Trouble Shooting Handling and Stunning Problems

1. Excessive electric prod use due to distractions
2. Stunner maintenance
3. Employee training issue
4. Ergonomics or design
5. Cattle can see people
6. Slipping on the floor causes agitation
Animal Avoids Walking on the Reflection
Bright Green Hose May Cause Animals to Stop
Most Common Distractions

- Reflections on water or metal
- Air blowing towards approaching cattle
- Moving people or equipment
- Chute entrance too dark
- Visual cliff in conveyor restrainer
- Shadows high contrasts
Animals going into the slaughter plant are afraid of little things people do not notice.
Tell Me Four Simple Ways to Improve Handling
Easy Fixes
to Reduce Balking

1. Hang a curtain in front of the restrainer
2. Move a ceiling light to eliminate a reflection on wet shiny surfaces
3. Change color of employee hats or coats to reduce contrast
4. Change where people stand
5. Experiment with lights – cattle approach light
6. Flooring in crowd pens and chutes should look the same
Handler Movement Pattern to Keep Cattle Moving into a Squeeze Chute or Restrainer

Cattle will move forward when the handler passes the point of balance at the shoulder of each animal. The handler walks in the opposite direction along side the single file race.
Training Employees

1. Flight zone principles
2. Point of balance
3. No yelling
4. Move cattle in small groups
5. Fill crowd pen half full
6. Get electric prods out of people’s hands
Causes of Increased Vocalization

1. Electric prod use
2. Missed stuns
3. Excessive pressure from restraint device
4. Sharp edges on restrainer devices
5. Isolated animal
6. Slipping
Metal rods welded to the floor prevent rapid small slips (jigging)
Well-designed stun box with an adjustable side
Well Designed Stun Box
Non-slip Flooring on Restrainer Entrance is Essential
Correct stun

Incorrect stun
Correct Stunner Locations

Diagrams by J.K. Shearer

Not between the eyes! Above the eyes as illustrated
Cartridge Fired Stunner
Must Keep Cartridges Dry
Poor maintenance of captive bolt stunners is a MAJOR cause of captive bolt failure.
Stunning with a pneumatic powered captive bolt

Note curtain to block the vision of the next animal
Cardboard to prevent cattle from seeing through cracks
Case Study
Beef Plant

- Blocked sunbeams with tarps
- Blocked view of people near the crowd pen with cardboard
- Blocked view of people walking in front of the restrainer with a curtain
- Illuminated the restrainer entrance with a portable light
- Stopped overloading of the crowd pen
Head holding devices are essential if non-penetrating captive bolt is used.
Non-penetrating captive bolt used with head holder
Head Holder For Use With Non-Penetrating Captive Bolt
Indentation in the skull from non-penetrating captive bolt
Non-Penetrating Captive Bolt

• Require more precise positioning than penetrating

• Effective stunning and brain damage are opposing goals

• Less effective on cattle with thick hair. Will not work on large bulls

• Effective on cattle with short hair
Electric Stunning of Cattle in a Head Holder
New Zealand System
Electric stunning with too much resistance is not effective.
Effective Electric Stunning
Continuous Wetting

Be careful not to create a new circuit over the surface of the animal with water
Requirements for Effective Electric Stunning

- Low resistance
- Maintain firm contact
- Head restraint
- Systems that ground out through the floor often work poorly
- Works poorly on dehydrated animals
Head Holder for the Center Track Restrainer
Steer in head holder on the center track restrainer
Insensibility Indicators
All Types of Stunning

- No spontaneous natural blinking like live animals
- No arched back righting reflex (small side neck flex is permissible)
- No rhythmic breathing (ribs move in and out at least twice)
- Loose, floppy head
- Limp, flaccid tongue (may be trapped in the mouth of a properly stunned animal)
- No response to pin prick on the nose (apply to nose only)
- Vocalization (moo or squeal) must be absent
Differences in Reactions of Insensible Animals

- Nystagmus (vibrating) eye must not be confused with natural spontaneous blinking. Nystagmus is permissible after electric or CO$_2$ stunning. It must be absent after captive bolt.

- Gasping like a fish out of water must not be confused with true rhythmic breathing. Gasping is permissible after electric or CO$_2$ stunning. It must be absent after captive bolt.
- After captive bolt, the eye should have a wide, blank stare and not be rotated

- Corneal reflex must be absent after captive bolt

- Do not use corneal reflex for electric or CO$_2$ stunning
Correctly Stunned Animal With Penetrating Captive Bolt Completely insensible
Correctly stunned animal with non-penetrating captive bolt bleed within 60 seconds
Sensible bovine with righting reflex

(Photo not from U.S.)
It is normal to have kicking in a correctly stunned animal.

The tail relaxes or spinal reflexes subside.
Head *Must* be Dead!

Ignore the Body
Immobilizer covers up signs of insensibility. Turn off to determine insensibility.
The animal should be held in an upright position for religious slaughter.
Welfare Tips for Religious Slaughter Without Stunning

- Calm animals lose sensibility faster
- Fast knife strokes are more effective
- Perform throat cut immediately after restraint
- Vocalization score of 5% or less
- Knife is twice the width of the neck
- Release pusher gate and head restraint after the cut
## Time to Eye Rollback and Collapse at a Kosher Plant

<table>
<thead>
<tr>
<th></th>
<th>Good Technique</th>
<th>Poor Technique</th>
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<tr>
<td>Avg. time to collapse</td>
<td>17 seconds</td>
<td>33 seconds</td>
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<tr>
<td>Longest time</td>
<td>38 seconds</td>
<td>120 seconds</td>
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<tr>
<td>Percentage collapsed in 30 seconds</td>
<td>94%</td>
<td>68%</td>
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</table>
Cattle Should be Cut Close to the Jaw in C1 Position

- Facilitates bleed out and helps prevent arteries from sealing off
- Cuts sensory nerves that transmit “potentially unpleasant sensory signals associated with blood contaminating the upper and lower respiratory tract.”

- N.C. Gregory, 2011
Halal slaughter with head only electric stunning
Head Only Stun

- Must be bled within 20 seconds; 10 seconds recommended
- Tonic and clovic seizure spasm indicates and effective stun
There is a Zero Tolerance for Hoisting an Animal that is Showing Obvious Signs of Sensibility

There is Zero Tolerance for Skinning, Scalding, Dehairing or Removal of Any Body Part on an Animal that Shows any Sign of Partial Return to Sensibility
<table>
<thead>
<tr>
<th>AMI Scoring System</th>
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<tbody>
<tr>
<td>Stunned with one shot</td>
<td>95%</td>
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<tr>
<td>Insensible</td>
<td>100%</td>
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<td>Electric prod</td>
<td>25%</td>
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<td>Falling down</td>
<td>1%</td>
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<tr>
<td>Vocalizing</td>
<td>3%</td>
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<td>Vocalizing with head holder</td>
<td>5%</td>
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