

Safety & Sustainability

A Case for Change – Smart Sounds for a
Safer and More Peaceful Environment

K&R Weigh Systems



- ▶ **Vikki Bartlett – Distributor Sponsor**
 - Opened In 1993
 - Major Distributor
 - Loadrite
 - Brigade Electronics
- ▶ **Product Line**
 - On-board Scales Wheel Loaders/Excavators
 - Conveyor Scales/Conveyor Metal Detectors
 - CCTV Camera Systems/Broadband Alarms
- ▶ **Active Supporter – 1993**
 - Aggregate/Construction/Mining Industry
- ▶ **Team K&R – 8 Field Members**
 - Customer Support/Quality Service

Brigade Electronics

- ▶ **Joe Redding – Manufacturer Rep**
 - Headquartered in England
 - Established in 1976
 - US Market – 2005
 - Global Market Leader
- ▶ **Full Range – Vehicle Safety Systems**
 - Broadband Back-Up Alarms
 - CCTV Camera Systems
 - Detection Systems
 - Mobile Digital Recorders
- ▶ **How New Technology Backup Alarms Improve Safety & Sustainability – A Case for Change**

Can Noisy Alarms Be Confusing?



Types of Alarm Sounds

- ▶ **Informative**

- Usually Accompanied By Text or Symbol
- *Oil Change Due In Next 1,000 Miles*

- ▶ **Caution; If You Perform X Y Will Happen**

- *Red Dash Light – Engine Running Hot*

- ▶ **Emergency; Immediate Action Required to Avoid Serious Accident / Injury**

- *Stop Light/Intersection; Stop Sign*
- 

Why Use Back-Up Alarms?

▶ **Emergency?**

- *Take Immediate Action or Get Backed Over*

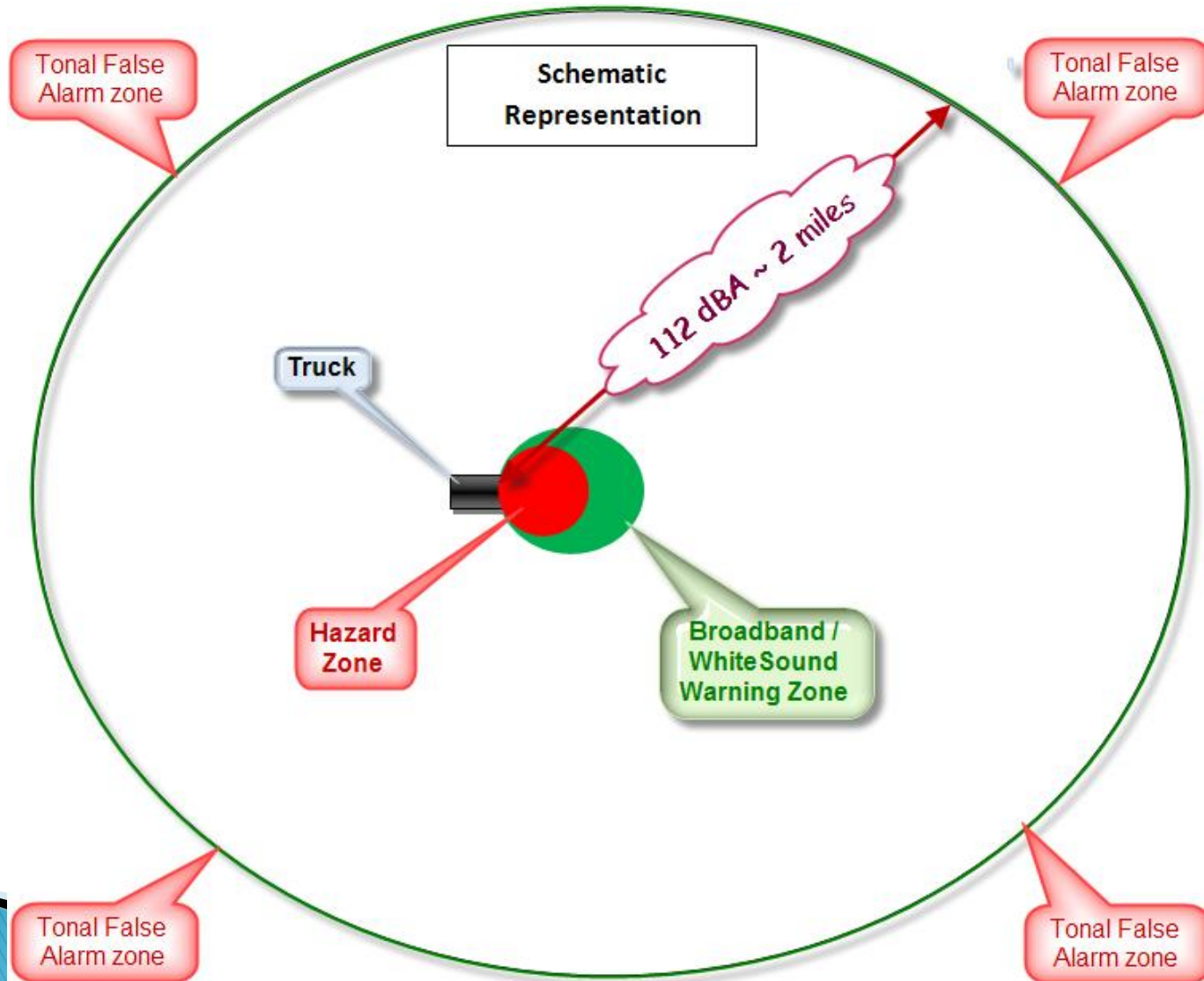
▶ **Caution?**

- *Close to Hazard Area, Take Care or Get Backed Over*

▶ **Informative**

- *Truck Backing Somewhere, ex. Neighborhood?*
- **Informative Backup Alarm Signal Impossible to Differentiate, Outside of a Caution and Emergency Area; Results in:**
 - *High False Alarm Rate = Poor Response Rate*
 - *Vehicle At 4 Mph, Traveling 1.5 Feet/Sec, Moves 12 Feet*

False Alarming?

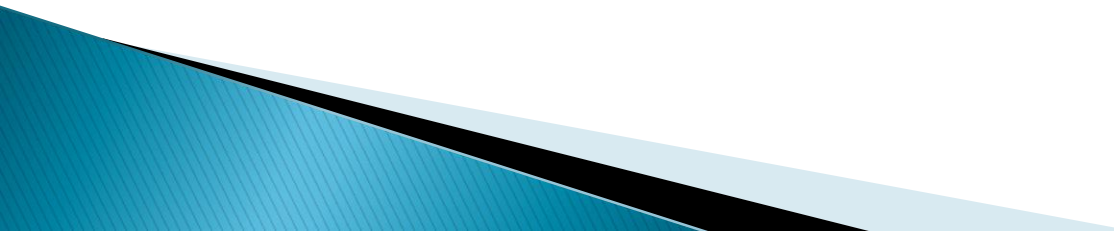


Safe Alarm Sound

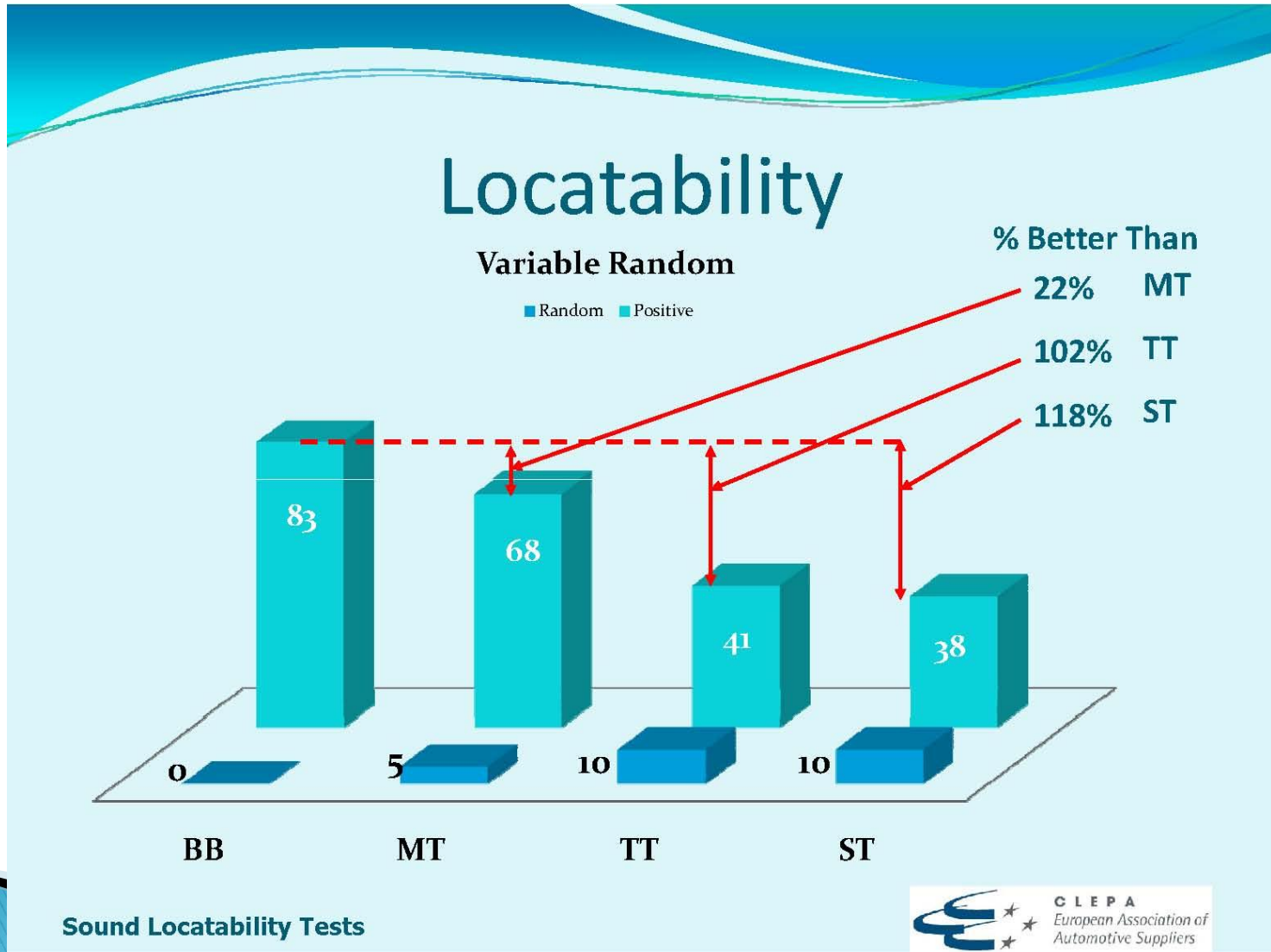
▶ **Essentially Fundamental**

- Audible ... Alerting (Loud Enough Above Ambient)
- Locatable ... Save Those Seconds
- Low False Alarm Rate (I.E. No “Informative” Signal)

▶ **Highly Attractive**

- Unlikely to Be Masked by Other Sounds
 - Audible to Hearing Impaired
 - Audible Through Hearing Protection
- 

Alarm Sound Locatability



Sustainable Alarm Sound

- ▶ **Backup Alarm Signals Are One Of The Biggest Sources Of NOISE...**

“NOISE EXPOSURE CAUSES HEALTH IMPACTS”

- ▶ **Noise Ordinances Limit Operating Hours**
- ▶ **Minimizing Noise Can**
 - Increase Operating Hours/Enable Night Time Deliveries
 - Increase Asset Utilization
 - Reduce Cost by Avoiding Day-to-day Work Congestion Periods
- ▶ **Provide Effective Results w/Less Decibels**

Noisy Alarm Sound

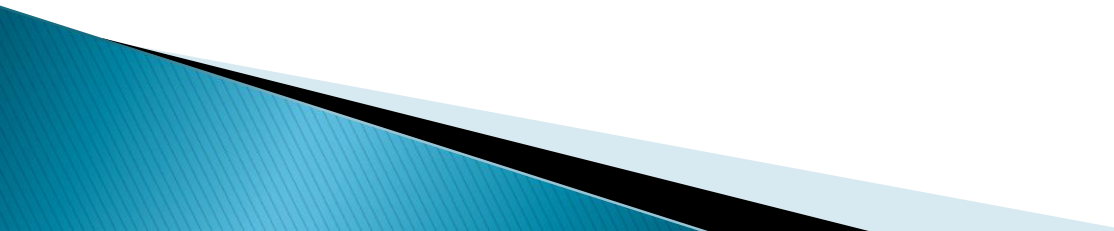


Summary

▶ Safer

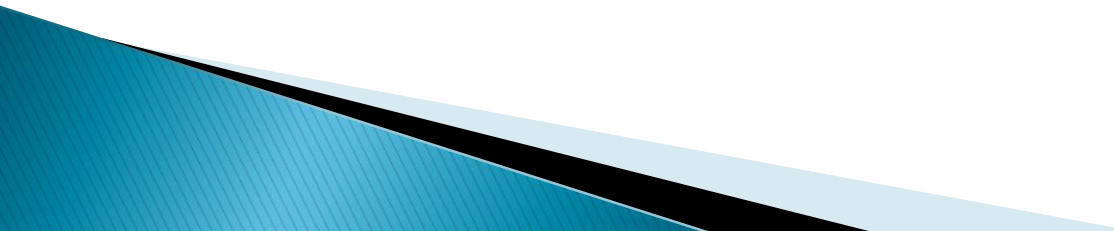
- Louder/Confusing Noise is No Longer Effective
- Locatable and Alertive, yet Less Irritating
- Only Heard Where Needed – DANGER ZONE
- “Environmentally Sound”

▶ Sustainable

- Supportive to Everyday Operating Budgets
 - Maximizes Asset Usage
 - Maximizes Operating Hours
- 

Questions / Comments?

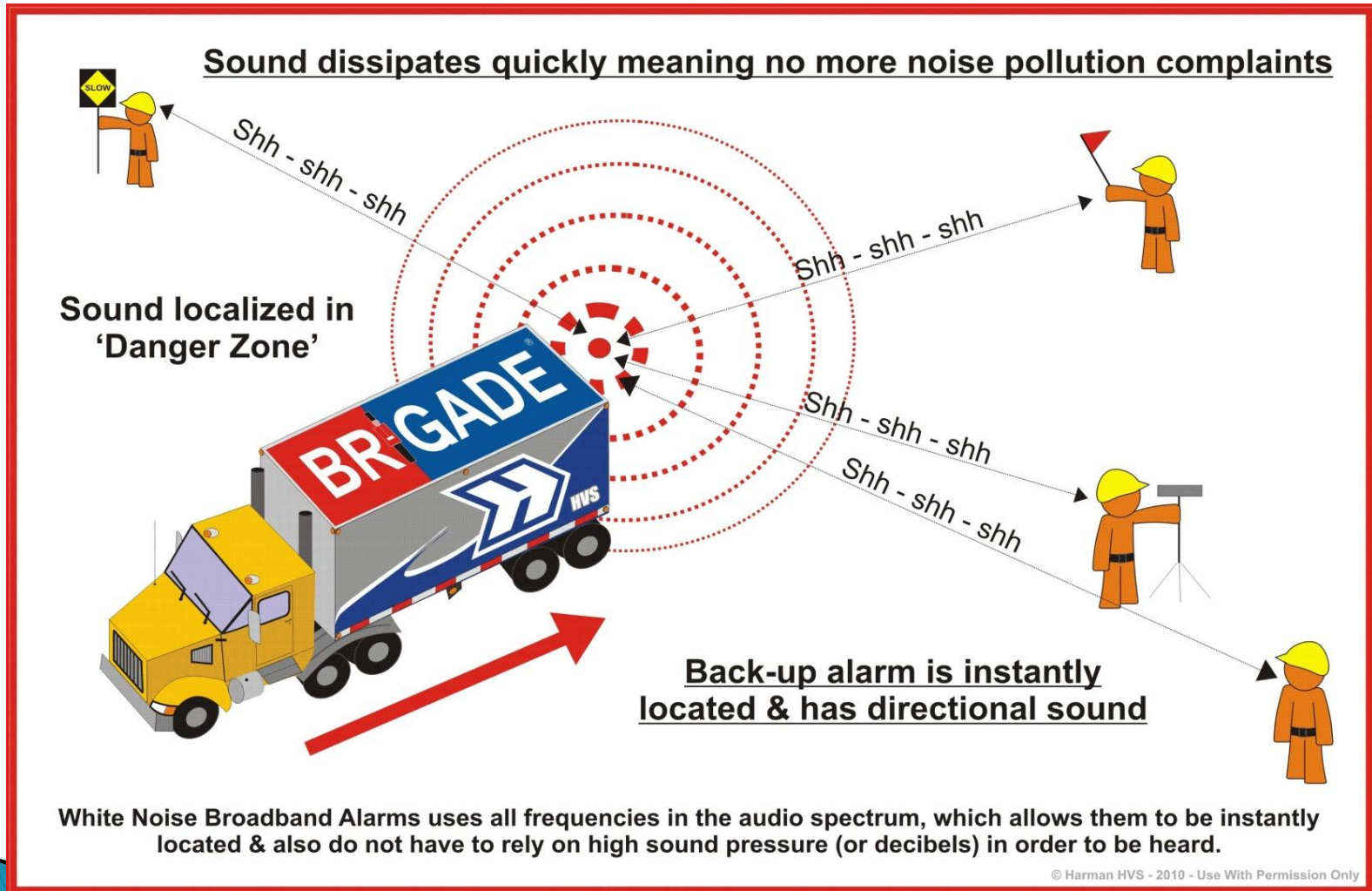
Thank You
K&R Weigh Systems
Brigade Electronics



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BBS - How it works



Which Works Best?

	Factors (Bad v's Good)	Tonal	bbs
Safety	Recognition:		
	Loudness / Audibility	<i>An alarm with appropriate loudness should be installed</i>	
	Is Sound an effective Danger Warning	Depends	Yes
	Is the Danger Relevant	Depends	Yes
	Response	Unreliable	Good
	Hard of Hearing - Audibility	Risky	Good
	Cause Confusion	Likely	Unlikely
Environmental	Gets rid of noise complaints	No	Yes
	Strident	Yes	No
Health	Risk of hearing damage & stress	Greater	Lower

Graph Tonal v bbs

