HearForever
Best Practices
in Hearing
Conservation

Presented by:
Brent Charlton, CSP
River Metals Recycling LLC
Noise +
Acoustics
Hazardous noise exposures occur

On the Job

Off the Job
Noise-Induced Hearing Loss

Causes no pain
Causes no visible trauma
Leaves no visible scars
Is unnoticeable in its earliest stages
Accumulates with each overexposure
Takes years to notice a change

Is Permanent + 100% Preventable
Noise-induced hearing loss is the most common permanent and preventable occupational injury in the world.

World Health Organization
United States Statistics

**Most common** occupational injury in the United States. **22 million US workers** are exposed to hazardous noise at work on a daily basis. Approx. **8 million Americans suffer from NIHL**.

(Source: NIOSH, 2009)
## Noise + Acoustics

<table>
<thead>
<tr>
<th>Non-Occupational</th>
<th>Occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>170 dB</td>
<td>160 dB</td>
</tr>
<tr>
<td>Immediate Physical Damage</td>
<td></td>
</tr>
<tr>
<td>120 dB</td>
<td>115 dB</td>
</tr>
<tr>
<td>Unprotected Noise Exposure of Any Duration Not Permitted Above This Level</td>
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</tr>
<tr>
<td>94 dB</td>
<td>90 dB</td>
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<tr>
<td>Hearing Protection Required by OSHA</td>
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</tr>
<tr>
<td>74 dB</td>
<td>85 dB</td>
</tr>
<tr>
<td>85 dB</td>
<td>85 dB</td>
</tr>
<tr>
<td>Ear Damage Possible</td>
<td></td>
</tr>
<tr>
<td>58 dB</td>
<td>60 dB</td>
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<tr>
<td>50 dB</td>
<td>50 dB</td>
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<tr>
<td>Comfortable</td>
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</table>
If you must **SHOUT** to be understood over background noise... 

...when standing one arm-length away from another person, that background noise is **HAZARDOUS**.
Do jets, stereos, my neighbor’s dog, air conditioner or mobile phones cause NIHL?

- To damage hearing, noise must be of sufficient intensity and duration
- Annoyance noises generally do not have the same intensity or duration to cause damage
The decibel (dB) scale is a logarithmic scale, not a linear scale.

- **83** If the noise **source** is doubled, the noise **level** only goes up **3 dB**.
- **86** Small increases in decibel level represent enormous increases in noise level and risk.
- **92**

*Howard Leight* by Sperian
Time Weighted Average

Permissible Exposure Limits

90 dB
8 hrs
Noise + Acoustics

Time Weighted Average

Permissible Exposure Limits

95 dB

4 hrs
Time Weighted Average

Permissible Exposure Limits
# Regulations in the United States

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<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Industry</td>
<td>Construction</td>
<td>Mining</td>
<td>Railroads</td>
</tr>
<tr>
<td>Permissible Exposure</td>
<td>90 dB</td>
<td>90 dB</td>
<td>90 dB</td>
<td>90 dB</td>
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<tr>
<td>Action Level</td>
<td>85 dB</td>
<td>85 dB</td>
<td>80 dB</td>
<td>85 dB</td>
</tr>
<tr>
<td>Noise Monitoring</td>
<td>Required</td>
<td>Not Required</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Audiometric Testing</td>
<td>Annual</td>
<td>Not Required</td>
<td>Annual</td>
<td>Every 3 Years</td>
</tr>
<tr>
<td>Training</td>
<td>Required New Hires/Annual</td>
<td>Not Required</td>
<td>Required New Hires/Annual</td>
<td>Required New Hires/Annual</td>
</tr>
<tr>
<td>Hearing Protectors</td>
<td>Required @ PEL</td>
<td>Required @ PEL</td>
<td>Required @ PEL</td>
<td>Required @ PEL</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Dual Protection</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>@ 105 dB TWA</td>
<td></td>
</tr>
<tr>
<td>Recordkeeping</td>
<td>Required OSHA 300 Log</td>
<td>Not Required</td>
<td>Required</td>
<td>Required OSHA 300 Log</td>
</tr>
</tbody>
</table>
Hearing Conservation Program

Action Level – 85 dB
- Hearing Conservation Program implemented
- Hearing protectors made available
- Annual audiometric testing & training

Permissible Exposure Limit – 90 dB
- Hearing protectors required
**Overprotection/Underprotection**

20-25% workers exposed between 80-90 dB will still get **NIHL**. While HPD use is mandatory at 90 dB, you should **protect to at least 85 dB**.

Avoid **overprotection** – protected levels below **65-70 dB** can create additional safety risk.
Noise Measurement Devices

**SOUND LEVEL METER**
Sound is measured immediately in a specific area

**PERSONAL DOSIMETER**
Sound “averaged” throughout day for sample employee/job

**IN-EAR DOSIMETER**
Collects personal noise dose – the only **real** measure of risk
Noise + Acoustics - Hierarchy of Controls

ENGINEERING CONTROLS
- Buy Quiet
- Vibration Pads
- Enclosures
- Barriers
- Isolation

ADMINISTRATIVE CONTROLS
- Rotate Workers
- Extended Breaks
- 2nd/3rd Shift

PERSONAL PROTECTIVE EQUIPMENT
What is the A-Weighting Scale?

A, B and C Weighting Curves

Sound Level in Decibels

Frequency in Hertz

A-Weighting
B-Weighting
C-Weighting

LEIGHT by SPERIAN
Ototoxic Chemical Exposures

Ototoxic by themselves
• Synergistic effect with noise
• Large differences in sensitivity
• Recommend: increased frequency of audiometric testing

Confmed Ototoxolics
Ethyl Benzene
Lead and inorganic compounds (as Pb)
Styrene
Toluene
Trichloroethylene

Synergistic Ototoxolics
• Carbon Monoxide
• Hydrogen Cyanide

Possible
Carbon disulfide
n-Hexane
Xylene
How We Hear
How We Hear

Hearing + Frequencies

• Nerve cells in the cochlea are tuned to specific frequencies

• Base of the cochlea is sensitive to high frequency sounds (red dots)

• Tip of the cochlea is sensitive to low frequency sounds (green dots)
How We Hear

Safe Noise Levels

Low noise Normal cochlea

At safe noise levels, sound waves move along the cochlea without damaging receptor cells
High noise levels damage the first turn of the cochlea – where high frequency sounds are heard... and lost.
How We Hear

The Human Cochlea

17-year old girl
- Low noise exposure
- Normal cochlea
- Receptors intact

76-year old man
- Low noise exposure
- Fewer receptors but still intact

59-year old man
- High noise exposure
- Damaged cochlea
- Receptors destroyed
How We Hear

High Frequency Sounds of Speech

TH SH S CH SH F K P H T
Normal Hearing is Understandable
How We Hear

NIHL Lacks Clarity

CLEARNESS
Characteristics of NIHL

- Time-linked to noise exposure
- High-frequency hearing loss
- Usually bilateral (both ears)
- Gradual progression over time
- Appropriate symptoms (tinnitus, muffled hearing)
How We Hear

Audiometric Testing

• A measure of HC Program effectiveness
• Measures effectiveness of HPDs
• Catches NIHL in its early stage

• Noise damage can only be determined when audiograms are compared serially
• A single industrial audiogram cannot identify noise damage
How We Hear

Annual Audiogram vs. Baseline

Worker Profile
- 35 years old
- Works in Tire Shop, does not use hearing protection
- Early detection of noise-related hearing loss
- Employee retrained in the use of hearing protectors
If workers already have hearing loss, are they exempt from using hearing protection?

According to OSHA interpretation, Hearing Conservation regulations apply to **ALL** employees, even those with existing hearing loss.

**Tips for Employees Wearing Hearing Aids**

- Hearing aids alone are terrible protectors
- Use hearing aids + electronic earmuffs
- Use hearing aids + uniform attenuation earmuffs
Hearing Protection
### Hearing Protection Selection Factors

<table>
<thead>
<tr>
<th>Comfort</th>
<th>Noise Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Select HPDs that can work with other PPE without compromise</td>
<td></td>
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<tr>
<td>• Cap-mounted earmuffs for hard hats</td>
<td></td>
</tr>
<tr>
<td>• Multiple-position earmuffs for full-brim hard hats</td>
<td></td>
</tr>
<tr>
<td>• Ultraslim neckband earmuffs with welding shields</td>
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<table>
<thead>
<tr>
<th>Size</th>
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<tbody>
<tr>
<td>• Every ear canal has its own shape and size</td>
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<tr>
<td>• Ensure proper fit with variety of earplug sizes and shapes</td>
</tr>
<tr>
<td>• Sized multiple-use earplugs</td>
</tr>
<tr>
<td>• Low-pressure foam earplugs for smaller ear canals</td>
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<table>
<thead>
<tr>
<th>Communication</th>
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<tr>
<td>• Keep workers connected to their environment</td>
</tr>
<tr>
<td>• Uniform attenuation allows speech/signals to be heard more naturally</td>
</tr>
<tr>
<td>• Sound amplification earmuffs for workers with hearing impairment</td>
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<table>
<thead>
<tr>
<th>Job Requirements</th>
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<tbody>
<tr>
<td>• Consider job requirements in HPD selection</td>
</tr>
<tr>
<td>• Detectable earplugs for process industries</td>
</tr>
<tr>
<td>• Hi-visibility earmuffs for dark/high traffic areas</td>
</tr>
<tr>
<td>• Dielectric HPDs for electrical environments</td>
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<table>
<thead>
<tr>
<th>Hygiene</th>
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<tbody>
<tr>
<td>• Proper care and maintenance can extend life and performance of HPDs</td>
</tr>
<tr>
<td>• Examine and clean all multiple-use earplugs daily</td>
</tr>
<tr>
<td>• Clean and replace ear cushions on earmuffs every 4-6 months</td>
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</table>

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<tr>
<th>Use with Other PPE</th>
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<td>• Ultraslim neckband earmuffs with welding shields</td>
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</table>
Hearing Protection Selection – Earplugs

**PRO**
- Comfortable for extended use
- Disposable earplugs available
- Cooler in hot/humid environments
- Single-use foam plugs can provide highest levels of attenuation

**CON**
- Attenuation highly dependent upon good fit
- Hygiene issues in dirty environments
Hearing Protection Selection – Earplugs

Care and Maintenance

• Dispose of single-use earplugs daily

• Clean multiple-use earplugs with mild soap and water, dry thoroughly

• Inspect multiple-use earplugs for dirt, cracks or hardness, replace if damaged
Hearing Protection Selection – Banded Earplugs

**PRO**
- Very convenient for intermittent noise
- Readily available around neck when not in use

**CON**
- Lower attenuation than most earplugs
- Some noise transmission through band
Care and Maintenance

• Clean and replace pods regularly

• Do not overstretch the band
Hearing Protection Selection - Earmuffs

**PRO**
- Easy to get proper fit
- Good for intermittent noise
- Radio & electronic options

**CON**
- Can feel hot/heavy with extended wear
- Compatibility with other PPE?
Care and Maintenance

• Clean ear cushions and headband regularly with mild soap and water

• Replace ear cushions and foam inserts every 6 - 12 months with normal wear, more often with heavy use or under humid/extreme conditions

• Do not overstretch headband
Hearing Protection Selection

Hearing Protection Selection Factors

www.howardleight.com/selector
Who would buy sunglasses so dark that you couldn’t see the cars coming down the road? No one!

Who would buy earplugs so effective that you couldn’t hear a forklift truck coming up behind you or a distant shouted warning? Everyone … at least every industrial buyer.

We’ve trained them so!
Choosing a protector with an NRR higher than necessary may result in overprotection

- Verbal communication may be hindered
- Warning alarms may not be heard
- Machine noises may be too diminished
- HPDs may be removed

Worker Exposure in the Ear With Protectors

- Insufficient Protection: dB
  - 85

- Acceptable Protection: dB
  - 80

- Optimal Protection: dB
  - 75

- Acceptable Protection: dB
  - 70

- Possible Overprotection

Hearing Protection Selection – Hazards of Overprotection
Hearing Protection Selection

Variation in attenuation is only 5 dB in speech range (250 - 4kHz)

Speech will sound more natural with this earplug.
Common Objections to Wearing HPDs

“I already lost some of my hearing, so why should I wear them?”

“Hearing protectors are uncomfortable to wear.”

“I can’t hear my co-workers if I wear them.”

“Can I hurt my eardrums if I insert an earplug too deeply?”

“My machine sounds different.”

“I don’t need them! I am used to the noise.”

“Won’t I get an ear infection?”

“I can always get fit with a hearing aid.”
In the United States, 76% of noise-exposed workers need no more than 10 dB of protection. 90% need no more than 15 dB of protection.
Noise Reduction Rating
How much noise is reaching the ear of the worker?

That is completely unknown ...

(55 – 104 dB)
Noise Reduction Rating

• A laboratory estimate of the amount of attenuation achievable by 98% of users when properly fit
• A population-based rating — some users will get more attenuation, some will get less

The NRR is only a population estimate, not a predictor of individual attenuation.
Noise Reduction Rating – Determining an NRR

- 10 human subjects tested in a simulated industrial room
- Tested with ears open / occluded at nine frequencies
- Each subject tested 3x
- NRR calculated to be population average

A test subject in the Howard Leight Acoustical Lab, San Diego, CA, accredited by the National Voluntary Laboratory Accreditation Program (NVLAP)
Noise Reduction Rating

De-Rating Methods

OSHA
NRR ÷ 2
(feasibility of engineering controls)

NIOSH
Fit Test

All Other Earplugs
NRR – 70%

CSA
Class
A up to 100
B up to 95
C up to 90

HOWARD LEIGHT by SPERIAN
From Kevin Michael, PhD and Cindy Bloyer "Hearing Protector Attenuation Measurement on the End-User"

192 users of a flanged reusable earplug ~ 27 NRR

Retraining and refitting resulted in an average 14 dB improvement for this group.

Real user attenuation <0 to 38 dB

Real-World Attenuation ≠ NRR

NRR = 27 Multiple-Use Earplug

Attenuation in dB

-10 0 10 20 30 40 50

Retraining and refitting resulted in an average 14 dB improvement for this group.
A worker who selects an earplug with an NRR of 30 but then removes that HPD for just ... effectively reduced his 8-hour NRR to just ...

In noise exposures, small intervals of no protection quickly void large intervals of adequate protection.
Dual Protection

- For extreme noise environments, dual protection is often recommended.
- To estimate the protected noise level, add about 5 dB to the higher NRR protector.

Example: Earplug = NRR 33
Earmuff = NRR 29
Total Maximum Protection = 38 dB
• The EPA recently made an announcement about a proposed change to the Noise Reduction Rating [NRR]

• This is the first change in hearing protector regulation in nearly 30 years
Noise Reduction Rating

Current NRR Label

Mock-up of New Label

80th % Minimally-trained

20th % Proficient Users
The New System: A Range

- Represents a range of expected protection
- Uses a new ANSI-standard lab testing to generate the attenuation ratings
- New NRR will provide an indication of how much attenuation minimally-trained users [the lower number] versus highly-motivated trained users [the higher number] can be expected to achieve
- For some hearing protectors, the spread of this range may be quite significant
## Noise Reduction Rating

### Three New Labels

<table>
<thead>
<tr>
<th>LABEL</th>
<th>DESCRIPTION</th>
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</table>
| Conventional HPD             | • Perform lab test with subjects who fit the protector after brief training  
• Estimates the range of protection achieved by 20% and 80% of users                                           |
| Active Noise Reduction [ANR] | • Uses a Microphone-in-Real-Ear [MIRE] method to estimate protection  
• Measured with ANR turned OFF and ON to show the additional attenuation from the ANR                                         |
| Level Dependent/Impulse Noise Reduction | • Testing will occur over a range of impulse noise levels. Multiple tests to determine lower and upper ranges of impulse noise reduction  
• Will include two ranges to identify attenuation for passive and active modes                                              |
Determining New NRR

- 20 human subjects tested in a simulated industrial room
- Subject trained then fits their own earplugs
- Tested with ears open / occluded at 9 frequencies
- Each subject tested 2x
- NRR calculated to be population average
New NRR (NR$_{sa}$)

80% achieved > 20 dB

20% achieved > 26 dB

Number of test subjects

Attenuation

11 14 18 19 20 22 23 24 25 26 27 30 33

20% achieved > 26 dB
Noise Reduction Rating

How to Apply the New Label

Two-number range displays the estimated protection achievable by minimally-trained users [80%] versus proficient users [20%].

A wider range indicates greater variability in the fit of that HPD. Smaller ranges indicate more consistency of fit. For example, earmuffs will usually have a tighter fitting range than earplugs, and may have a smaller NRR range.
Will OSHA 29 CFR 1910.95 change?

• OSHA has not announced any proposed changes to the Occupational Noise Standard.

• OSHA will presumably respond to the revised NRR label by issuing a field directive or technical memorandum, informing its compliance officers how to deal with the new two-number NRR range.
## EPA’s Published Timetable

<table>
<thead>
<tr>
<th>Action</th>
<th>Date</th>
<th>CFR Cite</th>
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</thead>
<tbody>
<tr>
<td>NPRM</td>
<td>08/05/09</td>
<td>74 FR 39150</td>
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<tr>
<td>NPRM Comment Period Extended</td>
<td>08/21/09</td>
<td>74 FR 42223</td>
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<tr>
<td>NPRM Comment Period End</td>
<td>09/04/09</td>
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<td>NPRM Comment Period Extended To</td>
<td>11/04/09</td>
<td></td>
</tr>
<tr>
<td>Final Action</td>
<td>09/00/10</td>
<td></td>
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</tbody>
</table>
What Can I Do Now?

• **Evaluate Current HPD Selection** to determine whether they are appropriate for your noise environment. Use the [Howard Leight Hearing Protector Selector](#) for recommendations.

• **Update Hearing Conservation Training Program** on proper fit of hearing protectors. Hold a “Toolbox Training” and hold a refresher fit training session.
What Can I Do Now?

Use **VeriPRO®** fit testing
- Train how to properly fit HPDs
- Select appropriate HPDs
- Document adequate protection

Use **QuietDose™**
- In-ear dosimetry measures and documents the noise dose employee is exposed to during their work shift
Reducing Costs of Hearing Loss
Reducing Costs of Hearing Loss
Reducing Costs of Hearing Loss

Indicators for Hearing Loss:
• Standard Threshold Shift
• Temporary Threshold Shift
• Recordable Hearing Loss
• Dosimetry
• Labeled NRR (derated?)
• In-ear Dosimetry
• Personal Attenuation Level (PAR)
Reducing Costs of Hearing Loss

Lagging Indicators vs. Leading Indicators
Indicators for Hearing Loss:

- Standard Threshold Shift
- Temporary Threshold Shift
- Recordable Hearing Loss
- Dosimetry
- Labeled NRR (derated?)
- In-ear Dosimetry
- Personal Attenuation Level (PAR)
Reducing Costs of Hearing Loss

Fit Testing

In-Ear Dosimetry
"I know how to better fit my earplugs now."

"I found a more comfortable fit. It was very beneficial."

"I had no idea I was not using my earplugs correctly."

"I was amazed with the results after being shown the proper way to use earplugs."

"Feel like am protected now!"

"Learned A LOT about best earplugs for me"

"Recently had threshold shift" "Found better earplugs"

"Very glad I did the fitting test. Now I know the correct way to fit my ear plugs."
Reducing Costs of Hearing Loss

OSHA Alliance: Best Practice Bulletin
www.hearingconservation.org

Additional Information
www.hearforever.org
Reducing Costs of Hearing Loss

Off-job + On-job = STS
Hearing Protectors +
Fitting Tips

How much protection?

0 dB

0 dB

33 dB

EAR #1

EAR #2

EAR #3

Howard Leight by Sperian
Fitting Tips

Roll-Down Foam Earplugs

1. Roll entire earplug into a crease-free cylinder

2. Pull Back pinna by reaching over head with free hand, gently pull top of ear up and out

3. Insert earplug well into ear canal and hold until it fully expands and expands
Fitting Tips

Multiple-Use Earplugs

1. Reach
While holding the stem, reach hand overhead and gently pull top of ear up and back.

2. Insert
Insert earplug so all flanges are well inside the ear canal.

3. Fit
If properly fitted, only the stem of the earplugs should be visible to someone looking at you from the front.
1. Visual Check
The earplug should sit well inside the ear canal and not stick out.

2. Acoustical Check
Cup hands over ears and release. Earplugs should block enough noise so that covering your ears with hands should not result in a significant noise difference.
Fitting Tips

Earmuff Instructions

1. Place earcups over each outer ear
2. Adjust the headband by sliding the headband up or down at the attachment buttons
3. The ear cushions should seal firmly against the head
Fitting Tips

Fitting Instruction Posters

Earplug Fitting Instructions

Earmuff Fitting Instructions

Do’s and Don’ts of Howard Leight® Earplugs

Do’s and Don’ts of Howard Leight® Earmuffs

Howard Leight by Sperian
FAQ: Earmuffs + Safety Eyewear

In our facility, several noisy areas require safety eyewear as well as earmuffs. Can earmuffs be worn over safety eyewear without affecting attenuation?

Attenuation is impacted significantly by **thick-framed eyewear**.

<table>
<thead>
<tr>
<th>Frame Thickness</th>
<th>Affect on Attenuation</th>
</tr>
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<tbody>
<tr>
<td>Thin (1-2 mm)</td>
<td>0 dB</td>
</tr>
<tr>
<td>Medium (3-4 mm)</td>
<td>2 dB</td>
</tr>
<tr>
<td>Thick (5-6 mm)</td>
<td>5 dB</td>
</tr>
</tbody>
</table>
FAQ: Dual Protection

At our facility, we are exposed to extreme noise levels and wear both earplugs and earmuffs. How much reduction in noise level can we expect from dual protection?

To estimate protected noise level, add 5 dB to the higher NRR protector.

Max® earplug: 33 dB
Viking™ earmuff: 29 dB
Maximum Protection: 38 dB
Fitting Tips

FAQ: Earmuffs + Absorbent Pads

We work in a humid environment and use moisture-absorbing pads with our earmuffs. Do the pads affect the attenuation of the earmuff?

No significant affect on attenuation!
FAQ: Radio Earmuffs + Noise

Is it safe to use earmuffs with built-in AM-FM radios? Doesn’t the radio just add more noise to damage hearing?

Built-in **sound level limitation** circuitry can mitigate additional noise exposure risks.

<table>
<thead>
<tr>
<th>Noise Level Under Earmuff</th>
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<tbody>
<tr>
<td>Ambient Noise</td>
</tr>
<tr>
<td>Attenuation</td>
</tr>
<tr>
<td>Passive Exposure</td>
</tr>
<tr>
<td>Plus Radio Noise</td>
</tr>
<tr>
<td><strong>Effective Exposure</strong></td>
</tr>
</tbody>
</table>
FAQ: Active Noise Cancellation

What about Active Noise Cancellation (ANC) earmuffs?

• Inserts a reverse-phase signal to cancel incoming noise
• Noise reduction at frequencies below 500 Hz
• Most effective in continuous noise (commuter noise)
• Not cost-effective for workers
FAQ: Hearing Aids / Protection

Can hearing aids act as hearing protectors?

• Hearing aids alone are often poor hearing protectors
• Use hearing aids and electronic earmuffs
• Use hearing aids and uniform attenuation earmuffs
FAQ: Custom Molded Earplugs

What about Custom Molded Earplugs?

**PRO**
- Comfort
- Personal attachment

**CON**
- Lower attenuation
- Variability in attenuation
- Lubricant required
- No extended-life benefit
Training + Motivation
Personalize Hearing Loss

Show, Don’t Tell

- Provide copy of annual audiogram to worker
- Use personal examples to demonstrate consequences of hearing loss
- Ask questions:
  - What is your favorite sound?
  - What sound would you miss the most if you couldn’t hear?
  - What sounds connect you to people and your environment?
Training + Motivation

Demonstrate Future Risk

Training Materials

• www.hearforever.org
• www.hearingconservation.org
• http://adl.grc.nasa.gov/
• www.cdc.gov/niosh/topics/noise
• www.dangerousdecibels.org
Send Clear Message On + Off Job

HC Part of Everyday Life

• Include recreational hearing conservation in annual training
• Provide extra HPDs for home use
• Promote Hearing Conservation at company/family events
Remove Barriers to HPD Use

Make HPDs Available

• Highlight “where to find HPDs” in annual training
• Make sure HPDs are well-stocked and accessible
• Include group of workers in selection process for increased acceptance
• Offer wide variety to match comfort, job requirements
Hearing Loss Due To Noise Exposure Is ...

Painless
Permanent
Progressive
... and very Preventable!