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Charitable Incorporated Organisation

Humane Slaughter Association

Technical Note No 13

Design Specifications
Handling Facilities for Abattoirs & Farms

Summary

This Technical Note on design specifications defines the physical, operational and managerial elements of the animal handling process. It describes what is required of the handling system, not how the requirements should be met. Some of the specifications are essential and must be met. Others, whilst not absolutely essential, are good practical ideals.

Handling systems should facilitate animal movement with due regard to animal factors, reliability, usability, conformity, environmental factors and human factors, whilst being flexible enough to cater for future changes.

Design specifications can be used: as a checklist to ensure areas have not been overlooked; as a source of ideas for improving a system; as a blueprint for designing subsequent systems; and in the process of evaluating designs - does the system do all the things you want and expect?

A design specification is a working document which evolves with time and as detail is added.

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Legislation

The legislation covering the welfare of animals whilst being handled depends on where the handling takes place. This legislation is written independently for each country within the UK . The general principle concerning handling in all of this legislation is that animals should be handled in such a way as to be spared any avoidable pain, distress or suffering.

Handling system requirements

Handling systems should facilitate animal movement with due regard to:

- conformity
- flexibility
- usability/reliability
- human factors
- animal factors
- environmental factors
- costs/benefits
- future implications

Conformity

Systems must comply with current and, where it is possible to predict, future:

- legislation protecting the welfare of animals (see above)
- UK and EU health and safety standards for workers
- welfare legislation
- company regulations

Flexibility

Systems should be:

- manufactured in modular sections where appropriate, for easy installation and replacement
- of suitable dimensions for the breeds and sizes of animals handled
- of appropriate design for the numbers of animals moved and the rate of movement
- adaptable to existing and future throughputs, in-house facilities and sizes/breeds/weights of animals

Usability reliability

Systems must be robust, durable, hygienic and easy to use. They must be suitable for:

- use in dirty, dusty, humid and/or wet environments
- power washing with pressurised water and disinfectant

Systems should:

- use available power sources
- be compatible with existing equipment
- not require long shut-down periods for installation or maintenance
- require minimal and simple maintenance by plant staff
- have no need for equipment to be taken out of commission
- allow access to all parts

Design and maintenance documents, spares lists, accessibility instructions and back-up services should be provided.

Human factors
There should be no risk to humans from animals or equipment within the system. Explanations of why systems are being altered/replaced should be given to all stock handlers. They should also be involved in the system design prior to and during installation, and should be trained in:

- animal handling
- legislation governing animal handling
- the effects of poor handling on welfare and product quality

Systems should:
- be safe, easy and obvious to use
- be operable by staff without specialist technical knowledge
- be tamper-proof
- reduce user fatigue and be comfortable to use
- optimise the number of staff involved in the handling
- allow human accessibility at the required places
- help stock handlers to work effectively and efficiently
- allow for a set position for stock handlers to perform each task
- accommodate ‘worst-case operators’

For every system designed, there should be procedures in place for staff to give feedback to management staff. This feedback should include reports of maintenance requirements, breakdowns, areas where handling problems occur and possible improvements.

Animal factors
Systems MUST be suitable for the type and species of animal being handled. Systems can allow humane handling of animals without undue stress by:

- utilising the natural behaviour of the animals
- allowing animals to walk at their own pace
- providing animals with a feeling of safety and calm

Systems should:
- have non-slip, non-abrasive floor surfaces
- have a smooth finish with no protrusions or jagged edges that might cause injury
- be built so there is a uniform appearance inside with no gaps or visible joins that might lead to balking
- be designed so that animals move from dim to light areas
- be noise-absorbing
- not use paint or other materials that might be toxic

Systems should have positive welfare benefits to ensure there is:

- no need for goading
- no jamming
- no injury
- no trapping
- reduced vocalisation
- no crushing

Systems should be designed to prevent the animals:

- turning
- climbing over one another
- balking/refusing
- being confused

Environmental factors

Systems should:

- be quiet during operation (minimal air hissing, metal clanging, etc)
- incorporate noise absorbent materials where possible
- provide uniform, bright but diffuse light levels, with no reflections, bright spots or shadows, where necessary

Lighting, ventilation, and thermal comfort must be adequate for operators and animals.

Costs/benefits

All elements of the handling system should be affordable in both the short and long term. Consideration needs to be given to installation, running and maintenance costs. Systems should aim to seek return on investment by:

- improving animal welfare
- meeting best practice guidelines
- offering job satisfaction to employees
- maintaining/improving productivity
- improving meat quality
- improving company image
- offering UK advantage in an international market (improved welfare standards)

There could also be potential income opportunities by selling the concept to other organisations.

Future implications

System designers should consider the implications of future changes in the following:

- capacity (throughput)
- legislation
- automation
- changes in the weights and sizes of animals to be handled

For handling systems prior to stunning, consider possible changes in or use of alternative:

- stunning equipment
- gases (including longer dwell times), group stunning and different group sizes

For handling systems designed for animal identification, consider future developments in electronic tagging and identification requirements.

Summary

Whenever animals are handled and moved they must be treated in a humane way that minimises stress to them and does not cause unnecessary pain or suffering. It is essential that the handling facilities are designed with the species in mind and that they encourage natural behaviour to move animals forward with as little coercion as possible. Designs that have both animal and operator in mind will be the most successful. It should also be remembered that, however good the handling system, the skill and attitude of the operator is also critical in maintaining high standards of welfare.

For enquires about practical training and advice on handling systems, please contact the HSA at the address overleaf.

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DISCLAIMER OF LIABILITY

In no circumstances can the HSA accept liability for the way in which the equipment in this leaflet is used: or for any loss, damage, death or injury caused thereby, since this depends on circumstance wholly outside the HSA's control

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Further Reading

Council Regulation (EC) No 1099/2009 (protection at time of killing)
OJ of the EU 2009

Council Regulation (EC) No.1/2005 (transport of animals)
OJ of the EU 2005

The Welfare of Farmed Animals Regulations 2007
DEFRA 2007

The Welfare of Animals at the Time of Killing (England) Regulations
DEFRA 2015

The Welfare of Animals (Transport)(England) Order
DEFRA 2006

The Welfare of Animals in Markets Order 1990 (as amended 1993)
DEFRA 1990/93

Handling Cattle at Abattoirs and Markets
Cambac, HSA, MLC 2000

Improved Handling Systems for Pigs at Slaughter
Cambac, HSA, MLC 1999

Full details of all UK legislation can be found on the following website: **www.tso.co.uk**