Advice to Ministers on the Handling and Transport of Poultry

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I have pleasure in submitting the Council's Report on the handling and transport of poultry.

The latest Report covers the period from collection of birds on the farm, and during transport, to shackling at the place of slaughter, concentrating on end-of-lay hens and broiler chickens. It follows up our poultry slaughter Report which stated that the welfare of the birds during slaughter is closely linked to their treatment and handling during collection and loading at farms, and during transport to the place of slaughter.

The Report offers advice which I believe will be of benefit in negotiations on the EC Regulation on the protection of animals during transport, including poultry. The Report also makes a number of important recommendations for research and I urge that these will be carefully considered, along with those that call for legislative or other changes.

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ADVICE TO MINISTERS ON THE HANDLING AND TRANSPORT OF POULTRY

Introduction

1. When the Farm Animal Welfare Council carried out its review of the welfare of poultry at the time of slaughter in 1980/81, it considered certain aspects which were relevant to the transport of poultry. This review culminated in its Report on the Welfare of Poultry at the Time of Slaughter. More recently, the Council has considered the Welfare of Poultry (Transport) Order 1988, and was aware that the European Community would be proposing a Regulation on the protection of animals (including poultry) during transport and that the Council of Europe was to prepare a code of conduct on the international transport of poultry. The Council was aware of concern over end-of-lay hens, which can often be transported long distances to slaughter, and particularly over the number of broken bones found in hens immediately prior to slaughter. It agreed, therefore, that a working group should consider the handling and transport of poultry, concentrating on broiler chickens and end-of-lay hens. This was not to be a full-scale review involving the invitation of comments from interested organisations since the Council's aim was to make recommendations to Ministers in time for them to be taken into account during EC and Council of Europe discussions.
Current national legislation

2. The Welfare of Poultry (Transport) Order 1988 (as amended) which applies throughout Great Britain, contains provisions relating to the welfare of poultry during transport by road, rail, air and water. The Order prohibits the transport, loading and unloading of poultry in a manner which is likely to cause injury or unnecessary suffering. It also imposes certain responsibilities on any person in charge of poultry. These include the provision of shelter from the weather, an adequate supply of fresh air and the provision of suitable food and water.

European legislation - current and proposed

3. In 1968, the Council of Europe agreed a European Convention on the Protection of Animals During International Transport. The committee of experts which drew up the Convention concentrated primarily on the main farm livestock species (cattle, sheep, pigs and goats) plus horses. Certain general provisions were related to poultry and some specific measures were formulated for "domestic birds and domestic rabbits". Much more recently, the Council of Europe has attempted to produce guidance for transporting poultry. We have seen drafts of a code of practice which, whilst it applies to international transport, could also be deemed appropriate for journeys within national boundaries. We made our comments direct to officials of the Ministry of Agriculture, Fisheries and Food (MAFF) who would attend discussions in Strasbourg. These concerns are reflected later in the report.

4. The European Convention was embodied in an EEC Directive 77/489 on the protection of animals during international transport. However, the EC Commission has now formally proposed a Regulation which would replace the Directive and would cover not only international journeys but all transport within the Community. As a Regulation it would apply directly in all member states. In this country it would replace The Welfare of Poultry (Transport) Order.

5. This report discusses the European implications further at paragraphs 31 to 33, 36 and 37.
Depleting and loading

Broilers

6. The common procedure in the poultry industry is for pullets to be reared at the company's hatchery units and transferred to its own farms or to contract rearers to be reared as broilers, with the aim of ensuring a regular supply of birds to processing plants. Broilers are normally slaughtered at about seven weeks but some are reared to ten weeks. In Great Britain, broiler houses are depleted by means of the birds being caught manually by teams of catchers. The procedure causes stress for the birds and can result in injury to them.

7. Over the years the method of transporting broilers has been developed from loose crates to fixed crate systems to crate module systems. In the Council's Report in 1982 on the Welfare of Poultry at the Time of Slaughter these were discussed in detail.

8. Also briefly mentioned was a further development of the modular system in which each crate within the module was mounted on runners and became a drawer which could be pulled out, enabling the birds to be loaded and unloaded through the open top of the drawer. Since 1982, development of the drawer-type modular system has continued and is now used increasingly by the broiler industry in Great Britain. Mechanical harvester systems using modules have also been developed recently. They are in use outside the United Kingdom.

Modular Systems

9. One type of module is built in units of twelve containers, each container being effectively an open-topped drawer. This is illustrated in Appendix 1. The modules are brought into the broiler house by fork-lift truck and set down close to the birds to be collected. Teams of catchers collect the birds - usually three or four in each hand - and place them in the drawers. When the first lot of birds has been placed in the drawer, the catcher sometimes jerks it with a brisk movement to propel the birds towards the rear. Birds subsequently loaded are often pushed down by the catcher to settle
them more quickly before closing the drawer. However, advantages of this module are that the birds do not have to be carried more than a few yards before being put into the drawers and the drawers are open-topped allowing for relatively easy loading and unloading.

10. Members of the working group saw a harvesting machine in operation in the Netherlands. The modules used in this system can also be loaded by hand and the group saw this in action. The module consists of five containers. Each of the four upper containers can be tilted upwards from the one below allowing the catcher about 14 inches clearance to load the birds into the container underneath. The tilting module has all the advantages of the drawer-type system described above but we believe that the tilting facility to allow ample clearance for birds to be loaded is a valuable additional feature, as it enables good distribution in each container, without the need to push or otherwise force the birds into the rear of the container. This type of module is illustrated in Appendix 1.

Mechanical harvesting systems

11. We consider the harvester seen in operation in the Netherlands to be impressive. As it is driven forward, it employs rotating soft foam-rubber paddles at the front assisted by outrider paddles to guide the chickens onto an inclined conveyor which carries them up to a horizontal weighing conveyor. When this is full (ie, when the weight of the birds on it has reached a set limit), the birds are transferred to one of five stack conveyors. When all five have been loaded, these move the chickens automatically into the module containers at the rear of the machine and are withdrawn leaving the chickens in the module containers, ready to be taken away by fork-lift truck and loaded on the transporter.

12. The harvesting of chickens using this machine was considered to be a gentle process and a big improvement on hand-catching. A most important welfare advantage was the absence of human handling until the birds were placed on shackles at the processing plant. Another very valuable benefit was the fact that the machine was pre-programmed to load a specified total weight of chickens into each container, therefore giving control of the maximum numbers to be loaded.
13. We see the harvester system as offering the opportunity for further welfare benefits through automatic loading and recommend the Government and the poultry industry to actively examine ways of encouraging the introduction into the United Kingdom of harvesters of the type described above. We recognise that this cannot be done without changes to the interior design of poultry houses. In particular, we commend the use of fully-integrated harvester and module systems because we believe they offer very important welfare advantages.

14. The working group also saw being unloaded at processing plants the two types of module described in paragraphs 9 and 10. Both are designed so that, when destacked from the module, each container is open-topped. Modules are off-loaded from the transporter to conveyors by fork-lift truck. Containers are withdrawn automatically from the module and moved on a conveyor to the shackling point where the chickens are removed from them and placed on shackles. (See also paragraphs 40 to 43: Unloading and Shackling)

End-of-lay hens

15. The majority of laying hens are kept in battery cages in individual houses which can hold up to 30,000 birds. Each cage normally holds up to five birds and the cages are usually arranged in three tiers on both sides of several aisles down the house. End-of-lay hens are culled towards the end of their laying life, usually between 72 and 76 weeks of age. Whilst each bird is worth comparatively little, their total numbers and the demand for their meat for manufacturing purposes are such that the value of the industry runs into millions of pounds. There are only about six major processing plants in the country which regularly take end-of-lay hens.

16. When cages are being emptied, the birds are removed from them by teams of catchers. Catching teams are arranged such that the birds have to be passed from hand to hand twice, or more when working in the areas furthest away from the loading operation.
17. A research project has been carried out by the Agricultural and Food Research Council at Bristol on broken bones in end-of-lay hens. Its aim was to determine the principal factors which cause broken bones, from when the hens are collected from farms to when they leave the chiller in the processing plant. Results revealed that, on average, 29% of live birds sampled arrived at the stunner with bones broken. There was a wide variation between farms in the incidence of hens with breakages at this stage from which the research workers concluded that there must be certain husbandry and handling procedures that were particularly likely to lead to weak and broken bones. It was also noted that some of the damage was inflicted when birds were being removed from the cage and carried to the crates. At that stage, from a more limited sample it was found that about 24% of birds sampled had broken bones (see paragraph 22). The Council is aware that research is being done on genetic factors, nutrition and exercise, all of which are believed to influence the incidence of broken bones in end-of-lay hens. The Council recommends that this research should be encouraged and that when the results are available, they should be carefully considered by the Government in order to establish what action should be taken (see paragraph 51).

Joint Industry Welfare Code

18. We are pleased that the British Poultry Federation, in conjunction with the National Farmers' Union, have prepared a welfare guide to the handling of end-of-lay hens. We hope that this guide will be widely distributed and followed throughout the industry. Some of the recommendations which follow are to be found in the guide.

19. So that the greatest benefit can be gained from the guide, we recommend that the industry should be encouraged by the Government to ensure the

(a) training of catchers in the provisions of the guide;

(b) close supervision of catching teams by experienced staff; and

(c) monitoring by management of adherence to the guide.
A similar guide should be issued for other types of poultry.

Cage designs

20. Earlier this year, the Ministry of Agriculture, Fisheries and Food consulted interested organisations with proposals about battery cage openings, the cage height rule and the width of aisles in battery houses. The document drew attention to evidence that the design of the cage opening was a contributory factor in causing broken bones when birds were removed from cages. The proposal would require all new or reconstructed cages to have fully-opening fronts. There would be a further requirement that there should not be any projection round the edge of the opening. It was also proposed to require, for new installations, a minimum width of aisle of 1 metre at and above a height of 70 cm from the floor in order to facilitate removal of birds from the lower tier of batteries. Whilst battery cages continue, the Council agrees with the amendments suggested in the Ministry's consultation document.

21. Good cage design, in particular good design of openings or doors, is vital in reducing injuries. There is wide variation in the size of openings in cages. We recommend that cage manufacturers be encouraged by the Government to give high priority to easy access and removal of birds (including the provision of fully-opening cage fronts) when designing cages or, preferably, alternatives to cage systems. We further recommend that where the cage door is hinged it should be hinged at the bottom.

Removal from cages and carrying

22. We are concerned to find that untrained staff are employed in catching teams because we believe that injuries can be caused by ignorance when handling live birds. At one stage of the research we referred to in paragraph 17, non-commercial depopulation was compared to commercial depopulation. This demonstrated that, where birds were removed individually from their cages (non-commercial depopulation), 14% on average had broken bones at this stage whereas commercial depopulation (which normally involved three birds being carried in one hand and four in the other) resulted in 24% with broken bones. We recommend, therefore, that the Government encourage the industry to ensure that
a. birds are removed from cages singly; (see paragraph 23)

b. extreme care is taken to avoid damage to birds during removal from cages;

c. not more than six birds are held or carried at any one time, three in each hand.

23. Ideally we would prefer that birds be held or carried individually and rested on the forearm, with the other hand holding their legs. We recognise, however, that with the scale of battery hen production, depopulation must be undertaken as quickly and humanely as possible and that in most cases birds will be held and carried upside down. We agree, however, with the researchers that careful handling could help minimise injuries. We recommend that, when birds are being held or carried head downwards, they should be held or carried by both legs.

24. The Joint Industry Welfare Guide (cf. paragraph 18) recommends the use of a breast support slide to facilitate smooth removal of birds from cages. We endorse this recommendation and hope that the industry will use this method.

25. The Group did not witness the depopulation of perchery and free-range hens but recognises that there would be welfare problems in these areas.

Handling of other birds

26. We understand that the mechanical harvesting and physical handling of turkeys are also being examined. We consider that this development should be encouraged.

Birds in transit

27. The loading system used must take account of ease of access for the operator, the management system employed and the size and type of birds. Whatever type of receptacle is used - loose crate, fixed crate
or crate module - it is important that birds are protected from the
elements during loading, transit and unloading, and during the period
they remain in the crates while waiting to be slaughtered.

Journey time and feeding and watering

End-of-lay hens

28. It has been pointed out that food, but not water, should be
withheld from birds for some hours before being collected where
carrying is by the legs with head hanging downwards. Nevertheless, we
are aware of one firm's internal code which indicates that food should
be available to battery cage birds until their removal from the cage.
We tend to support this advice especially as the lighting in battery,
and indeed other, houses should be subdued shortly before and during
depopulation. We recommend that procedures must allow birds to have
water and access to some food up to the time loading begins.

29. We consider that it is not practicable to unload and feed and
water birds in commercial consignments during journeys. This
underlines the importance of planning the journey to take account of
the need for feeding and watering birds. Liaison between the
producer, haulier and processor on the times of collection and arrival
is an important factor in reducing the length of the journey. The
journey should be arranged so as to avoid delays during transit and on
arrival at the processing plant.

30. In its Report on the Welfare of Poultry at the Time of Slaughter,
the Council recommended that the period between loading the first bird
of a consignment into a crate until the last one was unloaded at the
processing plant should be limited by law to 12 hours. This
recommendation was not taken up by the Government.

31. In recognition that the loading and unloading of crates and other
containers can take some time we are prepared to revise the Council's
1982 position and now recommend that the EC Regulation should permit
no longer than 15 hours between the loading of the first bird and the
unloading of the last from the receptacles.
32. This appears to go along with the European Convention on the Protection of Animals During International Transport and Directive 77/489 which state that, for "domestic birds":

"Suitable food and, if necessary, water shall be available in adequate quantities, save in the case of:

(i) a journey lasting less than 12 hours;

(ii) a journey lasting less than 24 hours for chicks of all species, provided it is completed within 72 hours after hatching".

The EC Commission has proposed to retain this provision in the Regulation. Neither the Convention nor the Directive define what constitutes a "journey", which could, therefore, be regarded as the time spent travelling.

33. Whatever the progress of the proposed EC legislation, we recommend the Government to consider introducing regulations that

a. birds should not be left in crates or on vehicles overnight; and

b. vehicles carrying birds should not be left stationary for a long period since ventilation is an important aspect of welfare during transport.

Furthermore, if the temperature is likely to be high, we recommend the Government to encourage the industry to adopt such practices as transporting the birds at night and slaughtering them early in the morning.

Broilers

34. All the above recommendations are applicable to broilers although there are, of course, two aspects specific to broilers which need to be borne in mind. The industry is organised so that travelling times to the processing plants need rarely last longer than a few hours. In some systems, the feeding and drinking troughs have to be removed from
the floor of the broiler house before depletion begins, so it is inevitable in these that food and water cannot be available immediately before loading.

**Alternatives to transporting birds to be slaughtered**

35. The group was aware that, with the exception of certain restricted sales of poultry meat by those who keep live poultry and normally slaughter them on a small scale, poultry meat intended for sale for human consumption must be prepared in accordance with the Poultry Meat (Hygiene) Regulations 1976. These require that poultry must be slaughtered in a licensed slaughterhouse, plucked immediately after slaughter and eviscerated immediately after plucking. It follows from this that it is not permissible, on hygiene grounds, to slaughter poultry on site and then transport the carcases to a plant for processing for human consumption.

**Injured or ill birds**

36. Both the 1968 European Convention and the 1977 EC Directive, which relate to international transport, contain a provision which has not been carried through into the proposed EC Regulation. This requires that any domestic birds or rabbits which "become ill or injured shall receive first aid treatment as soon as possible and if necessary be submitted to veterinary examination". We agree that this point can be deleted since it is difficult, if not impossible, to take any action when individual birds in commercial loads become ill or injured during the journey. **We recommend that the industry ensures that birds which are visibly unfit before loading should not be transported but killed as quickly as possible using approved humane slaughter methods.**

**Falling droppings**

37. Another provision not being carried through into the proposed EC Regulation states that "when [birds or rabbits] are loaded in containers one placed on top of another ... the necessary precautions shall be taken to avoid droppings falling on the [birds or rabbits]
placed underneath." We can see that it is undesirable to have bird droppings falling on the birds below but there can be adverse effects on the flow of ventilation where solid-floored containers are used, especially in warm conditions. Birds can also become soiled on longer journeys. Therefore, we agree on balance with the European Commission's proposal to delete the falling droppings provision, although a transport system which could both reduce falling droppings but allow ease of ventilation and cleanliness of the birds would be welcomed.

Ventilation

38. Ventilation is clearly important and must be considered carefully in determining the necessary protection of the birds against inclement weather conditions. In particular, they must also be kept out of hot sun. The stocking density of the crates should be judged against the prevailing and likely weather conditions. It would be ideal if there could be access to the birds to inspect them during the journey but this is not practicable with modular or stacked crate systems. Nevertheless, during long journeys, the driver should inspect the outside of the load for indications of any problems. We recommend that vehicle designers give consideration to the practicality of having a vertical space down the centre of the load as this would assist ventilation in the load.

Training of drivers

39. Training of drivers handling poultry is essential. We recommend, therefore, that the industry be encouraged to implement training schemes with special attention given to the following: avoiding sudden braking; avoiding driving at high speeds over uneven surfaces; attending to any causes of avoidable noise, especially rattling; and, most important, advice on care for the birds in the event of unforeseen problems.

Unloading and shackling

40. Unloading should be carried out as soon as possible on arrival at
the processing plant. Where there is a delay in unloading, vehicles should not be left unattended or stationary for lengthy periods unless suitable facilities exist for providing ventilation.

41. We note that no action has been taken yet on recommendation in paragraph 95(i) of Part III of the Council's Report on the Welfare of Livestock when Slaughtered by Religious Methods. Therefore, we reiterate our recommendation to the Government that once birds have arrived at the premises at which they are to be slaughtered, it shall be an offence for any birds which are not considered suitable to be moved to other premises for slaughter.

42. The research into broken bones referred to earlier indicated that removing hens from the transport crates and hanging them on shackles resulted in a sharp increase in the incidence of broken bones. It is of grave concern to us that hens should be subjected to such pain and distress which this sharp increase in breakages must surely be causing so many of them during their final minutes alive. While it remains necessary for birds to be shackled in order to be stunned and killed, we recommend that shackling teams are

(a) made fully aware of the increase in breakages that the hanging-on procedure causes to hens, and possibly to broilers;

(b) thoroughly trained to handle the birds in a way that will minimise the incidence of breakages; and

(c) thoroughly supervised by a trained person during the shackling process to ensure that the birds are handled in a way that will minimise the incidence of breakages.

Gassing as an alternative to shackling and electrical stunning

43. We understand from the research into broken bones in hens that stunning causes further sharp increases in the number of hens with
broken bones and in the average number per hen. We have considered
the feasibility of death by gassing for birds while still in their
transit crates in order to obviate the need to shackle and stun them.
We know that research is continuing in this area and recommend that
it be encouraged and the results considered carefully by Government
and the industry. (see paragraph 51).

Research findings

44. We have already discussed the work of Gregory and Wilkins (1989)
in paragraphs 17, 22 and 41. The following is a summary of other
research.

45. Cashman et al (1989) state that the welfare of live poultry in
transit is cause for much concern. They suggest that welfare may be
adversely affected by a variety of stressors associated with
transport, including climatic variations, deprivation of food and
water, loud noises, sudden movements, vibration, social disruption and
crowding.

46. Cashman et al (1989) showed that tonic immobility, as a measure
of fear, increased significantly with journey time and indicated
relatively high overall fear levels in broilers being transported.

47. Broom and Knowles (1989) state that the procedures used to handle
and transport spent hens result in welfare problems for the birds
which are often very severe. They suggest that much research is
needed using a wide range of indicators to assess welfare and to
design housing systems, handling methods and transport procedures
which do not result in poor welfare.

48. Duncan (1989) in his work on catching and transport stress in
broilers carried out a series of experiments by simulating the
catching and crating processes in the laboratory, with a view to
identifying the most stressful components and particularly those
perceived through the higher senses. The additivity of these effects
was also studied. He concluded that manual catching and restraining
was the most stressful component and this was less distressing if done
quickly, and preferably in the dark. Use of a moving belt was less stressful than carrying birds over the same distance in spite of double handling.

49. Further work is continuing to establish laboratory modelling of the transport environment with emphasis initially on simulation of crate packing and transportation. A wide range of both physiological and biochemical responses could be studied under these conditions. Monitoring of heart rate was possible on a limited scale and a feasible range of metabolic indices of "stress" which could be studied at the end of a journey, has been devised.

50. Equipment is being developed to record the effects of acceleration on animals in transit. This is now being used on poultry transport vehicles under practical conditions. Instrumentation relating to the measurement of air speed, temperature and humidity on the vehicle is also being developed.

Recommendations for new research

51. We recommend that the Government fund the following areas of new or continuing research:

a. evaluation and reduction of deaths, injuries and other stresses associated with the depletion, handling and transport of broilers and end-of-lay hens;

b. reduction of skeletal, muscular and tendon abnormalities in broilers and laying hens;

c. improvements to the design of vehicles for transporting poultry;

d. application of acceptable mechanical harvesters for broilers;

e. improved removal of end-of-lay hens from cages;
f. design of a modular system to enable the automatic unloading of end-of-lay hens at the slaughterhouse;

g. investigation of genetic factors, nutrition and exercise which are believed to influence the incidence of broken bones in chickens; and

h. investigation of death by gassing at processing plants for broilers and end-of-lay hens.

References


Model A – Drawer type model

Model B – Tilting type model