Appendix B](#). Dr D. Bayvel chaired the meeting.

On behalf of Dr B. Vallat, Director General of the OIE, Dr A. Thiermann welcomed the members of the Working Group and thanked them for agreeing to continue their work on this important mandate of the OIE.

Dr Thiermann advised that one expert from the OIE Collaborating Centre for Animal Welfare in Teramo (Italy), as well as three industry experts (from the International Dairy Federation [IDF], the International Meat Secretariat [IMS] and the International Federation of Agricultural Producers [IFAP]) had been invited to participate in the meeting on the second day. He also informed the Working Group that Dr Sarah Kahn would assume the post of Head of the International Trade Department as of 1 August, and due to that status she was attending this meeting.

1. OIE General Session 2006

a) Resolution on Animal Welfare

Dr Bayvel provided feedback to the Working Group on his presentation to the International Committee at the 74th General Session in May, and confirmed that a copy of the Power Point Presentation, the Working Group annual report and the draft Resolution had been circulated for information to Working Group members.

The Working Group agreed that recommendations 3, 4 and 5 of the Resolution, which was approved unamended by the International Committee, were of particular strategic significance.

b) International Declaration on Animal Welfare

Dr Bayvel reported on the discussions held just prior to the General Session regarding a draft Resolution on the International Declaration on Animal Welfare. This Resolution had been endorsed by the Working Group and Administrative Commission but in the lead up to the General Session, concerns had been raised by some member countries. These concerns were raised again at the Administrative Commission meeting held before the start of the General Session. As a consequence of these concerns, it was decided not to proceed with the Resolution.

Dr D. Wilkins then reported on other activities regarding the global promotion of the International Declaration on Animal Welfare. A Resolution supporting the principle of a universal Declaration had been put before the June meeting of EU Agriculture Ministers by the Czech Minister of Agriculture. This Resolution had been agreed unanimously by all 25 Member States.

Following discussion, Dr. Wilkins suggested that an Animal Welfare Resolution which could be put before next year's General Session, might include reference to basic animal welfare principles including animal sentience. Dr Wilkins reported that planning was under way to hold a Ministerial Conference in New York during 2007. There was optimism that many countries would agree to participate.

c) Updating of four chapters on terrestrial animal welfare

Dr Thiermann reported to the Working Group that revisions on four chapters on animal welfare for terrestrial animals, together with a list of new definitions related to animal welfare, were adopted by the International Committee unamended, except for the definition of "animal handler" of which the second sentence was indicated as "under study" for further consideration of the Working Group.

d) Other issues

Dr Bayvel also updated the Working Group on the following specific issues:

- i) Dr Vallat's confirmation at the General Session of the Working Group membership, which would continue unchanged
- ii) An "opportunistic meeting" at which certain Working Group members (Drs A. Gavinelli, Wilkins and Bayvel) met with Drs D. Wilson and J. Pinto during the General Session, with subsequent circulation of meeting minutes to all Working Group members
- iii) Farewell and expression of appreciation to Drs Wilson and Pinto
- iv) CIWF/WSPA presentations on long distance transport and avian influenza.

2. Revision of adopted standards

The Working Group examined comments received on, and changes proposed to, the four terrestrial animal welfare standards that had been adopted at the 2006 General Session. Dr T. Ishibashi explained that most of the comments from Member Countries and international organisations had been received in February, prior to the March meeting of the Terrestrial Animal Health Code Commission (the Terrestrial Code Commission). Comments of an editorial nature had been addressed by the Terrestrial Code Commission and reflected in the texts proposed and adopted at the 74th General Session, while comments of a technical nature remained in the working document for consideration by the Working Group.

The Working Group reviewed the outstanding comments and recommended that each one be addressed according to one of the following options:

- a) working to be reviewed and incorporated by the Central Bureau;
- b) Working Group to agree a consensus position;
- c) matter to be referred to relevant *ad hoc* Group.

The Working Group agreed that draft chapters reflecting comments classified under 1 or 2 above would be submitted to the Terrestrial Code Commission, while text containing comments classified in 3 above would be examined by the relevant *ad hoc* Group before being sent back to the Working Group for approval then forwarding to the Terrestrial Code Commission.

With respect to the “under study” status of the definition of “animal handler,” the Working Group reviewed comments from Member Countries as well as the discussion at the General Session, and considered that it might be necessary to define animal handlers according to two specific options, i.e. certified animal handler for high risk situations and animal handler for all other circumstances. The Working Group requested that the Central Bureau examine all references to “animal handler” in the chapters and advise on the appropriateness of adopting this risk-based distinction throughout.

The draft chapters with modifications recommended by the Working Group are at Appendices C-G.

The Working Group requested that the Central Bureau obtain material to update the figures in Article 3.7.5.7. to indicate the exact sites of stunning recommended in the Article.

For future distribution of documents among Working Group members, certain members confirmed their preference to receive the same in both hard and soft copy.

3. Development of the chapters on aquatic animal welfare

Prof. T. Håstein briefed the Working Group on progress with the draft documents “Introduction to OIE guidelines for the welfare of aquatic animals,” “Guidelines for the transport of fish by boat,” “Guidelines for the land transport of fish,” “Guidelines on slaughter of farmed fish for human consumption,” and “Guidelines for the humane killing of fish for disease control purposes.”

The drafts had been slightly amended after the Working Group meeting in September 2005 and the updates were presented to the Aquatic Animal Health Standards Commission (the Aquatic Animal Commission) in March 2006. The Aquatic Animal Commission acknowledged the work and made a few amendments, and the drafts were sent to Member Countries for comments with a deadline of 10 September 2006.

Prof. Hastein noted that no final decision had been taken to establish an ad hoc group on Aquatic Production Standards as referred to in the 2006 Work Programme.

In addition to these drafts, species specific articles on land transport of *Channel Catfish* and *Cyprinids* and a species specific draft on *Salmonids* are being developed.

The Working Group discussed what further work is needed on the drafts in order to seek approval at the General Session 2007 and acknowledged the progress made to date.

It was also noted that a draft on air transport of ornamental fish was planned: discussions would be carried out with experts in that field.

4. Comments from non-OIE Delegate sources

The Working Group discussed the best way to address comments received from non-OIE Delegates, such as animal welfare NGOs and industry organisations. It was confirmed that the formal policy position is available on the OIE website (<http://www.oie.int/tahsc/eng/transparency%20eng.pdf>).

It was noted that the OIE Central Bureau is receiving an ever-increasing volume of international correspondence on animal welfare issues. It was agreed that Working Group members would forward directly to the Central Bureau any such items they may receive. Working Group members also confirmed their availability to prepare responses on specific regional issues or on issues where they possess particular experience or expertise.

5. 2006-2007 Animal Welfare Working Group Work Plan

It was agreed that Dr Bayvel would prepare a first draft of the 2007 Work Plan by November 2006 for comment by Working Group members and Central Bureau staff. The OIE International Trade Department will prepare a complementary Central Bureau Work Plan by December 2006. The practice of using two monthly teleconferences to monitor Work Plan implementation will continue, involving Drs Kahn, Bayvel, Thiermann and Ishibashi.

6. Actions on other issues raised at the meeting in September 2005

It was agreed that Dr Wilkins will prepare a one-page position paper to support his proposal that OIE develop overarching ethical principles for specific animal welfare issues, e.g. whether, as a matter of principle, animals should be slaughtered as near as possible to the point of production. The position paper will be circulated to Working Group members for consideration and comment. If the Working Group reaches consensus, Dr Thiermann will raise the issue at the next meeting of the Administrative Commission. Otherwise, it will be discussed again at the next Working Group meeting.

Drs Wilkins and Gavinelli will prepare, by mid October, an “issues and options discussion paper” regarding the promulgation and implementation of OIE Guidelines. It was envisaged that Regional Commissions could play an important role in this regard.

7. Working Group Terms of Reference and Strategy Development

The paper entitled “Issues and Options Regarding Role Clarity and Strategic Direction” was discussed and it was agreed to develop recommendations for consideration by the Director General based on the experience gained by the Working Group. The following actions were agreed:

- a) All Working Group members to pass comments to Dr Bayvel by end August,
- b) Dr Bayvel to prepare a revised ‘recommendations document’ by end September,
- c) Drs Thiermann and Kahn to discuss an agreed version of this document with the Director General by end November.

8. Outcome-based versus prescriptive standards

The Working Group considered country recommendations and discussed how to improve the incorporation of outcome-based recommendations rather than prescriptive standards wherever relevant. Difficulties in choosing between outcome based and prescriptive standards were discussed and it was agreed that outcome-based recommendations are not always the best approach. In cases where prescriptive standards are chosen, it was decided to include an explanation of how the standard could achieve the desired outcome, to provide for consideration of equivalent approaches.

9. Animal production/housing and management

Prof. D. Fraser provided background on this issue and on the Discussion Paper entitled “Terrestrial animal welfare – housing/production systems” by Profs H. Aidaros and Fraser. He noted that this will be a challenging area because it includes economic, cultural and political dimensions and a large body of scientific literature.

The interpretation of scientific information has in some cases created difficulties because various standard-setting organizations have tended to emphasize different criteria for animal welfare. For example, criteria can relate to freedom from pain and distress, the maintenance of basic health, or the ability to live in a “natural” manner. Proponents of certain standards generally claim that their standards are science-based, but because the standards vary, critics may question the interpretation of the science or the involvement of non-scientific considerations. Moreover, there is as yet no basic agreement on whether animal welfare standards should be based on criteria relating to the animal (e.g. survival rate, disease status) or design of the production/management unit (e.g. size of pen).

The Working Group agreed to recommend that the Director General begin by creating an *ad hoc* Group to develop a guidance document that would provide background on relevant issues (including those mentioned above) and suggest a framework for the development of animal production/management guidelines.

The *ad hoc* Group should include scientists experienced in developing animal welfare standards for various species and regulators experienced in the implementation of standards. Membership should be broadly representative of regions and should include representatives of less developed countries.

The *ad hoc* Group should report on the following:

- a) appropriate goals (generic standards) that should be followed in OIE production/management guidelines
- b) the advantages and disadvantages of animal-based and design-based criteria
- c) how to ensure that the process is relevant to all OIE Member Countries
- d) the relationship between animal welfare standards and animal health
- e) a strategy to follow in future, including whether to approach the development of guidelines on the basis of species (e.g. chickens) or production system (e.g. cage systems for laying hens)
- f) areas for priority attention (i.e. species and production system) and a process for undertaking this work.

As a general approach, the Working Group recommends that the development of guidelines and standards begin, in all cases, with a review of the scientific literature and a clear statement of the generic guiding principles.

Upon Dr Vallat joining the meeting, Prof. Fraser outlined the conceptual approach taken by himself and Prof. Aidaros in drafting the discussion paper considered by the group earlier in the meeting. Dr Vallat confirmed his support for the careful and considered approach being adopted and emphasized the following points :

- g) That OIE membership includes around 120 developing or transition countries
- h) That animal protection rather than animal welfare promotion is, at this juncture, the strategic priority in many of those countries
- i) That extensive farming, without housing, is the norm in many countries for the most economically important species
- j) That the linkage between health and welfare should be stressed in any future Working Group deliberations
- k) That the composition of any future *ad hoc* Group should include a balance of scientific expertise and the experience and perspective of regulators, including veterinary managers with field experience.
- l) It was agreed that Profs Fraser and Aidaros would produce a revised version of the discussion paper, which was likely to recommend the establishment of an *ad hoc* Group to prepare an initial guidance document.

10. Wildlife and zoo animal welfare

Dr Wilkins reported that the planned discussion paper on welfare in wildlife would be prepared by Dr S.A. Rahman, Dr W. Masiga and himself for consideration at the next meeting of the Working Group.

11. Laboratory Animal Welfare: OIE/ICLAS meeting

Dr Bayvel summarised the sequence of events and dialogue with ICLAS and the Central Bureau leading up to the despatch of the joint invitation letter on 1 July 2006. It was agreed that the OIE Central Bureau is also to be represented at this meeting by Dr Kahn and that the European Community would be represented by either Dr Gavinelli or a US-based representative.

12. Stray animal control

Dr Rahman, the Chairman of the *ad hoc* Group on stray animal control, gave a brief report on the outcome of the *ad hoc* Group meeting held on 10-12 May 2006. Dr Rahman expressed some misgivings regarding input from some members and differences in the terms of reference between what was agreed at the Working Group meeting in September 2005 and what was presented to the *ad hoc* Group. Dr Rahman also mentioned that the *ad hoc* Group's expertise focused more on philosophical rather than on practical considerations and because of this the consideration of practical issues associated with stray dog control and zoonotic diseases, especially rabies, was compromised. He also noted that the absence of Dr A. Wandeler (WHO zoonosis expert) from the meeting and his subsequent lack of response to all electronic mails contributed to this imbalance.

The Working Group discussed the report of Dr Rahman and the following recommendations were made:

- a) Report of the *ad hoc* Group to be reviewed and modified by Dr Rahman, Prof. Aidaros and Dr Wilkins
- b) The terms of reference be modified to concentrate on dog population control programmes and not control of all stray animals
- c) The membership of the *ad hoc* Group be modified to include:
 - a) An expert in zoonotic diseases, in particular rabies, be identified and invited as a member
 - b) A public sector veterinarian from a country with experience in controlling a significant canine rabies problem be identified and invited as a member
 - c) Dr P. Dalla Villa be invited as a member
 - d) Dr Rahman to continue as Chairman
 - e) Dr E. Hiby to be retained as an animal welfare expert.

When Dr Vallat joined the meeting, Dr Wilkins reviewed a number of key issues which influenced the outcome of the May meeting of the *ad hoc* Group. It was agreed that Dr Wilkins, Dr Rahman and Prof. Aidaros would review and modify the *ad hoc* Group report and that the Central Bureau would reconstitute the *ad hoc* Group.

Dr Vallat supported this approach and recommended the inclusion of veterinarians with practical regulatory experience in the control of stray dogs and canine rabies. With around 50,000 people dying of rabies, world-wide each year from dog-transmitted rabies, he said that this work and associated liaison with, and input from, the WHO was of the highest priority.

13. Draft guidelines for crustaceans

Prof. Håstein presented draft guidelines for slaughter of crustaceans for human consumption and for the humane killing of crustaceans for disease control purposes, both of which had been circulated to Working Group members prior to the meeting. He informed the Working Group that these drafts had been discussed with Prof. D. Lightner (USA) and would be discussed at a meeting with lobster scientists and lobster handlers/producers in Canada in July 2006.

The Working Group discussed these drafts briefly. The Working Group considered the pros and cons of establishing an *ad hoc* Group to review these drafts. In the first instance it was of the view that a physical meeting might not be necessary.

It was agreed that Drs Kahn and Bayvel would discuss further the establishment of such an *ad hoc* group along with the proposed *ad hoc* group for aquatic animal production standards (Refer agenda item 3) and advise by end September. The Working Group acknowledged and supported the quality of the work done so far. It was agreed that comments from Working Group members on these drafts should be provided to Prof. Håstein within approximately one month. It was also noted that a draft report on transport of crustaceans is in progress.

14. EU Five -Year Action Plan

A short presentation was given on the European Community Action Plan on the Protection and Welfare of Animals 2006-2010 (AWAP).

The scope of the AWAP is to cover all fields of animal protection as specified in the European Union Treaty, from the protection of animals used in experiments to the protection of farm animals. The action plan contains five main elements and provides a comprehensive map of the Commission's planned animal welfare initiatives in coming years.

The action plan focuses on specific actions to promote and maintain high animal welfare standards in the EU and raise awareness and implementation of animal welfare standards at the international level in particular, taking fully into account the OIE guidelines and their important role in relation to bilateral and multilateral veterinary and trade agreements.

Simplification and clarification of existing European legislation, incorporation of specific measurable farm indicators for animal welfare and the improvement of marketing and communication strategies are some of the main objectives of the Action Plan.

In order to better achieve these objectives the Commission will consider the outcomes of an EU wide research project, 'Welfare Quality'. Welfare Quality (www.welfarequality.net) is an EU funded project promoting the integration of animal welfare within the food quality chain. Research projects outside the EU may also be funded to reflect the importance of animal welfare internationally.

15. EU contribution to the OIE trust fund for the purpose of Animal Welfare training

In March 2006 a letter was sent from Dr Jaana Husu Kallio, Deputy Director General of DG SANCO in the European Commission, to Dr Vallat, Director General of the OIE, announcing willingness to investigate the possibility of the European Community making a contribution of 200,000 Euros to the Animal Health and Welfare Fund. This contribution would facilitate the Fund's objectives of promoting training, especially with regard to the communication and application of the OIE's agreed Animal Welfare standards for animal slaughter.

The abovementioned letter highlights the importance of the OIE Collaborating Centre for Animal Welfare in Teramo playing an active role in developing training tools, in particular for countries that have experienced difficulties in implementing OIE Animal Welfare guidelines.

The Advisory Committee of the Fund consisting of the representatives of donors is scheduled in October. The Working Group will be kept informed of developments and consulted on the specifications related to the funding initiative in order to provide appropriate assistance to the Advisory Committee of the Fund.

16. Education resources in the area of Animal Welfare

a) Michigan State University E-Learning Course

Dr Bayvel referred to a recent MSU request for assistance in promoting its OIE E-learning course, in which animal welfare is one of ten modules. It was agreed that Dr Bayvel would pass details of this request to Dr Kahn, who would in turn discuss it with the OIE Communications Dept and other Central Bureau colleagues.

- b) Letters regarding OIE support for animal welfare research and teaching

Dr Bayvel referred to letters drafted in 2003, but not yet finalized, to be despatched over the signature of the Director General. It was agreed that Dr Bayvel would revise and update these draft letters for consideration and appropriate action by the Central Bureau.

- c) Sabbatical – Dr Ed Pajor, University of Purdue

The proposal that Dr Pajor undertake a sabbatical in Paris, in early 2007, and assist with implementing Working Group proposals in relation to animal welfare and education was supported by the Working Group and, in principle, by the Director General. Prof. Fraser will liaise with Dr Kahn to firm up any outstanding administrative arrangements.

17. WorldBank Group/International Finance Corporation and Animal Welfare

Dr Gavinelli confirmed strong EC support for the work undertaken recently by the IFC and proposed that the OIE liaise further with the IFC to promote international awareness. Dr Vallat confirmed that a conference was planned for Washington in December 2006 at which it would be possible to include animal welfare and the IFC initiative on the agenda. It was agreed that Dr Gavinelli would liaise with Dr Kahn on this opportunity and that Dr Kahn would communicate with IFC to confirm possibilities for further World Bank/OIE collaboration.

18. International Training in Animal Welfare and Slaughter

Dr Gavinelli provided an update on the purpose of this meeting, which will be held in Bristol on 26 – 29 September. It was agreed that Dr Gavinelli would liaise with Dr Kahn re appropriate Central Bureau staff involvement and proposed linkage with the OIE website.

19. 2004 Global Conference follow up

Dr Gavinelli confirmed EC support for such a conference, which was also supported by the Director General. An indicative theme “Towards International Implementation of Animal Welfare Standards – Challenges and Opportunities” was discussed and it was agreed in principle to recommend that the conference be held outside Europe or North America to reflect the broad range of OIE Member Countries’ interests, experiences and needs in regard to animal welfare. 2008 was agreed to be a realistic time to hold the conference, to enable necessary planning activities to take place, and Cairo and Bangalore were suggested as two possible venues.

It was agreed that the planning modus operandi used for the successful 2004 conference would be repeated, with a steering committee comprising Profs Fraser and Aidaros and Drs Rahman, Wilkins, Gavinelli and Bayvel. Dr Bayvel will liaise with Dr Kahn, with a view to preparing a draft conference project plan by October 2006.

20. Regional Commission involvement

Working Group members confirmed their interest in actively participating in Regional Commission meetings. This would generally assist with promoting awareness and adoption of guidelines and could specifically assist in promoting the update of educational activities such as the Bristol/WSPA “Concepts in Animal Welfare” programme. Such involvement was supported by the Director General and it was agreed that Dr Kahn would liaise with Central Bureau colleges and Working Group members, as appropriate.

21. SATRS 24(2) Promotion

Dr Bayvel noted that initial sales of the OIE *Scientific and Technical Review* Series publication “Animal Welfare: Global Issues, Trend and Challenges” have been very good and he had been liaising with the OIE Publications Department regarding additional journal and conference promotional opportunities. It was agreed that the Publications Department (Ms. Annie Souyri) would liaise directly with Working Group members to identify additional regional marketing opportunities.

22. New OIE Collaborating Centres

As per discussions at the 2005 Working Group meeting, and as per the 2006 work programme, it was agreed that Prof. Fraser, Dr Bayvel and the Central Bureau would review collaborating centre qualifying criteria to ensure that animal welfare is appropriately addressed and with a view to encouraging centres which meet the criteria to apply for OIE recognition. It was agreed that Prof. Fraser would prepare an initial review by end September.

23. Membership of Animal Welfare Working Group

Dr Vallat confirmed the policies and process relating to Working Group membership. A number of options to address the most appropriate method of ongoing involvement of IFAP, IMS, IDF, Teramo and other international stakeholder groups (e.g. aquatic industry and laboratory animal science stakeholders) were discussed. It was agreed that Dr Vallat and Central Bureau staff would meet again with IFAP, IMS and IDF senior management and that the outcome of these discussions would be communicated to the Working Group by end 2006. This would ensure that a revised modus operandi was agreed for the next meeting of the Working Group in 2007.

24. Relationship with other organisations

The relationships with other organisations worldwide has made possible the successful participation in relevant conferences and seminars, presenting the OIE modus operandi and raising awareness of OIE initiatives. Due to the increasing number of topics dealt by the Working Group and the foreseen increase in number of contacts related in particular to the new area of work on the protection of laboratory animals, the Working Group suggested that the OIE Central Bureau compile a list of the main organisations with world and regional importance that are already cooperating with the OIE, to be shared and updated by the members of the Working Group. This list for internal use could contribute to prioritizing the activities and the contribution to future initiatives where OIE participation will be demanded.

25. Animal Welfare Conference in Uruguay

Dr Wilkins reported on negotiations for an animal welfare conference for MERCOSUR countries to be held in Uruguay in 2007. The European Commission and WSPA have agreed to support administratively and financially the Uruguayan initiative to hold an animal welfare conference. A meeting took place during the OIE General Session with the representatives of the Uruguay State Veterinary Service. Progress was made in ensuring that all interested parties in Uruguay were involved in the organisation. It was also decided that the programme should include presentations from other South American countries and the OIE.

26. Other business

During her two months stay at the OIE Central Bureau, it was agreed that Ms Sonja Rosic-Banjanin, a stagiaire from Ontario Veterinary College, Guelph, Canada, would support the Working Group in the following areas:

- a) Review of animal handler definition and certification requirements and necessary amendments to adopted guidelines based on the recommendations from the Working Group
- b) Letters regarding OIE support for animal welfare research and teaching
- c) *ad hoc* Group on Stray Animal Control
- d) Stakeholder database
- e) Support for the proposed 2008 conference steering committee is a further possible area of activity.

27. Next Meeting

Working Group members confirmed that they would appreciate as early as possible advice on the date of the next meeting in 2007. Dr Thiermann suggested that an early September date was most likely. It was agreed that Dr Bayvel would liaise with Drs Thiermann and Kahn to ensure a date was agreed by end 2006. This timing would align with proposals on involvement of industry stakeholders in the Working Group. Working Group members also confirmed interest in receiving background documents at least two weeks prior to the meeting and that the agenda be structured to ensure that meeting effectiveness is not adversely influenced by the participation of multiple observers.

.../Appendices

FIFTH MEETING OF THE OIE WORKING GROUP ON ANIMAL WELFARE

Paris, 4-6 July 2006

List of participants**MEMBERS OF THE OIE WORKING GROUP**

Dr David Bayvel (Chair)

Director Animal Welfare
MAF Biosecurity New Zealand
Box 2526
Wellington
NEW ZEALAND
Tel.: (64-4) 8190368
Fax: (64-4) 8190728
E-mail: bayveld@maf.govt.nz

Prof. David Fraser

Professor and Chair in Animal Welfare
Faculty of Agricultural Sciences and
Centre for Applied Ethics
University of British Columbia
2357 Main Mall-Suite 248
Vancouver V6T 1Z4
CANADA
Tel.: (1-604) 822 2040
Fax: (1-604) 822 4400
E-mail: dfraser@interchg.ubc.ca

Dr Andrea Gavinelli

Deputy Head of Unit
European Commission
Directorate General Health and
Consumer Protection
Unit E2 – Animal Health and Welfare,
Zootechnics
Rue Froissart 101 – 2/54
1040 Brussels
BELGIUM
Tel.: (32-2) 2966426
Fax: (32-2) 2953144
E-mail: Andrea.Gavinelli@cec.eu.int

Prof. Dr Tore Håstein

Past President of the OIE Fish
Diseases Commission
National Veterinary Institute
Ullevålsveien 68
P.O. Box 8156 Dep.
0033 Oslo
NORWAY
Tel.: (47-23) 21 61 50
Fax: (47-23) 21 60 01
E-mail: tore.hastein@vetinst.no

Dr Walter N. Masiga

Retired Director of African Union
Animal Resources (AU/IBA)
Box 47926
Nairobi
KENYA
E-mail: masiga@iconnect.co.ke

Dr Sira Abdul Rahman

Retd. Dean Bangalore Veterinary College
No 123, 7th B Main Road
4th Block(West)
Jayanagar, Bangalore 560 011
INDIA
Tel. & Fax: (91-80) 6635210
E-mail: shireen@blr.vsnl.net.in

Prof. Hassan Aidaros

Professor of Hygiene and Preventive
Medicine
Faculty of Veterinary Medicine
Banha University
5 Mossadak Street
12311 Dokki - Cairo
EGYPT
Tel.: (202) 218 51 66
Fax: (202) 760 70 55
E-mail: Haidaros@netscape.net

Dr David Wilkins

Secretary
ICFAW
c/o WSPA, 89, Albert Embankment
London SE1 7TP
UNITED KINGDOM
Tel.: (44) 1243 585011
Fax: (44) 1243 585011
Email: wilkinsvet@btinternet.com

Appendix A (contd)**OTHER PARTICIPANTS**

Dr Alex Thiermann

President of the Terrestrial Animal Health Standards Commission
 OIE
 12, rue de Prony
 75017 Paris
 FRANCE
 Tel.: 33-(0)1 44 15 18 69
 Fax: 33-(0)1 42 67 09 87
 E-mail: a.thiermann@oie.int

Dr Nils Beaumond

INTERBEV - Relations internationales
 Tel.: 33-6 8608 4369
 E-mail: n.beaumond@interbev.asso.fr

Mrs Laura Kulkas

Chair of IDF Standing Committee on Animal Health
 DVM Head Health Veterinarian
 E-mail: Laura.Kulkas@valio.fi

Dr Per Olsen

Chief veterinary adviser
 Danish Agricultural Council
 Axelstorv 3
 DK-1609 Copenhagen V
 DENMARK
 Tel.: +45 33 39 42 81
 Fax: + 45 33 39 41 50
 E-mail: pol@agriculture.dk

Dr Paolo Dalla Villa

Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"
 OIE Collaborating Centre for Veterinary Training, Epidemiology, Food Safety and Animal Welfare
 Campo Boario
 64100 Teramo
 ITALY
 Tel.: +33 0861332280
 Fax: +33 0861332251
 E-mail: p.dallavilla@izs.it

Dr Sarah Kahn

Department of Agriculture, Fisheries and Forestry, Australia
 GPO Box 858 Barton ACT 2601
 AUSTRALIA
 Tel.: 612 6272 3243
 Fax: 512 5272 4118
 Email: sarah.kahn@daff.gov.au

OIE HEADQUARTERS

Dr Bernard Vallat

Director General
 12, rue de Prony
 75017 Paris
 FRANCE
 Tel.: 33-(0)1 44 15 18 88
 Fax: 33-(0)1 42 67 09 87
 E-mail: oie@oie.int

Dr Tomoko Ishibashi

Chargée de mission
 International Trade Department
 OIE
 Tel.: 33-(0)1 44.15.18.92
 Fax: 33-(0)1 42.67.09.87
 E-mail: t.ishibashi@oie.int

Ms Sonja Rosic-Banjanin

Stagiaire
 International Trade Department
 OIE
 Tel.: 33-(0)1 44.15.18.88
 Fax: 33-(0)1 42.67.09.87
 E-mail: s.rosic@oie.int

FIFTH MEETING OF THE OIE WORKING GROUP ON ANIMAL WELFARE**Paris, 4-6 July 2006****Adopted agenda**

1. Introduction
2. OIE General Session 2006 outcomes
 - Resolution on Animal Welfare
 - International Declaration on Animal Welfare
 - Updating of four chapters on Animal Welfare in the OIE *Terrestrial Animal Health Code*
 - Other issues raised
3. Work of the OIE Terrestrial and Aquatic Animal Health Standards Commissions
 - Member Countries' comments on the chapters on terrestrial animal welfare
 - Development of the chapters on aquatic animal welfare
 - Addressing comments from non-OIE Delegate sources
4. Current issues
 - 2006-2007 AWWG Work Plan
 - Other Teramo Meeting Actions
 - Working Group TOR and Strategy Development
 - Outcome-based versus Prescriptive Standard
 - Discussion paper on 'housing/production; generic housing systems'
 - Discussion paper on wildlife and zoo animal welfare
 - Laboratory Animal Welfare: OIE/ICLAS/IACLAM meeting (AALAS, Salt Lake City, 15 October 2006) (D. Bayvel, EU representative, OIE Central Bureau and D. Fraser)
 - Outputs from the meeting of the *ad hoc* Group on stray animal control
 - Draft guidelines for crustaceans
 - EU Five Year Action Plan
 - EU contribution to the OIE trust fund for the purpose of Animal Welfare training
 - Educational resources in the area of AW (Sabbatical Dr. Ed Pajor)

Appendix B (contd)

- International Finance Corporation Guide Note on Animal Welfare and Business
5. Other Business
- International Training on Animal Welfare at Slaughter
 - 2004 Global Conference Follow up
 - Animal Health and Welfare Fund
 - Regional Commission Involvement
 - SATRS 24(2) Promotion Follow up of the OIE Global Conference 2004
 - New OIE collaborating centres for animal welfare
 - Membership AWWG
 - Relationships with other organisations/associations (IDF, IMS, IFAP, AATA, WSPA, CIWF, etc.)
6. Next meeting

CHAPTER 1.1.1.

GENERAL DEFINITIONS

Article 1.1.1.1.

For the purposes of the *Terrestrial Code*:

Animal handler

means a person with a knowledge of the behaviour and needs of animals ~~which, who~~ with appropriate experience and a professional and positive response to an animal's needs, ~~results in~~ can achieve effective management and good welfare. In cases during animal transport by land in individual trucks, the truck driver may be the animal handler if a designated animal handler is not present (under study). ~~Their competence should be demonstrated through independent assessment and certification from the Competent Authority or from an independent body accredited by the Competent Authority (under study).~~

Accredited/Certified animal handler

means a person with a knowledge of the behaviour and needs of animals, who with appropriate experience and a professional and positive response to an animal's needs, can achieve in effective management and good welfare. Their competence should be demonstrated through independent assessment and certification from the Competent Authority or from an independent body accredited by the Competent Authority (under study).

Container

means a non-self-propelled receptacle or other rigid structure for holding animals during a *journey* by one or several means of transport.

Death

means the irreversible loss of brain activity demonstrable by the loss of brain stem reflexes.

Journey

an animal transport journey commences when the first animal is loaded onto a *vehicle/vessel* or into a *container* and ends when the last animal is unloaded, and includes any stationary resting / holding periods. The same animals do not commence a new journey until after a suitable period for rest and recuperation, with adequate feed and water.

Killing

means any procedure which causes the *death* of an animal.

Lairage

means pens, yards and other holding areas used for accommodating animals in order to give them necessary attention (such as water, feed, rest) before they are moved on or used for specific purposes including slaughter.

Loading/Unloading

loading means the procedure of moving animals onto a *vehicle/vessel* or into a *container* for transport purposes, whereas unloading: means the procedure of moving animals off a *vehicle/vessel* or out of a *container*.

Post-journey period

means the period between *unloading* and either recovery from the effects of the *journey* or slaughter (if this occurs before recovery).

Appendix C (contd)**Pre-journey period**

means the period during which animals are identified, and often assembled for the purpose of loading them.

Resting point

means a place where the *journey* is interrupted to rest, feed or water the animals; the animals may remain in the *vehicle/vessel* or *container*, or be unloaded for these purposes.

Restraint

means the application to an animal of any procedure designed to restrict its movements.

Slaughter

means any procedure which causes the *death* of an animal by bleeding.

Slaughterhouse/abattoir

means premises, including facilities for moving or lairaging animals, used for the slaughter of *animals* to produce animal products, and approved by the *Veterinary Services* or other *Competent Authority*.

Space allowance

means the measure of the floor area and height allocated per individual or body weight of animals.

Stocking density

means the number or body weight of animals per unit area on a *vehicle/vessel* or *container*.

Stunning

means any mechanical, electrical, chemical or other procedure which causes immediate loss of consciousness; when used before slaughter, the loss of consciousness lasts until *death* from the slaughter process; in the absence of slaughter, the procedure would allow the animal to recover consciousness.

Transport

means the procedures associated with the carrying of animals for commercial purposes from one location to another by any means.

Transporter

means the person licensed by the *Competent Authority* to transport animals.

Travel

means the movement of a *vehicle/vessel* or *container* carrying animals from one location to another.

Vehicle/vessel

means any means of conveyance including train, truck, aircraft or ship that is used for carrying animal(s).

Quarantine station

means a facility under the control of the *Veterinary Authority* where animals are maintained in isolation with no direct or indirect contact with other animals, to prevent the transmission of specified pathogen(s) while the animals are undergoing observation for a specified length of time and, if appropriate, testing and treatment.

— text deleted

APPENDIX 3.7.2.

GUIDELINES FOR THE TRANSPORT
OF ANIMALS BY SEA

Preamble: These guidelines apply to the following live domesticated animals: cattle, buffalo, deer, camelids, sheep, goats, pigs and equines. They may also be applicable to other domesticated animals.

Article 3.7.2.1.

The amount of time animals spend on a *journey* should be kept to the minimum.

Article 3.7.2.1.bis

1. Animal behaviour

Accredited animal handlers and animal handlers should be experienced and competent in handling and moving farm livestock and understand the behaviour patterns of animals and the underlying principles necessary to carry out their tasks.

The behaviour of individual animals or groups of animals will vary, depending on their breed, sex, temperament and age and the way in which they have been reared and handled. Despite these differences, the following behaviour patterns which are always present to some degree in domestic animals, should be taken into consideration in handling and moving the animals.

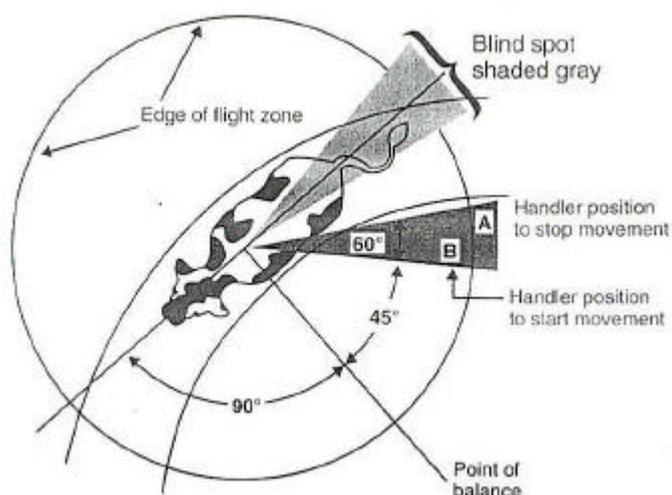
Most domestic livestock are kept in herds and follow a leader by instinct.

Animals which are likely to be hostile to each other in a group situation should not be mixed.

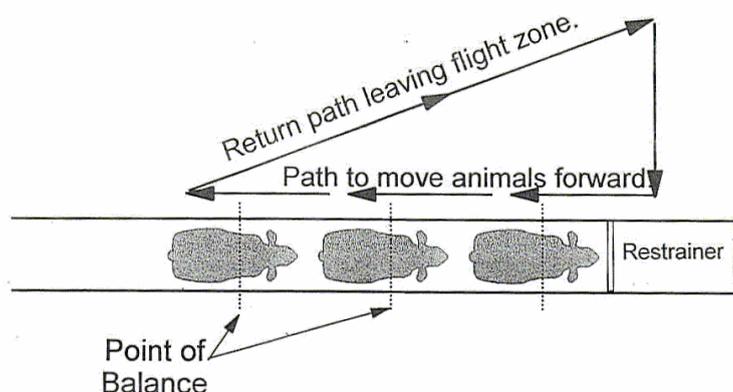
The desire of some animals to control their personal space should be taken into account in designing loading and unloading facilities, transport vessels and containers.

Domestic animals will try to escape if any person approaches closer than a certain distance. This critical distance, which defines the flight zone, varies among species and individuals of the same species, and depends upon previous contact with humans. Animals reared in close proximity to humans (i.e. tame) have a smaller flight zone, whereas those kept in free range or extensive systems may have flight zones which may vary from one metre to many metres. Accredited animal handlers and/or animal handlers should avoid sudden penetration of the flight zone which may cause a panic reaction which could lead to aggression or attempted escape.

An example of a flight zone (cattle)



Animal handler movement pattern to move cattle forward



Accredited animal handlers and animal handlers should use the point of balance at the animal's shoulder to move animals, adopting a position behind the point of balance to move an animal forward and in front of the point of balance to move it backward.

Domestic animals have wide-angle vision but only have limited forward binocular vision and poor perception of depth. This means that they can detect objects and movements beside and behind them, but can only judge distances directly ahead.

Although all domestic animals have a highly sensitive sense of smell, they may react differently to the smells encountered during travel. Smells which cause fear or other negative responses should be taken into consideration when managing animals.

Domestic animals can hear over a greater range of frequencies than humans and are more sensitive to higher frequencies. They tend to be alarmed by constant loud noise and by sudden noises, which may cause them to panic. Sensitivity to such noises should also be taken into account when handling animals.

2. Distractions and their removal

Distractions that may cause approaching animals to stop, baulk or turn back should be designed out from new loading and unloading facilities or removed from existing ones. Below are examples of common distractions and methods for eliminating them:

- a) reflections on shiny metal or wet floors - move a lamp or change lighting;
- b) dark entrances - illuminate with indirect lighting which does not shine directly into the eyes of approaching animals;
- c) animals seeing moving people or equipment up ahead - install solid sides on chutes and races or install shields;
- d) chains or other loose objects hanging in chutes or on fences - remove them;
- e) uneven floors or a sudden drop in floor levels – avoid uneven floor surfaces or install a solid false floor to provide an illusion of a solid and continuous walking surface;
- f) sounds of air hissing from pneumatic equipment - install silencers or use hydraulic equipment or vent high pressure to the external environment using flexible hosing;
- g) clanging and banging of metal objects - install rubber stops on gates and other devices to reduce metal to metal contact;
- h) air currents from fans or air curtains blowing into the face of animals - redirect or reposition equipment.

Article 3.7.2.2.

Responsibilities

Once the decision to transport the animals by sea has been made, the welfare of the animals during their *journey* is the paramount consideration and is the joint responsibility of all people involved, ~~with~~ The individual responsibilities of ~~those~~ involved ~~being~~ will be described in more detail in this Article. These guidelines may also be applied to the transport of animals by water within a country.

The management of animals at post-discharge facilities is outside the scope of this Appendix.

~~The roles of each of those responsible are defined below:~~

1. General considerations

- a) Exporters, importers, owners of animals, business or buying/selling agents, shipping companies, masters of vessels and managers of facilities are jointly responsible for the general health of the animals and their fitness for the journey, and for their overall welfare during the journey, regardless of whether duties are subcontracted to other parties during transport.
- b) The Exporters, the shipping companies, business or buying/selling agents, and the masters of the vessels are jointly responsible for planning the journey to ensure the care of the animals, including:

Appendix D (contd)

- i) choosing appropriate *vessels* and ensuring that at least one accredited animal handler and the appropriate number of animal handlers are available to care for the animals;
 - ii) developing and keeping up to date contingency plans to address emergencies (including adverse weather conditions) and minimise stress during transport;
 - iii) correct *loading* of the ship, regular inspections during the *journey* and for appropriate responses to problems arising;
 - iv) disposal of carcasses according to international law.
- c) To carry out ~~these~~ the above mentioned responsibilities, the ~~people~~ parties involved should be competent regarding transport regulations, equipment usage, and the humane handling and care of animals.

2. Specific considerationsa) The responsibilities of the exporters include:

- ~~2. The exporter has overall responsibility for the organisation, carrying out and completion of the journey, regardless of whether duties are subcontracted to other parties during transport. The exporter is also responsible for ensuring that equipment and medication are provided as appropriate for the species and journey, and for the presence during the journey of at least one animal handler competent for the species being transported. The exporter is also responsible for ensuring compliance of the animals with any required veterinary certification and, in the case of animals for export, any other requirements of the importing and exporting countries.~~

- i) the organisation, carrying out and completion of the journey, regardless of whether duties are subcontracted to other parties during transport;
- ii) ensuring that equipment and medication are provided as appropriate for the species and the journey;
- iii) securing the presence of at least one accredited animal handler and the appropriate number of animal handlers competent for the species being transported;
- iv) ensuring compliance of the animals with any required veterinary certification, and their fitness to travel;
- v) in case of animals for export, ensuring compliance with any requirements of the importing and exporting countries.

b) The responsibilities of the importers include:(under study)c) The responsibilities of the owners of the animals include the selection of animals that are fit to travel based on veterinary recommendations.

- ~~3. Business or buying/selling agents have a joint responsibility with owners for the selection of animals that are fit to travel. They have a joint responsibility with masters of vessels and managers of facilities at the start and at the end of the journey for the availability of suitable facilities for the assembly, loading, transport, unloading and holding of animals, and for emergencies.~~

- d) The responsibilities of the business or buying/selling agent include:
- i) selection of animals that are fit to travel based on veterinary recommendations;
 - ii) availability of suitable facilities for the assembly, loading, transport, unloading and holding of animals at the start and at the end of the journey, and for emergencies.
- e) The responsibilities of shipping companies include:
- (under study)
- f) The responsibilities of masters of vessels include the provision of suitable premises for animals on the vessel.
- g) The responsibilities of managers of facilities during loading include:
- ~~ii) Managers of facilities during loading of the animals are responsible for:~~
 - i) providing suitable premises for loading the animals;
 - ii) providing at least one accredited animal handler and an appropriate number of animal handlers to load the animals with minimum stress and the avoidance of injury;
 - iii) minimising the opportunities for disease transmission while the animals are in the facilities;
 - iv) providing appropriate facilities for emergencies;
 - v) providing facilities, ~~and veterinarians~~ and/or accredited animal handlers capable of killing animals humanely when required.
- h) The responsibilities of managers of facilities during unloading include:
- ~~ii) Managers of facilities at the end of the journey are responsible for:~~
 - i) providing suitable facilities for unloading the animals onto transport vehicles for immediate movement or securely holding the animals in lairage, with shelter, water and feed, when required, for transit;
 - ii) providing at least one accredited animal handler and an appropriate number of animal handlers to unload the animals with minimum stress and injury;
 - iii) minimising the opportunities for disease transmission while the animals are in the facilities;
 - iv) providing appropriate facilities for emergencies;
 - v) providing facilities, ~~and veterinarians~~ and/or accredited animal handlers capable of killing animals humanely when required.
4. ~~Animal handlers are responsible for the humane handling and care of animals, especially during loading and unloading. To carry out these responsibilities, accredited animal handlers (they) should have the authority to take prompt action.~~

Appendix D (contd)

- i) The responsibilities of the *accredited animal handlers* include:
 - i) humane handling and care of the animals, especially during *loading* and *unloading*;
 - ii) possess authority to take prompt action in order to maintain the required level of animal care and handling by the *animal handlers*
- j) The responsibilities of the *animal handlers* include humane handling and care of the animals, especially during *loading* and *unloading*.
- k) The responsibilities of the *Competent Authority* of the *exporting country* include:
 - i) establishing minimum standards for animal welfare, including requirements for inspection of animals before and during their travel, and for certification and record keeping;
 - ii) establishing requirements for a *veterinarian* and/or an *accredited animal handler* qualified to approving facilities, *containers*, *vehicles/vessels* for the holding and transport of animals, including that of the *importing country*;
 - iii) setting competence standards for *accredited animal handlers* and *animal handlers* and managers of facilities;
 - iv) ~~ensuring that the vessel transporting animals meets the required standards, including those of the *importing country*;~~
 - v) implementation of the standards, including through accreditation of / interaction with other organisations and *Competent Authorities*;
 - vi) establishing requirements for a *veterinarian* and/or an *accredited animal handler* to monitoring and evaluating health and welfare performance, including the use of any veterinary medications.
- l) The responsibilities of the *Competent Authority* of the *importing country* include:
 - i) establishing minimum standards for animal welfare, including requirements for inspection of animals after their travel, and for certification and record keeping;
 - ii) establishing requirements for a *veterinarian* and/or an *accredited animal handler* qualified to approving facilities, *containers*, *vehicles/vessels* for the holding and transport of animals;
 - iii) setting competence standards for *accredited animal handlers* and *animal handlers* and managers of facilities;
 - iv) implementation of the standards, including through accreditation of / interaction with other organisations and *Competent Authorities*;
 - v) ensuring that the *exporting country* is aware of the required standards for the *vessel* transporting the animals;
 - vi) establishing requirements for a *veterinarian* and/or an *accredited animal handler* to monitoring and evaluating health and welfare performance, including the use of any veterinary medications.

~~12. When travelling on vessels with the animals, veterinarians are responsible for the humane handling and treatment of the animals during the journey. To carry out these responsibilities, they should have the authority to act and report independently. The veterinarian should meet with the Master, Chief Officer and the senior accredited animal handler (senior animal handler) on a daily basis.~~

- m) The responsibilities of veterinarians travelling on the vessel with the animals include:
- i) humane handling and treatment of animals during the journey, including in emergencies, such as euthanasia;
 - ii) possess ability to report and act independently;
 - iii) meet daily with the master of the vessel and the accredited animal handler to obtain up-to-date information on animal health and welfare status.
- n) The receiving *Competent Authority* should report back to the sending *Competent Authority* on significant animal welfare problems which occurred during the *journey*.

Article 3.7.2.3.

Competence

1. All people responsible for animals during *journeys*, should be competent according to their responsibilities listed in Article 3.7.2.2. Competence in areas other than animal welfare would need to be addressed separately. Competence may be gained through formal training and/or practical experience.
2. The competence of accredited animal handlers should be demonstrated through a current certificate from the *Competent Authority* or from an independent body accredited by the *Competent Authority*. The certificate should be in one of the OIE official languages if the international transport of animals is involved.
3. The assessment of competence of accredited animal handlers should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:
 - a) planning a journey, including appropriate space allowance, feed, water and ventilation requirements;
 - b) responsibilities for animals during the *journey*, including loading and unloading;
 - c) sources of advice and assistance;
 - d) animal behaviour, general signs of disease, and indicators of poor animal welfare such as stress, pain and fatigue, and their alleviation;
 - e) assessment of fitness to travel: if fitness to travel is in doubt, the animal should be examined by a veterinarian;
 - f) relevant authorities and applicable transport regulations, and associated documentation requirements;
 - g) general disease prevention procedures, including cleaning and *disinfection*;

Appendix D (contd)

- h) appropriate methods of animal handling during transport and associated activities such as assembling, *loading*, and *unloading*;
- i) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies, including euthanasia;
- j) species-specific aspects and age-specific aspects of animal handling and care, including feeding, watering and inspection; and
- k) maintaining a *journey* log and other records.

4. The assessment of competence of *animal handlers* should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:

- a) planning a *journey*, including appropriate *space allowance*, and feed, water and ventilation requirements;
- b) responsibilities for animals during the *journey*, including *loading* and *unloading*;
- c) sources of advice and assistance;
- d) animal behaviour, general signs of disease, and indicators of poor animal welfare such as stress, pain and fatigue, and their alleviation;
- e) general disease prevention procedures, including cleaning and *disinfection*;
- f) appropriate methods of animal handling during transport and associated activities such as assembling, *loading*, and *unloading*;
- g) methods of inspecting animals and managing situations frequently encountered during transport such as adverse weather conditions;
- h) species-specific aspects and age-specific aspects of animal handling and care, including feeding, watering and inspection; and
- i) maintaining a *journey* log and other records.

5. Assessment of competence for exporters, importers, owners of animals, business or buying/selling agents, shipping companies, masters of *vessels* and managers of facilities should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:

- a) planning a *journey*, including appropriate *space allowances*, and feed, water and ventilation requirements;
- b) relevant authorities and applicable transport regulations, and associated documentation requirements;
- c) appropriate methods of animal handling during transport and associated activities such as cleaning and *disinfection*, assembling, *loading*, and *unloading*;
- d) species-specific aspects of animal handling and care, including appropriate equipment and medication;
- e) sources of advice and assistance;

- f) appropriate record keeping; and
- g) managing situations frequently encountered during transport, such as adverse weather conditions, and dealing with emergencies.

Article 3.7.2.4.

Planning the journey

1. General considerations

- a) Adequate planning is a key factor affecting the welfare of animals during a *journey*.
- b) Before the *journey* starts, plans should be made in relation to:
 - i) preparation of animals for the *journey*;
 - ii) type of transport *vessel* required;
 - iii) route, taking into account distance, expected weather and sea conditions;
 - iv) nature and duration of *journey*;
 - v) daily care and management of the animals, including presence of at least one accredited animal handler and the appropriate number of animal handlers, to help ensure the health and welfare of all the animals;
 - vi) avoiding the mixing of animals from different sources in a single pen group;
 - vii) provision of appropriate equipment and medication for the numbers and species carried; and
 - viii) emergency response procedures.

2. Preparation of animals for the journey

- a) When animals are to be provided with a novel diet or unfamiliar methods of supplying of feed or water, they should be preconditioned.
- b) There should be planning for water and feed availability during the *journey*. Feed should be of appropriate quality and composition for the species, age, condition of the animals, etc.
- c) Extreme weather conditions are hazards for animals undergoing transport and require appropriate *vessel* design to minimise risks. Special precautions should be taken for animals that have not been acclimatised or which are unsuited to either hot or cold conditions. In some extreme conditions of heat or cold, animals should not be transported at all.
- d) Animals more accustomed to contact with humans and with being handled are likely to be less fearful of being loaded and transported. Animals should be handled and loaded in a manner that reduces their fearfulness and improves their approachability.

Appendix D (contd)

- e) Behaviour-modifying (such as tranquillisers) or other medication should not be used routinely during transport. Such medicines should only be administered when a problem exists in an individual animal, and should be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*, such as an accredited animal handler. Treated animals should be placed in a dedicated area.

3. Control of disease

As animal transport is often a significant factor in the spread of infectious diseases, *journey* planning should take into account the following:

- a) When possible and agreed by the *Veterinary Authority* of the *importing country*, animals should be vaccinated against diseases to which they are likely to be exposed at their destination.
- b) Medications used prophylactically or therapeutically should only be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*, such as an accredited animal handler.
- c) Mixing of animals from different sources in a single consignment should be minimized.

4. Vessel and container design and maintenance

- a) *Vessels* used for the sea transport of animals should be designed, constructed and fitted as appropriate to the species, size and weight of the animals to be transported. Special attention should be paid to the avoidance of injury to animals through the use of secure smooth fittings free from sharp protrusions and the provision of non-slip flooring. The avoidance of injury to accredited animal handlers or animal handlers while carrying out their responsibilities should be emphasised.
- b) *Vessels* should be properly illuminated to allow animals to be observed and inspected.
- c) *Vessels* should be designed to permit thorough cleaning and *disinfection*, and the management of faeces and urine.
- d) *Vessels* and their fittings should be maintained in good mechanical and structural condition.
- e) *Vessels* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported. The ventilation system should be effective when the *vessel* is stationary. An emergency power supply should be available to maintain ventilation in the case of primary machinery breakdown.
- f) The feeding and watering system should be designed to permit adequate access to feed and water appropriate to the species, size and weight of the animals, and to minimise soiling of pens.
- g) *Vessels* should be designed so that the faeces or urine from animals on upper levels do not soil animals on lower levels, or their feed or water.
- h) Loading and stowage of feed and bedding should be carried out in such a way to ensure protection from fire hazards, the elements and sea water.

- i) Where appropriate, suitable bedding, such as straw or sawdust, should be added to *vessel* floors to assist absorption of urine and faeces, provide better footing for animals and protect animals (especially young animals) from hard or rough flooring surfaces and adverse weather conditions.
 - j) The above principles apply also to *containers* used for the transport of animals.
5. Special provisions for transport in road vehicles on roll-on/roll-off vessels or for containers
- a) Road *vehicles* and *containers* should be equipped with a sufficient number of adequately designed, positioned and maintained securing points enabling them to be securely fastened to the *vessel*.
 - b) Road *vehicles* and *containers* should be secured to the *vessel* before the start of the sea *journey* to prevent them being displaced by the motion of the *vessel*.
 - c) *Vessels* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported, especially where the animals are transported in a secondary *vehicle/container* on enclosed decks.
 - d) Due to the risk of limited airflow on certain ~~vessels'~~ decks of a vessel, a road *vehicle* or *container* may require a forced ventilation system of greater capacity than that provided by natural ventilation.
- 6) Nature and duration of the journey
- The maximum duration of a *journey* should be determined ~~according to~~ taking into account factors that determine the overall welfare of animals, such as:
- a) the ability of the animals to cope with the stress of transport (such as very young, old, lactating or pregnant animals);
 - b) the ~~animals'~~ previous transport experience of the animals;
 - c) the likely onset of fatigue;
 - d) the need for special attention;
 - e) the need for feed and water;
 - f) the increased susceptibility to injury and disease;
 - g) *space allowance* and *vessel* design;
 - h) weather conditions.
7. Space allowance
- a) The number of animals which should be transported on a *vessel* and their allocation to different pens on the *vessel* should be determined before *loading*.
 - b) The amount of space required, including headroom, depends on the species of animal and should allow the necessary thermoregulation. Each animal should be able to assume its natural position for transport (including during *loading* and *unloading*) without coming into contact with the roof or upper deck of the *vessel*. When animals lie down, there should be enough space for every animal to adopt a normal lying posture.

Appendix D (contd)

- c) Calculations for the *space allowance* for each animal should be carried out, using the figures given in Appendix XX.X. or, in their absence, in a relevant national or international document. The size of pens will affect the number of animals in each.
 - d) The same principles apply when animals are transported in *containers*.
8. Ability to observe animals during the journey

Animals should be positioned to enable each animal to be observed regularly and clearly by the accredited animal handler or animal handler or other responsible person, during the *journey* to ensure their safety and good welfare.

9. Emergency response procedures

There should be an emergency management plan that identifies the important adverse events that may be encountered during the *journey*, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

Article 3.7.2.5.

Documentation

1. Animals should not be loaded until the documentation required to that point is complete.
2. The documentation accompanying the consignment should include:
 - a) *journey* travel plan (~~including and~~ an emergency management plan);
 - b) time, date and place of *loading*;
 - c) the *journey* log – a daily record of inspection and important events which includes records of morbidity and mortality and actions taken, climatic conditions, food and water consumed, medication provided, mechanical defects;
 - d) expected time, date and place of arrival and *unloading*;
 - e) veterinary certification, when required;
 - f) *animal identification* to allow ~~traceback~~ animal traceability of individual animals to the premises of departure, and, where possible, to the premises of origin;
 - g) details of any animals considered '~~at risk~~' at particular risk of suffering poor welfare during transport (point 3e) of Article 3.7.2.6.);
 - h) number of accredited animal handlers and animal handlers on board, and their competencies; and
 - i) *stocking density* estimate for each load in the consignment.

3. When veterinary certification is required to accompany consignments of animals, it should address:
 - a) when required, details of *disinfection* carried out;
 - b) fitness of the animals to travel;
 - c) *animal identification* (description, number, etc.); and
 - d) health status including any tests, treatments and vaccinations carried out.

Article 3.7.2.6.

Pre-journey period

1. General considerations

- a) Before each *journey*, *vessels* should be thoroughly cleaned and, if necessary, treated for animal and public health purposes, using chemicals approved by the *Competent Authority*. When cleaning is necessary during a *journey*, this should be carried out with the minimum of stress to the animals.
- b) In some circumstances, animals may require pre-*journey* assembly. In these circumstances, the following points should be considered:
 - i) Pre-*journey* rest is necessary if the welfare of animals has become poor during the collection period because of the physical environment or the social behaviour of the animals.
 - ii) For animals such as pigs which are susceptible to motion sickness, and in order to reduce urine and faeces production during the *journey*, a species-specific short period of feed deprivation prior to *loading* is desirable.
 - iii) When animals are to be provided with a novel diet or unfamiliar methods of supplying feed or water, they should be preconditioned.
- c) Where an accredited animal handler or animal handler believes that there is a significant risk of disease among the animals to be loaded or significant doubt as to their fitness to travel, the animals should be examined by a *veterinarian*.
- d) Pre-*journey* assembly / holding areas should be designed to:
 - i) securely contain the animals;
 - ii) maintain an environment safe from hazards, including predators and disease;
 - iii) protect animals from exposure to adverse weather conditions;
 - iv) allow for maintenance of social groups; and
 - v) allow for rest, watering and feeding.

Appendix D (contd)2. Selection of compatible groups

Compatible groups should be selected before transport to avoid adverse animal welfare consequences. The following guidelines should be applied when assembling groups of animals:

- a) animals of different species should not be mixed unless they are judged to be compatible;
- b) animals of the same species can be mixed unless there is a significant likelihood of aggression; aggressive individuals should be segregated (recommendations for specific species are described in detail in Article 3.7.2.11.). For some species, animals from different groups should not be mixed because poor welfare occurs unless they have established a social structure;
- c) young or small animals may need to be separated from older or larger animals, with the exception of nursing mothers with young at foot;
- d) animals with horns or antlers should not be mixed with animals lacking horns or antlers, unless judged to be compatible; and
- e) animals reared together should be maintained as a group; animals with a strong social bond, such as a dam and offspring, should be transported together.

3. Fitness to travel

- a) Animals should be inspected by a *veterinarian* or an accredited animal handler to assess fitness to travel. If its fitness to travel is in doubt, ~~the animal should be examined by a veterinarian~~ it is the responsibility of a veterinarian to determine its ability to travel. Animals found unfit to travel should not be loaded onto a *vessel*.
- b) Humane and effective arrangements should be made by the owner or agent for the handling and care of any animal rejected as unfit to travel.
- c) Animals that are unfit to travel include, but may not be limited to:
 - i) those that are sick, injured, weak, disabled or fatigued;
 - ii) those that are unable to stand unaided or bear weight on each leg;
 - iii) those that are blind in both eyes;
 - iv) those that cannot be moved without causing them additional suffering;
 - v) newborn with an unhealed navel;
 - vi) females travelling without young which have given birth within the previous 48 hours;
 - vii) pregnant animals which would be in the final 10% of their gestation period at the planned time of *unloading*.
- d) Risks during transport can be reduced by selecting animals best suited to the conditions of travel and those that are acclimatised to expected weather conditions.

- e) Animals ~~'at risk'~~ at particular risk of suffering poor welfare during transport and which require special conditions (such as in the design of facilities and *vehicles*, and the length of the *journey*) and additional attention during transport, may include: ~~Animals at particular risk of suffering poor welfare during transport, and requiring better conditions and additional attention during transport may include:~~
- i) very large or obese individuals;
 - ii) very young or old animals;
 - iii) excitable or aggressive animals;
 - iv) animals subject to motion sickness;
 - v) animals which have had little contact with humans;
 - vi) females in the last third of pregnancy or in heavy lactation.
- f) Hair or wool length should be considered in relation to the weather conditions expected during transport.

Article 3.7.2.7.

Loading

1. Competent supervision

- a) *Loading* should be carefully planned as it has the potential to be the cause of poor welfare in transported animals.
- b) *Loading* should be supervised by the *Competent Authority* ~~and conducted by the~~ via accredited animal handlers. Accredited animal handlers and animal handlers should ensure that animals are loaded quietly and without unnecessary noise, harassment or force, and that untrained assistants or spectators do not impede the process.

2. Facilities

- a) The facilities for *loading*, including the collecting area at the wharf, races and loading ramps should be designed and constructed to take into account ~~of~~ the needs and abilities of the animals with regard to dimensions, slopes, surfaces, absence of sharp projections, flooring, sides, etc.
- b) Ventilation during *loading* and the *journey* should provide for fresh air, and the removal of excessive heat, humidity and noxious fumes (such as ammonia and carbon monoxide). Under warm and hot conditions, ventilation should allow for the adequate convective cooling of each animal. In some instances, adequate ventilation can be achieved by increasing the *space allowance* for animals.
- c) *Loading* facilities should be properly illuminated to allow the animals to be easily inspected by the accredited animal handlers and animal handlers, and to allow the ~~animals'~~ ease of movement of animals at all times. Facilities should provide uniform ~~lighting~~ light levels directly over approaches to sorting pens, chutes, loading ramps, with brighter ~~lighting~~ light levels inside *vehicles/containers*, in order to minimise baulking. Dim ~~lighting~~ light levels may be advantageous for the catching of some animals. Artificial lighting may be required.

Appendix D (contd)

3. Goads and other aids

The following principles should apply:

- a) ~~Animals that have little or no room to move should not be subjected to physical force or goads and other aids which compel movement.~~
- b) ~~Useful and permitted goads include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and metallic rattles; they should be used in a manner sufficient to encourage and direct movement of the animals.~~
- e) ~~Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of unsuitable goads or other aids (including sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.~~
- d) ~~The use of goads which administer electric shocks should be discouraged, and restricted to that necessary to assist movement of the animal. Such use should be limited to battery powered goads on the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets.~~
- e) ~~Shouting or yelling at animals or making loud noises (e.g., through the cracking of whips) to encourage them to move should not occur, as such actions may make the animals agitated, leading to crowding or falling.~~
- f) ~~The use of well trained dogs to help with the *loading* of some species may be acceptable.~~
- g) ~~Manual lifting is permissible for young animals that may have difficulty negotiating ramps, but the lifting of animals by body parts such as their tail, head, horns, ears, limbs, wool or hair should not be permitted. The throwing or dropping of animals should not be permitted.~~
- a) Animals that have little or no room to move should not be subjected to physical force or goads and other aids which compel movement. Electric goads and prods should only be used in extreme cases and not on a routine basis to move animals. The use and the power output should be restricted to that necessary to assist movement of an animal and only when an animal has a clear path ahead to move. Goads and other aids should not be used repeatedly if the animal fails to respond or move. In such cases, it should be investigated whether some physical or other impediment is preventing the animal from moving.
- b) The use of such devices should be limited to battery-powered goads on the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets.
- c) Useful and permitted goads include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and metallic rattles; they should be used in a manner sufficient to encourage and direct movement of the animals without causing undue stress.

- d) Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of goads or other aids which cause pain and suffering (including large sticks, sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.
- e) Shouting or yelling at animals or making loud noises (e.g., through the cracking of whips) to encourage them to move should not occur, as such actions may make the animals agitated, leading to crowding or falling.
- f) The use of well trained dogs to help with the *loading* of some species may be acceptable.
- g) Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used in young animals or small species, and in a manner appropriate to the species: grasping or lifting such animals only by their wool, hair, feathers, feet, neck, ears, tails, head, horns, limbs causing pain or suffering should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.
- h) Conscious animals should not be thrown, dragged or dropped.
- i) Performance standards should be established in which numerical scoring is used to evaluate the use of such instruments, and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling as a result of their usage.

Article 3.7.2.8.

Travel

1. General considerations

- a) Accredited animal handlers and animal handlers should check the consignment immediately before departure to ensure that the animals have been loaded according to the load plan. Each consignment should be checked again within 12 hours.
- b) Adjustments should be made to the *stocking density* as appropriate during the *journey*.
- c) Each pen of animals should be observed on a daily basis for normal behaviour, health and welfare, and the correct operation of ventilation, watering and feeding systems. There should also be a night patrol. Any necessary corrective action should be undertaken promptly.
- d) Adequate access to suitable feed and water should be ensured for all animals in each pen.

2. Sick ~~and~~ or injured animals

- a) Sick ~~and~~ or injured animals should be segregated ~~if possible~~.
- b) Sick ~~and~~ or injured animals should be appropriately treated or humanely killed, in accordance with a predetermined emergency response plan (Article 3.7.2.4.). Veterinary advice should be sought if necessary. All drugs and products should be used according to recommendations from a veterinarian and in accordance with the manufacturer's ~~or veterinarian's recommendations~~ instructions.

Appendix D (contd)

- c) A record of treatments carried out and their outcomes should be kept.
- d) When euthanasia is necessary, ~~the person responsible for the animals~~ the veterinarian or the accredited animal handler must ensure that it is carried out humanely. ~~Assistance should be sought from a veterinarian or other person(s) competent in euthanasia procedures.~~ Recommendations for specific species are described in Appendix 3.7.6. on killing of animals for disease control purposes.

Article 3.7.2.9.

Unloading and post-journey handling

1. General considerations

- a) The required facilities and the principles of animal handling detailed in Article 3.7.2.7. apply equally to *unloading*, but consideration should be given to the likelihood that the animals will be fatigued.
- b) *Unloading* should be carefully planned as it has the potential to be the cause of poor welfare in transported animals.
- c) A livestock *vessel* should have priority attention when arriving in port and have priority access to a berth with suitable *unloading* facilities. As soon as possible after the ~~ship's vessel's~~ arrival at the port and acceptance of the consignment by the *Competent Authority*, animals should be unloaded into appropriate facilities.
- d) The accompanying veterinary certificate and other documents should meet the requirements of the *importing country*. Veterinary inspections should be completed as quickly as possible.
- e) *Unloading* should be supervised by the *Competent Authority* ~~and conducted by~~ via an accredited animal handlers. The accredited animal handlers and animal handlers should ensure that animals are unloaded as soon as possible after arrival but sufficient time should be allowed for *unloading* to proceed quietly and without unnecessary noise, harassment or force, and that untrained assistants or spectators do not impede the process.

2. Facilities

- a) The facilities for *unloading* including the collecting area at the wharf, races and unloading ramps should be designed and constructed to take into account of the needs and abilities of the animals with regard to dimensions, slopes, surfaces, absence of sharp projections, flooring, sides, etc.
- b) All *unloading* facilities should have sufficient lighting to allow the animals to be easily inspected by the accredited animal handlers or *animal handlers*, and to allow the ~~animals'~~ ease of movement of animals at all times.
- c) There should be facilities to provide animals with appropriate care and comfort, adequate space, access to quality feed and clean drinking water, and shelter from extreme weather conditions.

3. Sick ~~and~~ or injured animals

- a) An animal that has become sick, injured or disabled during a *journey* should be appropriately treated or ~~humanely killed~~ euthanised (see Appendix 3.7.6.). ~~When necessary, veterinary~~ Advice of a veterinarian or accredited animal handler should be sought in the care and treatment of these animals.
- b) In some cases, where animals are non-ambulatory due to fatigue, injury or sickness, it may be in the best welfare interests of the animal to be treated or euthanised aboard the *vessel*.
- c) If *unloading* is in the best welfare interests of animals that are fatigued, injured or sick, there should be appropriate facilities and equipment for the humane *unloading* of such animals. These animals should be unloaded in a manner that causes the least amount of suffering. After *unloading*, separate pens and other appropriate facilities and treatments should be provided for sick or injured animals.

4. Cleaning and disinfection

- a) *Vessels* and *containers* used to carry the animals should be cleaned before re-use through the physical removal of manure and bedding, by scraping, washing and flushing *vessels* and *containers* with water until visibly clean. This should be followed by *disinfection* when there are concerns about disease transmission.
- b) Manure, litter and bedding should be disposed of in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.
- c) Where cleaning or *disinfestation* is necessary during travel, it should be carried out with the minimum of stress to the animals.

Article 3.7.2.10.

Actions in the event of a refusal to allow the importation of a shipment

1. The welfare of the animals should be the first consideration in the event of a refusal to import.
2. When animals have been refused import, the *Competent Authority* of ~~that~~ the *importing country* should make available suitable isolation facilities to allow the *unloading* of animals from a *vessel* and their secure holding, without posing a risk to the health of the national herd, pending resolution of the situation. In this situation, the priorities should be:
 - a) The *Competent Authority* of the *importing country* should provide urgently in writing the reasons for the refusal.
 - b) In the event of a refusal for animal health reasons, the *Competent Authority* of the *importing country* should provide urgent access to an OIE-appointed *veterinarian(s)* to assess the ~~animals'~~ health status of the animals with regard to the ~~importing country's~~ concerns of the importing country, and the necessary facilities and approvals to expedite the required diagnostic testing.
 - c) The *Competent Authority* of the *importing country* should provide access to allow continued assessment of the ongoing health and welfare situation.

Appendix D (contd)

- d) If the matter cannot be promptly resolved, the *Competent Authority* of the *exporting* and *importing countries* should call on the OIE to mediate.
3. In the event that the animals are required to remain on the *vessel*, the priorities should be:
- a) The *Competent Authority* of the *importing country* should allow ~~reprovision~~ provisioning of the *vessel* with water and feed as necessary.
- b) The *Competent Authority* of the *importing country* should provide urgently in writing the reasons for the refusal.
- c) In the event of a refusal for animal health reasons, the *Competent Authority* of the *importing country* should provide urgent access to an OIE-appointed *veterinarian(s)* to assess the ~~animals'~~ health status of the animals with regard to the ~~importing country's~~ concerns of the importing country, and the necessary facilities and approvals to expedite the required diagnostic testing.
- d) The *Competent Authority* of the *importing country* should provide access to allow continued assessment of the ongoing health and other aspects of the welfare of the animals, and the necessary actions to deal with any issues which arise.
- e) If the matter cannot be urgently resolved, the *Competent Authorities* of the *exporting* and *importing countries* should call on the OIE to mediate.
4. The OIE should utilise its dispute settlement mechanism to identify a mutually agreed solution which will address the animal health and welfare issues in a timely manner.

Article 3.7.2.11.

Species specific issues

Cattle are sociable animals and may become agitated if they are singled out. Social order is usually established at about two years of age. When groups are mixed, social order has to be re-established and aggression may occur until a new order is established. Crowding of cattle may also increase aggression as the animals try to maintain personal space. Social behaviour varies with age, breed and sex; *Bos indicus* and *B. indicus*-cross animals are usually more temperamental than European breeds. Young bulls, when moved in groups, show a degree of playfulness (pushing and shoving) but become more aggressive and territorial with age. Adult bulls have a minimum personal space of six square metres. Cows with young calves can be very protective, and handling calves in the presence of their mothers can be dangerous.

Goats should be handled calmly and are more easily led or driven than if they are excited. When goats are moved, their gregarious tendencies should be exploited. Activities which frighten, injure or cause agitation to animals should be avoided. Bullying is particularly serious in goats. Housing strange goats together could result in fatalities, either through physical violence, or subordinate goats being refused access to food and water.

Sheep are sociable animals with good eyesight and tend to “flock together”, especially when they are agitated. They should be handled calmly and their tendency to follow each other should be exploited when they are being moved. Sheep may become agitated if they are singled out for attention and will strive to rejoin the group. Activities which frighten, injure or cause agitation to sheep should be avoided. They can negotiate steep ramps.

Pigs have poor eyesight, and may move reluctantly in strange surroundings. They benefit from well lit loading bays. Since they negotiate ramps with difficulty, these should be as level as possible and provided with secure footholds. Ideally, a hydraulic lift should be used for greater heights. Pigs also negotiate steps with difficulty. A good 'rule-of-thumb' is that no step should be higher than the pig's front knee. Serious aggression may result if unfamiliar animals are mixed. Pigs are highly susceptible to heat stress.

Horses in this context include all solipeds, donkeys, mules, hinnies and zebra. They have good eyesight and a very wide angle of vision. They may have a history of *loading* resulting in good or bad experiences. Good training should result in easier *loading*, but some horses can prove difficult, especially if they are inexperienced or have associated *loading* with poor transport conditions. In these circumstances, two experienced animal handlers can load an animal by linking arms or using a strop below its rump. Blindfolding may even be considered. Ramps should be as shallow as possible. Steps are not usually a problem when horses mount a ramp, but they tend to jump a step when descending, so steps should be as low as possible. Horses benefit from being individually stalled, but may be transported in compatible groups. When horses are to travel in groups, their shoes should be removed.

Camelids in this context comprise llamas, alpacas, guanaco and vicuna. They have good eyesight and, like sheep, can negotiate steep slopes, though ramps should be as shallow as possible. They load most easily in a bunch as a single animal will strive to rejoin the others. Whilst they are usually docile, they have an unnerving habit of spitting in self-defence. During transport, they usually lie down. They frequently extend their front legs forward when lying, so gaps below partitions should be high enough so that their legs are not trapped when the animals rise.

— text deleted

APPENDIX 3.7.3.

GUIDELINES FOR THE TRANSPORT
OF ANIMALS BY LAND

Preamble: These guidelines apply to the following live domesticated animals: cattle, buffalo, camels, sheep, goats, pigs, poultry and equines. They will also be largely applicable to some other animals (e.g., deer, other camelids and ratites). Wild, feral and partly domesticated animals may need different conditions.

Article 3.7.3.1.

The amount of time animals spend on a *journey* should be kept to the minimum.

Article 3.7.3.1 bis1. Animal behaviour

Accredited animal handlers and animal handlers should be experienced and competent in handling and moving farm livestock and understand the behaviour patterns of animals and the underlying principles necessary to carry out their tasks.

The behaviour of individual animals or groups of animals will vary, depending on their breed, sex, temperament and age and the way in which they have been reared and handled. Despite these differences, the following behaviour patterns which are always present to some degree in domestic animals, should be taken into consideration in handling and moving the animals.

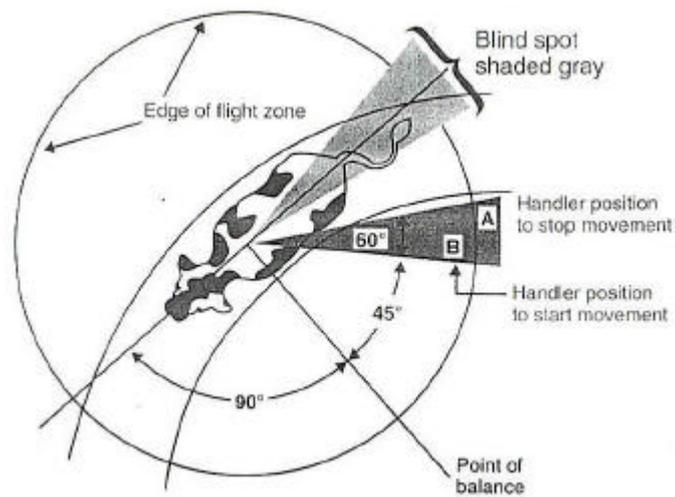
Most domestic livestock are kept in herds and follow a leader by instinct.

Animals which are likely to be hostile to each other in a group situation should not be mixed.

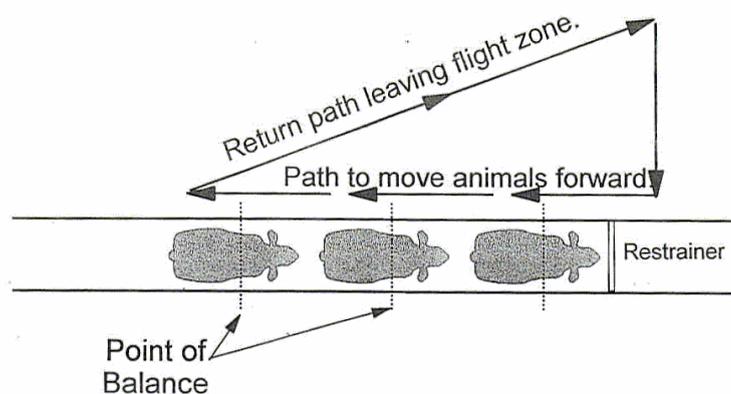
The desire of some animals to control their personal space should be taken into account in designing loading and unloading facilities, transport vessels and containers.

Domestic animals will try to escape if any person approaches closer than a certain distance. This critical distance, which defines the flight zone, varies among species and individuals of the same species, and depends upon previous contact with humans. Animals reared in close proximity to humans (i.e. tame) have a smaller flight zone, whereas those kept in free range or extensive systems may have flight zones which may vary from one metre to many metres. Accredited animal handlers and/or animal handlers should avoid sudden penetration of the flight zone which may cause a panic reaction which could lead to aggression or attempted escape.

An example of a flight zone (cattle)



Animal handler movement pattern to move cattle forward



Accredited animal handlers and animal handlers should use the point of balance at the animal's shoulder to move animals, adopting a position behind the point of balance to move an animal forward and in front of the point of balance to move it backward.

Domestic animals have wide-angle vision but only have limited forward binocular vision and poor perception of depth. This means that they can detect objects and movements beside and behind them, but can only judge distances directly ahead.

Although all domestic animals have a highly sensitive sense of smell, they may react differently to the smells encountered during travel. Smells which cause fear or other negative responses should be taken into consideration when managing animals.

Domestic animals can hear over a greater range of frequencies than humans and are more sensitive to higher frequencies. They tend to be alarmed by constant loud noise and by sudden noises, which may cause them to panic. Sensitivity to such noises should also be taken into account when handling animals.

2. Distractions and their removal

Distractions that may cause approaching animals to stop, baulk or turn back should be designed out from new *loading* and *unloading* facilities or removed from existing ones. Below are examples of common distractions and methods for eliminating them:

- a) reflections on shiny metal or wet floors - move a lamp or change lighting;
- b) dark entrances - illuminate with indirect lighting which does not shine directly into the eyes of approaching animals;
- c) animals seeing moving people or equipment up ahead - install solid sides on chutes and races or install shields;
- d) chains or other loose objects hanging in chutes or on fences - remove them;
- e) uneven floors or a sudden drop in floor levels – avoid uneven floor surfaces or install a solid false floor to provide an illusion of a solid and continuous walking surface;
- f) sounds of air hissing from pneumatic equipment - install silencers or use hydraulic equipment or vent high pressure to the external environment using flexible hosing;
- g) clanging and banging of metal objects - install rubber stops on gates and other devices to reduce metal to metal contact;
- h) air currents from fans or air curtains blowing into the face of animals - redirect or reposition equipment.

Article 3.7.3.2.

Responsibilities

Once the decision to transport the animals has been made, the welfare of the animals during their *journey* is the paramount consideration and is the joint responsibility of all people involved, ~~with~~ the individual responsibilities of those persons *involved* being *will be* described in more detail in this Article.

The roles of each of those responsible are defined below:

- 1- ~~The owners and managers of the animals are responsible for the general health of the animals and their fitness for the journey, and for their overall welfare during the journey. They are also responsible for ensuring compliance with any required veterinary or other certification, and for the presence during the journey of at least one *animal handler* competent for the species being transported, with the authority to take prompt action. They are also responsible for ensuring that equipment and veterinary assistance are provided as appropriate for the species and journey. These responsibilities should apply regardless of whether duties are subcontracted to other parties during transport.~~

Appendix E (contd)

1. The owners and managers of the animals are responsible for:
 - a) the general health, overall welfare and fitness of the animals for the *journey*.
 - b) ensuring compliance with any required veterinary or other certification;
 - c) the presence of an *animal handler* competent for the species being transported during the *journey* with the authority to take prompt action; in case of transport by individual trucks, the truck driver may be the sole *animal handler* during the *journey*.
 - d) the presence of at least one *accredited animal handler* and an adequate number of *animal handlers* during *loading* and *unloading*.
 - e) ensuring that equipment and veterinary assistance are provided as appropriate for the species and the *journey*.
2. ~~Business agents or buying/selling agents have a joint responsibility with owners for the selection of animals that are fit to travel. They have a joint responsibility with market owners and managers of facilities at the start and at the end of the journey for the availability of suitable facilities for the assembly, *loading*, transport, *unloading* and holding of animals, including for any stops at resting points during the journey and for emergencies.~~
2. Business agents or buying/selling agents are responsible for:
 - a) selection of animals that are fit to travel;
 - b) availability of suitable facilities at the start and at the end of the *journey* for the assembly: *loading*, transport, *unloading* and holding of animals, including for any stops at *resting points* during the *journey* and for emergencies.
3. ~~Accredited animal handlers and animal handlers are responsible for the humane handling and care of the animals, especially during *loading* and *unloading*, and for maintaining a journey log. To carry out their responsibilities, they should have the authority to take prompt action. In the absence of a separate *accredited animal handler* or *animal handler*, the driver is the *animal handler*. The driver may also be an *accredited animal handler* if an appropriate certification was obtained from the *Competent Authority*.~~
3. Accredited animal handlers are responsible for:
 - a) humane handling of animals especially during *loading* and *unloading*.
 - b) maintaining a *journey* log;
 - c) possessing authority to take prompt action.
4. In absence of a separate *accredited animal handler* or an *animal handler* during the *journey* via individual trucks, the truck driver is the *animal handler*. The driver may also be an *accredited animal handler* if an appropriate certification was obtained from the *Competent Authority*.

5. Animal handlers are responsible for:
(under study)
6. Transport Shipping companies, *vehicle* owners and drivers are responsible for planning the *journey* to ensure the care of the animals, in particular they are responsible for:
- a) ~~transport companies and vehicle owners are responsible for~~ choosing appropriate *vehicles* for the species transported and the *journey*.
 - b) ~~and ensuring that properly trained staff at least one~~ accredited animal handler and adequate number of animal handlers are available for loading/ unloading of animals;
 - c) ensuring adequate competency of the driver in matters of animal welfare for the species being transported in case a separate animal handler is not assigned to the truck;
 - d) ~~transport companies and vehicle owners are responsible for~~ developing and keeping up-to-date contingency plans to address emergencies (including adverse weather conditions) and minimise stress during transport;
 - e) ~~transport companies and vehicle owners are responsible for~~ producing a *journey* plan which includes a *loading* plan, *journey* duration, itinerary and location of resting places;
 - f) ~~drivers are responsible for loading~~ only those animals which are fit to travel, for their correct *loading* into the *vehicle* and their inspection during the *journey*, and for appropriate responses to problems arising. If its fitness to travel is in doubt, the animal should be examined by a *veterinarian* in accordance with point 5 a) of Article 3.7.3.6;
 - g) welfare of the animals during the actual transport.
7. Managers of facilities at the start and at the end of the *journey* and at *resting points* are responsible for:
- a) providing suitable premises for *loading*, *unloading* and securely holding the animals, with water and feed when required, until further transport, sale or other use (including rearing or slaughter);
 - b) providing an adequate number of competent animal handlers to load, unload, drive and hold animals in a manner that causes minimum stress and injury. In absence of a separate accredited animal handler or animal handler during the journey itself, the driver is the animal handler. The driver may also be an accredited animal handler if an appropriate certification was obtained from the Competent Authority.
 - c) minimising the opportunities for disease transmission;
 - d) providing appropriate facilities, with water and feed when required;
 - e) providing appropriate facilities for emergencies;
 - f) providing facilities for washing and disinfecting *vehicles* after *unloading*;
 - g) providing facilities and veterinarians or accredited animal handlers capable of euthanising animals when required; ~~providing facilities and competent staff to allow the humane killing of animals when required~~
 - h) ensuring proper rest times and minimal delay during stops.

Appendix E (contd)

8. The responsibilities of *Competent Authorities* include:
- a) establishing minimum standards for animal welfare, including requirements for inspection of animals before, during and after their travel, defining 'fitness to travel' and appropriate certification and record keeping;
 - b) setting standards for facilities, *containers* and *vehicles* for the transport of animals;
 - c) setting standards for the competence of accredited animal handlers, *animal handlers*, drivers and managers of facilities in relevant issues in animal welfare;
 - d) ensuring appropriate awareness and training of accredited animal handlers, *animal handlers*, drivers and managers of facilities in relevant issues in animal welfare;
 - e) implementation of the standards, including through accreditation of / interaction with other organisations;
 - f) monitoring and evaluating the effectiveness of standards of health and other aspects of welfare;
 - g) monitoring and evaluating the use of veterinary medications;
 - h) ~~expediting the passage of animal consignments at frontiers~~ give animal consignments priority at frontiers in order to allow them to pass without unnecessary delay.
9. All individuals, including *veterinarians*, involved in transporting animals and the associated handling procedures should receive appropriate training and be competent to meet their responsibilities.
10. The receiving *Competent Authority* should report back to the sending *Competent Authority* on significant animal welfare problems which occurred during the *journey*.

Article 3.7.3.3.

Competence

1. All people responsible for animals during *journeys*, should be competent according to their responsibilities listed in Article 3.7.3.2. Competence may be gained through formal training and/or practical experience. Competence in areas other than animal welfare would need to be addressed separately.
2. The competence of accredited *animal handlers* should be demonstrated through a current certificate from the *Competent Authority* or an independent body, accredited by the *Competent Authority*. The certificate should be in one of the OIE official languages if the international transport of animals is involved.
3. The assessment of the competence of accredited *animal handlers* should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:
 - a) planning a *journey*, including appropriate *space allowance*, and feed, water and ventilation requirements;
 - b) responsibilities for animals during the *journey*, including loading and unloading;

- c) sources of advice and assistance;
- d) animal behaviour, general signs of disease, and indicators of poor animal welfare such as stress, pain and fatigue, and their alleviation;
- e) assessment of fitness to travel. If fitness to travel is in doubt, the animal should be examined by a veterinarian;
- f) relevant authorities and applicable transport regulations, and associated documentation requirements;
- g) general disease prevention procedures, including cleaning and *disinfection*;
- h) appropriate methods of animal handling during transport and associated activities such as assembling, *loading*, and *unloading*;
- i) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies, including euthanasia;
- j) species-specific aspects and age-specific aspects of animal handling and care, including feeding, watering and inspection; and
- k) maintaining a *journey* log and other records.

4. The assessment of competence of *animal handlers* should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:

- a) responsibilities for animals during the *journey*, including *loading* and *unloading*;
- b) sources of advice and assistance;
- c) animal behaviour, general signs of disease, and indicators of poor animal welfare such as stress, pain and fatigue, and their alleviation;
- d) general disease prevention procedures, including cleaning and *disinfection*;
- e) appropriate methods of animal handling during transport and associated activities such as assembling, *loading*, and *unloading*;
- f) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions;
- g) during the *journey* when a *veterinarian* or an *accredited animal handler* may not be present, the *animal handler* should be capable of performing euthanasia if necessary (under study);
- h) species-specific aspects and age-specific aspects of animal handling and care, including feeding, watering and inspection; and
- i) maintaining a *journey* log and other records.

5. The competence of the driver should be at the same level as that of an *animal handler* in case a separate *animal handler* is not present.

Appendix E (contd)

Article 3.7.3.4.

Planning the journey1. General considerations

- a) Adequate planning is a key factor affecting the welfare of animals during a *journey*.
- b) Before the *journey* starts, plans should be made in relation to:
 - i) preparation of animals for the *journey*;
 - ii) choice of road, ~~or~~ rail; roll-on roll-off vessels or containers
 - iii) nature and duration of the *journey*;
 - iv) *vehicle/ container* design and maintenance, including roll-on roll-off *vessels*;
 - v) required documentation;
 - vi) *space allowance*;
 - vii) rest, water and feed;
 - viii) observation of animals en route;
 - ix) control of disease; ~~and~~
 - x) emergency response procedures;
 - xi) forecast weather conditions (e.g. conditions being too hot or too cold to travel during certain periods of the day);
 - xii) transfer time when changing mode of transport. and
 - xiii) waiting time at frontiers and inspection points.
- c) Regulations concerning drivers (for example, maximum driving periods) should be harmonised with maximum transport *journey* intervals appropriate for the species based on sound science.

2. Preparation of animals for the journey

- a) When animals are to be provided with a novel diet or method of water provision during transport, an adequate period of adaptation should be planned. For animals such as pigs which are susceptible to motion sickness, and in order to reduce urine and faeces production during the *journey*, a species-specific short period of feed deprivation prior to *loading* may be desirable.
- b) Animals more accustomed to contact with humans and with being handled are likely to be less fearful of being loaded and transported. ~~People handling animals~~ Animal handlers should handle and load animals in a manner that reduces their fearfulness and improves their approachability.

- c) Behaviour-modifying compounds (such as tranquillisers) or other medication should not be used routinely during transport. Such compounds should only be administered when a problem exists in an individual animal, and should be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*, such as an accredited animal handler or an animal handler.

3. Nature and duration of the journey

The maximum duration of a *journey* should be determined ~~according to~~ taking into account factors that determine the overall welfare of animals, such as:

- a) the ability of the animals to cope with the stress of transport (such as very young, old, lactating or pregnant animals);
- b) ~~the animals'~~ previous transport experience of the animals;
- c) the likely onset of fatigue;
- d) the need for special attention;
- e) the need for feed and water;
- f) the increased susceptibility to injury and disease;
- g) *space allowance*, *vehicle* design, road conditions and driving quality;
- h) weather conditions;
- i) vehicle type used, terrain to be traversed, road surfaces and quality, skill and experience of the driver.

4. Vehicle and container design and maintenance

- a) *Vehicles* and *containers* used for the transport of animals should be designed, constructed and fitted as appropriate ~~to~~ for the species, size and weight of the animals to be transported. Special attention should be paid to ~~the avoidance~~ avoid ~~of~~ the injury to animals through the use of secure smooth fittings free from sharp protrusions. The avoidance of injury to drivers, accredited animal handlers and *animal handlers* while carrying out their responsibilities should be emphasised.
- b) *Vehicles* and *containers* should be designed with the structures necessary to provide protection from adverse weather conditions and to minimise the opportunity for animals to escape.
- c) In order to minimise the likelihood of the spread of infectious disease during transport, *vehicles* and *containers* should be designed to permit thorough cleaning and *disinfection*, and the containment of faeces and urine during a *journey*.
- d) *Vehicles* and *containers* should be maintained in good mechanical and structural condition.
- e) *Vehicles* and *containers* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported; the ventilation system (natural or mechanical) should be effective when the *vehicle* is stationary.
- f) *Vehicles* should be designed so that the faeces or urine from animals on upper levels do not soil animals on lower levels, nor their feed and water.

Appendix E (contd)

- g) When *vehicles* are carried on board ferries, facilities for adequately securing them should be available.
 - h) If feeding or watering while the *vehicle* is moving is required, adequate facilities on the *vehicle* should be available.
 - i) When appropriate, suitable bedding should be added to *vehicle* floors to assist absorption of urine and faeces, to minimise slipping by animals, and protect animals (especially young animals) from hard flooring surfaces and adverse weather conditions.
5. Special provisions for transport in vehicles (road and rail) on roll-on/roll-off vessels or for containers
- a) *Vehicles* and *containers* should be equipped with a sufficient number of adequately designed, positioned and maintained securing points enabling them to be securely fastened to the *vessel*.
 - b) *Vehicles* and *containers* should be secured to the ~~ship~~ vessel before the start of the sea *journey* to prevent them being displaced by the motion of the *vessel*.
 - c) Roll-on/roll-off *vessels* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported, especially where the animals are transported in a secondary *vehicle/ container* on enclosed decks.
6. Space allowance
- a) The number of animals which should be transported on a *vehicle* or in a *container* and their allocation to compartments should be determined before *loading*.
 - b) The space required on a *vehicle* or in a *container* depends upon whether or not the animals need to lie down (for example, pigs, camels and poultry), or to stand (horses). Animals which will need to lie down often stand when first loaded or when the *vehicle* is driven with too much lateral movement or sudden braking.
 - c) When animals lie down, they should all be able to adopt a normal lying posture which allows necessary thermoregulation.
 - d) When animals are standing, they should have sufficient space to adopt a balanced position as appropriate to the climate and species transported (~~Article~~ Appendix X.X.X.).
 - e) The amount of headroom necessary depends on the species of animal. Each animal should be able to assume its natural position for transport (including during *loading* and *unloading*) without coming into contact with the roof or upper deck of the *vehicle*.
 - f) Calculations for the *space allowance* for each animal should be carried out using the figures given in Appendix X.X.X. or, in their absence, in a relevant national or international document. The number and size of pens on the *vehicle* should be varied to where possible accommodate already established groups of animals while avoiding group sizes which are too large.
 - g) Other factors which may influence *space allowance* include:
 - i) *vehicle/ container* design;
 - ii) length of *journey*;

- iii) need to provide feed and water on the *vehicle*;
- iv) quality of roads;
- v) expected weather conditions.

7. Rest, water and feed

- a) ~~There should be planning for the availability of~~ Suitable water and feed should be available as appropriate and needed for the species, age, and condition of the animals, as well as the duration of the *journey*, climatic conditions, etc.
- b) ~~There should be planning for the resting of animals at~~ Animals should be allowed to rest at resting points at appropriate intervals during the *journey*. The type of transport, the age and species of the animals being transported, and climatic conditions should determine the frequency of rest stops and whether the animals should be unloaded. ~~There should be planning for~~ Water and feed should be available ~~availability~~ during rest stops.

8. Ability to observe animals during the journey

- a) Animals should be positioned to enable each animal to be observed regularly during the *journey* to ensure their safety and good welfare.
- b) If the animals are in crates or on multi-tiered *vehicles* which do not allow free access for observation, for example where the roof of the tier is too low (i.e. less than 1.3 m), animals cannot be inspected adequately, and serious injury or disease could go undetected. In these circumstances, a shorter *journey* duration should be allowed, and the maximum duration will vary according to the rate at which problems arise in the species and under the conditions of transport.

9. Control of disease

As animal transport is often a significant factor in the spread of infectious diseases, *journey* planning should take the following into account:

- a) Mixing of animals from different sources in a single consignment should be minimised.
- b) Contact at *resting points* between animals from different sources should be avoided.
- c) When possible, animals should be vaccinated against diseases to which they are likely to be exposed at their destination.
- d) Medications used prophylactically or therapeutically should be approved by the *Veterinary Authority* of the *importing country* and should only be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*, such as an accredited animal handler or an animal handler.

10. Emergency response procedures

There should be an emergency management plan that identifies the important adverse events that may be encountered during the *journey*, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

Appendix E (contd)11. Other considerations

- a) Extreme weather conditions are hazardous for animals undergoing transport and require appropriate *vehicle* design to minimise risks. Special precautions should be taken for animals that have not been acclimatised or which are unsuited to either hot or cold conditions. In some extreme conditions of heat or cold, animals should not be transported at all.
- b) In some circumstances, transportation during the night may reduce thermal stress or the adverse effects of other external stimuli.

Article 3.7.3.5.

Documentation

1. Animals should not be loaded until the documentation required to that point is complete.
2. The documentation accompanying the consignment should include:
 - a) *journey* travel plan (~~including~~ and an emergency management plan);
 - b) date, time, and place of *loading* and *unloading*;
 - c) veterinary certification, when required;
 - d) ~~driver's~~ competencies of the driver;
 - e) ~~identities of the~~ animal identification transported to allow ~~traceback~~ animal traceability of individual animals to the premises of departure and, where possible, to the premises of origin;
 - f) details of any animals considered '~~at risk~~' at particular risk of suffering poor welfare during transport (point 3e) of Article 3.7.3.6.;
 - g) documentation of the period of rest, and access to feed and water, prior to the *journey*;
 - h) *stocking density* estimate for each load in the consignment;
 - i) the *journey* log - daily record of inspection and important events, including records of morbidity and mortality and actions taken, climatic conditions, rest stops, travel time and distance, feed and water offered and estimates of consumption, medication provided, and mechanical defects.
3. When veterinary certification is required to accompany consignments of animals, it should address:
 - a) fitness of animals to travel;
 - b) *animal identification* (description, number, etc.);
 - c) health status including any tests, treatments and vaccinations carried out;
 - d) when required, details of *disinfection* carried out.

At the time of certification, the *veterinarian* should notify the accredited animal handler, animal handler or the driver of any factors affecting the ~~animals'~~ fitness of animals to travel for a particular *journey*.

Article 3.7.3.6.

Pre-journey period1. General considerations

- a) Pre-journey rest is necessary if the welfare of animals has become poor during the collection period because of the physical environment or the social behaviour of the animals.
- b) Pre-journey assembly/holding areas should be designed to:
 - i) securely hold the animals;
 - ii) maintain a safe environment from hazards, including predators and disease;
 - iii) protect animals from exposure to severe weather conditions;
 - iv) allow for maintenance of social groups; ~~and~~
 - v) allow for rest, and appropriate water and feed; and
 - vi) allow sufficient space for all animals to lie down comfortably and move around freely.
- c) Consideration should be given to ~~an animal's~~ the previous transport experience, training and conditioning of the animals, if known, as these may reduce fear and stress in animals.
- d) Feed and water should be provided pre-journey if the journey duration is greater than the normal inter-feeding and drinking interval for the animal. Recommendations for specific species are described in detail in Article 3.7.3.11.
- e) When animals are to be provided with a novel diet or method of feed or water provision during the journey, an adequate period of adaptation should be ~~planned~~ allowed.
- f) Before each journey, vehicles and containers should be thoroughly cleaned and, if necessary, treated for animal health and public health purposes, using methods approved by the *Competent Authority*. When cleaning is necessary during a journey, this should be carried out with the minimum of stress to the animals.
- g) Where an accredited animal handler or animal handler believes that there is a significant risk of disease among the animals to be loaded or significant doubt as to their fitness to travel, the animals should be examined by a *veterinarian*.

2. Selection of compatible groups

Compatible groups should be selected before transport to avoid adverse animal welfare consequences. The following guidelines should be applied when assembling groups of animals:

- a) Animals reared together should be maintained as a group; animals with a strong social bond, such as a dam and offspring, should be transported together.
- b) Animals of the same species can be mixed unless there is a significant likelihood of aggression; aggressive individuals should be segregated (recommendations for specific species are described in detail in Article 3.7.3.11.). For some species, animals from different groups should not be mixed because poor welfare occurs unless they have established a social structure.

Appendix E (contd)

- c) Young or small animals should be separated from older or larger animals, with the exception of nursing mothers with young at foot.
 - d) Animals with horns or antlers should not be mixed with animals lacking horns or antlers unless judged to be compatible.
 - e) Animals of different species should not be mixed unless they are judged to be compatible.
3. Fitness to travel
- a) Each animal should be inspected by a *veterinarian* or an *accredited animal handler* to assess fitness to travel. If its fitness to travel is in doubt, the animal should be examined by a *veterinarian*. Animals found unfit to travel should not be loaded onto a *vehicle*, except for transport to receive veterinary treatment.
 - b) Humane and effective arrangements should be made by the owner or agent for the handling and care of any animal rejected as unfit to travel.
 - c) Animals that are unfit to travel include, but may not be limited to:
 - i) those that are sick, injured, weak, disabled or fatigued;
 - ii) those that are unable to stand unaided and bear weight on each leg;
 - iii) those that are blind in both eyes;
 - iv) those that cannot be moved without causing them additional suffering;
 - v) newborn with an unhealed navel;
 - vi) pregnant animals which would be in the final 10% of their gestation period at the planned time of *unloading*;
 - vii) females travelling without young which have given birth within the previous 48 hours;
 - viii) those whose body condition would result in poor welfare because of the expected climatic conditions.
 - d) Risks during transport can be reduced by selecting animals best suited to the conditions of travel and those that are acclimatised to expected weather conditions.
 - e) Animals 'at risk' at particular risk of suffering poor welfare during transport and which require special conditions (such as in the design of facilities and *vehicles*, and the length of the *journey*) and additional attention during transport, may include:
 - i) large or obese individuals;
 - ii) very young or old animals;
 - iii) excitable or aggressive animals;
 - iv) animals which have had little contact with humans;
 - v) animal subject to motion sickness;

- vi) females in late pregnancy or heavy lactation, dam and offspring;
- vii) animals with a history of exposure to stressors or pathogenic agents prior to transport.

4. Specific species requirements

Transport procedures should be able to take account of variations in the behaviour of the species. Flight zones, social interactions and other behaviour vary significantly among species and even within species. Facilities and handling procedures that are successful with one species are often ineffective or dangerous with another.

Recommendations for specific species are described in detail in Article 3.7.3.11.

Article 3.7.3.7.

Loading

1. Competent supervision

- a) *Loading* should be carefully planned as it has the potential to be the cause of poor welfare in transported animals.
- b) *Loading* should be supervised by a veterinarian or an accredited animal handler and/or conducted by accredited animal handlers or animal handlers. ~~These animal handlers should ensure that~~ The animals are to be loaded quietly and without unnecessary noise, harassment or force, ~~and that~~ Untrained assistants or spectators do should not impede the process.
- c) In cases where animals are loaded onto individual trucks on a farm, the animal owner is responsible for ensuring the presence of a loading supervisor who is competent in the issues in animal welfare.
- d) When *containers* are loaded onto a *vehicle*, this should be carried out in such a way to avoid poor animal welfare.

2. Facilities

- a) The facilities for *loading* including the collecting area, races and loading ramps should be designed and constructed to take into account the needs and abilities of the animals with regard to dimensions, slopes, surfaces, absence of sharp projections, flooring, etc.
- b) *Loading* facilities should be properly illuminated to allow the animals to be observed by the accredited animal handlers and/or animal handler(s), and to allow the ~~animals'~~ ease of movement of the animals at all times. Facilities should provide uniform light levels directly over approaches to sorting pens, chutes, loading ramps, with brighter light levels inside *vehicles/containers*, in order to minimise baulking. Dim light levels may be advantageous for the catching of poultry and some other animals. Artificial lighting may be required.
- c) Ventilation during *loading* and the *journey* should provide for fresh air, the removal of excessive heat, humidity and noxious fumes (such as ammonia and carbon monoxide), and the prevention of accumulations of ammonia and carbon dioxide. Under warm and hot conditions, ventilation should allow for the adequate convective cooling of each animal. In some instances, adequate ventilation can be achieved by increasing the *space allowance* for animals.

Appendix E (contd)

3. Goads and other aids

The following principles should apply:

- ~~a) Animals which have little or no room to move should not be subjected to physical force or goads and other aids which compel movement.~~
- ~~b) Useful and permitted aids include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and metallic rattles; they should be used in a manner sufficient to encourage and direct movement of the animals.~~
- ~~c) Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of unsuitable goads or other aids (including sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.~~
- ~~d) The use of goads which administer electric shocks should be discouraged, and restricted to that necessary to assist movement of the animal. Such use should be limited to battery powered goads on the hindquarters of adult pigs and cattle, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on other animals.~~
- ~~e) The use of well trained dogs to help with the loading of some species may be acceptable.~~
- ~~f) The throwing or dropping of animals, or their lifting or dragging by body parts such as their tail, head, horns, ears, limbs, wool, hair or feathers, should not be permitted. The manual lifting of small animals is permissible.~~
- ~~g) Shouting or yelling at animals or making loud noises e.g. through the cracking of whips to encourage them to move should not occur, as such actions may make the animals agitated, leading to crowding or falling.~~
- a) Animals that have little or no room to move should not be subjected to physical force or goads and other aids which compel movement. Electric goads and prods should only be used in extreme cases and not on a routine basis to move animals. The use and the power output should be restricted to that necessary to assist movement of an animal and only when an animal has a clear path ahead to move. Goads and other aids should not be used repeatedly if the animal fails to respond or move. In such cases it should be investigated whether some physical or other impediment is preventing the animal from moving.
- b) The use of such devices should be limited to battery-powered goads on the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets.
- c) Useful and permitted goads include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and metallic rattles; they should be used in a manner sufficient to encourage and direct movement of the animals without causing undue stress.
- d) Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of goads or other aids which cause pain and suffering (including large sticks, sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.

- e) Shouting or yelling at animals or making loud noises (e.g., through the cracking of whips) to encourage them to move should not occur, as such actions may make the animals agitated, leading to crowding or falling.
- f) The use of well trained dogs to help with the *loading* of some species may be acceptable.
- g) Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used in young animals or small species, and in a manner appropriate to the species; grasping or lifting such animals only by their wool, hair, feathers, feet, neck, ears, tails, head, horns, limbs causing pain or suffering should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.
- h) Conscious animals should not be thrown, dragged or dropped.
- i) Performance standards should be established in which numerical scoring is used to evaluate the use of such instruments, and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling as a result of their usage.

Article 3.7.3.8.

Travel

1. General considerations

- a) Accredited animal handlers/animal handlers and/or drivers should check the load immediately before departure to ensure that the animals have been properly loaded. Early in the trip, the accredited animal handler/animal handler or the driver should check the animals again and make appropriate adjustments if necessary. Each load should be checked again early in the trip and adjustments made as appropriate. From then on, periodic checks should be made by the accredited animal handler/animal handler or the driver throughout the trip. Periodic checks should be made throughout the trip.
- b) Drivers should utilise smooth, defensive driving techniques, without sudden turns or stops, to minimise uncontrolled movements of the animals.

2. Methods of restraining or containing animals

- a) Methods of restraining animals should be appropriate to the species and age of animals involved and the training of the individual animal.
- b) Recommendations for specific species are described in detail in Article 3.7.3.11.

3. Regulating the environment within vehicles or containers

- a) Animals should be protected against harm from hot or cold conditions during travel. Effective ventilation procedures for maintaining the ~~animals'~~ environment within *vehicles* or *containers* will vary according to whether conditions are cold, hot and dry or hot and humid, but in all conditions a build-up of noxious gases should be prevented. Specific temperature and humidity parameters are described in detail in Appendix X.X.X.

Appendix E (contd)

- b) The ~~animals'~~ environment within vehicles or containers in hot and warm weather can be regulated by the flow of air produced by the movement of the *vehicle*. In warm and hot weather, the duration of *journey* stops should be minimised and *vehicles* should be parked under shade, with adequate and appropriate ventilation.
- c) To minimise slipping and soiling, and maintain a healthy environment, urine and faeces should be removed from floors when necessary and disposed of in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.
4. Sick, injured ~~and~~ or dead animals
- a) ~~A driver or~~ Accredited animal handler/animal handler or the driver finding sick, injured or dead animals should act according to a predetermined emergency response plan.
- b) ~~If possible,~~ Sick or injured animals should be segregated.
- c) Ferries (roll-on roll-off) should have procedures to treat sick or injured animals during the *journey*.
- d) In order to reduce the likelihood that animal transport will increase the spread of infectious disease, contact between transported animals, or the waste products of the transported animals, and other farm animals should be minimised.
- e) During the *journey*, when disposal of a dead animal becomes necessary, this should be carried out in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.
- f) When euthanasia is necessary, ~~the driver or~~ accredited animal handler/animal handler or the driver should ensure that it is carried out as quickly as possible and assistance should be sought from a *veterinarian* or ~~other person(s)~~ an accredited animal handler competent in ~~humane~~ euthanasia procedures. Recommendations for specific species are described in Appendix 3.7.6. on killing of animals for disease control purposes.
5. Water and feed requirements
- a) If *journey* duration is such that feeding or watering is required or if the species requires feed or water throughout, access to suitable feed and water for all the animals (appropriate for their species and age) carried in the *vehicle* should be provided. There should be adequate space for all animals to move to the feed and water sources and due account taken of likely competition for feed.
- b) Recommendations for specific species are described in detail in Article 3.7.3.11.
6. Rest periods and conditions including hygiene
- a) Animals that are being transported should be rested at appropriate intervals during the *journey* and offered feed and water, either on the *vehicle* or, if necessary, unloaded into suitable facilities.
- b) Suitable facilities should be used en route, when resting requires the *unloading* of the animals. These facilities should meet the needs of the particular animal species and should allow access of all animals to feed and water.

7. In-transit observations

- a) Animals being transported by road should be observed soon after a *journey* is commenced and whenever the driver has a rest stop (with a maximum interval of 5 hours). After meal breaks and refuelling stops, the animals should be observed immediately prior to departure.
- b) Animals being transported by rail should be observed at each scheduled stop nearest to 5 hours since the last observation. The responsible rail transporter should monitor the progress of trains carrying animals and take all appropriate action to minimise delays.
- c) During stops, it should be ensured that the animals continue to be properly confined, have appropriate feed and water, and their physical condition is satisfactory.

Article 3.7.3.9.

Unloading and post-journey handling

1. General considerations

- a) The required facilities and the principles of animal handling detailed in Article 3.7.3.7. apply equally to *unloading*, but consideration should be given to the likelihood that the animals will be fatigued.
- b) *Unloading* should be supervised ~~and/or~~ by a veterinarian or an accredited animal handler and conducted by ~~an accredited animal handlers~~ or *animal handlers* with knowledge and experience of the behavioural and physical characteristics of the species being unloaded. Animals should be unloaded from the *vehicle* into appropriate facilities as soon as possible after arrival at the destination but sufficient time should be allowed for *unloading* to proceed quietly and without unnecessary noise, harassment or force.
- c) Facilities should provide all animals with appropriate care and comfort, adequate space and ventilation, access to feed (if appropriate) and water, and shelter from extreme weather conditions.
- d) For details regarding the *unloading* of animals at a *slaughterhouse*, see Appendix 3.7.5. on slaughter of animals for human consumption.

2. Sick ~~and~~ or injured animals

- a) An animal that has become sick, injured or disabled during a *journey* should be appropriately treated or ~~humanely killed~~ euthanized by a veterinarian or an accredited animal handler (see Appendix 3.7.6. on killing of animals for disease control purposes). ~~When~~ If necessary, veterinary advice should be sought in the care and treatment of these animals. In some cases, where animals are non-ambulatory due to fatigue, injury or sickness, it may be in the best welfare interests of the animal to be treated or euthanased aboard the *vehicle*.
- b) At the destination, *the animal handler* or the driver during transit should ensure that responsibility for the welfare of sick, injured or disabled animals is transferred to a ~~suitable person~~ veterinarian or an accredited animal handler.

Appendix E (contd)

- c) If treatment or euthanasia is not possible aboard the vehicle, there should be appropriate facilities and equipment for the humane *unloading* of animals that are non-ambulatory due to fatigue, injury or sickness. These animals should be unloaded in a manner that causes the least amount of suffering. After *unloading*, separate pens and other appropriate facilities should be available for sick or injured animals.
- d) Feed, if appropriate, and water should be available for each sick or injured animal.

3. Addressing disease risks

The following should be taken into account in addressing the greater risk of disease due to animal transport and the possible need for segregation of transported animals at the destination:

- a) increased contact among animals, including those from different sources and with different disease histories;
- b) increased shedding of pathogens and increased susceptibility to infection related to stress and impaired defences against disease, including immunosuppression;
- c) exposure of animals to pathogens which may contaminate *vehicles, resting points, markets, etc.*

4. Cleaning and disinfection

- a) *Vehicles, crates, containers, etc.* used to carry the animals should be cleaned before re-use through the physical removal of manure and bedding by scraping, washing and flushing ~~vehicles and containers~~ with water and detergent. This should be followed by *disinfection* when there are concerns about disease transmission.
- b) Manure, litter, bedding and the bodies of any animals which die during the *journey* should be disposed of in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.
- c) Establishments like livestock *markets, slaughterhouses, resting sites*, railway stations, etc. where animals are unloaded should be provided with appropriate areas for the cleaning and *disinfection* of *vehicles*.
- d) Where *disinfestation* is necessary, it should be carried out with the minimum stress to the animals.

Article 3.7.3.10.

Actions in the event of a refusal to allow the completion of the journey

1. The welfare of the animals should be the first consideration in the event of a refusal to allow the completion of the *journey*.
2. When the animals have been refused import, the *Competent Authority* of ~~that~~ the importing country should make available suitable isolation facilities to allow the *unloading* of animals from a *vehicle* and their secure holding, without posing a risk to the health of national herd or flock, pending resolution of the situation. In this situation, the priorities should be:
 - a) The *Competent Authority* of the *importing country* should provide urgently in writing the reasons for the refusal.

- b) In the event of a refusal for animal health reasons, the *Competent Authority* of the *importing country* should provide urgent access to a *veterinarian*, where possible an OIE *veterinarian(s)* appointed by the Director General, to assess the ~~animals'~~ health status of the animals with regard to the concerns of the importing country's concerns, and the necessary facilities and approvals to expedite the required diagnostic testing.
 - c) The *Competent Authority* of the *importing country* should provide access to allow continued assessment of the health and other aspects of the welfare of the animals.
 - d) If the matter cannot be promptly resolved, the *Competent Authorities* of the *exporting* and *importing countries* should call on the OIE to mediate.
3. In the event that a *Competent Authority* requires the animals to remain on the *vehicle*, the priorities should be:
- a) The *Competent Authority* should allow ~~re~~provisioning of the *vehicle* with water and feed as necessary.
 - b) The *Competent Authority* should provide urgently in writing the reasons for the refusal.
 - c) In the event of a refusal for animal health reasons, the *Competent Authority* should provide urgent access to an independent *veterinarian(s)* to assess the ~~animals'~~ health status of the animals, and the necessary facilities and approvals to expedite the required diagnostic testing.
 - d) The *Competent Authority* should provide access to allow continued assessment of the health and other aspects of the welfare of the animals, and the necessary actions to deal with any animal issues which arise.
4. The OIE should utilise its dispute settlement mechanism to identify a mutually agreed solution which will address animal health and any other welfare issues in a timely manner.

Article 3.7.3.11.

Species specific issues

(To be developed)

 — text deleted

APPENDIX 3.7.5.

GUIDELINES FOR THE
SLAUGHTER OF ANIMALS

Article 3.7.5.1.

General principles1. Object

These guidelines address the need to ensure the welfare of food animals during pre-*slaughter* and *slaughter* processes, until they are dead.

These guidelines apply to the *slaughter* in *slaughterhouses* of the following domestic animals: cattle, buffalo, sheep, goats, deer, horses, pigs, ratites and poultry. Other animals, wherever they have been reared, and all animals slaughtered outside *slaughterhouses* should be managed to ensure that their *transport*, ~~lairaging~~ lairage *restraint* and *slaughter* is carried out without causing undue stress to the animals; the principles underpinning these guidelines apply also to these animals.

2. Personnel

Persons engaged in the *unloading*, moving, ~~lairaging~~ lairage care, ~~restraining~~ restraint, *stunning*, *slaughter* and bleeding of animals play an important role in the welfare of those animals. For this reason, there should be a sufficient number of personnel, who should be patient, considerate, competent and familiar with the guidelines outlined in this Appendix and their application within the national context.

Competence may be gained through formal training and/or practical experience. This competence should be demonstrated through a current certificate from the *Competent Authority* or from an independent body accredited by the *Competent Authority*.

The management of the *slaughterhouse* and the *Veterinary Services* should ensure that *slaughterhouse* staff are competent and carry out their tasks in accordance with the principles of animal welfare.

~~The management of the slaughterhouse and the Veterinary Services should ensure that slaughterhouse staff carry out their tasks in accordance with the principles of animal welfare.~~

3. Animal behaviour

Accredited animal handlers and *animal handlers* should be experienced and competent in handling and moving farm livestock and understand the behaviour patterns of animals and the underlying principles necessary to carry out their tasks.

The behaviour of individual animals or groups of animals will vary, depending on their breed, sex, temperament and age and the way in which they have been reared and handled. Despite these differences, the following behaviour patterns which are always present to some degree in domestic animals, should be taken into consideration in handling and moving the animals.

Most domestic livestock are kept in herds and follow a leader by instinct.

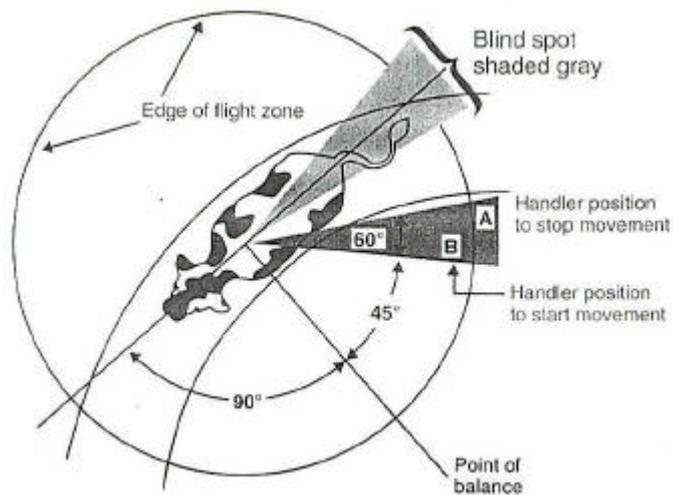
Appendix F (contd)

Animals which are likely to be hostile to each other in a group situation should not be mixed at *slaughterhouses*.

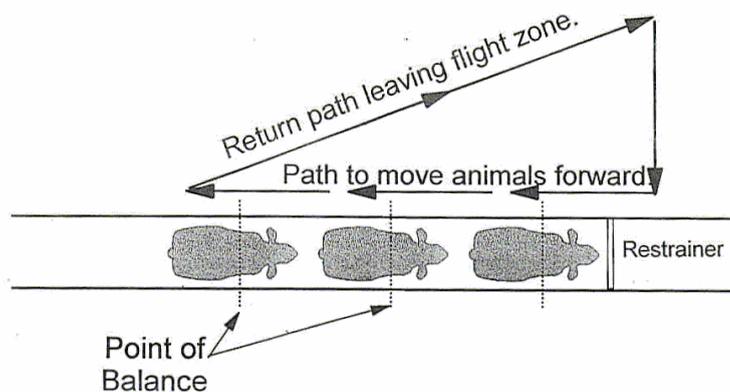
The desire of some animals to control their personal space should be taken into account in designing facilities.

Domestic animals will try to escape if animal handler any person approaches closer than a certain distance. This critical distance, which defines the flight zone, varies among species and individuals of the same species, and depends upon previous contact with humans. Animals reared in close proximity to humans (i.e. tame) have a ~~small~~ smaller flight zone, whereas those kept in free range or extensive systems may have flight zones which may vary from one metre to many metres. Accredited animal handlers and/or animal handlers should avoid sudden penetration of the flight zone which may cause a panic reaction which could lead to aggression or attempted escape.

An example of a flight zone (cattle)



Animal handler movement pattern to move cattle forward



Accredited animal handlers and animal handlers should use the point of balance at ~~an~~ the animal's shoulder to move animals, adopting a position behind the point of balance to move an animal forward and in front of the point of balance to move it backward.

Domestic animals have wide-angle vision but only have limited forward binocular vision and poor perception of depth. This means that they can detect objects and movements beside and behind them, but can only judge distances directly ahead.

Although all domestic animals have a highly sensitive sense of smell, they react in different ways to the smells of *slaughterhouses*. Smells which cause fear or other negative responses should be taken into consideration when managing animals.

Domestic animals can hear over a greater range of frequencies than humans and are more sensitive to higher frequencies. They tend to be alarmed by constant loud noise and by sudden noises, which may cause them to panic. Sensitivity to such noises should also be taken into account when handling animals.

4. Distractions and their removal

Distractions that may cause approaching animals to stop, balk or turn back should be designed out from new facilities or removed from existing ones. Below are examples of common distractions and methods for eliminating them:

- a) reflections on shiny metal or wet floors - move a lamp or change lighting;
- b) dark entrances to chutes, races, stun boxes or conveyor restrainers - illuminate with indirect lighting which does not shine directly into the eyes of approaching animals;
- c) animals seeing moving people or equipment up ahead - install solid sides on chutes and races or install shields;
- d) chains or other loose objects hanging in chutes or on fences - remove them;
- e) uneven floors or a sudden drop in floor levels at the entrance to conveyor restrainers – avoid uneven floor surfaces or install a solid false floor under the restrainer to provide an illusion of a solid and continuous walking surface;
- f) sounds of air hissing from pneumatic equipment - install silencers or use hydraulic equipment or vent high pressure to the external environment using flexible hosing;
- g) clanging and banging of metal objects - install rubber stops on gates and other devices to reduce metal to metal contact;
- h) air currents from fans or air curtains blowing into the face of animals - redirect or reposition equipment.

Article 3.7.5.2.

Moving and handling animals

1. General considerations

Animals should be transported to *slaughter* in a way that minimises adverse animal health and welfare outcomes, and the transport should be conducted in accordance with the OIE guidelines for the transportation of animals (~~Chapters~~ Appendices 3.7.2 and 3.7.3).

Appendix F (contd)

The following principles should apply to *unloading* animals, moving them into *lairage* pens, out of the *lairage* pens and up to the slaughter point:

- a) The conditions of the animals should be assessed upon their arrival for any animal welfare and health problems.
- b) Injured or sick animals, requiring immediate *slaughter*, should be killed humanely, preferably at the site where they are found in accordance with the OIE guidelines for the killing of animals for disease control purposes (Chapter Appendix 3.7.6).
- ~~e) The use of force on animals that have little or no room to move should not occur.~~
- ~~d) The use of instruments which administer electric shocks (e.g., goads and prods) and their power output should be restricted to that necessary to assist movement of an animal and only when an animal has a clear path ahead to move. If such use is necessary, it should be limited to the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets, nor on animals that have little or no room to move.~~
- ~~e) Performance standards should be established in which numerical scoring is used to evaluate the use of such instruments, and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling at a point in the slaughterhouse; the slaughterhouse should be investigated for faults in flooring, raceway design, lighting or handling, and these should be rectified to enable free movement of the animals without the need to use such instruments.~~
- ~~f) Aids for moving animals such as panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and metallic rattles should be used in a manner sufficient to encourage and direct movement of the animals.~~
- ~~g) Shouting or yelling at animals or making loud noises e.g. through the cracking of whips to encourage them to move should not occur as such actions may make the animals agitated, leading to crowding or falling.~~
- ~~h) Implements which cause pain and suffering such as large sticks, sticks with sharp ends, metal piping, fencing wire or heavy leather belts should not be used to move animals.~~
- ~~i) Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used in young animals or small species, and in a manner appropriate to the species; grasping or lifting such animals only by their wool, hair, feet, neck, ears or tails causing pain or suffering should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.~~
- ~~j) Conscious animals should not be thrown or dragged.~~
- ~~k) Animals should not be forced to move at a speed greater than their normal walking pace, in order to minimise injury through falling or slipping. Performance standards should be established where numerical scoring of the prevalence of animals slipping or falling is used to evaluate whether animal moving practices and/or facilities should be improved. In properly designed and constructed facilities with competent *animal handlers*, it should be possible to move 99% of animals without their falling.~~

- l) Animals for slaughter should not be forced to walk over the top of other animals.
- m) Animals should be handled in such a way as to avoid harm, distress or injury. Under no circumstances should *animal handlers* resort to violent acts to move animals, such as crushing or breaking animals' tails, grasping animals' eyes or pulling them by their ears. *animal handlers* should never apply an injurious object or irritant substance to animals and especially not to sensitive areas such as eyes, mouth, ears, anogenital region or belly. The throwing or dropping of animals, or their lifting or dragging by body parts such as their tail, head, horns, ears, limbs, wool, hair or feathers, should not be permitted. The manual lifting of small animals is permissible.
- c) Animals should not be forced to move at a speed greater than their normal walking pace, in order to minimise injury through falling or slipping. Performance standards should be established where numerical scoring of the prevalence of animals slipping or falling is used to evaluate whether animal moving practices and/or facilities should be improved. In properly designed and constructed facilities with competent *accredited animal handlers* or *animal handlers* it should be possible to move 99% of animals without their falling.
- d) Animals for slaughter should not be forced to walk over the top of other animals.
- e) Animals should be handled in such a way as to avoid harm, distress or injury. Under no circumstances should *accredited animal handlers* or *animal handlers* resort to violent acts to move animals, such as crushing or breaking tails of animals, grasping their eyes or pulling them by the ears. *Accredited animal handlers* and *animal handlers* should never apply an injurious object or irritant substance to animals and especially not to sensitive areas such as eyes, mouth, ears, anogenital region or belly. The throwing or dropping of animals, or their lifting or dragging by body parts such as their tail, head, horns, ears, limbs, wool, hair or feathers, should not be permitted. The manual lifting of small animals is permissible.
- f) When using goads and other aids, the following principles should apply:
- i) Animals that have little or no room to move should not be subjected to physical force or goads and other aids which compel movement. Electric goads and prods should only be used in extreme cases and not on a routine basis to move animals. The use and the power output should be restricted to that necessary to assist movement of an animal and only when an animal has a clear path ahead to move. Goads and other aids should not be used repeatedly if the animal fails to respond or move. In such cases it should be investigated whether some physical or other impediment is preventing the animal from moving.
- ii) The use of such devices should be limited to battery-powered goads on the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets.
- iii) Useful and permitted goads include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and metallic rattles; they should be used in a manner sufficient to encourage and direct movement of the animals without causing undue stress.
- iv) Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of goads or other aids which cause pain and suffering (including large sticks, sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.

Appendix F (contd)

- v) Shouting or yelling at animals or making loud noises (e.g. through the cracking of whips) to encourage them to move should not occur, as such actions may make the animals agitated, leading to crowding or falling.
- vi) Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used in young animals or small species, and in a manner appropriate to the species; grasping or lifting such animals only by their wool, hair, feathers, feet, neck, ears, tails, head, horns and limbs causing pain or suffering should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.
- vii) Conscious animals should not be thrown, dragged or dropped.
- viii) Performance standards should be established in which numerical scoring is used to evaluate the use of such instruments, and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling at a point in the slaughterhouse. the slaughterhouse should be investigated for faults in flooring, raceway design, lighting or handling, and these should be rectified to enable free movement of the animals without the need to use such instruments.

2. Provisions relevant to animals delivered in containers

- a) Containers in which animals are transported should be handled with care, and should not be thrown, dropped or knocked over. Where possible, they should be horizontal while being loaded and unloaded mechanically, and stacked to ensure ventilation. In any case they should be moved and stored in an upright position as indicated by specific marks.
- b) Animals delivered in *containers* with perforated or flexible bottoms should be unloaded with particular care in order to avoid injury. Where appropriate, animals should be unloaded from the *containers* individually.
- c) Animals which have been transported in *containers* should be slaughtered as soon as possible; mammals and ratites which are not taken directly upon arrival to the place of slaughter should have drinking water available to them from appropriate facilities at all times. Delivery of poultry for slaughter should be scheduled such that they are not deprived of water at the premises for longer than 12 hours. Animals which have not been slaughtered within 12 hours of their arrival should be fed, and should subsequently be given moderate amounts of food at appropriate intervals.

3. Provisions relevant to restraining and containing animals

- a) Provisions relevant to restraining animals for *stunning* or *slaughter* without *stunning*, to help maintain animal welfare, include:
 - i) provision of a non-slippery floor;
 - ii) avoidance of excessive pressure applied by restraining equipment that causes struggling or vocalisation in animals;
 - iii) equipment engineered to reduce noise of air hissing and clanging metal;

- iv) absence of sharp edges in restraining equipment that would harm animals;
 - v) avoidance of jerking or sudden movement of restraining device.
- b) Methods of *restraint* causing avoidable suffering ~~such as the following~~ should not be used in conscious animals because they cause severe pain and stress, such as the following:
- i) suspending or hoisting animals (other than poultry) by the feet or legs;
 - ii) indiscriminate and inappropriate use of *stunning* equipment;
 - iii) mechanical clamping of ~~an animal's~~ the legs or feet of the animals (other than shackles used in poultry and ostriches) as the sole method of *restraint*;
 - iv) breaking legs, cutting leg tendons or blinding animals in order to immobilise them;
 - v) severing the spinal cord, for example using a puntilla or dagger, to immobilise animals; using electric currents to immobilise animals, except for proper *stunning*.

Article 3.7.5.3.

Lairage design and construction

1. General considerations

The *lairage* should be designed and constructed to hold an appropriate number of animals in relation to the throughput rate of the *slaughterhouse* without compromising the welfare of the animals.

In order to permit operations to be conducted as smoothly and efficiently as possible without injury or undue stress to the animals, the *lairage areas* should be designed and constructed so as to allow the animals to move freely in the required direction, using their behavioural characteristics and without undue penetration of their flight ~~zone~~ zone.

The following guidelines may help to achieve this.

2. Design of lairages

- a) The *lairage* should be designed to allow a one-way flow of animals from *unloading* to the point of *slaughter*, with a minimum number of abrupt corners to negotiate.
- b) In red meat *slaughterhouses*, pens, passageways and races should be arranged in such a way as to permit inspection of animals at any time, and to permit the removal of sick or injured animals when considered to be appropriate, for which separate appropriate accommodation should be provided.
- c) Each animal should have room to stand up and lie down and, when confined in a pen, to turn around, except where the animal is reasonably restrained for safety reasons (e.g. fractious bulls). The *lairage* should have sufficient accommodation for the number of animals intended to be held. Drinking water should always be available to the animals, and the method of delivery should be appropriate to the type of animal held. Troughs should be designed and installed in such a way as to minimise the risk of fouling by faeces, without introducing risk of bruising and injury in animals, and should not hinder the movement of animals.

Appendix F (contd)

- d) Holding pens should be designed to allow as many animals as possible to stand or lie down against a wall. Where feed troughs are provided, they should be sufficient in number and feeding space to allow adequate access of all animals to feed. The feed trough should not hinder the movement of animals.
 - e) Where tethers, ties or individual stalls are used, these should be designed so as not to cause injury or distress to the animals and should also allow the animals to stand, lie down and access any food or water that may need to be provided.
 - f) Passageways and races should be either straight or consistently curved, as appropriate to the animal species. Passageways and races should have solid sides, but when there is a double race, the shared partition should allow adjacent animals to see each other. For pigs and sheep, passageways should be wide enough to enable two or more animals to walk side by side for as long as possible. At the point where passageways are reduced in width, this should be done by a means which prevents excessive bunching of the animals.
 - g) Accredited animal handlers and animal handlers should be positioned alongside races and passageways on the inside radius of any curve, to take advantage of the natural tendency of animals to circle an intruder. Where one-way gates are used, they should be of a design which avoids bruising. Races should be horizontal, but where there is a slope, they should be constructed to allow the free movement of animals without injury.
 - h) There should be a waiting pen, with a level floor and solid sides, between the holding pens and the race leading to the point of *stunning* or *slaughter*, to ensure a steady supply of animals for *stunning* or *slaughter* and to avoid having accredited animal handlers or animal handlers trying to rush animals from the holding pens. The waiting pen should preferably be circular, but in any case designed so that animals cannot be trapped or trampled.
 - i) Ramps or lifts should be used for *loading* and *unloading* of animals where there is a difference in height or a gap between the floor of the *vehicle* and the unloading area. Unloading ramps should be designed and constructed so as to permit animals to be unloaded from *vehicles* on the level or at the minimum gradient achievable. Lateral side protection should be available to prevent animals escaping or falling. They should be well drained, with secure footholds and adjustable to facilitate easy movement of animals without causing distress or injury.
3. Construction of lairages
- a) *Lairages* should be constructed and maintained so as to provide protection from unfavourable climatic conditions, using strong and resistant materials such as concrete and metal which has been treated to prevent corrosion. Surfaces should be easy to clean. There should be no sharp edges or protuberances which may injure the animals.
 - b) Floors should be well drained and not slippery; they should not cause injury to the ~~animals'~~ feet of the animals. Where necessary, floors should be insulated or provided with appropriate bedding. Drainage grids should be placed at the sides of pens and passageways and not where animals would have to cross them. Discontinuities or changes in floor patterns or texture which could cause baulking in the movement of animals should be avoided.
 - c) *Lairages* should be provided with adequate lighting, but care should be taken to avoid harsh lights and shadows which frighten the animals or affect their movement. The fact that animals will move more readily from a darker area into a well-lit area might be exploited by providing for lighting that can be regulated accordingly.

- d) *Lairages* should be adequately ventilated to ensure that waste gases (e.g. ammonia) do not build up and that draughts at animal height are minimised. Ventilation should be able to cope with the range of expected climatic conditions and the number of animals the *lairage* will be expected to hold.
- e) Care should be taken to protect the animals from excessively or potentially disturbing noises, for example by avoiding the use of noisy hydraulic or pneumatic equipment, and muffling noisy metal equipment by the use of suitable padding, or by minimising the transmission of such noise to the areas where animals are held and slaughtered.
- f) Where animals are kept in outdoor *lairages* without natural shelter or shade, they should be protected from the effects of adverse weather conditions.

Article 3.7.5.4.

Care of animals in lairages

Animals in *lairages* should be cared for in accordance with the following guidelines:

1. As far as possible, established groups of animals should be kept together. Each animal should have enough space to stand up, lie down and turn around. Animals hostile to each other should be separated.
2. Where tethers, ties or individual stalls are used, they should allow animals to stand up and lie down without causing injury or distress.
3. Where bedding is provided, it should be maintained in a condition that minimises risks to the health and safety of the animals, and sufficient bedding should be used so that animals do not become soiled with manure.
4. Animals should be kept securely in the *lairage*, and care should be taken to prevent them from escaping and from predators.
5. Suitable drinking water should be available to the animals on their arrival and at all times to animals in *lairages* unless they are to be slaughtered without delay.
6. If animals are not to be slaughtered as soon as possible, suitable feed should be available to the animals on arrival and at intervals appropriate to the species. Unweaned animals should be slaughtered as soon as possible.
7. In order to prevent heat stress, animals subjected to high temperatures, particularly pigs and poultry, should be cooled by the use of water sprays, fans or other suitable means. However, the potential for water sprays to reduce the ability of animals to thermoregulate (especially poultry) should be considered in any decision to use water sprays. The risk of animals being exposed to very cold temperatures or sudden extreme temperature changes should also be considered.
8. The *lairage* area should be well lit in order to enable the animals to see clearly without being dazzled. During the night, the lights should be dimmed. Lighting should also be adequate to permit inspection of all animals. Subdued lighting, and for example, blue light may be useful in poultry *lairages* in helping to calm birds.

Appendix F (contd)

9. The condition and state of health of the animals in a *lairage* should be inspected at least every morning and evening by a *veterinarian* or, under the ~~latter's~~ *veterinarian's* responsibility, by another competent person, such as an *accredited animal handler* or an *animal handler*. Animals which are sick, weak, injured or showing visible signs of distress should be separated, and veterinary advice should be sought immediately regarding treatment or euthanasia, and treated or humanely killed immediately.
10. Lactating dairy animals should be slaughtered as soon as possible. Dairy animals with obvious udder distension should be milked to minimise udder discomfort.
11. Animals which have given birth during the *journey* or in the *lairage* should be slaughtered as soon as possible or provided with conditions which are appropriate for suckling, for ~~its~~ their welfare and the welfare of the newborn. Under normal circumstances, animals which are expected to give birth during a *journey* should not be transported.
12. Animals with horns, antlers or tusks capable of injuring other animals, if aggressive, should be penned separately.

Recommendations for specific species are described in detail in Articles 3.7.5.5. to 3.7.5.8.

Article 3.7.5.5.
(under study)

Management of foetuses during slaughter of pregnant animals

~~The welfare of foetuses during slaughter of pregnant animals needs to be safeguarded.~~

Under normal circumstances, pregnant animals which would be in the final 10% of their gestation period at the planned time of *unloading* at the *slaughterhouse* should neither be transported nor slaughtered. ~~When~~ If such an event occurs, an *accredited animal handler* or an *animal handler* should ensure that females are handled separately and the specific procedures described below are applied. In all cases, the welfare of foetuses and dams during slaughter should be safeguarded.

1. Foetuses should not be removed from the uterus sooner than five minutes after the maternal neck or chest cut, to ensure absence of consciousness. A foetal heartbeat will usually still be present and foetal movements may occur at this stage, but these are only a cause for concern if the exposed foetus successfully breathes air.
2. If a live mature foetus is removed from the uterus, it should be prevented from inflating its lungs and breathing air (e.g. by clamping the trachea).
3. When uterine, placental or foetal tissues, including foetal blood, are not to be collected as part of the post-slaughter processing of pregnant animals, all foetuses should be left inside the unopened uterus until they are dead. When uterine, placental or foetal tissues are to be collected, where practical, foetuses should not be removed from the uterus until at least 15-20 minutes after the maternal neck or chest cut.
4. If there is any doubt about consciousness, the foetus should be killed with a captive bolt of appropriate size or a blow to the head with a suitable blunt instrument.

The above guidelines do not refer to foetal rescue. Foetal rescue, the practice of attempting to revive foetuses found alive at evisceration of the dam, should not be attempted during normal commercial slaughter as it may lead to serious welfare complications in the newborn animal. These include impaired brain function resulting from oxygen shortage before rescue is completed, compromised breathing and body heat production because of foetal immaturity, and an increased incidence of infections due to a lack of colostrum.

Article 3.7.5.6.

Summary of acceptable handling and restraining methods and the associated animal welfare issues

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
No restraint	Animals are grouped	Group container	Gas stunning	Specific procedure is suitable only for gas stunning	Competent <u>Accredited</u> animal handlers in lairage; facilities; stocking density	Pigs, poultry
		In the field	Free bullet	Inaccurate targeting and inappropriate ballistics not achieving outright kill with first shot	Operator competence	Deer
		Group stunning pen	Head-only electrical Captive bolt	Uncontrolled movement of animals impedes use of hand operated electrical and mechanical stunning methods	Competent <u>Accredited</u> animal handlers in lairage and at stunning point	Pigs, sheep, goats, calves
	Individual animal confinement	Stunning pen/box	Electrical and mechanical stunning methods	Loading of animal; accuracy of stunning method, slippery floor and animal falling down	Competent <u>Accredited</u> animal handlers	Cattle, buffalo, sheep, goats, horses, pigs, deer, camelids, ratites
Restraining methods	Head restraint, upright	Halter/ head collar/bridle	Captive bolt Free bullet	Suitable for halter-trained animals; stress in untrained animals	Competent <u>Accredited</u> animal handlers	Cattle, buffalo, horses, camelids
	Head restraint, upright	Neck yoke	Captive bolt Electrical-head-only Free bullet Slaughter without stunning	Stress of loading and neck capture; stress of prolonged restraint, horn configuration; unsuitable for fast line speeds, animals struggling and falling due to slippery floor, excessive pressure	Equipment; competent <u>accredited</u> animal handlers, prompt stunning or slaughter	Cattle
	Leg restraint	Single leg tied in flexion (animal standing on 3 legs)	Captive bolt Free bullet	Ineffective control of animal movement, misdirected shots	Competent <u>Accredited</u> animal handlers	Breeding pigs (boars and sows)

Appendix F (contd)

Summary of acceptable handling and restraining methods and the associated animal welfare issues (contd)

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
Restraining methods	Upright restraint	Beak holding	Captive bolt Electrical-head-only	Stress of capture	Sufficient <u>Competent Accredited</u> animal handlers	Ostriches
		Head restraint in electrical stunning box	Electrical-head-only	Stress of capture and positioning	Competent <u>Accredited</u> animal handlers	Ostriches
	Holding body upright- manual	Manual restraint	Captive bolt Electrical-head-only Slaughter without stunning	Stress of capture and restraint; accuracy of stunning/slaughter	Competent <u>Accredited</u> animal handlers	Sheep, goats, calves, rattes, small camelids, poultry
	Holding body upright mechanical	Mechanical clamp / crush / squeeze/ V-restrainer (static)	Captive bolt Electrical methods Slaughter without stunning	Loading of animal and overriding; excessive pressure	Proper design and operation of equipment	Cattle, buffalo, sheep, goats, deer, pigs, ostriches
	Lateral restraint – manual or mechanical	Restrainer/cradle/crush	Slaughter without stunning	Stress of restraint	Competent <u>Accredited</u> animal handlers	Sheep, goats, calves, camelids, cattle
	Upright restraint mechanical	Mechanical straddle (static)	Slaughter without stunning Electrical methods Captive bolt	Loading of animal and overriding	Competent <u>Accredited</u> animal handlers	Cattle, sheep, goats, pigs
	Upright restraint – manual or mechanical	Wing shackling	Electrical	Excessive tension applied prior to stunning	Competent <u>Accredited</u> animal handlers	Ostriches

Summary of acceptable handling and restraining methods and the associated animal welfare issues (contd)

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
Restraining and /or conveying methods	Mechanical - upright	V-restrainer	Electrical methods Captive bolt Slaughter without stunning	Loading of animal and overriding; excessive pressure, size mismatch between restrainer and animal	Proper design and operation of equipment	Cattle, calves, sheep, goats, pigs
	Mechanical - upright	Mechanical straddle – band restrainer (moving)	Electrical methods Captive bolt Slaughter without stunning	Loading of animal and overriding, size mismatch between restrainer and animal	Competent <u>Accredited</u> animal handlers, proper design and layout of restraint	Cattle, calves, sheep, goats, pigs
	Mechanical - upright	Flat bed/deck Tipped out of <i>containers</i> on to conveyors	Presentation of birds for shackling prior to electrical stunning Gas stunning	Stress and injury due to tipping in dump-module systems height of tipping conscious poultry broken bones and dislocations	Proper design and operation of equipment	Poultry
	Suspension and/or inversion	Poultry shackle	Electrical stunning Slaughter without stunning	Inversion stress; pain from compression on leg bones	Competent <u>Accredited</u> animal handlers; proper design and operation of equipment	Poultry
	Suspension and/or inversion	Cone	Electrical – head-only Captive bolt Slaughter without stunning	Inversion stress	Competent <u>Accredited</u> animal handlers; proper design and operation of equipment	Poultry
	Upright restraint	Mechanical leg clamping	Electrical – head-only	Stress of resisting restraint in ostriches	Competent <u>Accredited</u> animal handlers; proper equipment design and operation	Ostrich es

Appendix F (contd)

Summary of acceptable handling and restraining methods and the associated animal welfare issues (contd)

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
Restraining by inversion	Rotating box	Fixed side(s) (e.g. Weinberg pen)	Slaughter without stunning	Inversion stress; stress of resisting restraint, prolonged restraint, inhalation of blood and ingesta. Keep restraint as brief as possible	Proper design and operation of equipment	Cattle
		Compressible side(s)	Slaughter without stunning	Inversion stress, stress of resisting restraint, prolonged restraint Preferable to rotating box with fixed sides Keep restraint as brief as possible	Proper design and operation of equipment	Cattle
Body restraint	Casting/hobbling	Manual	Mechanical stunning methods Slaughter without stunning	Stress of resisting restraint; animal temperament; bruising. Keep restraint as short as possible	Competent <u>Accredited</u> animal handlers	Sheep, goats, calves, small camelids, pigs
Leg restraints		Rope casting	Mechanical stunning methods Slaughter without stunning	Stress of resisting restraint; prolonged restraint, animal temperament; bruising Keep restraint as short as possible	Competent <u>Accredited</u> animal handlers	Cattle, camelids
		Tying of 3 or 4 legs	Mechanical stunning methods Slaughter without stunning	Stress of resisting restraint; prolonged restraint, animal temperament; bruising Keep restraint as short as possible	Competent <u>Accredited</u> animal handlers	Sheep, goats, small camelids, pigs

Article 3.7.5.7.

Stunning methods1. General considerations

The competence of the operators, and the appropriateness, and effectiveness of the method used for *stunning* and the maintenance of the equipment are the responsibility of the management of the *slaughterhouse*, and should be checked regularly by a *Competent Authority*.

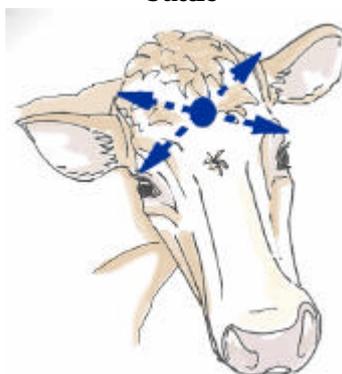
Persons carrying out *stunning* should be properly trained and competent, and should ensure that:

- a) the animal is adequately restrained;
- b) animals in *restraint* are stunned as soon as possible;
- c) the equipment used for *stunning* is maintained and operated properly in accordance with the manufacturer's recommendations, in particular with regard to the species and size of the animal;
- d) the instrument is applied correctly;
- e) stunned animals are bled out (slaughtered) as soon as possible;
- f) animals should not be stunned when slaughter is likely to be delayed; and
- g) backup *stunning* devices are available for immediate use if the primary method of *stunning* fails.

In addition, such persons should be able to recognise when an animal is not correctly stunned and should take appropriate action.

2. Mechanical stunning

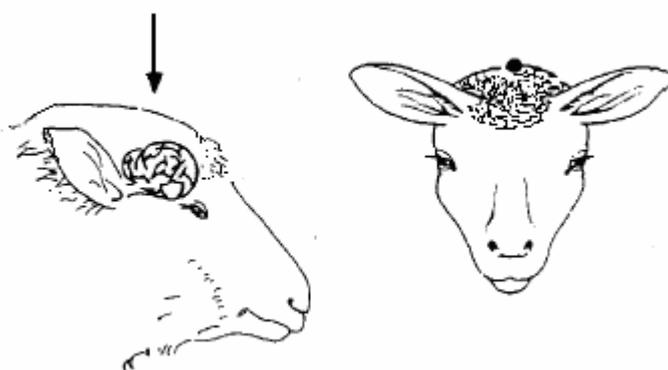
A mechanical device should be applied usually to the front of the head and perpendicular to the bone surface. The following diagrams illustrate the proper application of the device for certain species.

Cattle

The optimum position for cattle is at the intersection of two imaginary lines drawn from the rear of the eyes to the opposite horn buds.

Appendix F (contd)**Pigs**

The optimum position for pigs is on the midline just above eye level, with the shot directed down the line of the spinal cord.

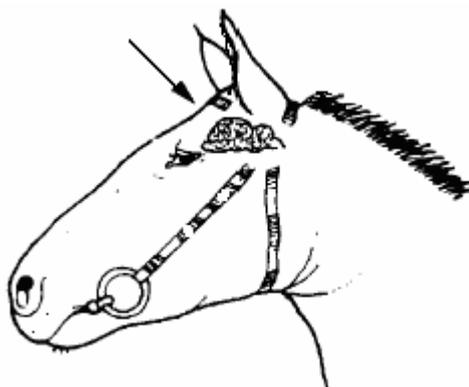
Sheep

The optimum position for hornless sheep and goats is on the midline.

Goats

The optimum position for heavily horned sheep and horned goats is behind the poll, aiming towards the angle of the jaw.

Horses



The optimum position for horses is at right angles to the frontal surface, well above the point where imaginary lines from eyes to ears cross.

Signs of correct *stunning* using a mechanical instrument are as follows:

- a) the animal collapses immediately and does not attempt to stand up;
- b) the body and muscles of the animal become tonic (rigid) immediately after the shot;
- c) normal rhythmic breathing stops; and
- d) the eyelid is open with the eyeball facing straight ahead and is not rotated.

3. Electrical stunning

a) General considerations

An electrical device should be applied to the animal in accordance with the following guidelines.

Electrodes should be designed, constructed, maintained and cleaned regularly to ensure that the flow of current is optimal and in accordance with manufacturing specifications. They should be placed so that they span the brain. The application of electrical currents which bypass the brain is unacceptable unless the animal has been stunned. The use of a single current leg-to-leg is unacceptable as a *stunning* method.

If, in addition, it is intended to cause cardiac arrest, the electrodes should either span the brain and immediately thereafter the heart, on the condition that it has been ascertained that the animal is adequately stunned, or span brain and heart simultaneously.

Electrical *stunning* equipment should not be applied on animals as a means of guidance, movement, *restraint* or immobilisation, and shall not deliver any shock to the animal before the actual *stunning* or *killing*.

Electrical *stunning* apparatus should be tested prior to application on animals using appropriate resistors or dummy loads to ensure the power output is adequate to stun animals.

Appendix F (contd)

The apparatus should incorporate a device which monitors and displays *stunning* current delivered to the animals.

Appropriate measures, such as removing excess wool or wetting the skin only at the point of contact, can be taken to minimise impedance of the skin and facilitate effective *stunning*.

The *stunning* apparatus required for electrical *stunning* should be provided with adequate power to achieve continuously the minimum current level recommended for *stunning* as indicated in the table below:

Species	Minimum current levels
Cattle	1.5 amps
Calves	1.0 amps
Pigs	1.25 amps
Sheep and goats	1.0 amps
Lambs	0.7 amps
Ostriches	0.4 amps

In all cases, the correct current level shall be attained within one second of the initiation of stun and maintained at least for between one and three seconds and in accordance with the manufacturer's instructions.

b) Electrical stunning of birds using a waterbath

In the case of birds suspended on a moving line, measures should be taken to ensure that the birds are not wing flapping at the entrance of the stunner. The birds should be secure in their shackle, but there should not be undue pressure on their shanks.

Waterbaths for poultry should be adequate in size and depth for the type of bird being slaughtered, and their height should be adjustable to allow for the head of each bird to be immersed. The electrode immersed in the bath should extend the full length of the waterbath. Birds should be immersed in the bath up to the base of their wings.

The waterbath should be designed and maintained in such a way that when the shackles pass over the water, they are in continuous contact with the earthed rubbing bar.

The control box for the waterbath stunner should incorporate an ammeter which displays the total current flowing through the birds.

The shackle-to-leg contact should be wetted preferably before the birds are inserted in the shackles. In order to improve electrical conductivity of the water, it is recommended that salt be added in the waterbath as necessary. Additional salt should be added regularly as a solution to maintain suitable constant concentrations in the waterbath.

Using waterbaths, birds are stunned in groups and different birds will have different impedances. The voltage should be adjusted so that the total current is the required current per bird as shown in the table hereafter, multiplied by the number of birds in the waterbath at the same time. The following values have been found to be satisfactory when employing a 50 Hertz sinusoidal alternating current.

Birds should receive the current for at least 4 seconds.

Species	Current (milliamperes per bird)
Broilers	120
Layers (spent hens)	120
Turkeys	150
Ducks and Geese	130

While a lower current may also be satisfactory, the current shall in any case be such as to ensure that unconsciousness occurs immediately and lasts until the bird has been killed by cardiac arrest or by bleeding. When higher electrical frequencies are used, higher currents may be required.

Every effort shall be made to ensure that no conscious or live birds enter the scalding tank.

In the case of automatic systems, until fail-safe systems of *stunning* and bleeding have been introduced, a manual back-up system should be in place to ensure that any birds which have missed the waterbath stunner and/or the automatic neck-cutter are immediately stunned and/or killed immediately, and they are dead before entering the scalding tank.

To lessen the number of ~~unstunned~~ birds that have not been effectively stunned from reaching neck cutters, steps should be taken to ensure that small birds do not go on the line amongst bigger birds and that these small birds are stunned separately.

4. Gas stunning (under study)

a) Stunning of pigs by exposure to carbon dioxide (CO₂)

The concentration of CO₂ for *stunning* should be preferably 90% by volume but in any case no less than 80% by volume. After entering the *stunning* chamber, the animals should be conveyed to the point of maximum concentration of the gas as rapidly as possible and be kept until they are dead or brought into a state of insensibility which lasts until *death* occur due to bleeding. Ideally, pigs should be exposed to this concentration of CO₂ for 3 minutes. Sticking should occur as soon as possible after exit from the gas chamber.

In any case, the concentration of the gas should be such that it minimises as far as possible all stress of the animal prior to loss of consciousness.

The chamber in which animals are exposed to CO₂ and the equipment used for conveying them through it shall be designed, constructed and maintained in such a way as to avoid injury or unnecessary stress to the animals. The animal density within the chamber should be such to avoid stacking animals on top of each others.

The conveyor and the chamber shall be adequately lit to allow the animals to see their surroundings and, if possible, each other.

It should be possible to inspect the CO₂ chamber whilst it is in use, and to have access to the animals in emergency cases.

The chamber shall be equipped to continuously measure and display register at the point of *stunning* the CO₂ concentration and the time of exposure, and to give a clearly visible and audible warning if the concentration of CO₂ falls below the required level.

Appendix F (contd)

b) Inert gas mixtures for stunning pigs

Inhalation of high concentrations of carbon dioxide is aversive and can be distressing to animals. Therefore, the use of non-aversive gas mixtures is being developed.

Such gas mixtures include:

- i) a maximum of 2% by volume of oxygen in argon, nitrogen or other inert gases, or
- ii) ~~to~~ a maximum of 30% by volume of carbon dioxide and a maximum of 2% by volume of oxygen in mixtures with carbon dioxide and argon, nitrogen or other inert gases.

Exposure time to the gas mixtures should be sufficient to ensure that no pigs regain consciousness before *death* supervenes through bleeding or cardiac arrest is induced.

c) Gas stunning of poultry

The main objective of gas *stunning* is to avoid the pain and suffering associated with shackling conscious poultry under water bath *stunning* and *killing* systems. Therefore, gas *stunning* should be limited to birds contained in crates or on conveyors only. The gas mixture should be non-aversive to poultry.

Gas *stunning* of poultry in their transport *containers* will eliminate the need for live bird handling at the processing plant and all the problems associated with the electrical *stunning*. Gas *stunning* of poultry on a conveyor eliminates the problems associated with the electrical water bath *stunning*.

Live poultry should be conveyed into the gas mixtures either in transport crates or on conveyor belts.

i) Gas mixtures used for *stunning* poultry include:

- a minimum of 2 minutes exposure to 40% carbon dioxide, 30% oxygen and 30% nitrogen, followed by a minimum of one minute exposure to 80% carbon dioxide in air; or
- a minimum of 2 minutes exposure to any mixture of argon, nitrogen or other inert gases with atmospheric air and carbon dioxide, provided that the carbon dioxide concentration does not exceed 30% by volume and the residual oxygen concentration does not exceed 2% by volume; or
- a minimum of 2 minutes exposure to argon, nitrogen, other inert gases or any mixture of these gases in atmospheric air with a maximum of 2% residual oxygen by volume; or
- a minimum of 2 minutes exposure to a minimum of 55% carbon dioxide in air.

ii) Requirements for effective use are as follows:

- Compressed gases should be vaporised prior to administration into the chamber and should be at room temperature to prevent any thermal shock. Under no circumstances, should solid gases with freezing temperatures enter the chamber.

- Gas mixtures should be humidified.
- Appropriate gas concentrations should be monitored and displayed continuously at the level of the birds inside the chamber.

Under no circumstances, should birds exposed to gas mixtures be allowed to regain consciousness. If necessary, the exposure time should be extended.

5. Bleeding

From the point of view of animal welfare, animals which are stunned with a reversible method should be bled without delay and in any case within the following time limits:

Stunning method	Maximum delay for bleeding to be started
Electrical methods and non penetrating captive bolt	20 seconds
CO ₂	60 seconds (after leaving the chamber)

All animals should be bled out by incising both carotid arteries, or the vessels from which they arise (e.g. chest stick). However, when the *stunning* method used causes cardiac arrest, the incision of all of these vessels is not necessary from the point of view of animal welfare.

It should be possible for staff to observe, inspect and access the animals throughout the bleeding period. Any animal showing signs of recovering consciousness should be re-stunned ~~restunned~~.

After incision of the blood vessels, no scalding carcass treatment or dressing procedures should be performed on the animals for at least 30 seconds, or in any case until all brain-stem reflexes have ceased.

Appendix F (contd)

Article 3.7.5.8.

Summary of acceptable stunning methods and the associated animal welfare issues

Method	Specific method	AW concerns/implications	Key AW requirements applicable	Species	Comment
Mechanical	Free bullet	Inaccurate targeting and inappropriate ballistics	Operator competence, achieving outright kill with first shot	Cattle, calves, buffalo, deer, horses, pigs (boars and sows)	Personnel safety
	Captive bolt - penetrating	Inaccurate targeting, velocity and diameter of bolt	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, buffalo, sheep, goats, deer, horses, pigs, camelids, ratites	(Unsuitable for specimen collection from TSE suspects). A back-up gun should be available in the event of an ineffective shot
	Captive bolt - non-penetrating	Inaccurate targeting, velocity of bolt, potentially higher failure rate than penetrating captive bolt	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats, deer, pigs, camelids, ratites	Presently available devices are not recommended for young bulls and animals with thick skull
	Manual percussive blow	Inaccurate targeting; insufficient power; size of instrument	Competent <u>Accredited</u> animal handlers; restraint; accuracy. Not recommended for general use	Young and small mammals, ostriches and poultry	Mechanical devices potentially more reliable. Where manual percussive blow is used, unconsciousness should be achieved with single sharp blow delivered to central skull bones
Electrical	Split application: 1. across head then head to chest; 2. across head then across chest	Accidental pre-stun electric shocks; electrode positioning; application of a current to the body while animal conscious; inadequate current and voltage	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats and pigs, ratites and poultry	Systems involving repeated application of head-only or head-to-leg with short current durations (<1 second) in the first application should not be used.

Summary of acceptable stunning methods and the associated animal welfare issues

Method	Specific method	AW concerns/implications	Key AW requirements applicable	Species	Comment
Electrical	Single application: 1. head only; 2. head to body; 3. head to leg	Accidental pre-stun electric shocks; inadequate current and voltage; wrong electrode positioning; recovery of consciousness	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats, pigs, ratites, poultry	
	Waterbath	Restraint, accidental pre-stun electric shocks; inadequate current and voltage; recovery of consciousness	Competent operation and maintenance of equipment	Poultry only	
Gaseous	CO ₂ air/O ₂ mixture; CO ₂ inert gas mixture	Aversiveness of high CO ₂ concentrations, respiratory distress; inadequate exposure	Concentration; duration of exposure; design, maintenance and operation of equipment; stocking density management	Pigs, poultry	
	Inert gases	Recovery of consciousness	Concentration; duration of exposure; design, maintenance and operation of equipment; stocking density management	Pigs, poultry	

Appendix F (contd)

Article 3.7.5.9.

Summary of acceptable slaughter methods and the associated animal welfare issues

Slaughter methods	Specific method	AW concerns / implications	Key requirements	Species	Comments
Bleeding out by severance of blood vessels in the neck without stunning	Full frontal cutting across the throat	Failure to cut both common carotid arteries; occlusion of cut arteries.	A very sharp blade or knife, of sufficient length so that the point of the knife remains outside the incision during the cut; the point of the knife should not be used to make the incision. An incision which does not close over the knife during the throat cut.	Cattle, buffalo, horses, camelids, sheep, goats, poultry, ratites	
Bleeding with prior stunning	Full frontal cutting across the throat	Failure to cut both common carotid arteries; occlusion of cut arteries; pain during and after the cut.	A very sharp blade or knife, of sufficient length so that the point of the knife remains outside the incision during the cut; the point of the knife should not be used to make the incision. An incision which does not close over the knife during the throat cut.	Cattle, buffalo, horses, camelids, sheep, goats	
	Neck stab followed by forward cut	Ineffective stunning; failure to cut both common carotid arteries; impaired blood flow; delay in cutting after reversible stunning	Prompt and accurate cutting	Camelids, sheep, goats, poultry, ratites	
	Neck stab alone	Ineffective stunning; failure to cut both common carotid arteries; impaired blood flow; delay in cutting after reversible stunning	Prompt and accurate cutting	Camelids, sheep, goats, poultry, ratites	

Summary of acceptable slaughter methods and the associated animal welfare issues (contd)

Slaughter methods	Specific method	AW concerns / implications	Key requirements	Species	Comments
Bleeding with prior stunning (contd)	Chest stick into major arteries or hollow-tube knife into heart	Ineffective stunning; inadequate size of stick wound inadequate length of sticking knife; delay in sticking after reversible stunning	Prompt and accurate sticking	Cattle, sheep, goats, pigs	
	Neck skin cut followed by severance of vessels in the neck	Ineffective stunning; inadequate size of stick wound; inadequate length of sticking knife; delay in sticking after reversible stunning	Prompt and accurate cutting of vessels	Cattle	
	Automated mechanical cutting	Ineffective stunning; failure to cut and misplaced cuts. Recovery of consciousness following reversible stunning systems	Design, maintenance and operation of equipment; accuracy of cut; manual back-up	Poultry only	
	Manual neck cut on one side	Ineffective stunning; recovery of consciousness following reversible stunning systems	Prior non-reversible stunning	Poultry only	N.B.: Slow induction of unconsciousness under slaughter without stunning
	Oral cut	Ineffective stunning; recovery of consciousness following reversible stunning systems	Prior non-reversible stunning	Poultry only	N.B.: Slow induction of unconsciousness in non-stun systems

Appendix F (contd)

Slaughter methods	Specific method	AW concerns / implications	Key requirements	Species	Comments
Other methods without stunning	Decapitation with a sharp knife	Pain due to loss of consciousness not being immediate		Sheep, goats, poultry	This method is only applicable to Jhatka slaughter
	Manual neck dislocation and decapitation	Pain due to loss of consciousness not being immediate; difficult to achieve in large birds	Neck dislocation should be performed in one stretch to sever the spinal cord	Poultry only	Slaughter by neck dislocation should be performed in one stretch to sever the spinal cord
Cardiac arrest in a waterbath electric stunner	Bleeding by evisceration		Induction of cardiac arrest	Quail	
	Bleeding by neck cutting			Poultry	

Article 3.7.5.10.

Methods, procedures or practices unacceptable on animal welfare grounds

1. The restraining methods which work through immobilisation by injury such as breaking legs, ~~and~~ leg tendon cutting, and severing the spinal cord (e.g. using a puntilla or dagger) cause severe pain and stress in animals. Those methods are not acceptable in any species.
2. The use of the electrical *stunning* method with a single application leg to leg is ineffective and unacceptable in any species. ~~as it is likely to be painful. The animal welfare concerns are:~~
 - a) ~~accidental pre-stun electric shocks;~~
 - b) ~~inadequate current and voltage;~~
 - c) ~~wrong electrode positioning;~~
 - d) ~~recovery of consciousness.~~
3. The slaughter method of brain stem severance by piercing through the eye socket or skull bone without prior *stunning*, is not acceptable in any species.

 — text deleted

APPENDIX 3.7.6.

GUIDELINES FOR THE KILLING OF
ANIMALS FOR DISEASE CONTROL PURPOSES

Article 3.7.6.1.

General principles

These guidelines are based on the premise that a decision to kill the animals has been made, and address the need to ensure the welfare of the animals until they are dead.

1. All personnel involved in the humane *killing* of animals should have the relevant skills and competencies. Competence may be gained through formal training and/or practical experience.
2. As necessary, operational procedures should be adapted to the specific circumstances operating on the premises and should address, apart from animal welfare, aesthetics of the method of euthanasia, cost of the method, operator safety, biosecurity and environmental aspects.
3. Following the decision to kill the animals, *killing* should be carried out as quickly as possible and normal husbandry should be maintained until the animals are killed.
4. The handling and movement of animals should be minimised and when done, it should be done in accordance with the guidelines described below.
5. Animal *restraint* should be sufficient to facilitate effective *killing*, and in accordance with animal welfare and operator safety requirements; when *restraint* is required, *killing* should follow with minimal delay.
6. When animals are killed for disease control purposes, methods used should result in immediate death or immediate loss of consciousness lasting until death; when loss of consciousness is not immediate, induction of unconsciousness should be non-aversive and should not cause anxiety, pain, distress or suffering in the animals.
7. For animal welfare considerations, young animals should be killed before older animals; for biosecurity considerations, infected animals should be killed first, followed by in-contact animals, and then the remaining animals.
8. There should be continuous monitoring of the procedures by the *Competent Authorities* to ensure they are consistently effective with regard to animal welfare, operator safety and biosecurity.
9. When the operational procedures are concluded, there should be a written report describing the practices adopted and their effect on animal welfare, operator safety and biosecurity.
10. These general principles should also apply when animals need to be killed for other purposes such as after natural disasters or for culling animal populations.

Appendix G (contd)

Article 3.7.6.2.

Organisational structure

Disease control contingency plans should be in place at a national level and should contain details of management structure, disease control strategies and operational procedures; animal welfare considerations should be addressed within these disease control contingency plans. The plans should also include a strategy to ensure that an adequate number of personnel competent in the humane *killing* of animals is available. Local level plans should be based on national plans and be informed by local knowledge.

Disease control contingency plans should address the animal welfare issues that may result from animal movement controls.

The operational activities should be led by an *official veterinarian* who has the authority to appoint the personnel in the specialist teams and ensure that they adhere to the required animal welfare and biosecurity standards. When appointing the personnel, he/she should ensure that the personnel involved has the required competencies.

The *official veterinarian* should be responsible for all activities across one or more affected premises and should be supported by coordinators for planning (including communications), operations and logistics to facilitate efficient operations.

The *official veterinarian* should provide overall guidance to personnel and logistic support for operations on all affected premises to ensure consistency in adherence to the OIE animal welfare and animal health guidelines.

A specialist team, led by a team leader answerable to the *official veterinarian*, should be deployed to work on each affected premises. The team should consist of personnel with the competencies to conduct all required operations; in some situations, personnel may be required to fulfil more than one function. Each team should contain a *veterinarian* or have access to veterinary advice at all times.

In considering the animal welfare issues associated with the *killing* of animals, the key personnel, their responsibilities and competencies required are described in Article 3.7.6.3.

Article 3.7.6.3.

Responsibilities and competencies of the specialist team1. Team leader

a) Responsibilities:

- i) plan overall operations on ~~an~~ affected premises;
- ii) determine and address requirements for animal welfare, operator safety and biosecurity;
- iii) organise, brief and manage team of people to facilitate humane *killing* of the relevant animals on the premises in accordance with national regulations and these guidelines;
- iv) determine logistics required;
- v) monitor operations to ensure animal welfare, operator safety and biosecurity requirements are met;

- vi) report upwards on progress and problems;
- vii) provide a written report at the conclusion of the *killing*, describing the practices adopted and their effect on the animal welfare, operator safety and biosecurity outcomes.

b) Competencies

- i) appreciation of normal animal husbandry practices;
- ii) appreciation of animal welfare and the underpinning behavioural, anatomical and physiological processes involved in the *killing* process;
- iii) skills to manage all activities on premises and deliver outcomes on time;
- iv) awareness of psychological effects on farmer, team members and general public;
- v) effective communication skills;
- vi) appreciation of the environmental impacts caused by their operation.

2. Veterinarian

a) Responsibilities

- i) determine and ~~implement~~ supervise the implementation of the most appropriate *killing* method to ensure that animals are killed without avoidable pain and distress;
- ii) determine and implement the additional requirements for animal welfare, including the order of *killing*;
- iii) ensure that confirmation of the death of the animals is carried out by competent persons at appropriate times after the *killing* procedure;
- iv) minimise the risk of disease spread within and from the premises through the supervision of biosecurity procedures;
- v) continuously monitor animal welfare and biosecurity procedures;
- vi) in cooperation with the leader, prepare a written report at the conclusion of the *killing*, describing the practices adopted and their effect on animal welfare.

b) Competencies

- i) ability to assess animal welfare, especially the effectiveness of *stunning* and *killing*, and to correct any deficiencies;
- ii) ability to assess biosecurity risks.

3. Accredited animal handlers

a) Responsibilities

- i) review on-site facilities in terms of their appropriateness;

Appendix G (contd)

- ii) design and construct temporary animal handling facilities, when required;
 - iii) move and restrain animals;
 - iv) continuously monitor animal welfare and biosecurity procedures.
- b) Competencies
- i) animal handling in emergency situations and in close confinement is required;
 - ii) an appreciation of biosecurity and containment principles.

4. Animal handlera) Responsibilities

- i) move and restrain animals;
- ii) continuously monitor animal welfare and biosecurity procedures.

b) Competencies

- i) animal handling in emergency situations and in close confinement is required;
- ii) an appreciation of biosecurity and containment principles.

4.5. Animal killing personnel

a) Responsibilities

Humane *killing* of the animals through effective *stunning* and *killing* should be ensured.

b) Competencies

- i) when required by regulations, licensed to use necessary equipment;
- ii) competent to use and maintain relevant equipment;
- iii) competent to use techniques for the species involved;
- iv) competent to assess effective *stunning* and *killing*.

5.6. Carcass disposal personnel

a) Responsibilities

An efficient carcass disposal (to ensure *killing* operations are not hindered) should be ensured.

b) Competencies

The personnel should be competent to use and maintain available equipment and apply techniques for the species involved.

6-7. Farmer/owner/manager

- a) Responsibilities
 - i) assist when requested.
- b) Competencies
 - i) specific knowledge of his/her animals and their environment.

Article 3.7.6.4.

Considerations in planning the humane killing of animals

Many activities will need to be conducted on affected premises, including the humane *killing* of animals. The team leader should develop a plan for humanely *killing* animals on the premises which should include consideration of:

1. minimising handling and movement of animals;
2. *killing* the animals on the affected premises; however, there may be circumstances where the animals may need to be moved to another location for *killing*; when the *killing* is conducted at an *abattoir*, the guidelines in Appendix 3.7.5. on the slaughter of animals ~~for human consumption~~ should be followed;
3. the species, number, age and size of animals to be killed, and the order of *killing* them;
4. methods of *killing* the animals, and their cost;
5. housing, husbandry, ~~and~~ location of the animals, as well as accessibility of the farm;
6. the availability and effectiveness of equipment needed for *killing* of the animals, as well as the time necessary to kill the required number of animals using such methods;
7. the facilities available on the premises that will assist with the *killing* including any additional facilities that may need to be brought on and then removed from the premises;
8. biosecurity and environmental issues;
9. the health and safety of personnel conducting the *killing*;
10. any legal issues that may be involved, for example where restricted veterinary drugs or poisons may be used, or where the process may impact on the environment; ~~and~~
11. the presence of other nearby premises holding animals;
12. possibilities of removal and disposal and destruction of carcasses.

In designing a *killing* plan, it is essential that the method chosen be consistently reliable to ensure that all animals are humanely and quickly killed.

Appendix G (contd)

Article 3.7.6.5.

Table summarising killing methods described in Articles 3.7.6.6.-3.7.6.17.*

Species	Age range	Procedure	Restraint necessary	Animal welfare concerns with inappropriate application	Article reference
Cattle	all	free bullet	no	non-lethal wounding	3.7.6.6.
	all except neonates	captive bolt - penetrating, followed by pithing or bleeding	yes	ineffective stunning	3.7.6.7.
	adults only	captive bolt - non-penetrating, followed by bleeding	yes	ineffective stunning, regaining of consciousness before killing	3.7.6.8.
	calves only	electrical, two-stage application	yes	pain associated with cardiac arrest after ineffective stunning	3.7.6.10.
	calves only	electrical, single application (method 1)	yes	ineffective stunning	3.7.6.11.
	all	injection with barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	3.7.6.15.
Sheep and goats	all	free bullet	no	non-lethal wounding	3.7.6.6.
	all except neonates	captive bolt - penetrating, followed by pithing or bleeding	yes	ineffective stunning, regaining of consciousness before death	3.7.6.7.
	all except neonates	captive bolt - non-penetrating, followed by bleeding	yes	ineffective stunning, regaining of consciousness before death	3.7.6.8.
	neonates	captive bolt - non-penetrating	yes	non-lethal wounding	3.7.6.8.
	all	electrical, two-stage application	yes	pain associated with cardiac arrest after ineffective stunning	3.7.6.10.
	all	electrical, single application (method 1)	yes	ineffective stunning	3.7.6.11.
	neonates only	CO ₂ / air mixture	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.12.
	neonates only	nitrogen and/or inert gas mixed with CO ₂	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.13.

Appendix G (contd)

Species	Age range	Procedure	Restraint Necessary	Animal welfare concerns with inappropriate application	Article reference
Sheep and goats (contd)	neonates only	nitrogen and/or inert gases	yes	slow induction of unconsciousness	3.7.6.14.
	all	injection of barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	3.7.6.15.
Pigs	all	free bullet	no	non-lethal wounding	3.7.6.6.
	all except neonates	captive bolt - penetrating, followed by pithing or bleeding	yes	ineffective stunning, regaining of consciousness before death	3.7.6.7.
	neonates only	captive bolt - non-penetrating	yes	non-lethal wounding	3.7.6.8.
	all §	electrical, two-stage application	yes	pain associated with cardiac arrest after ineffective stunning	3.7.6.10.
	all	electrical, single application (method 1)	yes	ineffective stunning	3.7.6.11.
	neonates only	CO ₂ / air mixture	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.12.
	neonates only	nitrogen and/or inert gas mixed with CO ₂	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.13.
	neonates only	nitrogen and/or inert gases	yes	slow induction of unconsciousness	3.7.6.14.
	all	injection with barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	3.7.6.15.
Poultry	adults only	captive bolt - non-penetrating	yes	ineffective stunning	3.7.6.8.
	day-olds and eggs only	maceration	no	non-lethal wounding, non-immediacy;	3.7.6.9.
	adults only	electrical, single application (method 2)	yes	ineffective stunning	3.7.6.11.
	adults only	electrical, single application, followed by killing (method 3)	yes	ineffective stunning; regaining of consciousness before death	3.7.6.11.

Appendix G (contd)

Species	Age range	Procedure	Restraint necessary	Animal welfare concerns with inappropriate application	Article reference
Poultry (contd)	all	CO ₂ / air mixture method 1 method 2	yes no	slow induction of unconsciousness, aversiveness of induction	3.7.6.12.
	all	nitrogen and/or inert gas mixed with CO ₂	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.13.
	all	nitrogen and/or inert gases	yes	slow induction of unconsciousness	3.7.6.14.
	all	injection of barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	3.7.6.15.
	adults only	addition of anaesthetics to feed or water, followed by an appropriate killing method	no	ineffective or slow induction of unconsciousness	3.7.6.16.

* The methods are described in the order of mechanical, electrical and gaseous, not in an order of desirability from an animal welfare viewpoint.

§ The only preclusion against the use of this method for neonates is the design of the stunning tongs that may not facilitate their application across such a small-sized head/body.

Article 3.7.6.6.

Free bullet

1. Introduction

- a) A free bullet is a projectile fired from a shotgun, rifle, handgun or purpose-made humane killer.
- b) The most commonly used firearms for close range use are:
 - i) humane killers (specially manufactured/adapted single-shot weapons);
 - ii) shotguns (12, 16, 20, 28 bore and .410);
 - iii) rifles (.22 rimfire);
 - iv) handguns (various calibres from .32 to .45).
- c) The most commonly used firearms for long range use are rifles (.22, .243, .270 and .308).
- d) A free bullet used from long range should be aimed to penetrate the skull or soft tissue at the top of the neck of the animal, to cause irreversible concussion and death and should only be used by properly trained and competent marksmen.

2. Requirements for effective use

- a) The marksman should take account of human safety in the area in which he/she is operating. Appropriate vision and hearing protective devices should be worn by all personnel involved.
- b) The marksman should ensure that the animal is not moving and in the correct position to enable accurate targeting and the range should be as short as possible (5 –50 cm for a shotgun) but the barrel should not be in contact with the ~~animal's~~ head of the animal.
- c) The correct cartridge, calibre and type of bullet for the different species, age and size should be used. Ideally, the ammunition should expand upon impact and dissipate its energy within the cranium.
- d) Shot animals should be checked to ensure the absence of brain stem reflexes.

Figure 1. The optimum shooting position for cattle is at the intersection of two imaginary lines drawn from the rear of the eyes to the opposite horn buds.

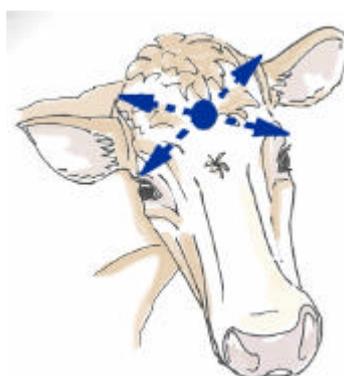
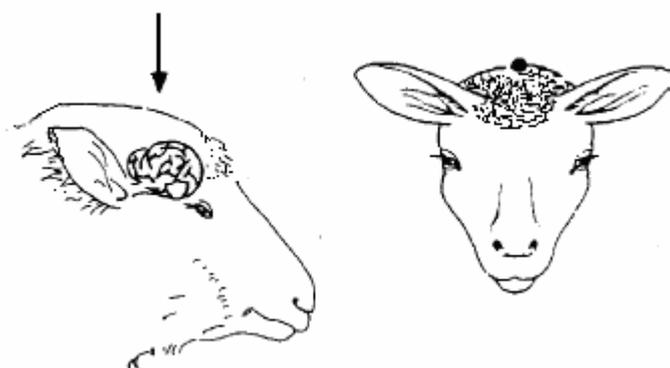


Figure 2. The optimum position for hornless sheep and goats is on the midline.

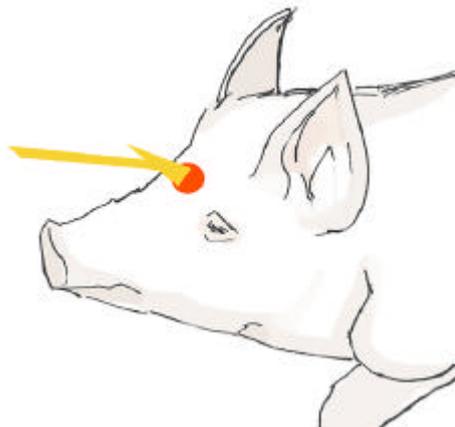


Appendix G (contd)

Figure 3. The optimum shooting position for heavily horned sheep and horned goats is behind the poll aiming towards the angle of the jaw.



Figure 4. The optimum shooting position for pigs is just above eye level, with the shot directed down the line of the spinal cord.



3. Advantages

- a) Used properly, a free bullet provides a quick and effective method for *killing*.
- b) It requires minimal or no *restraint* and can be used to kill from a distance by properly trained and competent marksmen.
- c) It is suitable for *killing* agitated animals in open spaces.

4. Disadvantages

- a) The method is potentially dangerous to humans and other animals in the area.
- b) It has the potential for non-lethal wounding.
- c) Destruction of brain tissue may preclude diagnosis of some diseases.
- d) Leakage of bodily fluids may present a biosecurity risk.
- e) Legal requirements may preclude or restrict use.
- f) There is a limited availability of competent personnel.

5. Conclusions

The method is suitable for cattle, sheep, goats and pigs, including large animals in open spaces.

Article 3.7.6.7.

Penetrating captive bolt

1. Introduction

A penetrating captive bolt is fired from a gun powered by either compressed air or a blank cartridge. There is no free projectile.

The captive bolt should be aimed on the skull in a position to penetrate the cortex and mid-brain of the animal. The impact of the bolt on the skull produces unconsciousness. Physical damage to the brain caused by penetration of the bolt may result in death; however, pithing or bleeding should be performed as soon as possible after the shot to ensure the death of the animal.

2. Requirements for effective use

- a) For cartridge powered and compressed air guns, the bolt velocity and the length of the bolt should be appropriate to the species and type of animal, in accordance with the ~~manufacturer's~~ recommendations of the manufacturer.
- b) Captive bolt guns should be frequently cleaned and maintained in good working condition.
- c) More than one gun may be necessary to avoid overheating, and a back-up gun should be available in the event of an ineffective shot.
- d) Animals should be restrained; at a minimum, they should be penned for cartridge powered guns and in a race for compressed air guns.
- e) The operator should ensure that the ~~animal's~~ head of the animal is accessible.
- f) The operator should fire the captive bolt at right angles to the skull in the optimal position (see figures 1, 3 and 4. The optimum shooting position for hornless sheep is on the highest point of the head, on the midline and aims towards the angle of the jaw).
- g) To ensure the death of the animal, pithing or bleeding should be performed as soon as possible after *stunning*.

Appendix G (contd)

- h) Animals should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.

3. Advantages

- a) Mobility of cartridge powered equipment reduces the need to move animals.
- b) The method induces an immediate onset of a sustained period of unconsciousness.

4. Disadvantages

- a) Poor gun maintenance and misfiring, and inaccurate gun positioning and orientation may result in poor animal welfare.
- b) Post stun convulsions may make pithing difficult and hazardous.
- c) The method is difficult to apply in agitated animals.
- d) Repeated use of a cartridge powered gun may result in over-heating.
- e) Leakage of bodily fluids may present a biosecurity risk.
- f) Destruction of brain tissue may preclude diagnosis of some diseases.

5. Conclusion

The method is suitable for cattle, sheep, goats and pigs (except neonates), when followed by pithing or bleeding.

Article 3.7.6.8.

Captive bolt – non-penetrating1. Introduction

A non-penetrating captive bolt is fired from a gun powered by either compressed air or a blank cartridge. There is no free projectile.

The gun should be placed on the front of the skull to deliver a percussive blow which produces unconsciousness in cattle (adults only), sheep, goats and pigs, and death in poultry and neonate sheep, goats and pigs. Bleeding should be performed as soon as possible after the blow to ensure the death of the animal.

2. Requirements for effective use

- a) For cartridge powered and compressed air guns, the bolt velocity should be appropriate to the species and type of animal, in accordance with the ~~manufacturer's~~ recommendations of the manufacturer.
- b) Captive bolt guns should be frequently cleaned and maintained in good working condition.
- c) More than one gun may be necessary to avoid overheating, and a back-up gun should be available in the event of an ineffective shot.

- d) Animals should be restrained; at a minimum mammals should be penned for cartridge powered guns and in a race for compressed air guns; birds should be restrained in cones, shackles, crushes or by hand.
- e) The operator should ensure that the ~~animal's~~ head of the animal is accessible.
- f) The operator should fire the captive bolt at right angles to the skull in the optimal position (figures 1-4).
- g) To ensure death in non-neonate mammals, bleeding should be performed as soon as possible after *stunning*.
- h) Animals should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.

3. Advantages

- a) The method induces an immediate onset of unconsciousness, and death in birds and neonate mammals.
- b) Mobility of equipment reduces the need to move animals.

4. Disadvantages

- a) As consciousness can be regained quickly in non-neonate mammals, they should be bled as soon as possible after *stunning*.
- b) Laying hens in cages have to be removed from their cages and most birds have to be restrained.
- c) Poor gun maintenance and misfiring, and inaccurate gun positioning and orientation may result in poor animal welfare.
- d) Post stun convulsions may make bleeding difficult and hazardous.
- e) Difficult to apply in agitated animals; such animals may be sedated in advance of the *killing* procedure.
- f) Repeated use of a cartridge powered gun may result in over-heating.
- g) Bleeding may present a biosecurity risk.

5. Conclusions

- a) The method is suitable for poultry, and neonate sheep, goats and pigs.
- b) If bleeding does not present a biosecurity issue, this is a suitable method for cattle (adults only), and non-neonate sheep, goats and pigs when followed by bleeding.

Appendix G (contd)

Article 3.7.6.9.

Maceration1. Introduction

Maceration, utilising a mechanical apparatus with rotating blades or projections, causes immediate fragmentation and death in day-old poultry and embryonated eggs.

2. Requirements

- a) Maceration requires specialised equipment which should be kept in excellent working order.
- b) The rate of introducing the birds should not allow the equipment to jam, birds to rebound from the blades or the birds to suffocate before they are macerated.

3. Advantages

- a) Procedure results in immediate death.
- b) Large numbers can be killed quickly.

4. Disadvantages

- a) Specialised equipment is required.
- b) Macerated tissues may present a biosecurity or human health issue.
- c) The cleaning of the equipment can be a source of contamination.

5. Conclusion

The method is suitable for *killing* day-old poultry and embryonated eggs.

Article 3.7.6.10.

Electrical – two-stage application1. Introduction

A two-stage application of electric current comprises firstly an application of current to the head by scissor-type tongs, immediately followed by an application of the tongs across the chest in a position that spans the heart.

The application of sufficient electric current to the head will induce 'tonic/clonic' epilepsy and unconsciousness. Once the animal is unconscious, the second stage will induce ventricular fibrillation (cardiac arrest) resulting in death. The second stage (the application of low frequency current across the chest) should only be applied to unconscious animals to prevent unacceptable levels of pain.



Figure 5. Scissor-type stunning tongs.

2. Requirements for effective use

- a) The stunner control device should generate a low frequency (30 – 60 Hz) current with a minimum voltage of 250 volts true RMS under load.
- b) Appropriate protective clothing (including rubber gloves and boots) should be worn.
- c) Animals should be restrained, at a minimum free-standing in a pen, close to an electrical supply.
- d) Two team members are required, the first to apply the electrodes and the second to manipulate the position of the animal to allow the second application to be made.
- e) A *stunning* current should be applied via scissor-type stunning tongs in a position that spans the brain for a minimum of 3 seconds; immediately following the application to the head, the electrodes should be transferred to a position that spans the heart and the electrodes applied for a minimum of 3 seconds.
- f) Electrodes should be cleaned regularly and after use, to enable optimum electrical contact to be maintained.
- g) Animals should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.

3. Advantages

- a) The application of the second stage minimises post-stun convulsions and therefore the method is particularly effective with pigs.
- b) Non-invasive technique minimises biosecurity risk.

4. Disadvantages

- a) The method requires a reliable supply of electricity.
- b) The electrodes must be applied and maintained in the correct positions to produce an effective *stunning* and *killing*.
- c) Most stunner control devices utilise low voltage impedance sensing as an electronic switch prior to the application of high voltages; in unshorn sheep, contact impedance may be too high to switch on the required high voltage (especially during stage two).
- d) The procedure may be physically demanding, leading to operator fatigue and poor electrode placement.

5. Conclusion

The method is suitable for calves, sheep and goats, and especially for pigs (over one week of age).

Electrical – single application1. Method 1

Method 1 comprises the single application of sufficient electrical current to the head and back, to simultaneously stun the animal and fibrillate the heart. Provided sufficient current is applied in a position that spans both the brain and heart, the animal will not recover consciousness.

- a) Requirements for effective use
 - i) The stunner control device should generate a low frequency (30 – 60 Hz) current with a minimum voltage of 250 volts true RMS under load.
 - ii) Appropriate protective clothing (including rubber gloves and boots) should be worn.
 - iii) Animals should be individually and mechanically restrained close to an electrical supply as the maintenance of physical contact between the *stunning* electrodes and the animal is necessary for effective use.
 - iv) The rear electrode should be applied to the back, above or behind the heart, and then the front electrode in a position that is forward of the eyes, with current applied for a minimum of 3 seconds.
 - v) Electrodes should be cleaned regularly between animals and after use, to enable optimum electrical contact to be maintained.
 - vi) Water or saline may be necessary to improve electrical contact with sheep.
 - vii) An effective stun and kill should be verified by the absence of brain stem reflexes.
- b) Advantages
 - i) Method 1 stuns and kills simultaneously.
 - ii) It minimises post-stun convulsions and therefore is particularly effective with pigs.
 - iii) A single team member only is required for the application.
 - iv) Non-invasive technique minimises biosecurity risk.
- c) Disadvantages
 - i) Method 1 requires individual mechanical animal *restraint*.
 - ii) The electrodes must be applied and maintained in the correct positions to produce an effective *stunning* and *killing*.
 - iii) Method 1 requires a reliable supply of electricity.
- d) Conclusion

Method 1 is suitable for calves, sheep, goats, and pigs (over one week of age).

2. Method 2

Method 2 stuns and kills by drawing inverted and shackled poultry through an electrified waterbath stunner. Electrical contact is made between the 'live' water and earthed shackle and, when sufficient current is applied, poultry will be simultaneously stunned and killed.

a) Requirements for effective use

- i) A mobile waterbath stunner and a short loop of processing line are required.
- ii) A low frequency (30-60 Hz) current applied for a minimum of 3 seconds is necessary to stun and kill the birds.
- iii) Poultry need to be manually removed from their cage, house or yard, inverted and shackled onto a line which conveys them through a waterbath stunner with their heads fully immersed.
- iv) The required minimum currents to stun and kill dry birds are:
 - Quail - 100 mA/bird
 - Chickens – 160 mA/bird
 - Ducks and Geese – 200 mA/bird
 - Turkeys – 250 mA/bird.

A higher current is required for wet birds.

- v) An effective stun and kill should be verified by the absence of brain stem reflexes.

b) Advantages

- i) Method 2 stuns and kills simultaneously.
- ii) It is capable of processing large numbers of birds reliably and effectively.
- iii) This non-invasive technique minimises biosecurity risk.

c) Disadvantages

- i) Method 2 requires a reliable supply of electricity.
- ii) Handling, inversion and shackling of birds are required.

d) Conclusion

Method 2 is suitable for large numbers of poultry.

3. Method 3

Method 3 comprises the single application of sufficient electrical current to the head of poultry in a position that spans the brain, causing unconsciousness; this is followed by a *killing* method (Article 3.7.6.17.).

a) Requirements for effective use

- i) The stunner control device should generate sufficient current (more than 300 mA/bird) to stun.

Appendix G (contd)

- ii) Appropriate protective clothing (including rubber gloves and boots) should be worn.
 - iii) Birds should be restrained, at a minimum manually, close to an electrical supply.
 - iv) A *stunning* current should be applied in a position that spans the brain for a minimum of 3 seconds; immediately following this application, the birds should be killed (Article 3.7.6.17.).
 - v) Electrodes should be cleaned regularly and after use, to enable optimum electrical contact to be maintained.
 - vi) Birds should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.
- b) Advantages
- Non-invasive technique (when combined with cervical dislocation) minimises biosecurity risk.
- c) Disadvantages
- i) Method 3 requires a reliable supply of electricity.
 - ii) The electrodes must be applied and maintained in the correct position to produce an effective stun.
 - iii) Birds must be individually restrained.
 - iv) It must be followed by a *killing* method.
- d) Conclusion
- Method 3 is suitable for small numbers of poultry.

Article 3.7.6.12.
(under study)

CO₂ / air mixture**1. Introduction**

Controlled atmosphere *killing* is performed by exposing animals to a predetermined gas mixture, either by placing them in a gas-filled *container* or apparatus (Method 1) or by the gas being introduced into a poultry house (Method 2).

Inhalation of carbon dioxide (CO₂) induces respiratory and metabolic acidosis and hence reduces the pH of cerebrospinal fluid (CSF) and neurones thereby causing unconsciousness and, after prolonged exposure, death.

2. Method 1

The animals are placed in a gas-filled *container* or apparatus.

- a) Requirements for effective use in a container or apparatus
 - i) *Containers* or apparatus should allow the required gas concentration to be maintained and accurately measured.
 - ii) When animals are exposed to the gas individually or in small groups in a *container* or apparatus, the equipment used should be designed, constructed, and maintained in such a way as to avoid injury to the animals and allow them to be observed.
 - iii) Animals should be introduced into the *container* or apparatus after it has been filled with the required CO₂ concentration, and held in this atmosphere until death is confirmed.
 - iv) Team members should ensure that there is sufficient time allowed for each batch of animals to die before subsequent ones are introduced into the *container* or apparatus.
 - v) *Containers* or apparatus should not be overcrowded and measures are needed to avoid animals suffocating by climbing on top of each other.
- b) Advantages
 - i) CO₂ is readily available.
 - ii) Application methods are simple.
- c) Disadvantages
 - i) The need for properly designed *container* or apparatus.
 - ii) The aversive nature of high CO₂ concentrations.
 - iii) No immediate loss of consciousness.
 - iv) The risk of suffocation due to overcrowding.
 - v) Difficulty in verifying death while the animals are in the *container* or apparatus.
- d) Conclusion

Method 1 is suitable for use in poultry and neonatal sheep, goats and pigs.

3. Method 2

The gas is introduced into a poultry house.

- a) Requirements for effective use in a poultry house
 - i) Prior to introduction of the CO₂, the poultry house should be appropriately sealed to allow control over the gas concentration.
 - ii) The house should be gradually filled with CO₂ so that all birds are exposed to a concentration of >40% until they are dead; a vaporiser may be required to prevent freezing.
 - iii) Devices should be used to accurately measure the gas concentration at the maximum height accommodation of birds.

Appendix G (contd)

b) Advantages

- i) Applying gas to birds *in situ* eliminates the need to manually remove live birds.
- ii) CO₂ is readily available.
- iii) Gradual raising of CO₂ concentration minimises the aversiveness of the induction of unconsciousness.

c) Disadvantages

- i) It is difficult to determine volume of gas required to achieve adequate concentrations of CO₂ in some poultry houses.
- ii) It is difficult to verify death while the birds are in the poultry house.

d) Conclusion

Method 2 is suitable for use in poultry in closed-environment sheds.

Article 3.7.6.13.

Nitrogen and/or inert gas mixed with CO₂1. Introduction

CO₂ may be mixed in various proportions with nitrogen or an inert gas (e.g., argon), and the inhalation of such mixtures leads to hypercapnic-hypoxia and death when the oxygen concentration by volume is =2%. This method involves the introduction of animals into a *container* or apparatus containing the gases. Such mixtures do not induce immediate loss of consciousness; therefore, the aversiveness of various gas mixtures containing high concentrations of CO₂ and the respiratory distress occurring during the induction phase, are important animal welfare considerations.

Pigs and poultry appear not to find low concentrations of CO₂ strongly aversive, and a mixture of nitrogen or argon with =30% CO₂ by volume and =2% O₂ by volume can be used for *killing* poultry and neonatal sheep, goats and pigs.

2. Requirements for effective use

- a) *Containers* or apparatus should allow the required gas concentrations to be maintained, and the O₂ and CO₂ concentrations accurately measured during the *killing* procedure.
- b) When animals are exposed to the gases individually or in small groups in a *container* or apparatus, the equipment used should be designed, constructed, and maintained in such a way as to avoid injury to the animals and allow them to be observed.
- c) Animals should be introduced into the *container* or apparatus after it has been filled with the required gas concentrations (with =2% O₂), and held in this atmosphere until death is confirmed.
- d) Team members should ensure that there is sufficient time allowed for each batch of animals to die before subsequent ones are introduced into the *container* or apparatus.
- e) *Containers* or apparatus should not be overcrowded, and measures are needed to avoid animals suffocating by climbing on top of each other.

3. Advantages

Low concentrations of CO₂ cause little aversiveness and, in combination with nitrogen or an inert gas, produces a fast induction of unconsciousness.

4. Disadvantages

- a) A properly designed *container* or apparatus is needed.
- b) It is difficult to verify death while the animals are in the *container* or apparatus.
- c) There is no immediate loss of consciousness.
- d) Exposure times required to kill are considerable.

5. Conclusion

The method is suitable for poultry and neonatal sheep, goats and pigs.

Article 3.7.6.14.

Nitrogen and/or inert gases

1. Introduction

This method involves the introduction of animals into a *container* or apparatus containing nitrogen or an inert gas such as argon. The controlled atmosphere produced leads to unconsciousness and death from hypoxia.

Research has shown that hypoxia is not aversive to pigs and poultry, and it ~~doesn't~~ does not induce any signs of respiratory distress prior to loss of consciousness.

2. Requirements for effective use

- a) *Containers* or apparatus should allow the required gas concentrations to be maintained, and the O₂ concentration accurately measured.
- b) When animals are exposed to the gases individually or in small groups in a *container* or apparatus, the equipment used should be designed, constructed and maintained in such a way as to avoid injury to the animals and allow them to be observed.
- c) Animals should be introduced into the *container* or apparatus after it has been filled with the required gas concentrations (with =2% O₂), and held in this atmosphere until death is confirmed.
- d) Team members should ensure that there is sufficient time allowed for each batch of animals to die before subsequent ones are introduced into the *container* or apparatus.
- e) *Containers* or apparatus should not be overcrowded, and measures are needed to avoid animals suffocating by climbing on top of each other.

Appendix G (contd)3. Advantages

Animals are unable to detect nitrogen or inert gases, and the induction of hypoxia by this method is not aversive to animals.

4. Disadvantages

- a) A properly designed *container* or apparatus is needed.
- b) It is difficult to verify death while the animals are in the *container* or apparatus.
- c) There is no immediate loss of consciousness.
- d) Exposure times required to kill are considerable.

5. Conclusion

The method is suitable for poultry and neonatal sheep, goats and pigs.

Article 3.7.6.15.

Lethal injection1. Introduction

A lethal injection using high doses of anaesthetic and sedative drugs causes CNS depression, unconsciousness and death. In practice, barbiturates in combination with other drugs are commonly used.

2. Requirements for effective use

- a) Doses and routes of administration that cause rapid loss of consciousness followed by death should be used.
- b) Prior sedation may be necessary for some animals.
- c) Intravenous administration is preferred, but intraperitoneal or intramuscular administration may be appropriate, especially if the agent is non-irritating.
- d) Animals should be restrained to allow effective administration.
- e) Animals should be monitored to ensure the absence of brain stem reflexes.

3. Advantages

- a) The method can be used in all species.
- b) Death can be induced smoothly.

4. Disadvantages

- a) *Restraint* and/or sedation may be necessary prior to injection.

- b) Some combinations of drug type and route of administration may be painful, and should only be used in unconscious animals.
 - c) Legal requirements and skill/training required may restrict use to *veterinarians*.
 - d) Contaminated carcasses may present a risk to other wild or domestic animals.
5. Conclusion
- The method is suitable for *killing* small numbers of cattle, sheep, goats, pigs and poultry.

Article 3.7.6.16.

Addition of anaesthetics to feed or water

1. Introduction

An anaesthetic agent which can be mixed with poultry feed or water may be used to kill poultry in houses. Poultry which are only anaesthetised need to be killed by another method such as cervical dislocation.

2. Requirements for effective use

- a) Sufficient quantities of anaesthetic need to be ingested rapidly for effective response.
- b) Intake of sufficient quantities is facilitated if the birds are fasted or water is withheld.
- c) Must be followed by *killing* (see Article 3.7.6.17.) if birds are anaesthetised only.

3. Advantages

- a) Handling is not required until birds are anaesthetised.
- b) There may be biosecurity advantages in the case of large numbers of diseased birds.

4. Disadvantages

- a) Non-target animals may accidentally access the medicated feed or water when provided in an open environment.
- b) Dose taken is unable to be regulated and variable results may be obtained.
- c) Animals may reject adulterated feed or water due to illness or adverse flavour.
- d) The method may need to be followed by *killing*.
- e) Care is essential in the preparation and provision of treated feed or water, and in the disposal of uneaten treated feed/water and contaminated carcasses.

5. Conclusion

The method is suitable for *killing* large numbers of poultry in houses.

Appendix G (contd)

Article 3.7.6.17.

Killing methods for use on unconscious animals1. Method 1: Cervical dislocation (manual and mechanical)

a) Introduction

Poultry may be killed by either manual cervical dislocation (stretching) or mechanical neck crushing with a pair of pliers. Both methods result in death from asphyxiation and/or cerebral anoxia.

b) Requirements for effective use

- i) *Killing* should be performed either by manually or mechanically stretching the neck to sever the spinal cord or by using mechanical pliers to crush the cervical vertebrae with consequent major damage to the spinal cord.
- ii) Consistent results require strength and skill so team members should be rested regularly to ensure consistently reliable results.
- iii) Birds should be monitored continuously until death to ensure the absence of brain stem reflexes.

c) Advantages

- i) It is a non-invasive *killing* method.
- ii) It can be performed manually on small birds.

d) Disadvantages

- i) Operator fatigue.
- ii) The method is more difficult in larger birds.

e) Conclusion

This method is suitable for *killing* unconscious poultry.

2. Method 2: Decapitation

a) Introduction

Decapitation results in death by cerebral ischaemia using a guillotine or knife.

b) Requirements for effective use

The required equipment should be kept in good working order.

c) Advantages

The technique is effective and does not require monitoring.

d) Disadvantages

The working area is contaminated with body fluids, which increases biosecurity risk.

e) Conclusion

This method is suitable for *killing* unconscious poultry.

3. Method 3: Pithing

a) Introduction

Pithing is a method of *killing* animals which have been stunned by a penetrating captive bolt, without immediate death. Pithing results in the physical destruction of the brain and upper regions of the spinal cord, through the insertion of a rod or cane through the bolt hole.

b) Requirements for effective use

- i) Pithing cane or rod is required.
- ii) An access to the head of the animal and to the brain through the skull is required.
- iii) Animals should be monitored continuously until death to ensure the absence of brain stem reflexes.

c) Advantages

The technique is effective in producing immediate death.

d) Disadvantages

- i) A delayed and/or ineffective pithing due to convulsions may occur.
- ii) The working area is contaminated with body fluids, which increases biosecurity risk.

e) Conclusion

This method is suitable for *killing* unconscious animals which have been stunned by a penetrating captive bolt.

4. Method 4: Bleeding

a) Introduction

Bleeding is a method of *killing* animals through the severance of the major blood vessels in the neck or chest that results in a rapid fall in blood pressure, leading to cerebral ischaemia and death.

b) Requirements for effective use

- i) A sharp knife is required.
- ii) An access to the neck or chest of the animal is required.
- iii) Animals should be monitored continuously until death to ensure the absence of brain stem reflexes.

Appendix G (contd)

c) Advantages

The technique is effective in producing death after an effective *stunning* method which does not permit pithing.

d) Disadvantages

a) A delayed and/or ineffective bleeding due to convulsions may occur.

b) The working area is contaminated with body fluids, which increases biosecurity risk.

e) Conclusion

This method is suitable for *killing* unconscious animals.

— text deleted

© **World Organisation for Animal Health (OIE), 2006**

This document has been prepared by specialists convened by the World Organisation for Animal Health (OIE). Pending adoption by the International Committee of the OIE, the views expressed herein can only be construed as those of these specialists.

All OIE publications are protected by international copyright law. Extracts may be copied, reproduced, translated, adapted or published in journals, documents, books, electronic media and any other medium destined for the public, for information, educational or commercial purposes, provided prior written permission has been granted by the OIE.

The designations and denominations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the OIE concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

The views expressed in signed articles are solely the responsibility of the authors. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by the OIE in preference to others of a similar nature that are not mentioned.