

Module 3 – Doing a Noise Audit

This module and Module 2 provide the necessary training needed to do a noise audit.

This module covers the following topics:

- ✓ Conducting basic noise measurements
- ✓ Assessing hearing protection use
- ✓ Noise audit recordkeeping



Sample Noise Audit Form #1	
Date _____	
Company Name _____	
Employee Name _____	
Job Duties or Workstation _____	
Make & Model of Hearing Protection _____	
NRR of Hearing Protection _____	
Size of Hearing Protection _____	
Average Noise Exposure _____	
Problems with Hearing Protection? _____	
Employee Comments or Complaints _____	

The following is needed to do a noise audit:

Audit form, checklists, clipboard,

Previous noise measurement records,

Hearing protection,

Sound level meter.



Photo by Justin Suter in Creative Commons



A map or sketch of your workplace or jobsite showing noisy areas may also be useful.

The following employees should be checked during a noise audit:

workers who you know or suspect are exposed to noise above 85 decibels,

workers wearing hearing protection,

and are:

present on the day of the audit,

working at normal or full production level.



Photo by Reid Rosenberg in Creative Commons

Four things to check in a noise audit:

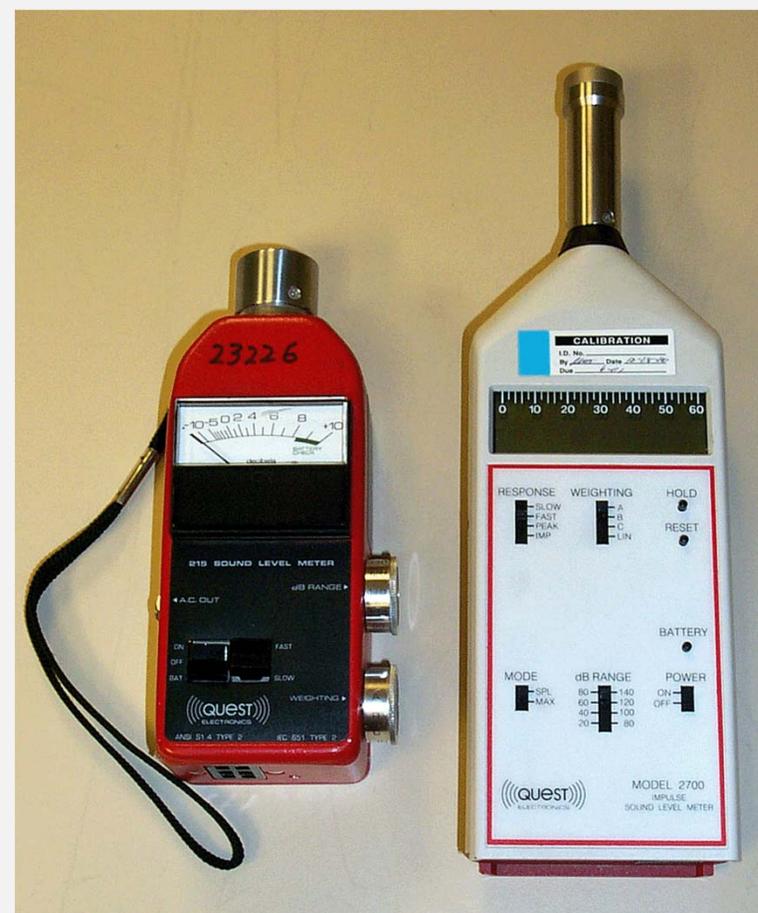
1. Has employee noise exposure changed? (requires a noise measurement survey)
2. Is hearing protection appropriate for conditions?
3. Is hearing protection worn properly?
4. Are employees satisfied with their hearing protection?

Sound Level Meters

A sound level meter measures noise at any particular moment.

They are good for spot checking and determining loudness of equipment.

They are useful for noise audits.



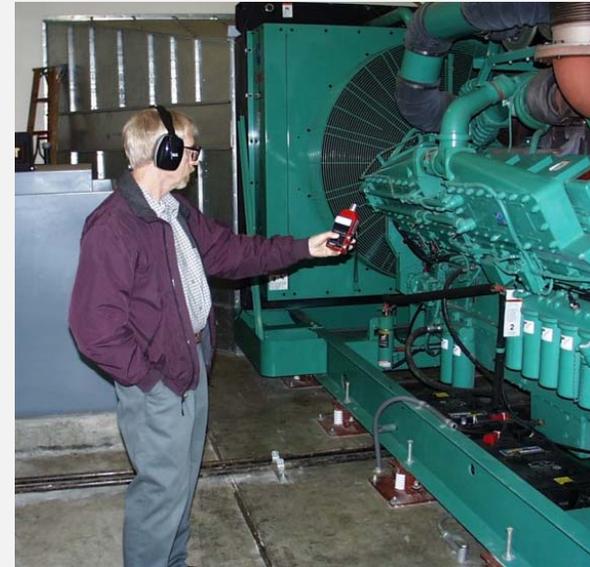
Taking Noise Measurements

Take noise readings with a sound level meter in noisy areas where employees work.

Compare to previous noise survey.

Determine if worker's noise exposure has changed.

Where noise is highly variable, you may need to take noise dosimeter readings.



Taking sound level meter readings



Noise dosimeters

Taking sound level meter measurements

Take noise measurements at employee's normal work location and near their ear. →

Take all readings in the "A-scale" and "slow response" mode.

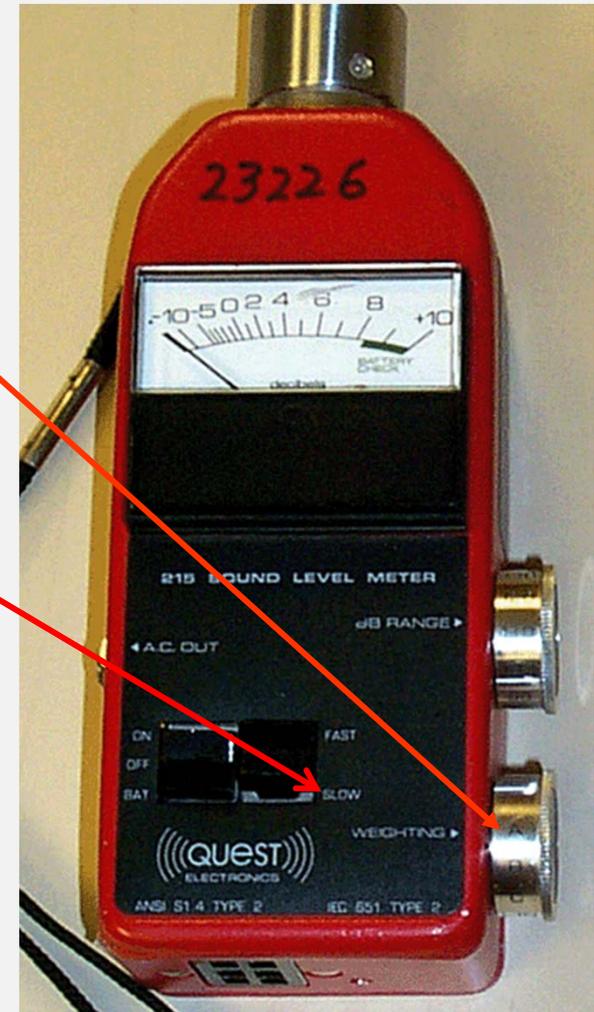
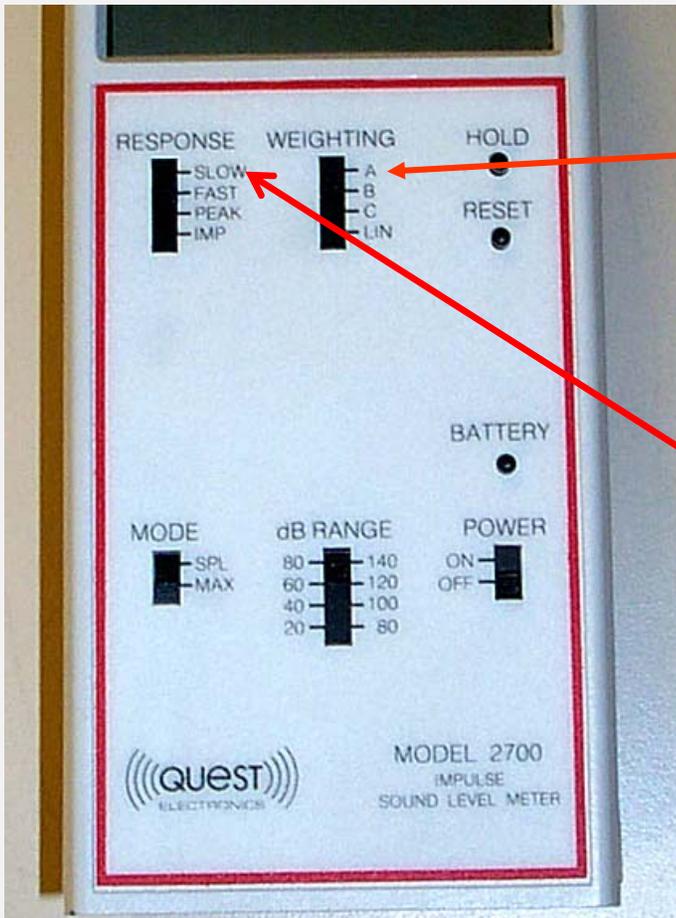
Estimate employees' length of exposure.

Highly mobile or inaccessible employees may need noise dosimeter measurements.



Sound level meter settings

Two Examples



A-scale

Slow response

Estimating average noise levels from sound level meter readings

If an employee is exposed to several different noise levels, you can estimate average noise level with the following formula:

$$D = 100(C_1/T_1 + C_2/T_2 \dots C_n/T_n)$$

C = time at specific noise level

T = reference duration # from Table HT-1

If D is greater than 50, than average noise level exposure of that employee is over 85 decibels

To use Table HT-1 in Noise Rule and see examples, [click here](#)

Noise Dosimeters

Noise dosimeters are used to measure average noise levels.

Dosimeters are worn by workers, usually for a full shift.

Dosimeters are useful for highly variable noise exposure or very mobile workers.



L & I consultants can be requested to do this activity

Noise Audit Procedures

Observe and talk to employees

Check what hearing protection is worn and how it is used.

Make sure the hearing protection has the appropriate NRR rating for the job.

Check hearing protection for cleanliness and need for repair or replacing.

Ask employees if hearing protectors are comfortable and are protective enough.

Note any other comments by employees.



Hearing Protector Checklist

What to check for in earmuffs

- ✓ Cover the whole ear?
- ✓ Positioned properly?
- ✓ Band snug, not too loose or tight?
- ✓ No interference from other PPE or glasses?
- ✓ Comfortable to employee?

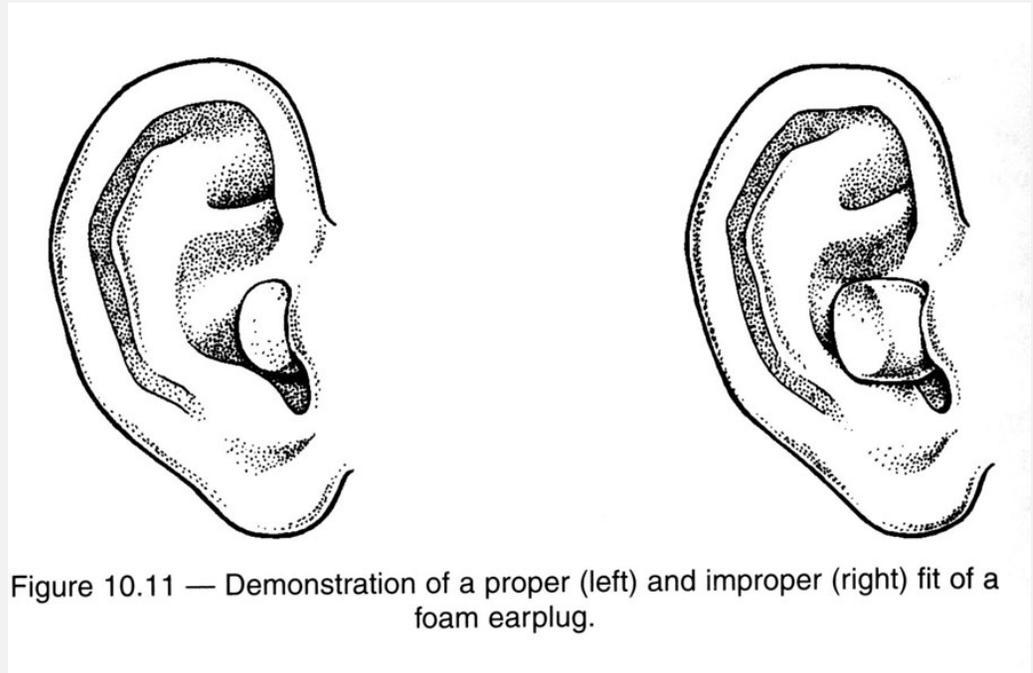


For a copy of checklist, [click here](#)

Hearing Protector Checklist

What to check for in foam earplugs

- ✓ Correct size?
- ✓ Inserted correctly?
- ✓ Properly seated?
- ✓ Clean?
- ✓ Comfortable to employee?



Hearing Protector Checklist

Check following in preformed earplugs & earcaps:

Preformed Earplugs

- ✓ correct size?
- ✓ inserted correctly?
- ✓ properly seated?
- ✓ clean?
- ✓ comfortable to employee?



Earcaps

- ✓ noise level not above 95 decibels?
- ✓ other items same as earplugs



Noise Audit Recordkeeping

Document Your Noise Audits

Audit records must be kept for each employee checked as long as they work for you.

The following must be included in the records:

- make & model of hearing protectors,
- size of protectors,
- average noise exposure,
- any problems found with protectors,
- any comments from employees about protectors

Audit Recordkeeping Sample Form #1

Sample Noise Audit Form #1

[company name here]

Date _____

Employee Name _____

Job Duties or Workstation _____

Make & Model of Hearing Protection _____

NRR of Hearing Protection _____

Size of Hearing Protection _____

Average Noise Exposure _____

Problems with Hearing Protection? _____

Employee Comments or Complaints _____

Additional Comments _____

For a pdf copy, click on this form



Audit Recordkeeping Sample Form #2

Sample Audit Form #2

Employee Name	Job Duties or Workstation	Make, Model & NRR of Hearing Protection	Hearing Protection Size	Average Noise Exposure in Decibels	Problems with Hearing Protection?	Employee Comments or Complaints



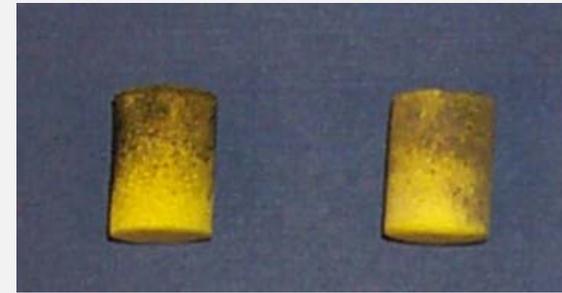
For a pdf copy, click on the form above

Noise Audit Follow-up

Correct any hearing protection deficiencies

Hearing protection must be replaced if it:

- ✓ is the wrong size
- ✓ doesn't fit properly
- ✓ is soiled, damaged or broken
- ✓ is uncomfortable to employee
- ✓ is not protective enough (noise level has increased)



Replace these!

You must assure employees use hearing protectors that provide them the needed protection.

Check Your Understanding

Question 1

The following must be checked in a noise audit:

- a) How many employees are wearing earplugs,
- b) Current noise levels of machinery,
- c) Current noise exposure of employees,
- d) How well employees have been trained.

Check Your Understanding

Question 2

Can a sound level meter be used to measure average noise level?

- a) Yes, it can do that.
- b) No, you must use a noise dosimeter.
- c) Yes, if you use a special formula.
- d) Yes, but only if you know how.

Check Your Understanding

Question 3

The following should be done in a noise audit follow-up:

- a) Keep the records for at least a year,
- b) Replace hearing protection when needed,
- c) Fire employees who aren't wearing earplugs,
- d) Double-check noise levels.