

Poultry welfare training needs - **Understanding stunning and slaughter**

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Topics for discussion

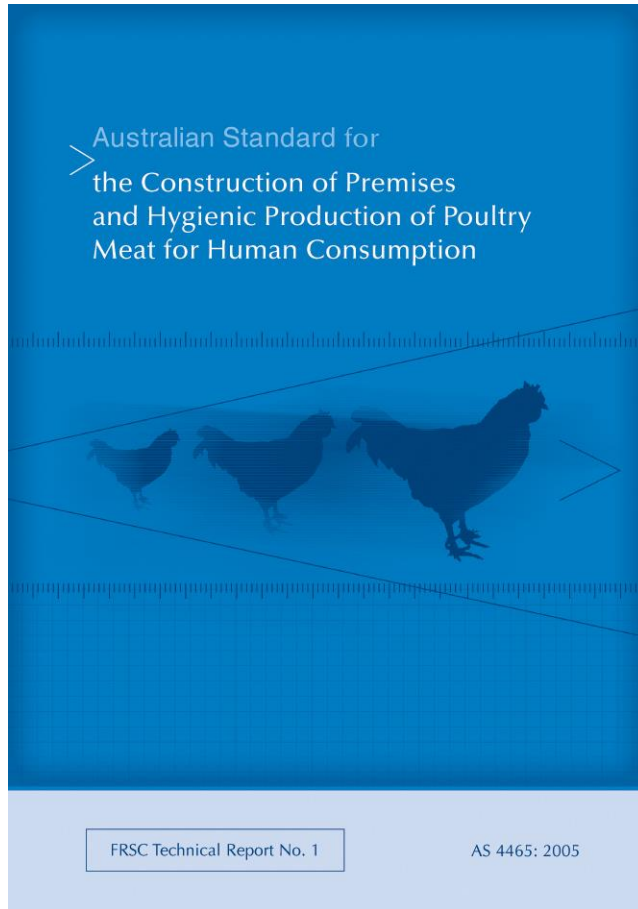
- Poultry welfare issues during stunning and slaughter
- Stunning and slaughter methodology
- Measuring unconsciousness and difficulties in-plant
- Demonstration of effective stunning
- Poultry welfare - Training needs

Risks to bird welfare

- Pick-up and transport
- Lairage conditions
- Tipping
- Shackling
- Pre-stun shocks
- Ineffective stunning
- Exposure to aversive gases
- Ineffective slaughter

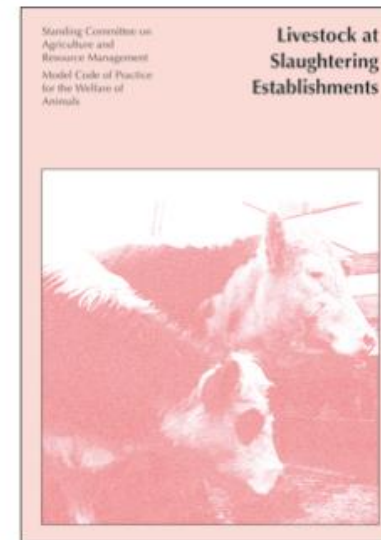


Poultry - Responsibility and regulatory requirements



Primary Industries Standing Committee Model Code of Practice for the Welfare of Animals

Livestock at Slaughtering Establishments SCARM Report 79



Poultry standards

- RSPCA
- Currently being revised
- Implications for electrical and CAS systems



What is stunning?

- Consciousness is individual awareness. Feeling pain and distress requires the animal to be **conscious**
- An inactive brain is **unconsciousness**.
If the brain is inactive, the animal can not feel pain and distress
- **Stunning** produces unconsciousness
- **Death** occurs when the brain stem is irreversibly inactive





Requirements for effective stunning

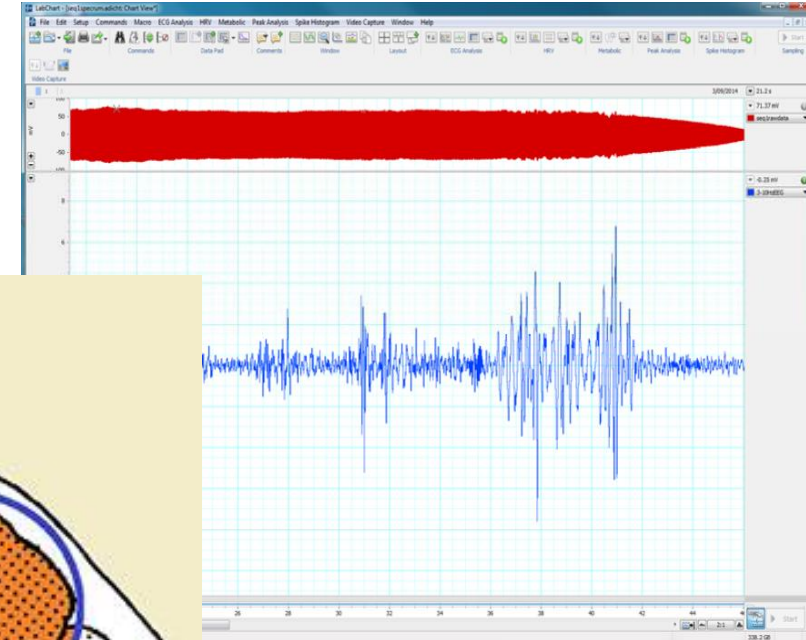
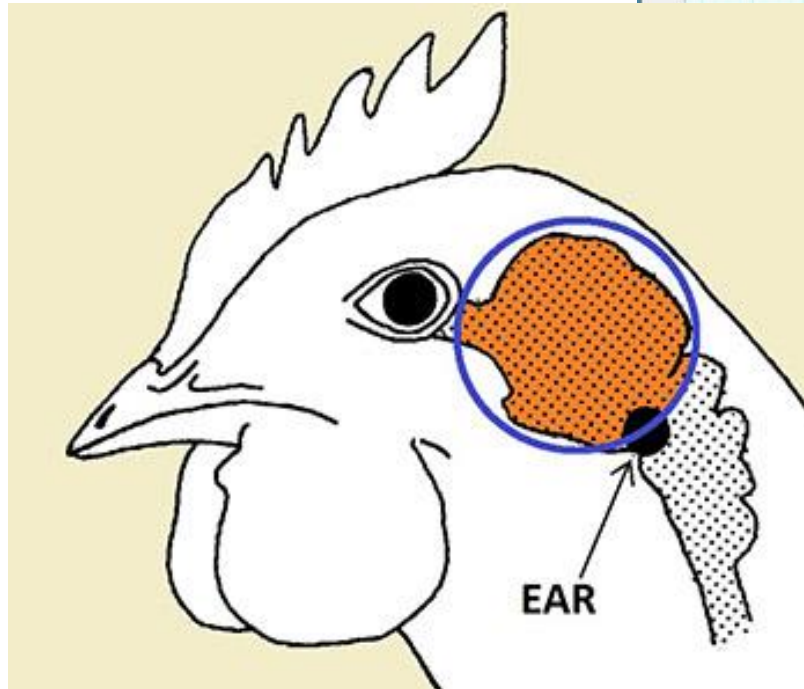
In the Australian Standard -

Stunning and killing

- 15.24 All poultry shall be humanely killed.
- 15.25 Live poultry that are rejected at pre-slaughter examination shall be humanely killed in such a way to avoid contamination of floors, walls and equipment.
- 15.26 Poultry for processing shall be:
 - (a) rendered unconscious by:
 - (i) an electric current;
 - (ii) approved inert gas; or
 - (iii) dislocation of the head, and must not regain consciousness before slaughter; or
 - (b) rendered unconscious or slaughtered by a method that has been approved in writing by the controlling authority.

What happens in the bird's brain?

- Red meat animals
 - Epilepsy
- Poultry
 - Epilepsy
 - Suppression of EEG
 - 10% pre-stun level



Electrical stunning of poultry

- Electrical current passes from an electrode through the bird to the shackle
- Effective stunning depends on the amount and duration of electrical current



Shackling of live birds

- Painful
 - Compression of legs
 - Inversion
- Duration
 - Wing flapping
- Pre-stun shocks
- Ineffective stunning



Pre-stun shocks



Wing flapping caused by pre-stun shocks can cause birds to 'fly' the waterbath stunner. Birds are not stunned effectively.

Low frequency electrical stunning



High frequency electrical stunning



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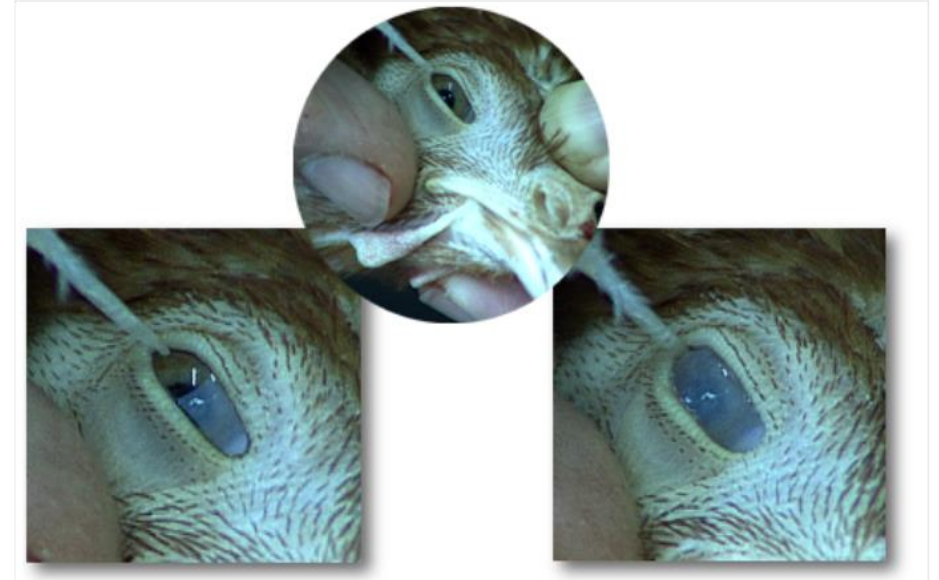
Two phase electrical stunning

- Step-up stunner
- Phase 1 - Pulsed DC at 550Hz
- Phase 2 - AC at 50Hz
- Maximum AC 60V did not achieve adequate unconsciousness
- Difficult to interpret effective stunning



Practical assessment of effective stunning

- Stunning should achieve immediate unconsciousness
- Difficult to assess unconsciousness
- Needs an understanding of electrical parameters
- Brain stem reflexes - Absence of nictitating membrane reflex
- Recovery phase absent



Modified atmosphere systems



Overcomes the issues of shackling live birds. Reduced human contact whilst alive which reduces stress.



Shackling operatives are able to work in optimum conditions. Birds are easy to hang producing no dust or noise. Large turkeys are easier to manage

CAS System features

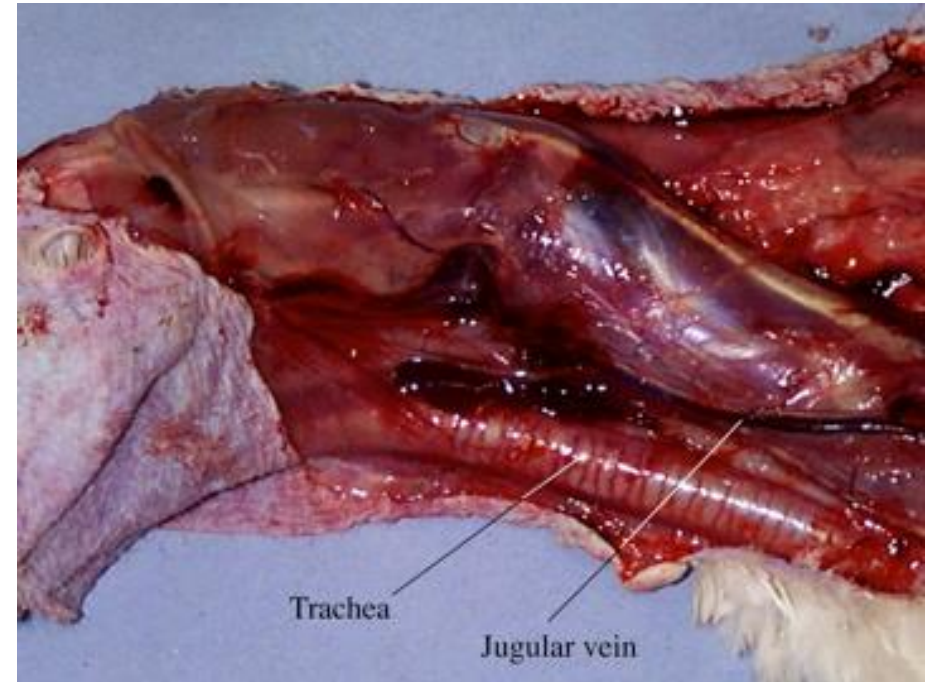
- Poultry can remain in crates
- Multi-phase CO₂
- Rising concentration
- Gradual induction
- Cycle time is 2 - 6 minutes
- Irreversible



Methods for killing sick and injured birds



- Manual neck dislocation
 - Stretches the neck
- Neck dislocation using pliers
 - Crushes the neck



3.4.1 Injured birds unloaded from crates should be slaughtered immediately.

Average time to loss of brain responsiveness

Species	Method	Time (mins:secs)	Reference
Sheep	Cutting the throat	0:14	Gregory and Wotton, 1984
Calves	Cutting the throat	0:17	Gregory and Wotton, 1984
Pigs	Cutting the vessels in chest	0:18	Gregory and Wotton, 1984
Adult cattle	Cutting the throat	0:55	Gregory, 2010
Poultry	Severing the spinal cord	2:43	Hewitt, 2000
Alligators	Severing the spinal cord	54:00	Navarez et al., 2014

- Loss of brain responsiveness takes time
- Animal exposed to pain and distress

Alternative methods

Zephyr-EXL Stunner



TED Stunner



CASH Poultry Killer



Slaughter

- Kills the bird
- Automated or manual
- Voids the carcass of blood
- Correct blood vessels
- Ventral neck cut
- Time to brain death



Monitoring effective slaughter

- Assessment methods
 - Nictitating membrane
 - Vessels severed
 - Blood loss
- Adjustment of kill blade
- Back-up action
- Carcass convulsions



Requirements for back-up stunning



In the Model Code Practice -

3.5.9 Birds that are not effectively stunned should not be relocated on the shackle. They should be killed immediately by a manual slaughtering method such as decapitation, cervical dislocation or cutting both carotid arteries.



Training needs summary

- Understanding the welfare risk to poultry
- Understanding the important stunning inputs
- Manufacturers requirements - Knowledge of stunning equipment
- Documented processes that deliver welfare-outcome
- Assessment:
 - After stunning
 - Prior to slaughter
 - During bleeding



Thank you!

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