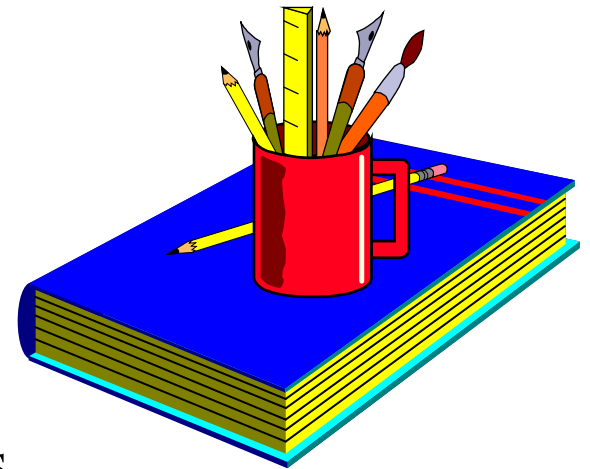


OCCUPATIONAL NOISE

CONTENTS

- Introduction
- What is noise
- How we hear
- Why a noise prevention program
- Signs and symptoms of hearing loss
- Effects of noise
- Noise level and the human response
- Employers responsibility
- European Community 1990 Regulations
- Hearing protection
- Audiometric testing
- Summary

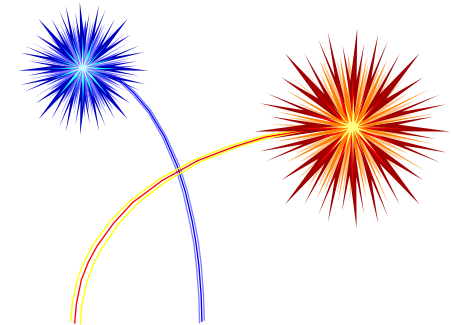




INTRODUCTION



- Loud noises can cause hearing loss
- Prolonged exposure to a harmless noise can cause hearing loss
- Damage from hearing loss is irreversible
- Noise induced hearing loss is preventable
- Prevention involves:
 - noise controls
 - safe work practices
 - education



WHAT IS NOISE

- Noise is an unpleasant / unwanted sound
- Hearing and how noise effects it
- Types of noise
 - continuous
 - impulse
- Side effects of noise
 - loss of hearing
 - stress
 - accidents
 - behavioural effects
 - negative impact on health





HOW WE HEAR

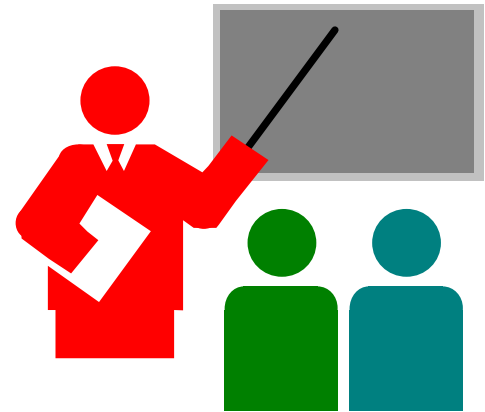


Ear

- Outer ear - directs sound waves
- Middle ear - eardrum - hammer, anvil, stirrup
- Inner ear - organ of corti, cochlea

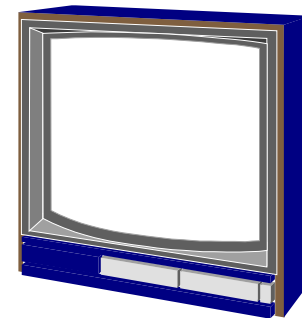
WHY AN OCCUPATIONAL NOISE PROGRAM

- Hearing loss can be temporary or permanent
- Physical means
- No cure
- Inner ear cells cannot be replaced
- Hearing loss is gradual and painless
- Employee awareness



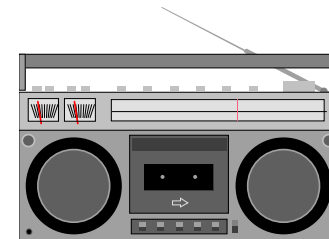
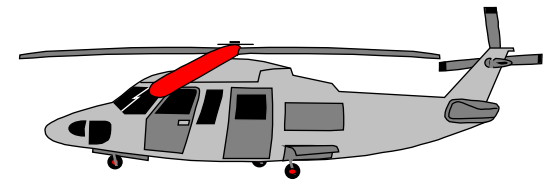
SIGNS AND SYMPTOMS OF HEARING LOSS

- Ringing / buzzing in the ears
- Difficulty with high pitched sounds
- Problems with conversing with others
- Inability to hear consonants
- Raising the volume on the TV / radio



THE EFFECTS OF NOISE ON HEARING

- **Sound** - produced vibrations enter the inner ear as waves.
- **Frequency** - (*pitch*) number of vibrations per second; measured in hertz (Hz)
- **Intensity** - loudness of the sound; measure in decibels (dB).





NOISE LEVEL AND THE HUMAN RESPONSE

- | | |
|--|-----------|
| → Pneumatic chipping and riveting | 130dB(A) |
| → Automatic punch press | 110 dB(A) |
| → Heavy lorries at 6m | 90 dB(A) |
| → Construction site - pneumatic drilling | 90 dB(A) |

HEARING CONSERVATION

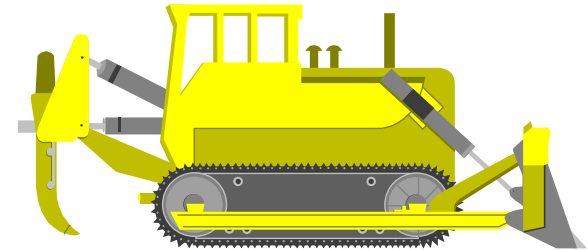
Quite Room: 30 dBA



Normal City Noises: 65 dBA



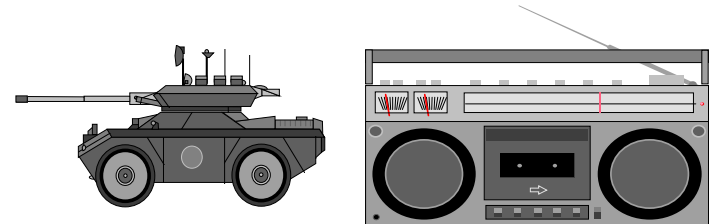
Bulldozer: 85dBA



Normal Conversation: 50 dBA



Artillery/Good Rock Band: 120 dBA



EUROPEAN COMMUNITY 1990 REGULATIONS

→ Objectives

- Protect workers from risks to their hearing caused by noise
- Prevent hearing loss and deafness as a result of exposure to noise at work

→ Legal requirements placed on employers

- Identify noise problems and if noise levels are above 85dB(A), measurements must be taken and assessed by a competent person
- Measurements should be repeated at appropriate intervals

EUROPEAN COMMUNITY 1990 REGULATIONS

- General duty to reduce the level of noise exposure by engineering or administrative means
 - **If noise level is above 85dB(A):**
 - Inform employees of the noise levels present and measures taken to reduce exposure
 - Make ear protection available and provide training in its use
 - Hearing checks must be made available to employees exposed to noise levels in excess of 85dB(A) over an 8 hour period



EUROPEAN COMMUNITY 1990 REGULATIONS

→ If noise level is above 90dB(A) the noise requirements for 85dB(A) apply plus:

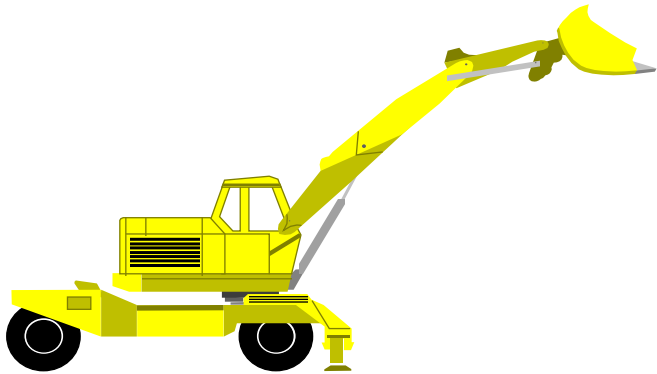
- Identify reasons for excess noise and put a plan in place to reduce
- Identify and clearly designate hearing conservation zones
- Ear protection must be worn and its use supervised
- Employees must be trained in the hazards of noise and the correct use of hearing protection



HEARING PROTECTION

- Three ways to protect your hearing:
- Engineering controls
 - Administrative controls
 - Hearing protection (**Last resort**)

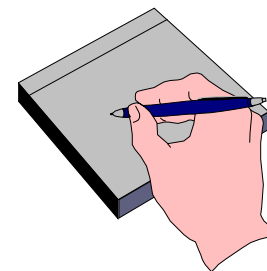
ENGINEERING CONTROLS



- Enclosure
- Sound barriers
- Complete enclosure
- Sound proof cabs
- Mufflers
- Equipment and exhaust

ADMINISTRATIVE CONTROLS

- Decreasing the exposure time
- Limiting the number of personnel exposed
- Arranging a work roster system



HEARING PROTECTORS

“EAR PLUGS”

- Description
- How to fit and wear
- Care
- Advantages
- Disadvantages



HEARING PROTECTORS

“EAR MUFFS”

- Description
- How to fit and wear
- Care
- Advantages
- Disadvantages





AUDIOMETRIC TESTING

- Painless and short test to measure hearing
- Establishes a baseline
- Detects changes in hearing
- Employee's with exposure in excess of 85dB(A) over an 8 hour period

SUMMARY

- Know the source of harmful noise
- Use engineering and administrative controls to avoid exposure to noise
- Obey posted high noise area signs
- Wear hearing protection properly

