

Report and Recommendations of a Workshop, Organised by the Humane Slaughter Association, on the Transport of Livestock for Market and Slaughter post FMD

**Held on 24 September 2001 at the British Veterinary Association,
London.**

Background

The foot-and-mouth (FMD) epidemic has prompted calls for, among other things, re-examination of the transport of livestock for marketing and slaughter. The HSA has supported the concept of mobile slaughter halls for many years but, for various reasons, this may not be a viable way forward in the short term. The Government is considering legislating for greater restriction to movements of cattle, sheep and goats (similar to those in place for pigs) as a measure to reduce the risk of spread of infectious diseases. The number of slaughterhouses has been in decline for many years and many producers are unhappy about the distances their animals have to travel for slaughter and it has been suggested that livestock markets may become a thing of the past. The issues are complex. There are calls for change and it is very important that the issues and their welfare consequences are carefully considered. Any legislation introduced should be based on a proper understanding of the problems and of what can, in practice, be achieved. The aim of this workshop was to bring together persons with expertise in relevant facets of the livestock production and transport industry, to discuss the way ahead, to try to formulate proposals and advice for Government and industry.

The 2001 FMD outbreak and DEFRA's proposal for livestock movement controls in the future

Foot-and-mouth was diagnosed on 20th February. Subsequent investigations suggested that infection may have been introduced 18 days earlier. There was dissemination during this time through, it is thought, wind-borne spread to cattle and sheep near the initial focus, and via animals, humans and vehicles. Patterns of transport and marketing of sheep facilitated rapid, widespread dissemination. By 5th March MAFF was tracing the movements of >100,000 sheep.

In March MAFF consulted on proposals for regulations that would reduce the risk of such rapid spread of infectious disease in future by limiting livestock movements. One proposal was for a '20-day rule' that would ban the movement of cattle, sheep and goats from a premises for 20 days after the arrival of new animals.

A number of sectors of the livestock industry pointed to problems that such regulation would raise. DEFRA has put the matter on hold for a time since the greater immediate priority is stamping out the remaining foci of infection.

The current view held by DEFRA is that such a standstill (ideally for 21 days), whilst not expected to be 100% effective, would retard the spread of infectious disease.

Some factors driving livestock movements in the UK

Sheep farming is an extensive industry dependent on grass growth. In contrast to pig and poultry farming, the animals have to be moved to the food rather than vice versa. Regional variation in the grass growing season is a factor that drives many movements. As output has been focused on supermarkets, and as abattoir numbers have declined, movements for slaughter have tended to become longer.

The sale of sheep at auction markets is favoured by many producers as a means of obtaining a fair price for their animals. Animals may, on occasion, be withdrawn from markets (because they are unsold or because of low prices) and returned later, or taken to other markets in pursuit of better prices.

The premium scheme encourages unnecessary sheep movements. This drives many sheep movements during February, with animals being bought in both from markets and farms to make up quota numbers .

As is the case for sheep, regional patterns of food availability drive movements of cattle reared for beef. Another 'driver' is the need for bull calves from dairy herds to be moved for rearing to 12 weeks and then again for post-weaning growth. Typically calves 'trickle' in to rearing systems but leave in batches at around 12 weeks.

Livestock Markets

There are some 230 markets in England, Wales and Scotland, and over £1000 million of livestock is sold through these each year. Since the outbreak of FMD all have been closed. It seems likely that most will re-open but numbers may decline as a consequence of changes in the industry. Fewer markets would mean longer distances to market.

The Livestock Auctioneers' Association (LAA) believes that there should be tighter controls on traceability. Recording of all animals entering and leaving markets would assist this.

The LAA also believes that there should be no re-marketing of animals through livestock markets within 21 days.

Welfare impact of movement controls

The ways in which constraints to livestock movements can potentially cause welfare problems can be categorized under three headings. (i) Feeding. Store cattle and sheep have to be moved to where forage is available. If the animals cannot be moved there needs to be provision to supply the animals with conserved forage and this may not always be possible. (ii) Accommodation. Overstocking can develop rapidly if movements are restricted since the industry mostly operates the 'just-in-time' principle and has little spare capacity for accommodation. (iii) Provision of care. Movement restrictions can block moves for veterinary or management procedures such as dipping, shearing, and lambing.

Opinions differ as to the extent to which the welfare problems that might follow the imposition of permanent movement restrictions could be satisfactorily resolved by allowing for movements under licence. Opinions also differ as to the extent to which it would be possible for the industry to build in the capacities necessary to be able to cope with the potential problems listed above if a 21-day rule was imposed. Some have emphasized that there is no financial capacity in the industry.

Other impacts of a 21-day rule

The economic impacts are not yet known. If the idea moves forward, DEFRA will undertake a regulatory impact assessment as part of the consultation process.

The 'epidemiological unit' on to which, and from which, animal movements would be regulated by a 21-day rule have not yet been defined in detail by DEFRA. Clearly these would need to take account of the epidemiology of the various infectious diseases that the measures will be designed to control. Where stock are in fence-line contact between farms, there would be little logic in the farm being the unit.

Is there a middle way? Are there alternatives?

Measures suggested as possible means of reducing risk of infectious disease transmission, but which would be easier for the industry to meet than a blanket 21-day rule include:

- control of unnecessary movements;
- improving traceability;
- banning the moving of the incoming animal itself from the epidemiological unit for 21 days, whilst allowing other animals to be moved off. However, unless incoming animals could be kept in extremely strict biological isolation (which would be almost impossible to achieve in practice) this would be futile as it would not prevent spread of diseases as infectious as FMD.

It has been suggested by some that an alternative and better approach would be to focus on preventing entry of infectious diseases into the country. However, whilst the importance of efforts to prevent introduction of disease cannot be over-emphasised, at best these can only reduce, not eliminate, the risk. Increasing global travel results in an ever-present and increasing infectious disease threat. Biosecurity measures should be maintained at as high a standard as can practically be achieved within the country also.

It has also been suggested that, as long as any system to restrict movements could be flouted, it would be a complete waste of time to put it in place. This does not seem a sound argument. However, any system would have to be workable and enforceable.

Feasibility of the mobile slaughter unit concept

The attraction of the mobile slaughter unit concept - taking the abattoir to the animal rather than vice versa - is its potential for welfare-friendly local slaughter. Does this idea offer the real prospect of avoiding or minimising any adverse impact of transport?

During 2000, with support from MAFF and the HSA, Humane Slaughter Services Ltd commissioned the MLC to undertake a study of the feasibility of the MSU concept. The feasibility study indicated that it may be possible for an MSU to process sufficient stock for economic viability providing it ran at high capacity (double-shifts) and moved between about 6-8 base-stations to each of which stock from local farms would be brought. However, capital costs would be high. The unit would be likely to cost about £700k and base stations would be likely to cost about £75k each on average. Total cost is likely to be some £1.3 million and it would be difficult to launch such a scheme without some substantial grant aid.

Another difficulty that would need to be overcome is organizing the logistics of operation with a large cooperative network of farms, centered around each of the 8 or so base stations, particularly in view of peaks and troughs in seasonal demand. Because, in order to provide sufficient throughput, animals would have to be transported to the base-stations, the MSU would not offer a way to avoid animal transport completely, and distances might still be quite considerable.

Journey times and welfare

Setting precise limits on journey times for sheep is difficult (other than arbitrarily) because the results of research do not point to a time after which welfare is measurably worse. Cortisol response does not increase with journey time. During road transport, sheep can lie down and may be able to obtain physical rest whilst travelling. Furthermore, motivation to eat may not be clearly related to time since last fed and it is hard to define a time after which they should be allowed to eat and/or drink again. At UK temperatures,

sheep show no physiological signs of dehydration for at least 24 hours of transport and they tend to choose to eat rather than drink after transport. At present the law sets a limit of 8 hours unless specified additional provisions have been met. Where journey times are longer, the law requires an hour's break after 14 hours. This is to provide rest but there is no scientific evidence that it does provide rest of more or better quality than sheep are able to get during the journey. Stops may not be without potential welfare costs through increasing total journey time, stress through disruption, and potential for injury, infection and stress from novel environments.

Transport often follows soon after other potentially-stressful events such as shearing. Research has focused on transport alone and on fit animals transported under good conditions, little is known about the welfare during transport of cull animals or of the effects of genotype. Undoubtedly, a great deal depends upon the level of stockmanship and on the professionalism of the driver. There is some agreement amongst welfare scientists and others in the industry that journey quality is more important than journey length (distance and duration).

Unweaned calves may be at particular risk to stresses of transport because they are vulnerable to infections, need special feeding arrangements, and have immature thermoregulatory abilities. There is evidence which suggests that mortality in calves which have been transported may be greater than in those which have not, but the effects of potentially confounding variables are hard to control in such comparisons. Health problems in calves associated with transport may not be apparent immediately after the transport.

The law (the rules are established by EU Directives 91/628/EEC, 95/29/EEC and associated Council Regulations) prohibits transport of cattle for more than 8 hours unless specified additional provisions have been made for their care during transport. In these circumstances unweaned calves may be transported for 9 hours and adult cattle may be transported for 14 hours but must then have a 1 hour break before being transported further. Is the 1 hour lairage period appropriate? Not all drink at this time, it is difficult to feed them, and observations indicate that they do not rest. Is the maximum journey time of 28 hours (with a one hour break after 14 hours) too long for cattle? In contrast to sheep, cattle stay standing during transport. If they lie down they are at risk from trauma from others. After 15-20 hours road transport scientific evidence suggests that they start lying down which suggests that they have a need for rest. In other parts of the world cattle are transported on very long journeys but detailed studies on welfare in these cases is lacking.

What matter greatly are transport conditions (including pre-transport handling, characteristics of the vehicle, stocking density, and driver's ability), rather than transport per se. Development of better in-cab monitoring facilities will provide extra safeguards (at present, no hygrometers robust enough to withstand regular cleaning and disinfection are available). It would be easier to police the travel times of animals if limits were tied in with driver hours as these are monitored by the vehicle's tachometer.

Lamb journey structures and welfare

The structures of journeys by which lambs travel to slaughter vary greatly. At simplest they are direct farm to abattoir, but often they involve stops at a number of markets and farms en route. Longer journeys tend also to be the more complex, in terms of number of stops.

When animals are sold through electronic auctions, they are often widely scattered, making it hard to pick them up in one day. Pick-ups from a series of farms are likely to carry a biosecurity risk to all but the first farm.

Conclusions

It was hoped that, in the course of the workshop, it would be possible to address and hopefully to find some shared views on the four important questions listed below. The workshop did indeed prove helpful in this regard.

Does journey length (within limits) significantly affect welfare? There was some consensus that, providing transport conditions are good, increasing transport distance or journey time, within reason, does not impose an extra welfare burden. It is very hard to find a clear scientific basis for limits, for animal welfare reasons, to journey times of less than 24 hours in sheep and less than 15-20 hours in cattle (the situation is different for unweaned cattle) when transport conditions are good.

What constraints might be imposed on livestock movements in future? The current view held by DEFRA is that a 21-day rule, whilst not expected to be 100% effective, would retard the spread of infectious disease. It is understood that proposals for some such constraint are on hold pending the elimination of FMD but that the matter will receive attention soon. A number of related issues remain to be fully-explored including the definition of 'epidemiological units' to which the rule would apply, the financial implications of such a rule, and the development of robust systems of identification and enforcement.

What specific welfare problems might arise through imposition of these constraints? The constraints to livestock movements can lead to serious welfare problems associated with feeding, accommodation, and provision of care. Whilst in theory there are ways to plan for and overcome these problems, the practicalities and costs would pose significant difficulties.

What might be the role of mobile slaughter units in the future? The capital costs of establishing an MSU would be considerable and initial grant aid would be required. To have a chance of economic viability, a unit would have to operate from a network of about 8 base stations, each of which would need to be supplied from a network of surrounding farms. It does not offer a way of avoiding animal transport entirely and, in view of current views about welfare and transport distance, may be hard to justify on welfare grounds alone (although there may be environmental benefits).

Recommendations

Biosecurity

- Measures to prevent introduction of infectious disease into UK livestock populations should be enforced rigorously.
- There appears to be less public awareness in the UK of the risks of accidental introduction of infectious disease than in, for example, Australia and New Zealand, and government and industry should work to improve this situation.
- The industry should be aware of the disease risks inherent in animal movements, should avoid making unnecessary movements and should observe careful biosecurity measures at all times.
- The government should review the premium scheme as it drives sheep movements that are unnecessary except for qualifying for subsidies.
- Animals passing through markets should not be allowed to do so again within a defined period (perhaps 21 days, but the duration of which should reflect current knowledge of the epidemiology of the major infectious threats). For this, and other reasons, there should be tighter controls on traceability.
- The government and industry should consider the duration of the proposed movement restriction period and whether there is a case for this varying between species and with other factors.
- The government should publish detailed proposals on the definition of the epidemiological units to which movement control regulations would apply. Without this, and knowledge of the duration of the movement restriction period(s), the impact of imposing such a rule cannot be judged.
- The government and industry should explore the economic impact of movement restriction regulations.
- The government should, in consultation with industry, develop proposals about the ways in which exemptions to movements would be allowed under license to address special circumstances.

Sheep and cattle transport

- For stock that are fit to be transported and where transport standards are good, the quality of transport and of pre-transport handling is more important to welfare than distance travelled or journey times (within limits). Government and industry could do more to educate the public and industry about this and to keep the welfare focus on journey quality. (Other considerations, eg environmental, may argue for keeping journeys from point of production to slaughter as short as possible and this would benefit welfare if transport standards were poor.)
- Government should continue to encourage development and uptake of technical improvements (such as in-cab monitoring) and welfare safeguards.
- Other potential stresses should, as far as possible, be avoided prior to transport.

- Complex journeys involving multiple picking up points may put welfare and biosecurity at greater risk than simpler ones, so should be avoided if possible.
- Little is known about the welfare of cull animals during transport and the Government should consider commissioning research in this area.

Participants

Chairman: Professor Mac Johnston, Royal Veterinary College and Vice-President HSA

- Mr John Avizienius, Farm Animals Department, RSPCA
- Mr David Brown, Secretary, Livestock Auctioneers Association
- Dr Michael Cockram, University of Edinburgh Animal Welfare Research Group, Roslin BioCentre
- Dr John Eddison, Department of Agriculture and Food Studies, University of Plymouth
- Professor Stephen Hall, Lincolnshire School of Agriculture, University of Lincoln
- Mr Eddie Harper, Road Haulage Association
- Dr James Kirkwood, Chief Executive/Scientific Director, HSA
- Dr Toby Knowles, Department of Food Animal, Science Bristol
- Mr Fred Landeg, Head of Exotic Diseases, DEFRA
- Mr Julian Earl, Sheep Veterinary Society,
- Dr Judy MacArthur-Clark, Chair, Farm Animal Welfare Council
- Mr Charles Mason, Technical Director, HSA
- Mr John Matts, Sheep Farmer and Vice-Chairman, Moredun Foundation
- Mr Tim Miles, Veterinary Manager, MLC
- Dr Karen Murray, Department of Agriculture and Food Studies, University of Plymouth
- Dr Paul Warriss, Department of Food Animal Science, Bristol University
- Mr Pat Oakley, Humane Slaughter Services Ltd, Wiltshire
- Mr Rob Paul, Chair, Welfare Committee, British Cattle Veterinary Association
- Mr David Pritchard, Head of Animal Welfare Veterinary Team, DEFRA
- Mr Peter Scott, Secretary, British Meat Federation
- Mr John Thorley, National Sheep Association

