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Recommendations for amendments
to EU Council Regulation (EC) No 1/2005

Dossier of Evidence

November 2008

World Horse Welfare's campaign to end the long-distance transportation of horses to slaughter in Europe

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The Long Distance Transport of Live Equidae to Slaughter in Europe:

Dossier of Evidence to Support Changes to EU Council Regulation (EC) No 1/2005

It is generally agreed that horses have specific welfare needs and are very different to 'farm animals' (in this document, the term "equine" or "equidae" is intended to cover all horses, ponies, donkeys, and hybrids including mules. Where the word "horse" is used in this document, that reference applies to all equidae). Horses are domesticated and are kept in a variety of ways. They may be kept alone without the company of other animals or in groups where they form strong bonds. Depending on their use they may be moved around and could be used to new equine company or may never come into contact with other horses. During transport they need to be separated as mixing with unfamiliar horses can lead to fighting. Due to their size and conformation they find it harder to balance in a moving vehicle. They find it harder to thermo-regulate in hot temperatures with high humidity than farm animals. Therefore issues of time on the lorry, space allowance, single stalling and ventilation are paramount to their welfare during transport.

Horses have different welfare requirements from other farm animals and should be considered according to their unique needs.

Individual equidae within the population entering the slaughter trade will all have vastly differing experiences of handling, transportation and contact with other equidae. Their responses to being transported long distances with unfamiliar equidae will therefore vary hugely compared to farm animals.

Horses are 16.5 times more likely to be injured during transport than cattle (Stefancic and Martin, 2005)

Horses for slaughter are transported in a markedly different way to horses used for competition, leisure or breeding. Horses transported for slaughter may begin their journey in a poor state of health and in poor condition and this may be further compromised by transport. Stocking density is almost invariably higher in transport to slaughter, which is associated with an increased risk of falling and inability to get up after they have fallen. High stocking density also causes injury due to the sheer number of horses being packed tightly into vehicles with inadequate space to brace themselves. However there are basic fundamental requirements, for example access to rest, food and water, that every horse has regardless of background but which are not met for many slaughter horses.

World Horse Welfare's focus is species-specific and therefore considers solely the health and welfare of horses destined for slaughter during transport. We take a pragmatic approach that considers the trade in horses as a whole, including economic and social factors, and on this basis offer practical solutions to improve their welfare and reduce the spread of disease. We have therefore included information such as the distribution of slaughterhouses in EU Member States licensed to slaughter horses in order to demonstrate the practicalities of shorter journey times (see Annex 11). Furthermore, we would suggest that from an economic

perspective the proportion of injuries caused because of current standards of transport must have a negative economic impact on the profits of meat processors, because of the quantity that must be condemned due to disease, bruising etc. Observations in the field indicate that at one particular control post that an average of one horse per month is being euthanased due to serious injury, which represents a further impact on potential profits (it is important to note that this control post is only seeing a small proportion of the entire trade and therefore we can assume that the economic impact is much greater).

Enlargement of the European Union (EU) has presented challenges to and opportunities for improving the health and welfare of horses destined for slaughter. The completion of the internal market has allowed transport companies to move horses even greater distances and field evidence reports that many do not stop at control posts for rest, food and water. The accession of major source countries such as Poland and Romania into the EU presents a greater opportunity for harmonised legislation with a common welfare aim that is robustly enforced across all Member States. However enforcement on such a large land mass and in so many Member States is a complex task which requires a resolutely joined-up approach from all members. Furthermore, it must be acknowledged that due to the developing nature of some accession countries road networks are often in poor condition meaning that horses regularly undertake stressful journeys to collection centres prior to the journey to slaughter. The physical, mental, health, disease and other environmental stresses placed upon horses at markets, coupled with the fact that most are forced to interact with unfamiliar horses compounds this. World Horse Welfare also has it on good authority that the 15 day holding period that should be observed in collection centres prior to export is poorly enforced in some Member States (see Annex 8).

Current practices in the long distance transport of live horses to slaughter present a threat of the spread of disease, and subject horses to extreme suffering. This dossier presents a practical way forward for improving the health and welfare of these horses, and therefore limiting the spread of disease, by recommending changes to Council Regulation (EC) No 1/2005. The recommendations are underpinned by a broad range of economic, welfare and research evidence summarised below, the full detail of which can be found in annexes 1-18.

Environmental stresses are very significant for horses destined for slaughter.

Enlargement of the EU presents challenges to and opportunities for improving the welfare of equidae transported long distances to slaughter.

Current practices in long distance transport risk spread of disease and seriously compromise the welfare of horses, ponies, donkeys, mules and hinnies.
This paper highlights major concerns about welfare and spread of disease and proposes changes to current transportation legislation.

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RECOMMENDATIONS FOR CHANGES TO EU COUNCIL REGULATION (EC) No 1/2005

During the review of Council Directive 91/496 EEC, World Horse Welfare (at the time known as the ILPH) presented clear recommendations in 2002 on how to improve the health and welfare of horses being transported long distances to slaughter. We were encouraged that a number of these were adopted, but we believe that health and welfare continues to be compromised by the recommendations that were not put in place (e.g. journey limits, specific definition of partition design, space allowance). In order to present clear and sound evidence of the need for further improvements, World Horse Welfare has conducted extensive and detailed research and evaluation to develop this compelling dossier of evidence, further supporting our case. We have utilised this to underpin the following recommendations, which we believe need to be incorporated in Regulation (EC) No 1/2005 on health and welfare grounds.

1. RECLASSIFYING HORSES SEPARATELY FROM FARM ANIMALS

It is universally recognised that horses have a different place in society and in the community to cattle, pigs, sheep, poultry and other traditional 'farm animals' due to centuries of domestication and their close association with man.

It is therefore credible and important to establish legislative measures and standards specific to horses, separating them from 'farm animals', bearing in mind that the rate of injury in horses is 16.5 times more likely during transport than in cattle (Stefancic and Martin, 2005).

Legislation representing the specific needs of horses should be introduced taking into consideration that they:

- **are highly domesticated herd animals that possess a flight or fight instinct. This means that well-handled and broken horses not travelling in small family groups need to be kept apart through the use of individual compartments for their own and others safety (teeth on both jaws and the ability to kick backwards and forwards). They do not take kindly to being moved in unfamiliar groups (either reared and kept in a solitary environment or sold on as individuals separately from companions or family groups). In contrast, when scared or stressed, sheep and cattle will herd together for safety, therefore travelling in groups is a benefit for these species;**

- **react very quickly to adverse or unfamiliar situations due to high levels of stress hormones;**

- **require room to brace (position hooves wider than their standing base); their high centre of gravity and shape makes them unstable (they require their head and neck to balance, particularly if they cannot move freely);**

- **are ineffectual at thermo-regulating in high temperatures – they have a greater propensity to dehydrate than cattle or sheep (the consequences of dehydration are: an increased risk of developing contagious disease in a short period of time; heat exhaustion; collapse).**

Many horses are sent to slaughter because of the presence of disease or long standing injury or because

they are no longer fit for work. Furthermore, horses fattened for slaughter suffer the consequences of obesity (disproportionate pressure on their joints; lack of exercise and lack of physical fitness; lack of social interaction with other horses) so that they are totally unprepared for the demands of long distance transport. Whilst 'fitness to travel' is taken into consideration in the legislation, under EU Council Regulation (EC) No 1/2005, this still allows for low-level pain or injury to be present, which is more likely to be seen in obese horses or old working horses than in, for instance, fit grass-fed beef cattle. Low-level injury and/or pain coupled with the fact they are unused to being transported makes horses particularly vulnerable during long distance transportation. Furthermore, World Horse Welfare has evidence that the section of the Regulation relating to 'fitness to travel' is very poorly enforced and that many horses transported long distances succumb to disease during these long journeys to slaughter.

2. SHORT, FINITE JOURNEY LIMIT

A. Maximum journey time of 9-12 hours for all movements of equidae (including within and between EU Member States) for slaughter. Equidae should be offered feed and water to correspond with driver rest breaks, every 4.5 hours (which would mean stopping twice during a 9-12 hour journey). However if the hydration status of the equidae indicates that water is required sooner it must be given. After the maximum journey time of 9-12 hours the journey must be terminated and the equidae unloaded for compulsory rest prior to slaughter.

B. If there is a need to complete an international journey (including those between EU member states), a new journey log and animal health veterinary certificate in accordance with annex C to Directive 90/426 will be required [1].

For movement within a Member State following 9-12 hours transport, equidae should be rested for a minimum of 48 hours off the vehicle. This is necessary to ensure that they are fully rested before any further movements takes place.

(1) In practice this would mean that the animals should not be able to commence a new journey for a period of 15 days to comply with animal health certification requirements (which offers a guarantee that the animal has not been exposed to disease in the 15 days prior to the issue of the certificate). During the 15 day period they should be kept in isolation and should not come into contact with any other equidae.

Finite journeys of 9-12 hours would reduce the complex enforcement structure across multiple Member States and the need for control posts offering rest off the vehicle, so cutting costs. They would also lessen the risk of disease spread and the welfare problems resulting from mixing of groups and exhaustion.

"Our world is absolutely connected,... resulting in a reality that events happening in even remote parts of the world to us often have a significant impact on what we have to deal with in our own countries. This not only applies to emerging diseases and their rapid movement through countries and regions, but also to the more 'traditional' animal health and food safety events, resulting from the large amounts and rapid movements of animals and animal products."

Dr Barry O'Neill, President of OIE's International Committee
FVE Newsletter October 2008

The EU approved equine slaughterhouse infrastructure in the major source countries is such that all equidae can reach a slaughterhouse within 12 hours (see page 47 for a map of slaughterhouses licensed to slaughter horses in the EU and Annex 11 for details).

This recommendation fits with the drivers' breaks stipulated in Road Transport (Working Time) Regulation 2005 (SI 2005 No 639). Drivers are required to take 11 consecutive hours' rest within a 24-hour period. This may be reduced to 9 consecutive hours up to three times a week. After 4.5 hours' travelling time the driver must take a 45 minute break (or 15 minutes plus 30 minutes in that 4.5 hour period). (Source: UK Department of Transport)

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3. MINIMUM SPACE ALLOWANCE (AND FLOORING REQUIREMENTS)

The frequency of horses injured was greater in higher density (29%) compared with lower density (12%) transport (Stull 1999). In low (221kg/m2), medium (348kg/m2) and high density (397kg/m2) shipments the only occurrence of horses going down in the trailer was in the high density shipments (Iacono et al 2007). A greater proportion of horses fell at high (40%) compared with low stocking density (17%). The proportion of horses injured was also greater at the high (64%) compared with the low-density stocking level (29%) (Collins et al 2000).

Minimum space allowance (NB: These initial recommendations are subject to additional research, so may increase):

Equidae (over 1.45m)	**0.3m bracing allowance at either side of its widest point and the length of the stall must be 0.8m longer than the length of the horse from nose to the back of the hindquarters.**
Ponies (under 1.45m, heavy frame: over 300kilos)	**0.3m bracing allowance at either side of its widest point and the length of the stall must be 0.6m longer than the length of the horse from nose to the back of the hindquarters.**
Ponies (under 1.45m, light frame: under 300kilos)	**Stall must be 0.6m longer than the length of the 0.2m bracing allowance at either side of its widest point and the length of the stall must be 0.6m longer than the length of the horse from nose to the back of the hindquarters.**
Unbroken equidae (transported loose and untied in groups of no more than 4 for up to 8 hours)	**The compartment should be 0.8m longer than the length of the longest equidae of more than 1.45m high, and 0.6m longer than the length of the longest equidae under 1.45m high, with sufficient room for the equidae to move safely within the area, to find the correct orientation without adversly impacting on the movement, balance and space of other equidae within the same compartment. In terms of length and width, each individual equidae should have the space to stand herringbone, forwardfacing or rear facing without being forced to touch the sides of the compartment.**
Mares and foals (transported loose and untied for up to 8 hours)	**The space allowance for an equidae over 1.45m (0.3m bracing allowance at either side of its widest point and the length of the compartment must be 0.8m longer than the length of the horse from nose to the back of the hindquarters) or for an equidae under 1.45m (0.3m bracing allowance at either side of its widest point and the length of the stall must be 0.6m longer than the length of the horse from nose to the back of the hindquarters) plus a further 50% of the total of this floor area for the foal. The foal must have the space to safely feed from the mare, turn around and lie down (therefore the space required must be assessed each time and may need to be increased).**

Tethering and orientation

If horses are tied it should be at a length that allows them to balance and clear their airways, but not so long that they are at risk of entanglement. The orientation of the compartment to be at 45˚ angle towards or away from the direction of travel (see Annex 5).

Flooring requirements

World Horse Welfare recommends that rubber matting be used to provide the equidae with enough purchase to prevent slipping and to assist with balance. Annex 1, chapter II, 1(g) of Regulation 1/2005 states that vehicles must have an anti-slip surface but it is our view that rubber matting must be specified. This type of flooring is used extensively in the transportation of sports horses to prevent many of the injuries seen in horses travelling long-distances to slaughter on metal surfaces. Additional bedding may be required for the purpose of absorbing urine and faeces and for the comfort of young animals.

4. PARTITIONS

Partitions must be full length to the floor, of a rigid construction, and bear the weight of the horse, with no sharp edges or projections and be made of padded material with no metal, wood or plastic surfaces for the sides of the horse's body to make direct contact with, to avoid friction burns or injury. They should ideally be positioned either in a herringbone pattern (45˚ angle) or alternatively forward or rearward facing to accommodate the individual equid's length; equidae must not be transported at a 90˚ angle to the direction of travel (see Annex 5). If a rubber skirt is used at the bottom of the partition, this should be made of robust rubber material of an absolute minimum thickness of 4cm, so that should a horse adopting the brace position impinge on the neighbouring partition space the rubber would be strong enough to protect both horses from injury. Its attachment should not present any protrusion that could cause injury and the skirt should reach the floor.

Partitions are absolutely essential as horses travelling in groups can cause one another serious injury, and they help reduce horse to horse contact thus limiting the spread of disease between animals. However the partitions must be designed, constructed, installed and used correctly. The space between them should allow the horse room to brace and therefore balance, avoid friction injuries and promote air flow around the horse's body. Partitions that reach the floor are used by professional sport and leisure horse transporters in the UK when moving highly valuable animals precisely because they limit injury.

5. UNBROKEN EQUIDAE

Unbroken equidae should be defined as "Equidae that cannot be tied, led by a halter, loaded, unloaded, partitioned and/or transported without causing undue excitement, stress, pain or suffering."

Horses not used to being handled can suffer extreme stress during the transportation process so require different provision to those used to being handled. Their 'flight or fight' instinct means they are compelled to run when scared, which in a confined environment is dangerous and very stressful for the horse.

6. ENFORCEMENT

Stricter enforcement of Regulation (EC) No 1/2005, particularly for journey limits, single partitioning, resting, feeding, watering, transport of unbroken equidae, journey plans and handling (certificates of competence).

An excellent example of a practical enforcement strategy is in Slovenia where the authorities enforce Regulation 1/2005 through a team of full time inspectors who provide 24 hour cover on the road. They are fully supported by the Slovenian government.

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7. JOURNEY PLANS

Detailed journey plans of the entire journey, prior to entering the EU, on entering the EU, and the complete journey within the EU (which must be a record of the plan of the journey and the actual journey including stops, rest periods, loading, unloading, feeding, watering and veterinary inspections), which can be verified through the use of GPS and this must be cross referenced throughout all stages of the journey.

Although journey logs are a requirement of Regulation (EC) No 1/2005 there are issues with non-compliance and the plans are not detailed enough to provide information on all stages of the journey. Detailed journey plans are essential to make enforcement of Regulation (EC) No 1/2005 and monitoring of welfare effective.

8. ENTRY TO THE EU

Compulsory 24-hour rest, off the vehicle, with access to feed and water immediately on entry to the EU on health and welfare grounds.

24 hour rest on entry to the EU is essential to ensure horses are rested, fed and watered before continuing their journey and they are therefore fully fit to ensure that their welfare is not compromised. It also provides an opportunity to observe them for signs of disease.

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Background

Since 1927 World Horse Welfare (previously known as the International League for the Protection of Horses) has been campaigning to end the long distance transport of live equidae to slaughter in Europe. Over the past 81 years World Horse Welfare has been a leader in promoting improvements to welfare conditions for equidae transported to slaughter, by influencing legislative changes and raising awareness of welfare, enforcement and attitude issues (see Annex 1 for a detailed history of the charity's campaign). Despite World Horse Welfare's diverse range of activity in the UK and overseas, the founding focus of the charity's major campaign remains: to end the long distance transport of live horses, ponies, donkeys, mules and hinnies to slaughter in Europe with a move to a carcase-only trade. The campaign's short term goal is to improve welfare conditions of equidae making these journeys. All of this must be supported by robust enforcement throughout the EU.

World Horse Welfare wants to see an end to the long distance transport of live equidae to slaughter and a move to a carcase-only trade.

Whilst equidae are still being transported long distances to slaughter World Horse Welfare wants to see dramatic improvements to their welfare during transport.

World Horse Welfare has gathered a substantial body of evidence that indicates that welfare concerns regarding equidae transported long distances to slaughter are serious and ongoing.

The campaign to end the long distance transport of live equidae to slaughter has wide and growing support from politicians, equine industry experts, the public, and other NGOs.

Major welfare issues include excessively long journeys without rest, food and water; lack of enforcement of partitioning and poorly designed partitions that cause injury; and equidae frequently displaying signs of disease, injury, stress, exhaustion and dehydration.

World Horse Welfare has a long history of undertaking desk and field research to evaluate compliance with transport legislation. To see the findings of World Horse Welfare field research and the findings and position of other welfare organisations, including Animals' Angels, RSPCA, WSPA and CIWF, see Annexes 2,3 and 4. The evidence we have collected strongly supports the need to maintain pressure for legislative change and improved enforcement. Through ongoing awareness raising events and media coverage World Horse Welfare has continued to grow a base of dedicated supporters, including politicians, equine industry representatives, other NGOs and members of the public.

Since the adoption of Regulation (EC) No 1/2005, World Horse Welfare has observed changes in transport practice, and identified the most worrying welfare issues. For example many but not all equidae are now transported with individual partitions and this and other areas of the legislation need to be more rigorously enforced (for details of enforcement issues with reference to the Food and Veterinary Office missions, see Annex 5). Equidae are still transported unacceptably long distances without adequate rest, food and water. The equidae are frequently in poor condition prior to, during and at the end of the journey, with nasal discharge, injuries and open wounds, together with signs of stress, exhaustion and dehydration. Essentially a great number of the equidae observed are not fit to travel, as required by Regulation (EC) No 1/2005. Not only do the long journeys (often well in excess of 24 hours) with insufficient rest and unacceptable transport conditions promote great suffering of these equidae, they also represent a disease risk as often the equidae will show signs of infection due to immuno-supression that is commonly associated with transport. To corroborate these field observations during 2008 World Horse Welfare has been undertaking a scientific study into the health and welfare of equidae transported across Europe and arriving in Italy for slaughter. This study is the first of its kind to focus on horses transported for slaughter in Europe, and indicates that the horses involved in this trade are exposed to great suffering and there is evidence that a considerable number of these animals that enter the food chain are showing signs of disease.

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WELFARE ISSUES

Field observations (carried out by World Horse Welfare and third parties) confirm that welfare problems have primarily related to the unique needs of equidae and consequences of equidae travelling vast distances in cramped conditions, limited, if any, access to rest, food and water, the fitness of equidae to travel and standards of handling. This section covers the evidence supporting each of World Horse Welfare's recommendations.

This serious wound was caused by lack of space allowance and poorly designed partitions. This horse was not fit to continue its journey and was euthanased at Control Post on the advice of World Horse Welfare.

These are two examples of horses that collapsed through extreme exhaustion. Equidae would never choose to lie down whilst confined in such close proximity to other equidae.

The unbroken youngster on the left was transported illegally for more than 8 hours in a compartment with six other fully grown horses. As a result his eyes and legs were badly damaged, but he was later reloaded to continue his journey against the advice of World Horse Welfare. He had already travelled for at least 18 hours and would continue for another 6-20 hours (it was unclear to the team if he was destined for northern or southern Italy).

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Recommendation 1:

RECLASSIFYING HORSES SEPARATELY FROM FARM ANIMALS

It is universally recognised that horses have a different place in society and in the community to cattle, pigs, sheep, poultry and other traditional 'farm animals' due to centuries of domestication and their close association with man. It is therefore credible and important to establish legislative measures and standards specific to horses, separating them from 'farm animals', bearing in mind that the rate of injury in equidae is 16.5 times more likely during transport than in cattle (Stefancic and Martin, 2005). Legislation representing the specific needs of equidae should be introduced taking into consideration that they:

- **are highly domesticated herd animals that possess a flight or fight instinct, meaning that well-handled and broken equidae not travelling in small family groups need to be kept apart through the use of individual compartments for their own and others safety (teeth on both jaws and the ability to kick backwards and forwards). They do not take kindly to being moved in unfamiliar groups (many are reared and kept in a solitary environment). In contrast, when scared or stressed, sheep and cattle will herd together for safety; therefore travelling in groups is a benefit;**

- **react very quickly to adverse or unfamiliar situations due to high levels of stress hormones;**

- **require room to brace (position hooves wider than their standing base); their high centre of gravity and shape makes them unstable (they require their head and neck to balance, particularly if they cannot move freely);**

- **are ineffectual at thermo-regulating in high temperatures – greater propensity to dehydrate than cattle or sheep (the consequences of dehydration are: an increased risk of developing contagious disease in a short period of time; heat exhaustion; collapse).**

Many equidae are sent to slaughter because of the presence of disease or long standing injury or because they are no longer fit for work. Furthermore, youngsters fattened for slaughter suffer the consequences of obesity (disproportionate pressure on their joints; lack of exercise and lack of physical fitness; lack of social interaction with other equidae) so that they are totally unprepared for the demands of long distance transport. Whilst 'fitness to travel' is taken into consideration in the legislation, under EU Council Regulation (EC) No 1/2005, this still allows for low-level pain or injury to be present, which is more likely to be seen in obese youngsters or old working horses than in, for instance, fit grass-fed beef cattle. Low-level injury and/or pain coupled with the fact they are unused to being transported makes horses particularly vulnerable during long distance transportation. Furthermore, World Horse Welfare has evidence that the section of the Regulation relating to 'fitness to travel' is very poorly enforced and that many horses transported long distances succumb to disease during these long journeys to slaughter.

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Recommendation 2:

SHORT, FINITE JOURNEY LIMIT

A. Maximum journey time of 9-12 hours for all movements of equidae (including within and between EU Member States) for slaughter. Equidae should be offered feed and water to correspond with driver rest breaks, every 4.5 hours (which would mean stopping twice during a 9-12 hour journey). However if the hydration status of the equidae indicates that water is required sooner it must be given. After the maximum journey time of 9-12 hours the journey must be terminated and the equidae unloaded for compulsory rest.

B. If there is a need to complete an international journey (including those between EU Member States), a new journey log and animal health veterinary certificate in accordance with annex C to Directive 90/426 will be required.

For movement within a Member State following 9-12 hours, equidae should be rested for a minimum of 48 hours off the vehicle. This is necessary to ensure that they are fully rested before any further movements takes place. Haematological variables have been shown to take around 48 hours to return to normal after transport of racehorses over 900km (Codazza et al. 1974). According to the European Road Safety Observatory the HGV speed limit is currently set at 80kmph in most Member States (meaning a 900km journey would take approximately 11.25 hours not including breaks).

This recommendation fits with the drivers' breaks stipulated in Road Transport (Working Time) Regulation 2005 (SI 2005 No 639). Drivers are required to take 11 consecutive hours' rest within a 24-hour period. This may be reduced to 9 consecutive hours up to three times a week. After 4.5 hours' travelling time the driver must take a 45 minute break (or 15 minutes plus 30 minutes in that 4.5 hour period). (Source: UK Department of Transport). Bringing drivers' working times and the number of hours horses are permitted to travel into line will streamline compliance and enforcement and will be more cost effective.

Exhaustion

The following examples demonstrate case evidence of just a few of the many examples witnessed of the condition and suffering of equidae travelling for longer than 12 hours:

This mare took around fifteen minutes to get to her feet after 18 hours on the lorry; when she did, her legs shook and her head remained low as she struggled to get off the lorry. She was completely exhausted and showed signs of severe fatigue.

This horse had collapsed due to exhaustion. Once down the horse would have found it almost impossible to get back on his feet as there was insufficient space for him to right himself and the inappropriate gaps at the bottom of the partitions which would have made injury to his lower limbs likely.

Equidae are usually only witnessed resting like this with their chin taking the weight of their head when they are sedated. This Polish horse is so exhausted she relies on the trough to support her. It is common to see these equidae with their heads dropped and eyes closed, in total silence, showing signs of depression.

This tightly tethered mare does her best to lie down in an attempt to rest. Apart from the discomfort she must be suffering, having her head in this unnatural position puts her at great risk of developing respiratory problems (see below). At control posts it is common to see equidae shifting their weight restlessly around all four limbs as they attempt to rest but are too fatigued to do so effectively. It is natural for horses to rest one hind leg alternately but it is not normal to see horses shifting weight restlessly around all four feet.

A short finite journey limit of 9-12 hours would reduce the exhaustion experienced by these equidae. The negative effects of journeys lasting longer than 12 hours are not only seen in World Horse Welfare's field research, but are well documented in scientific literature (for a review of the literature see Annex 10). Extreme fatigue, exhaustion and dehydration are frequent and are a feature of our ongoing field work. The physiological effort expended by equidae being transported has been likened to walking, as they constantly adjust to the movements of the vehicle (Doherty et al, 1997). The increased heart rate and electro-myographic activity noted by Giovagnoli et al (2002) was attributed to emotional and physical stress likely to be determined by road conditions and driving style. The physical effort expended is particularly significant when considering the increased numbers of slaughter equidae seen by World Horse Welfare that are tethered in stalls where they are fattened and are therefore totally unused to exercise with no muscle development or condition. Marlin et al (2008) noted that a condition score of 5 on a 5 point scale (indicating obesity) was recorded in 26% of horses arriving in Italy for slaughter. The fatigue experienced by equidae leads to an increased risk of injury over time, and Stull (1999) suggests that

this may be attributed to a combination of fatigue, dehydration and stress. A substantial number of the equine population transported long distances for slaughter are entire males (Marlin et al, 2008). Fazio et al (2008) demonstrated increased cortisol in stallions during transport suggesting stallions are particularly susceptible to transport related stress.

Equidae as a species are particularly vulnerable to injury during long journeys; in a sample group of horses (comprising 161,685) observed by Stefancic and Martin (2005) in road and rail journeys 2.5% - 7.5% of horses acquired direct injuries (including death) compared to 0.3% of cattle. Marlin et al (2008) documented that 1 in 3 horses arriving in Italy had cuts that resulted directly from transport. A significant number of horses observed arriving in Italy by Marlin et al (2008) were considered unfit for transport (471 out of 1271) and the number unfit for transport at the end of the journey was over twice that seen before transport. Three times as many horses were lame following transport as prior to transport, but the other major reason for lack of fitness to travel related to clinical signs - on arrival in Italy 90% of horses considered unfit for transport had more than one clinical sign of disease.

Incidental observations by Marlin et al (2008) were that the health of many slaughter horses deteriorated in the 24-48 hours after arrival in Italy, findings supported by Foreman et al (1992) who demonstrated that the incidence of shipping fever was higher when horses were monitored for 14 days following transport. In a total of 130 horses less than 36 months of age, transported 515km, 70% developed pneumonia within 14 days of arrival. Marlin et al (2008) suggest that this is most likely to be due to immuno-supression, dehydration and developing illness, which is extremely concerning when these animals will be entering the human food chain with overt evidence of infectious disease.

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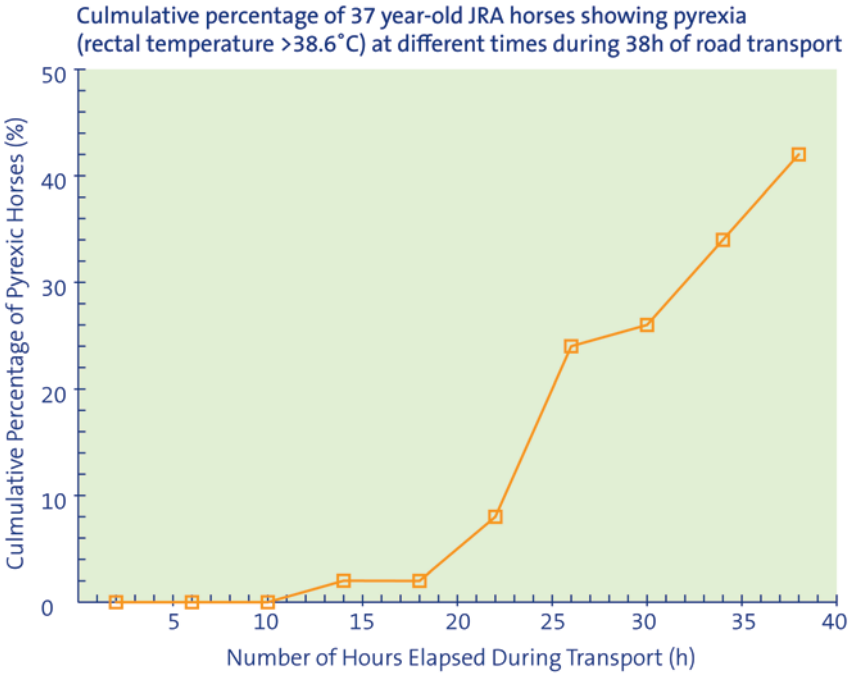
Disease contraction

Infectious diseases are commonly seen and these horses with purulent nasal and ocular discharge must be classified as unfit to travel; the transport conditions exacerbate the problem and put domestic equidae in both transit and destination countries at risk.

The major implication of journeys longer than 12 hours is an increased risk of disease contraction and spread. This is due to equidae becoming immuno-compromised after 12 hours of road transport (Stull et al, 2008; Oikawa and Kusunose, 1995; Marlin et al, 2001), and the fact that equidae sourced for slaughter originate from different locations and travel vast distances to control posts where they are not isolated. Marlin et al (2008) noted that following transport nasal discharge was noted in twice as many horses, elevated respiratory rates were seen in three times as many horses and eight times as many horses had congested mucous membranes compared with prior to transport. Horses with shipping fever usually exhibit pyrexia, depression and a reduced appetite with or without specific respiratory signs including cough, nasal discharge and increased respiratory rate. The increased risk of disease contraction from the long journey, coupled with the lack of isolation at control posts means the spread of disease is a real and obvious threat (O'Neill, 2008) and Stull and Rodiek (2000) noted that long distance transport presents a greater risk of development of infectious disease. Therefore the risk of meat from diseased animals entering the food chain from horses transported long distances to slaughter is high. The Scientific Committee on Animal Health and Animal Welfare (2002) stated that in journeys beyond 12 hours,

physiological responses and increments in disease become more marked, and the risk of shipping fever greatly increases. The rise in shipping fever over time is confirmed by Oikawa and Jones (2000) and Austin et al (1995), is demonstrated in the following graph:



Source: Oikawa and Jones, 2000

In addition the practice of the horses' heads being tightly restrained by tethering in the transport has been linked to bacterial infections of the lower respiratory tract. Chiesa et al (2002) found that horses restrained for 24 hours were more likely to have in their respiratory tract cultivable bacteria which could yield potentially pathogenic bacteria species than those restrained for 12 hours. It is important that the horses' tethers are long enough to allow them to balance and lower their head but still prevent them from turning or becoming caught in the tether. Warm and humid conditions cause horses to increase their ventilation (Hobo et al, 1995) meaning more dust particles are deposited in airways so airway drying is increased. This reduces mucociliary clearance and increases the risk of airway inflammation. Animals that begin a journey with pre-existing airway inflammation will almost certainly not improve and are more likely to suffer exacerbation of their condition. Generalised 'stress' responses in horses that are poor travellers could possibly contribute to pulmonary or systemic immuno-supression (Marlin, 2008b). Conditions observed during transport are frequently hot and humid and Marlin et al (2008) recorded an average temperature of 24 degrees and average humidity of 51% in the collection centres prior to transport. Hungerford et al (1992) demonstrated a relationship between fat horses (condition score 8 or 9 on a 10 point scale) and an increased risk of respiratory disease. This is significant as World Horse Welfare has observed increasingly obese horses (frequently with condition scores of 5 on a 5 point scale) leaving Poland for slaughter in Italy, as discussed above.

Carriers of Salmonella with no apparent symptoms may become shedders when loaded as the stress induces diarrhoea (Salmonella is a zoonosis).

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Dehydration

Transporting horses for long periods causes them to become dehydrated (Stull and Rodiek, 2000). Field observations consistently note wrinkled skin, dried visible salt deposits, excessive sweat and azoturia. Marlin et al (2008a) found that only one third of horses transported to Italy for slaughter had access to water prior to their journey and field observations indicate that drivers often fail to stop for water and food on route. By the time horses observed by Marlin et al (2008) reached Italy they were less likely to be observed drinking and were 18 times less likely to be seen urinating than when seen at source in Romania. This suggests they had reached such a severe level of dehydration that their drinking stimulus was no longer triggered (Marlin, 2008a). Large animals such as horses have an advantage in cold conditions, but are disadvantaged in hot conditions and rely heavily on sweating for thermo-regulation, when unwanted nitrogen must be removed as urea in the urine, which requires water (Davidson and Harris in Waran et al, 2002). Horses will sweat due to anxiety and also lose water through urine, faeces and breath and are therefore at a great risk of dehydration.

It is very common to see horses reloaded still showing signs of dehydration after 24 hours at a control post; because they are so severely dehydrated when they arrive they are not able to recover fully. Dehydration is exacerbated if drivers fail to stop to feed, water and rest the horses off the lorry after 24 hours in transit, and also in exessive ambient temperatures (during field investigations these have been recorded as high as 40°C). Furthermore, observations confirm that they are given limited access to water at control posts (see Annex 9).

"Dehydration doesn't appear to be dramatic when taken with a stills camera, but it is dramatic to the horse – it is likely to kill it."

Barry Johnson B.V.Sc D.V.Sc.(hc) MRCVS

During transportation horses lose on average 0.36% of their body weight per hour (Marlin et al, 2001). In sport or leisure horses veterinary intervention to rehydrate would usually take place at a total body weight loss of 5% (Marlin, 2008a). Based on losing 0.36% per hour, it would therefore take 14 hours of transport for a horse to become severely dehydrated. These averages are however based on healthy horses that are transported sympathetically. Rates of loss will almost certainly be higher (potentially even doubled) in stressed animals with limited previous experience of transport and in hot and humid conditions with poor ventilation (Marlin, 2008a).

The effects of progressive dehydration increase the risk of:

- **Respiratory disease**
- **Gastro-intestinal disease**
- **Heat exhaustion and collapse**
- **Infection (due to drying of mucous membranes)**

(Marlin,2008a; Geor and McCutcheon, 1998)

Horses observed travelling long distances by Friend (2000) became dehydrated by 8 hours of transport if unwatered, and dehydration gradually increased over the duration of the trip. General stress responses to transport can affect the gastro-intestinal tract increasing dehydration and decreasing digestibility (Marlin, 2008b). Decreased feed and water intake during transport may lead to decreases in intestinal motility and predispose to colic. Conversely dehydration may decrease gastrointestinal tract water content and slow the passage of ingesta, thereby increasing the risk of impaction colic. Therefore World Horse Welfare believes that equidae should be transported for no longer than 4.5 hours without being offered food and water, to coincide with drivers rest times (which would mean stopping twice during a 12 hour journey). Our field observations have shown that equidae transported long distances are desperate for water and will drink on or off the transport if given the chance. In the conditions described (temperature, humidity, poor health and welfare, other stressors) if they are unwilling to drink it is likely to be because they have already become severely dehydrated and are suffering from thirst suppression, as discussed above.

The conditions under which equidae are currently transported live to slaughter mean that they are at serious risk of injury and disease. The risk is exacerbated by the exceedingly long journeys that they have to endure and where exhaustion and fatigue compromise their welfare status further. Dr David Marlin, who led the World Horse Welfare scientific study (2008) and was an advisor to the FEI for the 2008 Beijing Olympic equestrian events, has been studying the effects of long distance transportation in equidae for over 20 years. He comments:

"The practices we see in commercial transport to slaughter are the worst possible combination for the horse. If you wanted to try and make a horse ill this is what you would do to it: you would dehydrate it; stress it; and tie it up with its head forced high."

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Recommendation 3:

MINIMUM SPACE ALLOWANCE (AND FLOORING REQUIREMENTS)

World Horse Welfare would like to see the following minimum space allowance as follows:

Equidae (over 1.45m)	**0.3m bracing allowance at either side of its widest point and the length of the stall must be 0.8m longer than the length of the horse from nose to the back of the hindquarters.**
Ponies (under 1.45m, heavy frame: over 300kilos)	**0.3m bracing allowance at either side of its widest point and the length of the stall must be 0.6m longer than the length of the horse from nose to the back of the hindquarters.**
Ponies (under 1.45m, light frame: under 300kilos)	**Stall must be 0.6m longer than the length of the 0.2m bracing allowance at either side of its widest point and the length of the stall must be 0.6m longer than the length of the horse from nose to the back of the hindquarters.**
Unbroken equidae (transported loose and untied in groups of no more than 4 for up to 8 hours)	**The compartment should be 0.8m longer than the length of the longest equidae of more than 1.45m high, and 0.6m longer than the length of the longest equidae under 1.45m high, with sufficient room for the equidae to move safely within the area, to find the correct orientation without adversly impacting on the movement, balance and space of other equidae within the same compartment. In terms of length and width, each individual equidae should have the space to stand herringbone, forward facing or rear facing without being forced to touch the sides of the compartment.**
Mares and foals (transported loose and untied for up to 8 hours)	**The space allowance for an equidae over 1.45m (0.3m bracing allowance at either side of its widest point and the length of the compartment must be 0.8m longer than the length of the horse from nose to the back of the hindquarters) or for an equidae under 1.45m (0.3m bracing allowance at either side of its widest point and the length of the stall must be 0.6m longer than the length of the horse from nose to the back of the hindquarters) plus a further 50% of the total of this floor area for the foal. The foal must have the space to safely feed from the mare, turn around and lie down (therefore the space required must be assessed each time and may need to be increased).**

(NB: These initial recommendations are subject to additional research, so may increase)

Tethering and orientation

If horses are tethered during transportation, it should be be at a length that allows them to balance and clear their airways, but not so long that they are at risk of entanglement. The orientation of the compartment to be at 45˚ angle towards or away from the direction of travel (see Annex 5).

Flooring requirements

World Horse Welfare recommends that rubber matting be used to provide the equidae with enough purchase to prevent slipping and to assist with balance. Annex 1, chapter II, 1(g) of Regulation 1/2005 states that vehicles must have an anti-slip surface but it is our view that rubber matting must be specified. This type of flooring is used extensively in the transportation of sports horses to prevent many of the injuries seen in horses travelling long-distances to slaughter on metal surfaces. Additional bedding may be required for the purpose of absorbing urine and faeces and for the comfort of young animals.

In a sample of 15 horses the average length was 2.42m and in a sample of 20 ponies the average length was 1.75m. According to Pezzaioli and the Road Hauliers' Association the internal width of an average lorry is 2.2m - 2.3m.

World Horse Welfare welcomes the use of individual stalling and believes this has been key in preventing some equidae from causing injury to each other from travelling in groups. This is the reason that valuable sport horses are transported in single stalls, because if transported in a group horses are at risk of falling and causing each other injury. Careful transport in single stalls with sufficient space allows sport horses to be moved great distances without injury. Regulation (EC) No 1/2005 specifies space allowances for horses; World Horse Welfare has compelling evidence that this is totally insufficient, which must be addressed as a matter of urgency. Furthermore, we have serious concerns over the lack of current levels of enforcement, as often horses are observed with less than the minimum space required in the Regulation. Inadequate space allowance and lack of individual stalls have been recurrent findings of Food and Veterinary Office missions (Cussen, 2008). There is also an ongoing issue with the range of sizes of horses (their individual space requirements are not catered for under the current Regulation) being transported as discussed above, which can be seen from the following case studies:

The fat deposits on these horses can be clearly seen - these Polish horses have been fattened for slaughter and are very heavy and unfit. World Horse Welfare has observed an increase in horses fattened specifically for slaughter that are physically compromised by the sheer amount of fat they carry.

The width of the hind quarters and fat deposits on the flanks of the horse on the left can be clearly seen. Compare this to the horse on the right – two horses given the same space allowance under Regulation (EC) No 1/2005, but with entirely different space requirements.

Balance and stability (these points relate to both recommendations 3 and 4)

Equidae's need for adequate space when travelling is different to that of other species, for example pigs, which have a much lower centre of gravity. Equidae's centre of mass is high off the ground because they are long legged relative to their body mass, and they carry 60% of their bodyweight over the forelegs.

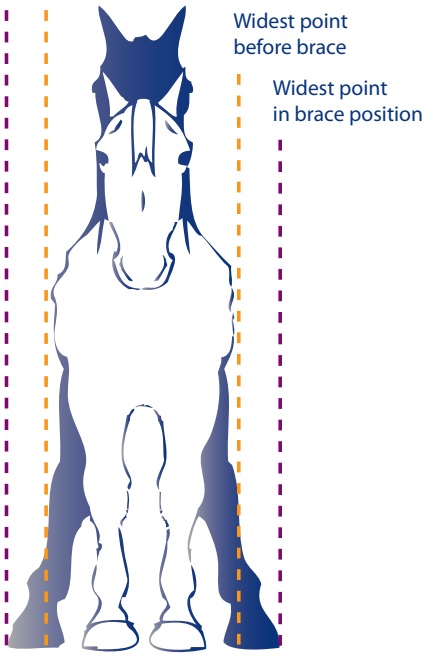
(Waran et al in Waran, 2002)

Equidae's shape also makes them unstable – they need to use their head and neck to balance, particularly if they are not in an open space. Possibly one of the largest studies of health and welfare of slaughter horses is that of Stefancic and Martin (Stefancic and Martin 2005). These authors reported on observations on 161,685 horse movements (imports and exports) through the road and railway border stations in Sezana and Port of Koper in Slovenia. The rate of death in these shipments for horses and cattle combined, bearing in mind that these animals were almost certainly being observed mid-journey, was around 2.5/1000. The authors observed journeys less than 800km and noted that death due to weakness and traumatic lesions was more common in horses, reporting that compared with cattle, the rate of injury in horses was 16.5 times greater. The higher rate of injury in horses may be due to poorer transport conditions of horses or to a poorer initial physical condition of horses compared with cattle. Alternatively, the greater rate of injury to horses may be due to their morphology and anatomy. The static stability of an animal is determined by its mass, its base (leg) configuration and the position of its centre of mass. The horse has long legs, a relatively narrow lateral base and its centre of mass is high. Thus, when stood at 90° to the direction of motion, as is common in single-stalled commercial slaughter horse vehicles, the horse would be most susceptible to cranio-caudal vehicle accelerations and decelerations. This could make the horse more susceptible to injury from collision with the transport vehicle than animals such as other commonly transported farm animals including cattle, sheep and pigs. Stull (1999) noted greater adverse physiological responses in horses transported in high density conditions, 29% were injured in high density transports compared to 12% in low density conditions and a longer duration of travel was associated with a higher prevalence of injury. This finding is supported by Collins et al (2000) and Iacono et al (2007) who found that horses fell during high density transport but not low density. This challenges a common misconception that tightly packing horses into a communal space for transport helps them to balance. The horses in these studies were not individually stalled and although lower stocking density reduced injury it did not eliminate it in the same way that well designed individual partitions with sufficient space allowance does, as witnessed in sport horses.

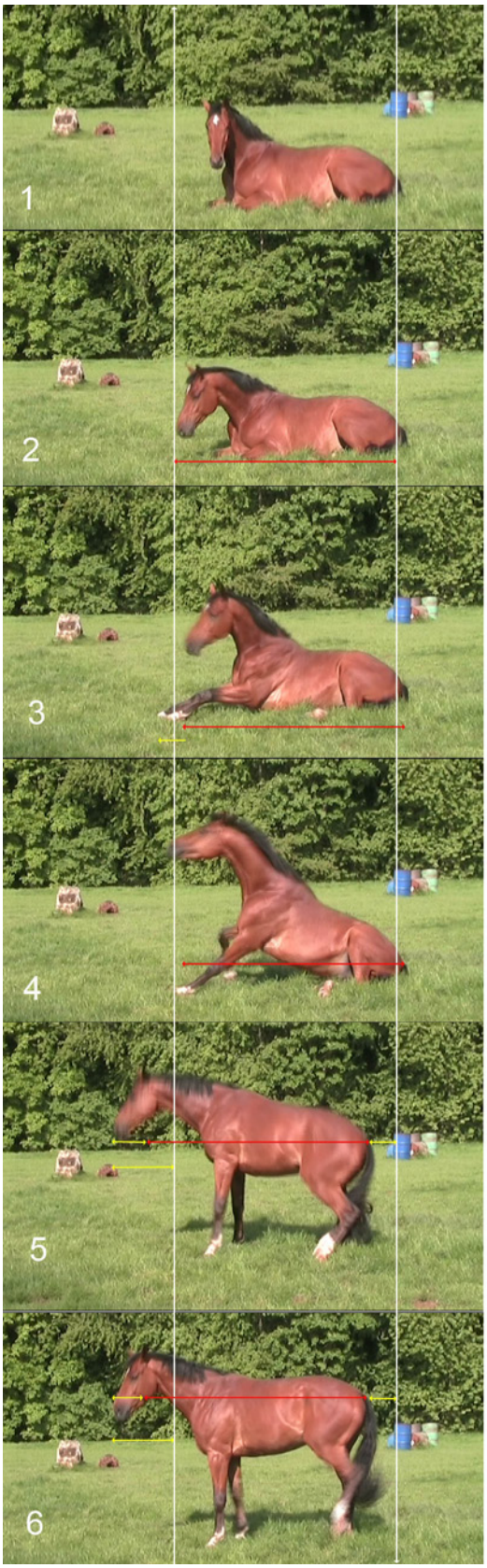
Equidae use a bracing technique to balance, by placing their front and hind legs wide apart so they can stand wider than their standing base. Space between the partitions should be wide enough that the horse

is able to brace naturally with partitions that are fully to the floor. Some authors have defined a recommended space allowance during transport for horses (Houpt and Leib, 1993; Stull, 1999), however Broom (in Appleby et al, 2008) warns that defined space allowances must take into consideration the whole range of animal sizes that may be transported. World Horse Welfare field observations have noted a number of challenges in designing space allowance for equidae that vary so greatly in size and shape, and a 'one size fits all' definition of space allowance is not appropriate. Therefore transporters should be aware of the need to make allowances according to size, but with a minimum space allowance as detailed in this recommendation.

This picture demonstrates horses being transported with no space between themselves and the partitions. This means the horse has no space to brace and balance, air flow around the horse is impeded affecting the horse's level of hydration, and is in danger of sustaining friction injuries on his flanks.



This picture illustrates a horse in its normal stance and when bracing.



When standing after rising a horse's nose to tail length may be up to 150% of the length occupied in sternal recumbancy (Clutton 2008). This does not take into account the width required which is greater than the horse's widest point since when lying down a horse is unable to put its back legs underneath its body (they are folded to one side). This is important when considering space allowance and partition design, as a horse needs space to correct itself into a standing position if it becomes recumbent. In addition to this, a horse needs to be able to extend its forelegs in front of its body in order to rise (see figs 3 and 4).

To the left is a series of photographs demonstrating the spatial requirements (length wise) of a horse rising under natural conditions.

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Friction injuries (these points relate to both recommendations 3 and 4)

Lack of space and partitions made of inappropriate materials and with projections means the partitions can cause friction injuries on the horses' skin, commonly observed by World Horse Welfare and by Marlin et al (2008) on the flanks seen in the examples above. It is also common to see irregular sweat patterns because of the lack of air flow around the horses' bodies due to the close fitting partitions made of inappropriate materials (see left). These problems are not seen in sports horses transported with more space and appropriately designed partitions. Herringbone positioning (45˚ angle) or forward or rearward facing positions can avoid the injuries seen below, caused due to horses being transported at a 90˚ angle to the direction of travel, which does not provide a long enough compartment for some horses.

These horses have been transported in a lorry at a 90˚ angle to the direction of travel of the vehicle - they did not have sufficient space to brace and avoid severe friction injuries on their hind quarters and hocks.

Positioning

Several authors (Smith et al, 1994; Gibbs and Friend, 1999) have commented that when given free choice horses will not choose to stand at a 90˚ angle to the direction of travel of the vehicle during transport, because they cannot move their weight from front to back to balance as they would naturally, instead they favour angles which can be achieved by placing partitions in a herringbone fashion. Rearward facing transport has been associated with reductions in the total number of impacts with the vehicle interior, losses of balance, vocalisation and movement (Clark et al, 1993; Gibbs and Friend, 1999; Waran et al, 1996). The impact travelling at a 90˚ angle has on the horse's ability to balance and absorb movement means the risk of injury caused by instability is greater. It is difficult for a horse to move laterally, but easy for it to move forwards and backwards, therefore if travelling at 90˚ the horse must attempt to balance in an unnatural position.

Prior to the adoption of Regulation (EC) No 1/2005 the European Commission (2003) proposed how much space should be between the horse and the partition and walls of the transport. This recommendation does not feature in Regulation (EC) No 1/2005, however an appropriate minimum space would reduce the kinds of injuries seen in the pictures above and the incidence of horses falling. World Horse Welfare believes that space allowance must be addressed in the review of the Regulation, both in terms of accommodating the size of equidae currently being transported and how this could be reflected in the Regulation as well as future enforcement.

The impact travelling at a 90˚ angle has on the horse's ability to balance and absorb movement means the risk of injury caused by instability is greater.

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Recommendation 4:

PARTITIONS

> Partitions must be full length to the floor, of a rigid construction, and bear the weight of the horse, with no sharp edges or projections and be made of padded material with no hard metal, wood or plastic surfaces for the sides of the horse's body to make direct contact with, to avoid friction burns or injury. They should ideally be positioned either in a herringbone pattern (45˚ angle) or alternatively forward or rearward facing to accommodate the individual equine's length; equidae must not be transported at a 90˚ angle to the direction of travel (see Annex 5). If a rubber skirt is used at the bottom of the partition, this should be made of robust rubber material of an absolute minimum of 4cm thick*, so that should a horse adopting the brace position impinge on the neighbouring partition space the rubber would be strong enough to protect both horses from injury. Its attachment should not present any protrusion that could cause injury and the skirt should reach the floor.

During the consultation prior to the implementation of Regulation (EC) No 1/2005, World Horse Welfare submitted recommendations regarding partition design, aware that poorly designed partitions could be problematic. These were not included in the Regulation, and field observations have confirmed issues with poor partition design. It is therefore imperative that this is addressed in the forthcoming review, whilst emphasising the importance of well designed partitions and adequate space allowance in preventing injuries and horses falling. There are two key factors with partitions, design and positioning for optimum space. Positioning and spacing are discussed above. The issues with design are highlighted in the following case studies:

The yearling in these pictures was so severely injured because the partition had a large gap at the bottom and he did not have space to brace, that he had to be euthanased. His situation was worsened as he was being illegally transported over a long distance despite being unbroken, and was therefore unused to handling and transportation.

* Conversations with leading coachbuilders confirm that manufacturers currently use rubber skirts of between 8.75cm and 10cm thick

Many thousands of valuable sport and leisure horses are transported every year without sustaining injury, due to the careful way in which they are moved. The majority of pleasure horses, sport horses and racehorses are transported in individual partitions. This is irrespective of whether the transport is commercial or non-commercial or by road, sea or air. This practice has clearly evolved in order to ensure as lower risk of injury as possible. The horse is a large and powerful animal. It has a highly developed fllight or fight response, and is able to react extremely rapidly. In the wild its first response is to run when threatened. In confined spaces, such as pens or small fields, and where there is a high-density of animals per unit ground area, the horse will use biting and kicking as effective defence mechanisms. A horses' bite is capable of inflicting severe wounds on both people and other horses. A horse's kick is capable of killing people outright and frequently results in bone fractures in other horses. Thus, partitions are essential to limit inter-horse aggression within transport vehicles and the resulting injuries that are almost certain to occur. In addition, stallions are by their nature even more aggressive than mares and geldings and the relatively high proportion of stallions being transported for slaughter further underlines the requirement for single partitions. Aside from limiting aggression between horses, partitions are also essential to prevent falls and injury resulting from a "domino" effect, where one horse loses balance, and/or falls causing the same response in others. Falls of this type in these vehicles are highly likely to result in catastrophic injuries. Due to their high centre of mass, compared with other farm animals, the horse is relatively unstable during transport. Partitions are therefore essential in order to help horses maintain their posture during transport.

Field observations of horses transported without partitions are that when one horse falls the others have no choice but to trample the horse and others are likely to also fall. World Horse Welfare has spoken to a number of industry experts (leading international horse transporters). This body of opinion surmised that it is common practice for commercial transporters of sport and leisure horses to use full length partitions which reach the floor and generous space allowance to avoid injury. There are a range of factors to consider to develop the optimum compartment design for horses transported commercially long distances to slaughter, and our recommendations are devised with these in mind.

Observations in the field and during the scientific research study have found that the design of partitions currently in use does not allow individual access to each horse. World Horse Welfare has witnessed a driver climbing onto the top of a partition and walking from one end of the lorry over the backs of each horse to reach a horse whose water source was not working. Inevitably this caused significant stress to the entire shipment, as this is a totally unnatural experience for most horses and is incredibly dangerous for the driver.

Lower limb injuries are extremely common on long road journeys because partitions do not reach the floor and are often poorly constructed (from chains and ropes) or with sharp projections so equidae are able to become caught in the space underneath them as they attempt to brace and balance and cut themselves on sharp projections.

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Recommendation 5:

UNBROKEN EQUIDAE

Unbroken equidae should be defined as: "Equidae that cannot be tied, led by a halter, loaded, unloaded partitioned and/or transported without causing avoidable excitement, stress, pain or suffering."

Both of these horses are displaying classic signs of panic at being loaded - their heads are held high and the whites of their eyes are visible.

Field observations indicate that the current definition of unbroken equidae is incomplete and does not go far enough to safeguard the welfare of young or unhandled equidae who can become distressed, not just from being tied or led by a halter but also from the experience of being loaded and transported.

Marlin et al (2008) observed a high level of resistance in horses to loading (63%) and unloading (66%).

A large proportion of the equidae that become injured during transport to slaughter are unbroken equidae not used to travel. In particular it is recommended that the definition should be amended to specifically include the actual process of loading and the time that the unbroken animal is on the vehicle. Field observations have shown unbroken equidae that are not able to be lead quietly being manually forced onto vehicles and packed extremely tightly. Marlin et al (2008) observed a high level of resistance in horses to loading (63%) and unloading (66%). Marlin (2008b) also notes that it appears there are marked differences in transport responses in horses that are effectively transported naive compared to those transported on a regular basis. Horses that are conditioned to handling and transport are calm when loading and unloading and during transport. An updated detailed definition would clarify the current situation where a broad definition is open to abuse, as frequently observed by World Horse Welfare and Animals' Angels.

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Recommendation 6:

ENFORCEMENT

> Stricter enforcement of Regulation (EC) No 1/2005, particularly for journey limits, single partitioning, resting, feeding, watering, transport of unbroken equidae, journey plans and handling (certificates of competence).

Enforcement of Regulation EC 1/2005 is an ongoing concern, Cussen (2008) notes:

> ***Since the new legislation entered into force on 5 January 2007 the Food and Veterinary Office has conducted four missions to assess the welfare during transport of equidae for slaughter. These missions have shown that, despite some improvements in competent authority infrastructure, enforcement remains inconsistent, penalties are absent or insufficient, and accurate audits of transport controls are lacking. Overstocking of animals, excessive journey times, inadequate watering of animals, inadequate vehicles, inadequate training and instruction, and staff shortages remain commonplace. Resource constraints limit the enforcement and auditing ability of both the Commission and Member State competent authorities. Therefore, controls during transport are still not effective and equidae continue to be transported in ways that both contravene the new legislation and impinge on the welfare of animals transported. Considerably more resources need to be allocated to enforcement of animal welfare controls during transport, if this situation is to improve.***

It is the view of World Horse Welfare that the general enforcement of the transport legislation is lamentable although there are some notable exceptions in some Member States. Recent field observations showed a mare and foal transported within the same partition space with no room to brace separately and consequently the mare was forced to lean her weight on the foal for the whole journey. Transporters commonly fail to stop for food or water - one vehicle when inspected had an incorrect journey log that stated that the transporter had stopped and the equidae were watered but when asked to demonstrate use of the watering system the driver did not know how it worked. Field observations also indicate that vehicles from Romania are failing to stop at all at the control posts. It is imperative that overall levels of enforcement are raised whilst at the same time making the rules both simpler and more amenable to enforcement. Complex rules that are unenforceable are bad rules and should be simplified so that they can be properly enforced by any competent authority.

World Horse Welfare's proposals on a 12 hour finite journey limit will facilitate traceability and enforcement by cutting the involvement of multiple agencies across numerous Member States.

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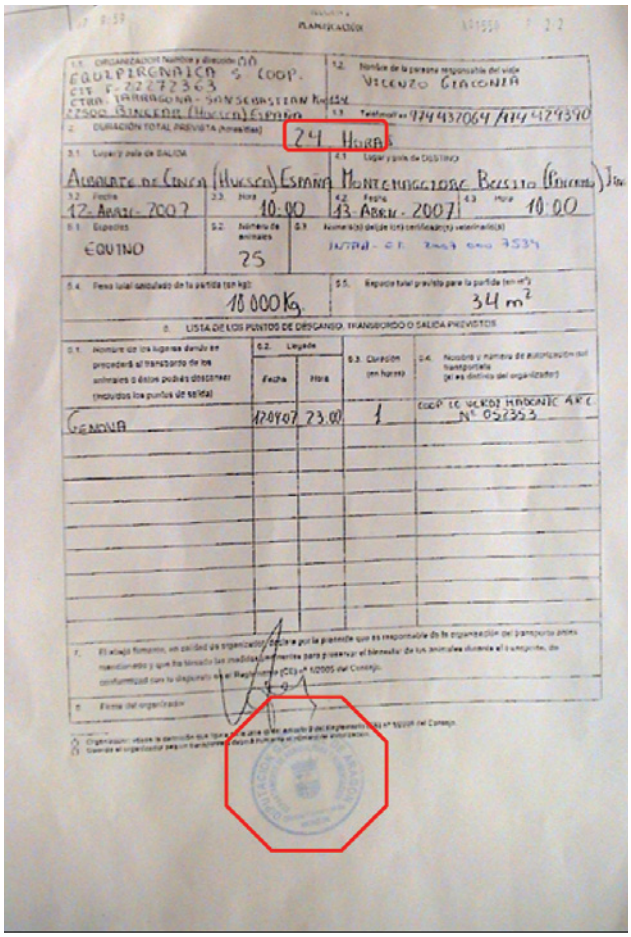
Recommendation 7:

JOURNEY PLANS

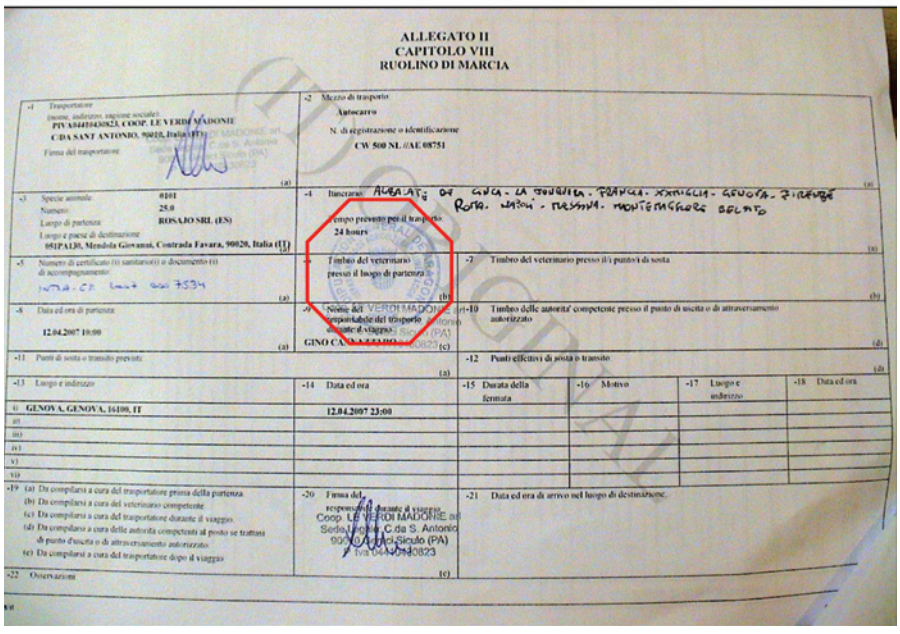
> Detailed journey plans of the entire journey, prior to entering the EU, on entering the EU, and the complete journey within the EU (which must be a record of the plan of the journey and the actual journey including stops, rest periods, loading, unloading, feeding, watering and veterinary inspections), which can be verified through the use of GPS and cross referenced through all stages of the journey.

Observations have been made at control posts of problems with documentation, including incomplete journey logs and evidence of unrealistic journey time allocations. There are also repeated observations that vehicles are not stopping for rest, food and water. The introduction of microchips for horses (from July 2009) and GPS will facilitate better enforcement by allowing vehicles and individual horses to be monitored at all points of the journey. Recording the actual events of every stage of the journey will be a change from current practice by providing more detail which will assist in traceability and enforcement.

Having a restricted and finite journey time of 12 hours would simplify the enforcement responsibilities falling on Member States and reduce the burden considerably. Furthermore, traceablility on animal health grounds would be made easier, which is essential when dealing with a serious notifiable disease such as African Horse Sickness. Traceability is critically important with the serious epedemic diseases of all animals as it has been with Foot and Mouth disease that has caused major problems in the UK in recent years. An outbreak of this magnitude in Europe's equine industry would be catastrophic.



Section 1 of journey plan (sections 2-5 were missing), approved by the Spanish veterinary service at place of departure, even though the estimated journey time was not realistic. (Picture courtesy: Animals' Angels)



Route plan stamped by the Spanish veterinary service at place of departure, even though the "route plan" has been repealed from 5 January 2007 and substituted by the "journey log". (Picture courtesy: Animals' Angels)

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Recommendation 8:

ENTRY TO THE EU

Compulsory 24-hour rest, off the vehicle, with access to feed and water immediately on entry to the EU on health and welfare grounds.

Due to the fact that the welfare status and length of journey travelled by horses entering the EU will not be known, it is essential that they have 24 hours rest off the vehicle with access to food and water on arrival in the EU to ensure they are fit to continue their journey according to Regulation (EC) No 1/2005. It will also provide the opportunity to undertake a basic examination to ascertain their health status as we share the very serious concerns expressed by many veterinary authorities as well as Europe's horse industry about the transmission of disease. There is a highly publicised and real threat of a disease outbreak that could have catastrophic consequences for Europe's entire horse industry. The animals should not be permitted to continue their journey until they have passed a veterinary inspection and have been certified as fit to continue. World Horse Welfare appreciates that it is the view of Commission lawyers that the EU rules are not applicable to animals until they enter the EU and it is for that reason that we recommend that animals should undergo a compulsory period of rest off the vehicle on entry into the EU.

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RESEARCH EVIDENCE

There is a significant body of scientific evidence regarding the long distance road transport of horses. However this mostly relates to sport or racehorses, which are transported under very different conditions from those destined for slaughter (see Annex 10), although there are a few excellent papers published in the USA that do cover the transport of slaughter horses. Until now no such papers have been published covering the road transport of slaughter horses in Europe. The evidence gathered by a number of authors (Stull et al, 2008; Stefancic and Martin, 2005; Marlin et al, 2001; Stull and Rodiek, 2000; Oikawa and Jones, 2000; Stull, 1999; Oikawa and Kusunose, 1995) supports anecdotal and field observations that horses transported long distances are at higher risk of physiological compromise and injuries, as noted above.

To add scope to the body of evidence World Horse Welfare collaborated with a group of leading scientific researchers to conduct the first scientific study on the health and welfare of horses transported across Europe to Italy for slaughter. The collection of scientific evidence is crucial to corroborate findings from field observations. This is the first research specifically focusing on horses travelling across Europe to slaughter and therefore adds weight to World Horse Welfare's recommendations regarding the welfare of these horses. This study is due to be published in full in the coming months, however an overview of the initial findings is as follows (see Annex 18 for examples of the forms used to collect data):

A Scientific Epidemiological Investigation of the Health and Welfare of Horses Transported for Slaughter within the European Union

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This project was funded by a grant from World Horse Welfare.

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SUMMARY

Observational evidence collected in the field by World Horse Welfare (formerly the International League for the Protection of Horses) and other organisations including Animals' Angels, the Royal Society for the Prevention of Cruelty to Animals, the World Society for the Protection of Animals (WSPA) and Compassion in World Farming has shown evidence of poor welfare in horses transported for slaughter within the European Union. To date there has been limited scientific data collected on horses transported commercially to slaughter and that which does exist has primarily been on transport within the USA.

This report describes an epidemiological investigation into the health and welfare of horses transported long distances to slaughter within the European Union. Data collection was undertaken between March and September 2008 by four veterinary surgeons, two based in Romania and two based in Italy. A total of 1519 horses in 64 separate shipments were observed prior to transport in Romania from two collecting centres and 1271 horses in 63 separate shipments were observed after transport in Italy at four different abattoirs. The specific locations will not be disclosed under agreement with the owners of the sites.

A high proportion of the horses observed in this study, either at origin, or at destination had evidence of poor health and welfare. Acute and chronic injuries were prevalent and lameness was common. On arrival in Italy, many horses exhibited clear signs of disease, which would have rendered them unsuitable to enter into the human food chain. There were frequent instances recorded of non-compliance with EU Regulation 1/2005 on the Welfare of Animals during Transport. However, despite this, following transport the proportion of horses considered unfit to transport was not different between compliant and non-compliant shipments. The lack of provision of food and water to these animals in many instances is of extreme concern. Almost two thirds of horses leaving Romania had some form of external injury and 1 in 7 were considered unfit to be transported. Around one third of the horses arriving in Italy had cuts on their body and 1 in 3 were considered unfit to be transported.

The results of this study support anecdotal evidence collected in the field of poor health and welfare amongst horses transported over long distances for slaughter. The higher prevalence of clinical signs of disease and physical injury indicate that many of these animals are suffering physically and psychologically as a result of long distance transport. These results also support the contention that horses have distinctly different needs and responses to transport when compared with other farm/food animals, as has clearly been recognised in transport of pleasure, sport and racehorses.

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KEY POINTS

- High level of resistance of horses to loading (63%) or unloading (66%).
- Only one third of animals were provided with food or water before transport. After transport over half had food but only 1 in 10 horses had water.
- 4 out of 5 horses considered unfit for transport in Romania had one or more clinical signs of disease.
- On arrival in Italy 9 out of 10 horses considered unfit for transport had more than one clinical sign of disease.
- The number of unfit horses after transport was over twice that seen before transport.
- After transport nasal discharge, elevated respiratory rate and congested mucous membranes were seen in twice as many horses as prior to transport.
- Over 2000 separate injuries were documented in the horses in Romania.
- 1 in 3 horses arriving in Italy had cuts that resulted directly from transport. Grazing to the skin from friction with the partitions was also common.
- Around 1-2 horses on average in each shipment were considered to be lame. Nearly 3 times as many horses were considered to be lame after transport.
- Foraging, grooming and vocalisation were the most common behaviours before transport. After transport there was a dramatic reduction in most behaviours, but threat, aggression and fear pose were all increased.
- Only 11 of 62 shipments leaving Romania were considered to be compliant with EU Regulation 1/2005 on the Welfare of Animals during Transport.
- Only 7 of 63 shipments arriving in Italy were considered to be compliant with EU Regulation 1/2005 on the Welfare of Animals during Transport.
- Whilst there is a clear issue relating to enforcement, there was no difference in the proportion of animals in poor health between shipments that were compliant with the EU regulations and those that were not.

BACKGROUND

Observational evidence collected in the field by World Horse Welfare (formerly the International League for the Protection of Horses) and other organisations including Animals' Angels, the Royal Society for the Prevention of Cruelty to Animals, the World Society for the Protection of Animals and Compassion in World Farming, has shown evidence of poor welfare in horses transported for slaughter within the European Union. To date there has been limited scientific data collected on horses transported commercially to slaughter. In the United States of America a series of scientific studies over the past ten years have provided clear evidence of compromised welfare (Marlin, 2008b). By contrast, there appears to be almost no data relating to horses transported commercially within Europe. However, a report in 2005 by the government veterinary authorities of Slovenia in which shipments of horses passing through Slovenia were observed found that horses were around 16.5 times more likely to suffer injury compared with cattle (Stefanic & Martin, 2005). The higher rate of injury in horses may be due to poorer transport conditions of horses or to a poorer initial physical condition of horses compared with cattle. Alternatively, the greater rate of injury to horses may be due to their morphology and anatomy, giving them a relatively high centre of mass above the ground leading to reduced lateral stability in moving vehicles.

This report is based on an epidemiological investigation of the health and welfare of horses being transported commercially over long distances for slaughter under Regulation (EC) No 1/2005 on the Welfare of Animals during Transport. Separate groups of horses were examined before transport in collecting centres within Romania or on arrival at slaughter houses in Italy. Paired measurements, that is in the same horses before and after they were transported from Romania to Italy, were made in 86 horses in 4 separate shipments.

METHODOLOGY

Data collection was undertaken between March and September 2008 by four veterinary surgeons employed and trained specifically for the project. One team of native speakers were based in Romania and the other team was based in Italy. All data from Romania was obtained from two different collecting centres in the same region. All Italian data was collected from 4 different slaughter houses in the same region. The location of the collecting centres and abattoirs that took part in the study is confidential and they are simply identified as CC1 and CC2 (CC = collecting centre) for Romania and AB1, AB2, AB3 and AB4 (AB = abattoir) for Italy.

The initial training of the four veterinary surgeons took place immediately prior to commencement of the study. Training took place at World Horse Welfare's Hall Farm and Glenda Spooner Farm, both in the UK. As part of their training the teams also visited a livestock market, a professional livestock haulier and an abattoir slaughtering horses. Training covered all aspects involved in the project, including instruction in using record forms and standardisation of recording within and between the Italian and Romanian Teams. The teams were also given detailed instruction on legislation, equine assessment, fitness to travel, vehicle design and humane slaughter. Training was undertaken by members of the scientific project team, which included four veterinary surgeons and three scientists. Skills within the scientific project team included two epidemiologists, an animal scientist with extensive experience of livestock transport, a physiologist and an animal ethologist.

General data were collected on shipments of animals (i.e. all animals that were to be or had been shipped together in a single lorry or lorry and trailer) and on individual animals within a shipment. Behavioural observations (five minute single observations) were also undertaken. Data were recorded on custom designed record sheets (see appendix) and subsequently entered into a custom database (Microsoft Access V).

On completion of the project and prior to analysis, the data were manually verified. Shipment and individual horse data (with the exception of the behaviour data) were described using STATA version 10.0. These analyses were performed separately for the Italian and Romanian horse and transport data. In order to identify an association between fitness to travel and origin, a mixed effects logistic regression model was developed for the Italian horse data alone. There was a significant degree of variation in the likelihood of fitness to travel on different shipments. Shipment number was therefore included as a random effect in this model with origin as a fixed effect. There was one shipment each from Lithuania, Russia and Spain (out of a total of 63 shipments recorded by the Italian team) that were excluded from this part of the analysis. A total of 651 horses were transported in 34 shipments from Poland to Italy and 562 horses were transported in 26 shipments from Romania to Italy.

Behavioural data were non-normally distributed and therefore analysed using non-parametric methods including the Kruskall-Wallis test and the Mann-Whitney U-test. The behaviours withdrawal, mutilation and mounting all occurred with a very low-frequency and were therefore not analysed.

Data are presented as frequency, mean or median and significance was set at $P<0.05$.

RESULTS
Romania

A total of 1519 horses in 64 separate shipments were observed prior to transport in Romania, giving an average shipment density of 23.7 horses/shipment. Eighty-eight percent (88%) of the observations were made at one of the two collecting centres. The most common destination for the horses from these collecting centres was Italy (61 of 64 shipments). Horses in 59 of the 62 shipments observed were considered to have been appropriately handled.

Ambient temperatures at the time of observations ranged from 0 to 38°C (median 24°C). Ambient relative humidity ranged from 30 to 86% (median 63%). Resistance of horses to loading was observed in 39 out of 62 shipments (63%). A veterinary surgeon was observed to be present for 42 of the 62 (68%) shipments.

Observations were predominantly made at the time of loading (64%) as opposed to in pens (36%). Most horses were female (69%), with 16% being geldings and 15% entire males. The age of horses was obtained predominantly by estimation from dentition (43%) or from visual estimation (42%). A small proportion of horses (15%) were aged from observation of health certificates.

Body condition score (BCS) was most commonly three or four out of 5 (82%), with 10% of animals observed considered obese (BCS of five). Most animals were considered to have a normal demeanour (95%) and head posture (89%). 90% of the animals were observed moving and of this subset 8% were considered to be lame. Of the lame animals, 35% were considered to be moderately lame and 12% were considered to be severely lame.

Only 38% of the animals had food available and of these only 16% were observed to be eating. Only around one third of animals had access to water and of those that did only 3% were observed drinking.

In relation to clinical signs of health, 6% of animals were observed coughing, 10% were observed to have nasal discharge, 2% to be sweating, and less than 1% had diarrhoea. Seven percent (7%) of horses had congested mucous membranes and 11% had an elevated a respiratory rate. A total of 874 out of 1521 horses (58%) were observed to have some form of external injury.

A total of 417 acute and 1530 chronic injuries (both classified as contusions, cuts, fractures, swellings and other) were identified in horses prior to transport. Of all injuries, contusions were the most common (61% acute and 59% chronic). Forty-three percent (43%) of all injuries were classified as moderate or severe.

The most common behaviours noted were foraging (mean 8.5 events/shipment), vocalisation (4.0 events/shipment) and grooming (3.7 events/shipment).

Out of a total of 1519 horses, 212 (14% or 1 in 7) were considered to be unfit for transport. Only 11 of 62 shipments were considered to be compliant with EU Regulation 1/2005 on the Welfare of Animals during Transport.

Italy

A total of 1271 horses in 63 separate shipments were observed after transport in Italy, giving an average shipment density of 20.2 horses/shipment. Fifteen % of the observations were from AB1, 59% from AB2, 17% came from AB3 and 9% from AB4. The majority of the horses observed at these abattoirs originated from Poland (51%) and Romania (44%) with around 1.5% each from Russia, Lithuania and Spain.

Ambient temperatures at the time of observations ranged from 15 to 32°C (median 24°C). Ambient relative humidity ranged from 25 to 89% (median 51%). Resistance amongst horses to unloading and handling was recorded in 66% of shipments (41 shipments). A veterinary surgeon was only present for 9 of the 63 shipments. Overall, the majority of the shipments (63%) arriving at these four abattoirs were considered to have been appropriately handled.

The majority of horses were observed in pens following unloading (59%) compared with observations made at the time of unloading (41%). The majority of horses observed were female (49%), followed by entire males (36%) and only 15% were geldings. Age of horses was predominantly obtained by visual estimation as access to health certificates, passports or direct access to horses to make an estimation based on dentition was only available for 7% of the horses. The majority of horses were estimated to be less than 2½ years of age (57%) or between 2½ and 5 years of age (34%).

Body condition score (BCS; 1-5 scale) was predominantly 3 or above. A score of 5 (indicating obesity) was recorded in 26% of animals. The majority of animals were regarded as showing normal demeanour (84%) and head posture (95%). Eighty-nine percent of the animals were observed moving and of this subset 21% were considered to be lame. Of the lame animals, 23% were considered to have moderate lameness and 10% were considered to have severe lameness.

57 % of animals were observed to have food available and of those that did have food available, 70% were observed to be eating. However, only 11% of animals had access to water. Of the animals with access to water, 26% were observed to be drinking.

In relation to clinical signs of health, 2% of animals were observed coughing, 23% were observed to have nasal discharge, 2% were observed to have diarrhoea, 53% had congested mucous membranes and 32% had an elevated respiratory rate. Of 1271 horses arriving in Italy after long distance transport, 414 (33%) were observed to have some form of external injury.

The most common behaviour observed was foraging (mean 6.1 events/shipment, threat (3.4 events/shipment) and aggression (2.4 events/shipment).

A total of 334 acute injuries and 142 chronic injuries (classified as contusions, cuts, fractures, swellings and other) were identified in horses following transport. The most common specific injury classification was for acute cuts (32%) and acute contusions (12%).

Out of a total of 1271 horses that had been transported, at the time of observation 471 of these horses were not considered fit to transport. Only 7 of 63 shipments were considered to be compliant with EU Regulation 1/2005 on the Welfare of Animals during Transport.

Paired Measurements

Paired measurements, that is in the same horses before and after they were transported from Romania to Italy, were made in 84 horses in 4 shipments. Paired shipment number 4 resulted in very poor assessments at unloading for demeanour, head posture, lameness, nasal discharge, sweating, mucous membranes, respiratory rate and fitness to transport, compared with the loading scores. Comparing unloading with loading, the proportion of horses with nasal discharge was increased in shipments 2 and 4. The proportion of horses sweating was increased in all shipments. Where recorded, congested mucous membranes were more common during unloading (shipments 2, 3 and 4). The proportion of horses with elevated respiratory rate was increased in shipment 4. In all four paired shipments the number of horses deemed not fit for travel was greater on unloading than during loading. These results are consistent with the results obtained for the full datasets for Romania and Italy.

Compliance with Regulation (EC) No 1/2005 on the Welfare of Animals during Transport and Fitness for Transport

In order to determine if the condition of animals on arrival in Italy was related to compliance with Regulation (EC) No 1/2005 on the Welfare of Animals during Transport and Fitness for Transport, the Italian data was analysed according to the classifications: 1) fit to transport (yes/no); 2) compliant with Regulation (EC) No 1/2005 (yes/no). This analysis identified that there was no significant difference between horses being deemed fit to transport and compliant status of the transport. On arrival in Italy, in compliant shipments 39% of animals were deemed to be unfit for transport and this was not different to the proportion in non-compliant shipments (37%).

Behaviour Analysis (All Horses)

There were significantly fewer of all behaviours except aggression, threat, and fear pose record in Italy compared with in Romania. That is, horses observed in Italy were less likely to be observed drinking, urinating, foraging, defecating, kicking, pawing or grooming than those in Romania. The number of drinking events per shipment in Italy was around half that observed in Romania whilst the number of foraging events was only reduced by around 28%. The rates of both urination and defecation were both around 18 times greater in the horses in Romania compared with those in Italy.

When investigating the effects of stocking density, significantly fewer threats were observed in the low-density situation and significantly more drinking, urination, defecation, pawing and kicking when compared with the high-density situation.

In examining the effects of tethering, overall less aggression and drinking was observed in tethered horses but more vocalisation, kicking, pawing and urination than when untethered.

DISCUSSION

To the best of our knowledge this is the first study to describe the health and welfare of horses transported commercially over long distances for slaughter for human consumption within the European Union.

Working under field conditions in a commercial setting does not afford the level of control that can be achieved under laboratory or controlled research conditions. However observations of relatively large numbers of animals and shipments, good experimental design and expert analysis allow confidence in the data.

Furthermore, the findings from this work are consistent both with unstructured field observations and results obtained from studies of horses transported long distances for slaughter within the USA. The findings are also consistent with the results of scientific studies on transport of horses not destined for slaughter.

The data obtained in the study supports the view that horses transported commercially to slaughter are at a very high risk of illness and injury. A very high proportion of these horses also appear to start transport in poor condition, with pre-existing disease and injury and most likely limited previous transport experience. This is consistent with the poor condition of horses after transport. Whilst not forming part of the scientific study presented here, the veterinary surgeons working in Italy noted that many horses deteriorated in the 24 to 48 hours after arrival. This is most likely the result of prolonged immuno-suppression, dehydration and developing illness and a requirement for veterinary intervention. Of extreme concern with respect to the entrance of these animals into the human food chain is common and overt evidence of infectious disease.

Clearly there is a significant issue relating to the lack of compliance with Regulation (EC) No 1/2005 on the Welfare of Animals during Transport. However, in compliant shipments welfare was not different to that in non-compliant shipments, suggesting that current legislation may not be effective in preserving health and welfare of horses.

Whilst there are many different factors that can potentially impact on the health and welfare of horses during transport, journey length is likely to be of prime importance. A review of the scientific literature indicates almost without exception, deteriorating health and welfare with increasing journey duration.

The practices observed in this study have clearly evolved such that the long distance transport of horses for slaughter in Italy for human consumption is economic, although Leckie (2007) demonstrated that on the route from Spain to Italy the trade in slaughter horses becomes uneconomic if full compliance with Regulation (EC) No 1/2005 occurs, particularly with reference to rest, food and watering at control posts.

The current practices appear to cause marked suffering to the animals involved and must be considered inhumane. Horses, whether because of their nature, degree of domestication, size or anatomy, do not appear to tolerate long distance commercial transport as well as other farm animals as identified in the present study by the prevalence of clinical signs of disease and injuries following transport.

MOVING TO A CARCASE-ONLY TRADE

World Horse Welfare's aim to see an end to the long distance transport of live horses to slaughter relies on the existence of an effective network of EU approved slaughterhouses that deal with horses. There is a significant network of slaughterhouses in source, transit and destination countries, however future research is needed to confirm how these plants would deal with a move to slaughter at source (for a summary of slaughterhouse infrastructure see Annex 11). This would inform development of a strategy for setting up abattoirs in source countries in order to encourage a move to a carcase only trade. The following map demonstrates the geographical locations of existing EU approved slaughterhouses that are licensed to slaughter horses.

World Horse Welfare has conducted research to establish the number and positioning of slaughterhouses across the European Union. Our findings confirm that it is entirely feasible for any shipment of horses to reach a slaughterhouse licensed to slaughter horses within twelve hours or less. There is the current anomoly that transporters are driving past a significant number of slaughterhouses with live animals on-board. If the EU was to adopt a policy of short finite journey limits this would assist in reducing the very serious threat of a catastrophic disease outbreak which would have enormous economic consequences for all Member States.

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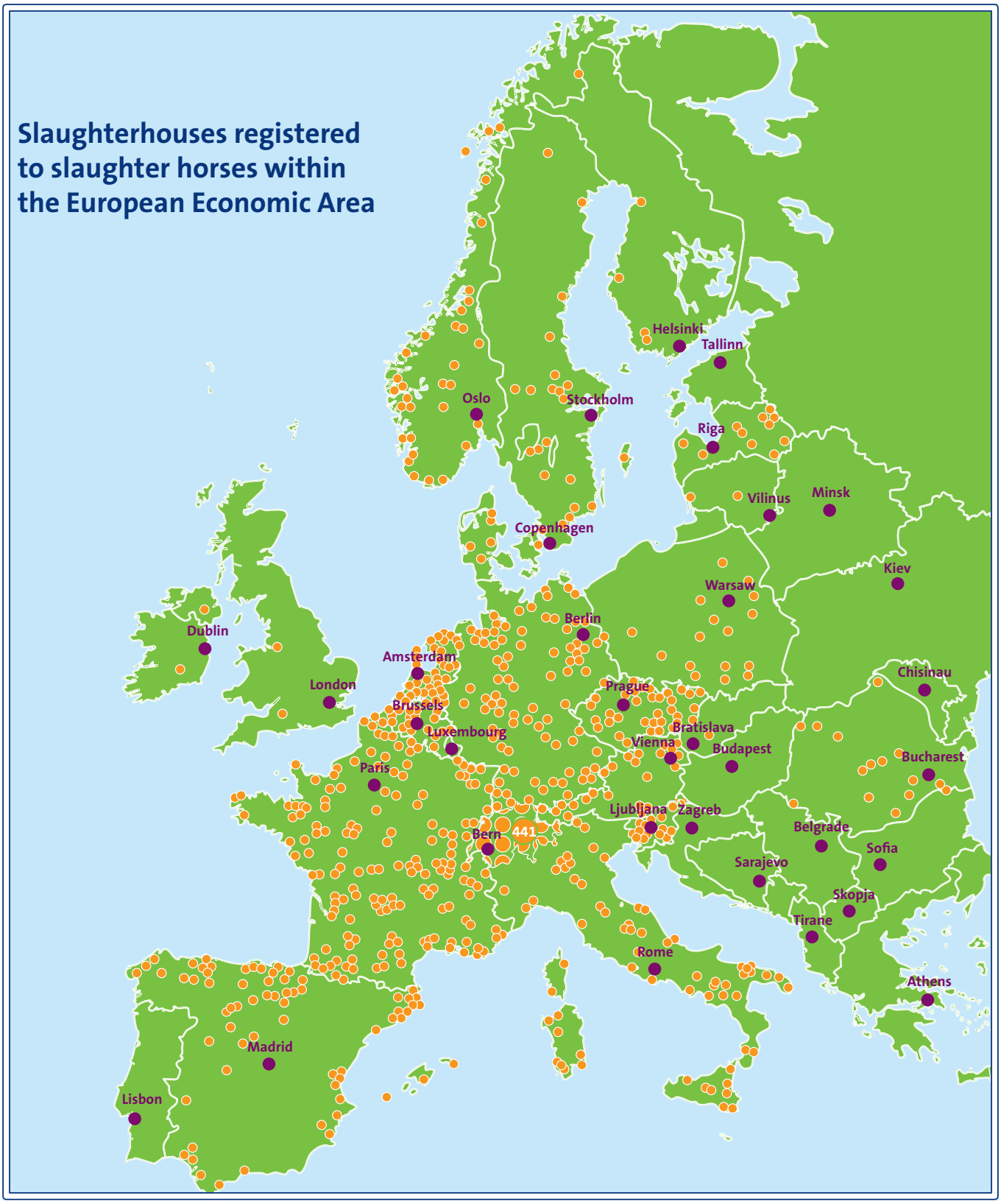

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CONSUMER PREFERENCE AND FOOD LABELLING

Several reports have considered consumer attitudes to animal welfare and food origins, and discuss issues around food labelling. The key points from these are noted below:

- **The Italian consumers surveyed were unaware of the origin of animals destined for slaughter and distribution within Italy.**

- **Knowledge of the place of slaughter is the only fact generally known to the consumer and is felt to represent knowledge of the place of origin by the majority of consumers.**

Lega Anti Vivisezione, Italy, 2008

- **For 72% of citizens of the European Union, identification of production processes appears to never be possible. This will influence their ability to consider animal welfare when making their food purchasing decisions.**

Special Eurobarometer 229 "Attitudes of consumers towards the welfare of farmed animals"
DG Sanco 2005

- **95% of the 3,500 respondents were not satisfied with the current EU regulations that only require country of origin labelling for certain food products such as beef, fruit and vegetables, fish and eggs.**

Transatlantic Consumer Dialogue, March 2008

- **There is a lack of clarity and lack of market transparency regarding the communication of the welfare status of animal foods to European consumers**

- **There is a potential for a win-win situation for producers who commit to the EU's higher welfare standards and for consumers who wish to be able to choose these products. And this is where labelling becomes an important instrument. It is in fact our tool for ensuring proper implementation of animal welfare rules, proper return for those who apply them and an informed choice for the citizen.**

German Ministry for Food, Agriculture and Consumer Protection
"Animal Welfare: Improving by Labelling?" Conference, March 2007

A number of economic and consumer drivers mean that the trade in live horses transported long distances for slaughter, particularly in Italy, is thriving. However reports from Mexico (UNAM, 2008) are that 500 equine carcases per week are being transported from Mexico for consumption in Europe, indicating that consumers are willing to buy meat that has been transported chilled or frozen. The number of horses for slaughter moved from Poland to Italy has decreased and significantly there has been an increase in the amount of horsemeat despatched from Poland to Italy since the accession of Poland in 2004 to the EU (Leckie 2006). Although the number of horses imported live from Eastern Europe appears to have fallen in recent years, these figures should be treated with caution. The trade in live horses transported from Spain has grown. A number of surveys strongly indicate that EU citizens are concerned about the welfare of animals produced for food, and that consumers of horsemeat are unaware that the meat they eat is not locally sourced. Country of origin labelling is advocated as a method of informing consumers of the reality of the source of their food and the welfare and health of the animals produced for meat.

The European Commission has made the consideration of labelling a key element of its Community Action Plan on the Protection and Welfare of Animals 2006-2010, stating:

"The establishment of an EU label for animal welfare is an option to be explored in the near future which could promote products elaborated under high welfare standards thus facilitating the choice of the consumers between products obtained with basic welfare standards (the minimum standards laid down in EU legislation) or with higher standards (contained in voluntary codes of practice or Member States' legislation going beyond EU minimum rules)".

World Horse Welfare believes that there should be specific legislation introduced within the Commission's five year action plan to require equine meat to be labelled in the same way as beef and beef products, where the practice of selling the meat from imported animals as home produced cannot now take place. A Regulation of the European Parliament and the Council adopted in 2000 established a compulsory Community beef labelling system (Regulation (EC) No 1760/2000). The objective of the labelling law is to give maximum transparency to the production and marketing of beef particularly as regards traceability.

Recital 4 of the Regulation makes it clear that one of the purposes of labelling is to "avoid misleading" consumers. Article 13 of the Regulation provides that anyone marketing beef in the Community must indicate on the label:

a) the Member State or third country of birth;

b) all Member States or third countries where fattening took place; and

c) the Member State or third country where slaughter took place.

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PUBLIC AND POLITICAL SUPPORT

World Horse Welfare has been successful in raising awareness and mobilising the general public and politicians in support of the campaign to end the long distance transport of horses to slaughter in Europe. For a full list of Parliamentary Questions tabled and a summary of a recent House of Lords debate regarding the transport of live horses to slaughter see Annex 16, for the World Horse Welfare response to the Parliamentary consultation on Regulation EC1/2005 see Annex 17.

- **Public interest in the campaign has been consistently high, over the past decade which has helped continue to fund the campaign.**

- **The launch of the Make A Noise campaign, designed to further raise awareness and gain support, has resulted in action from existing and new supporters, including: a letter writing campaign; petition; and pledges. The Campaign was voted 'Campaign of the Year' by Horse & Hound readers in December 2007.**

- **World Horse Welfare is currently the fourth most viewed of all not-for-profit organisations on YouTube, above UNICEF and Cancer Research. Of the World Horse Welfare footage featured on YouTube, the transportation material is the most regularly viewed.**

- **The transportation of horses for slaughter update video posted on YouTube in 2007 received over 358,000 viewings.**

- **Since January 2007, 27 Parliamentary Questions relating to the long distance transport of animals to slaughter have been tabled by Members of the European Parliament, Members of the Westminster Parliament and Members of the Scottish Parliament.**

- **A Scottish Motion tabled by John Scott MSP in August 2008 to end the long distance transport of live horses to slaughter in Europe has so far been signed by 43 supportive Members of the Scottish Parliament (correct at date of going to press - 6/11/08).**

- **A recent debate in the House of Lords highlighted the strong support of a number of influential peers.**

- **World Horse Welfare was instrumental in influencing the content of Regulation (EC) No 1/2005, including the recommendation to provide individual partitions to reduce injury to horses and the limitation in the transport of unbroken horses by road and sea. While there have been positive steps towards improving welfare conditions, our findings confirm that current legislation does not go far enough to safeguard welfare and enforcement of current provisions is a serious concern. Therefore, following analysis of the growing body of evidence, some of which has only emerged in the last few months of 2008, World Horse Welfare makes clear unambiguous recommendations for amendment of Regulation (EC) No 1/2005 as well as measures to improve enforcement for consideration during the forthcoming review.**

A significant and very detailed review was undertaken in preparation for the proposed transport regulation by the Scientific Committee on Animal Health and Animal Welfare (SCAHAW) in 2002. A summary of this report can be found at Annex 15, but the main conclusions are as follows:

"Since loading and transport are stressful to animals unaccustomed to them for these animals transport should be avoided wherever possible and journeys should be a short as possible.

Poor welfare in transported animals is caused by the stressful condition which they encounter during loading and transport and also by disease which is exacerbated during transport or transmitted during and as a result of transport.

It has been shown that an increased incidence of disease occurs with increased transport distance or travelling time. Restricting travel time to less than 12 hours should also greatly reduce the probability of a horse experiencing transport related pyrexia or respiratory disease (Oikawa and Kusunose, 1995).

A wide range of measures of physiological responses and increments in disease occurrence show that horse welfare during transport becomes considerably worse after 8 - 12 hours of transport without rest. Horses require food and water more frequently than do ruminants.

Transporting horses for periods greater than 12 hours greatly increases their risk of developing 'shipping fever'."

SCAHAW, 2002

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References:

Austin, S.M., Foreman, J.H. and Hungerford, L.L. (1995) Case-control study of risk factors for development of pleuropneumonia in horses. *Journal of the American Veterinary Medical Association* 207(3): 325-330

Broom, D. (2008) The welfare of livestock during road transport. In: Appleby, MC., Cussen, V., Garcés, L., Lambert, LA. & Turner, J. (Eds) *Long Distance Transport and Welfare of Farm Animals*. CAB International, Wallingford, UK pp157-177

Chiesa, O.A., Cuenca, R., Mayayo, E., Guarro, J., Santamaria, J. and Stchigel, A.M. (2002) Cytological and microbiological findings in guttural pouch lavages of clinically normal horses with head restraint. *Australian Veterinary Journal* 80 (4): 234-238

Clark, D.K., Friend, T.H. and Dellmeier, G. (1993) The effect of orientation during trailer transport on heart rate, cortisol and balance in horses. *Applied Animal Behaviour Science* 38(3-4): 179-189

Collins, M.N., Friend, T.H., Jousan, F.D. and Chen, S.C. (2000) Effects of density on displacement, falls, injuries and orientation during horse transportation. *Applied Animal Behaviour Science* 67(23): 169-179

Cussen, V.A. (2008) Enforcement of Transport Regulations: the EU as Case Study. In: Appleby, M.C., Cussen, V.A., Garcés, L., Lambert, L.A., and Turner, J. (Eds) *Long Distance Transport and Welfare of Farm Animals* CAB International, Wallingford, UK pp 113-136

Davidson, N. & Harris, P. (2002) Nutrition and Welfare. In: Waran, N. (Ed) *The Welfare of Horses*. Kluwer Academic Publishers, Dordrecht, Netherlands

Doherty, O., Booth, M., Waran, N., Salthouse, C. and Cuddeford, D. (1997) Study of the heart rate and energy expenditure of ponies during transport. *Veterinary Record* 141(23): 589-592

European Commission (2003) Communication from the commission to the council and the European Parliament on the protection of animals during transport proposal for a Council Regulation. Brussels: European Commission COM(2003) 425 final/3 presented 5/9/2003

Eurostat (2007) *Eurostat Comext Statistical Database*. [Online] Available at: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,30070682,1090_33076576&_dad+portal&_schema=PORTAL [Accessed August 2008]

Eurostat (2006) *Eurostat Comext Statistical Database*. [Online] Available at: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,30070682,1090_33076576&_dad=portal&_schema=PORTAL [Accessed August 2008]

Fazio, E., Medica, P., Aronica, V., Grasso, L. and Ferlazzo, A. (2008) Circulating beta-endorphin, adrenocorticotrophic hormone and cortisol levels of stallions before and after short road transport: stress effect of different distances. *Acta Veterinaria Scandinavica* 50(1): 6

Foreman, J.H., Hungerford, L.L. and Folz, S.D. (1992) Transport stress-induced pneumonia: a model in young horses. *Equine Infectious Diseases VI: Proceedings of the Sixth International Conference, 7-11 July 1991* p313

Friend, T.H. (2000) Dehydration, stress and water consumption of horses during long-distance commercial transport. *Journal of Animal Science* 78(10): 2568-2580

Geor, R.J. and McCutcheon, L.J. (1998) Hydration effects on physiological strain of horses during exercise-heat stress. *Journal of Applied Physiology* 84(6): 2042-2051

Gibbs, A.E. and Friend, T.H. (1999) Horse preference for orientation during transport and the effect of orientation on balancing ability. *Applied Animal Behaviour Science* 63(1): 1-9

Giovagnoli, G., Marinucci, M.T., Bolla, A. and Borghese, A. (2002) Transport stress in horses: an electromyographic study on balance preservation. *Livestock Production Science* 73(2-3): 247-254

Hobo, S., Kuwano, A. and Oikawa, M. (1995) Respiratory changes in horses during automobile transportation. *Journal of Equine Science* 6: 135-139

Houpt, K.A. and Leib, S. (1993) Horse handling and transport. In: Grandin, T. (Ed.) *Livestock Handling and Transport*. CAB International, Wallingford, UK

Hungerford, L.L., Foreman, J.H., and Folz, S.D. (1992) Risk factors for respiratory disease associated with transport in horses. *Equine Infectious Diseases VI: Proceedings of the Sixth International Conference, 7-11 July 1991* p317

Iacono, C., Friend, T., Keen, H., Martin, T. and Krawczel, P. (2007) Effects of density and water availability on the behaviour, physiology and weight loss of horses during transport. *Journal of Equine Veterinary Science* 27(8): 355-361

Leckie, E. (2002) *The ILPH Transportation Report Update 2006. An International League for the Protection of Horses (ILPH) report on the economics of the trade in horses for slaughter from Spain to Italy and the cost implications of the proper implementation of Regulation (EC) No 1/2005*. World Horse Welfare, Norfolk, UK

Leckie, E. (2006) *The ILPH Transportation Report Update 2006. An International League for the Protection of Horses (ILPH) report on the economics of the trade in horses for slaughter from Spain to Italy and the cost implications of the proper implementation of Regulation (EC) No 1/2005*. World Horse Welfare, Norfolk, UK

Leckie, E. (2007) *An International League for the Protection of Horses (ILPH) Report: The economics of the trade in horses for slaughter from Spain to Italy and the cost implications of the proper implementation of Regulation (EC) No 1/2005.* World Horse Welfare, Norfolk, UK

Marlin, D., Meldrum, K., Kettlewell, P., Heard, C., Parkin, T., Kennedy, M. & Wood, J. (2008) *A scientific epidemiological investigation of the health and welfare of horses transported for slaughter within the European Union.* Unpublished research

Marlin, D. (2008a) Personal communication

Marlin, D. (2008b) *Road transport of horses: a review*. [Literature review] World Horse Welfare, Norfolk, UK

Marlin, D.J., Schroter, R.C., White, S.L., Maykuth, P., Matthesen, G., Mills, P.C., Waran, N. and Harris, P. (2001) Recovery from transport and acclimatisation of competition horses in a hot humid environment. *Equine Veterinary Journal* 33(4): 371-379

Oikawa, M.A. and Kusunose, R. (1995) Some epidemiological aspects of equine respiratory disease associated with transport. *Journal of Equine Science* 6(1): 25-29

Oikawa, M. and Jones, J.H. (2000) Studies of the causes and effects of transport-associated stress and shipping fever in athletic horses. In: Kohn, C.W. (Ed) *Guidelines For Horses Transported By Road and Air* American Horse Shows Association, New York, USA pp35-62

O'Neill, B. (2008) *Federation of Veterinarians of Europe. (Newsletter, October 2008).* [Online] Available at: http://www.fve.org/news/newsletters/2008_4_newsletter.pdf [Accessed 3rd October 2008]

Smith, B.L., Jones, J.H., Carlson, G.P. and Pascoe, J.R. (1994) Body position and direction preferences in horses during road transport. *Equine Veterinary Journal* 26(5): 374-377

Stefancic, I. and Martin, D. (2005) Influence of transport conditions on animal welfare. Proceedings of International Society for Animal Hygiene XII International Congress on Animal Hygiene: Warsaw Influence of transport conditions on animal welfare. *Animals and environment, Volume 2: Proceedings of the XIIth ISAH Congress on Animal Hygiene, Warsaw, Poland, 4-8 September 2005* pp148-152

Stull, C.L., Morrow, J., Aldridge, B.A., Stott, J.L. and McGlone, J.J. (2008) Immuno-physiological responses of horses to a 12-hour rest during 24 hours of road transport. *Veterinary Record* 162(19): 609-614

Stull, C.L. and Rodiek, A.V. (2000) Physiological responses of horses to 24 hours of road transportation using a commercial van during summer conditions. Journal of Animal Science 78(6): 1458-1466

UNAM (2008) Personal communication from the Universidad Nacional Autonoma de Mexico

Waran, N., Leadon, D. and Friend, T. (2002) The effects of transportation on the welfare of horses. In Waran, N. (Ed.) *The Welfare of Horses* Kluwer Academic Publishers, Dordrecht, Netherlands

Waran, N.K., Robertson, V., Cuddeford, D., Kokoszko, A. and Marlin, D.J. (1996) Effects of transporting horses facing either forwards or backwards on their behaviour and heart rate. *Veterinary Record* 139(1): 7-11

WorldHorseWelfare
the new name for the ILPH

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