

# **NOISE POLLUTION**

# Why worry about noise?

- Of all the pollution concerns:
  - Air, water, land, and noise; noise pollution is the one that has the potential for the most damage to humans and wildlife.
  - It is a hidden health hazard that impacts our physical, psychological and intellectual well being.
  - Our ears never shut down, even while we are sleeping, so the input is constant.

# What is Noise ?

- Sound that which is unwanted and disrupts one's quality of life, is known as **NOISE**.
- Normal sound becomes undesirable when it disturbs our normal activities such as working , sleeping and during conversation.
- World Health Organization stated that “Noise must be recognized as a major threat to human well-being”.

# Types of Noise:-

## External Noise:-

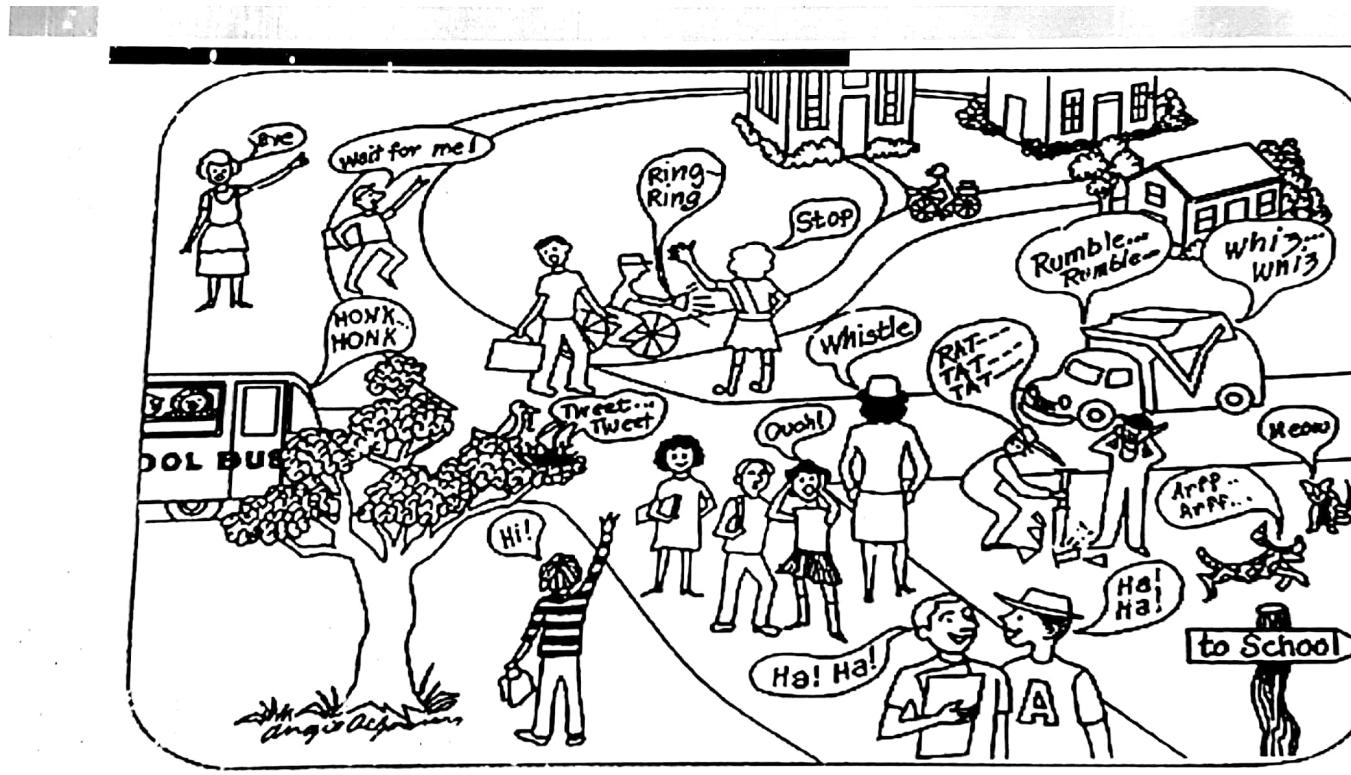
- Atmospheric noise.
- Extraterrestrial noise.
- Industrial noise.
- Man made noise.

## Internal Noise:-

- Thermal noise.
- Shot noise.
- Transit time noise.
- Miscellaneous noise.

# **What is Noise Pollution ?**

- Sound that is unwanted or that disrupts the activity or balance of human or animal life is called as **noise**.
  
- When there is lot of noise in the environment, then it is termed as **noise pollution**.



# **Source of Noise**

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**1. Noise in Industrial Area**

**2. Noise in Residential Area**

- Mechanical devices
- Voices
- Music's
- Neighbors

**3. Transportation Noise**

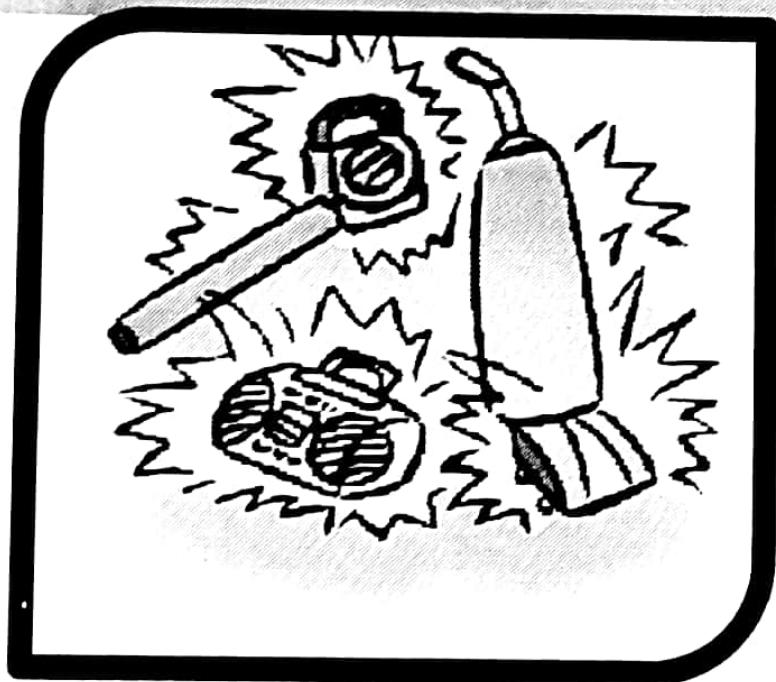
- Road Traffic
  - Rail Traffic
  - Air Traffic
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## **THESE ARE THE MAIN SOURCES OF NOISE POLLUTION :-**

- Household sources.**
- Social Events.**
- Commercial & Industrial Activities.**
- Transportation.**

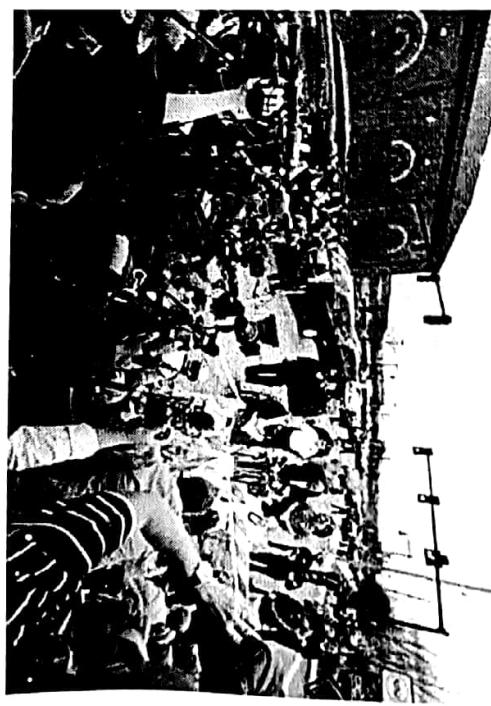
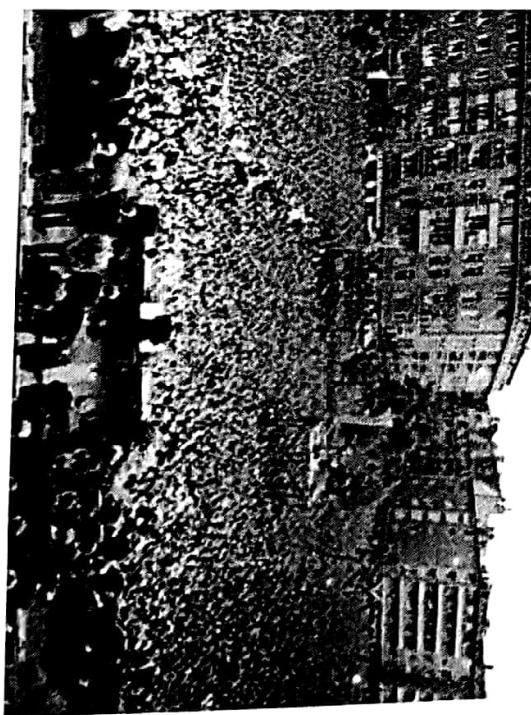
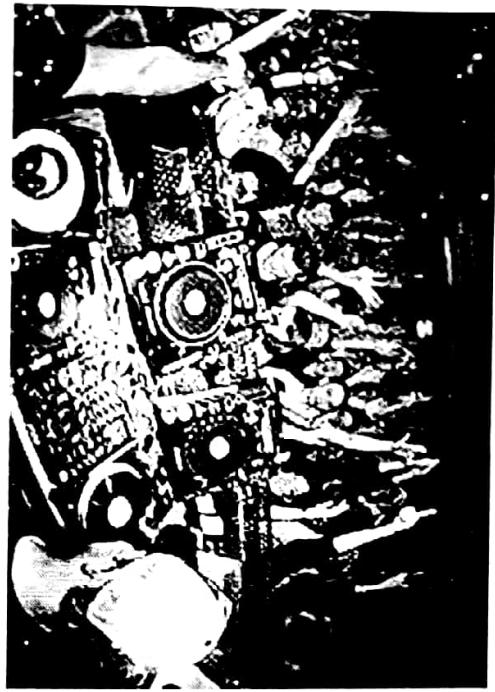
- **Gadgets like food mixer, grinder, vacuum cleaner, washing machine and dryer, cooler, air conditioners, can be very noisy and injurious to health.**
- **Others include loud speakers of sound systems and TVs, ipods and ear phones.**

# Household Sou



- **Places of worship, parties and other social events** also create a lot of noise for the people living in that area.
- In many market areas, people sell with loud speakers, others shout out offers and try to get customers to buy their goods.
- It is important to note that whey these events are not often, they can be called “Nuisance” rather than noise pollution.

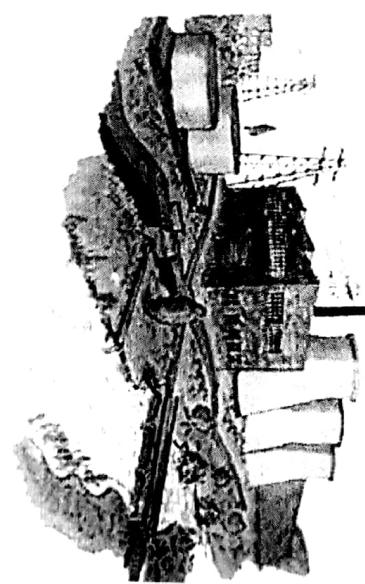
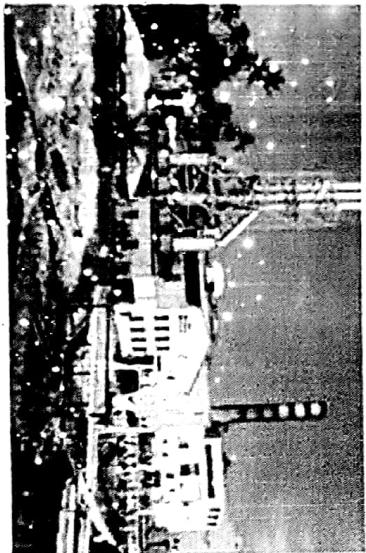
# Social Events:-



- Printing presses, manufacturing industries, construction sites contribute the noise pollutions in large cities.
- In many industries it is a requirement that people always wear earplugs to minimize their exposure to heavy noise.
- People who work with noisy equipments are required to wear noise-proof gadgets.

# Commercial & Industrial

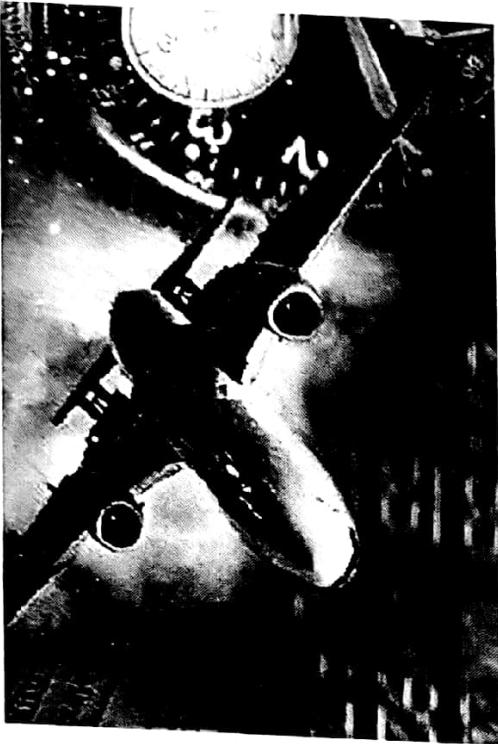
## Activities:-

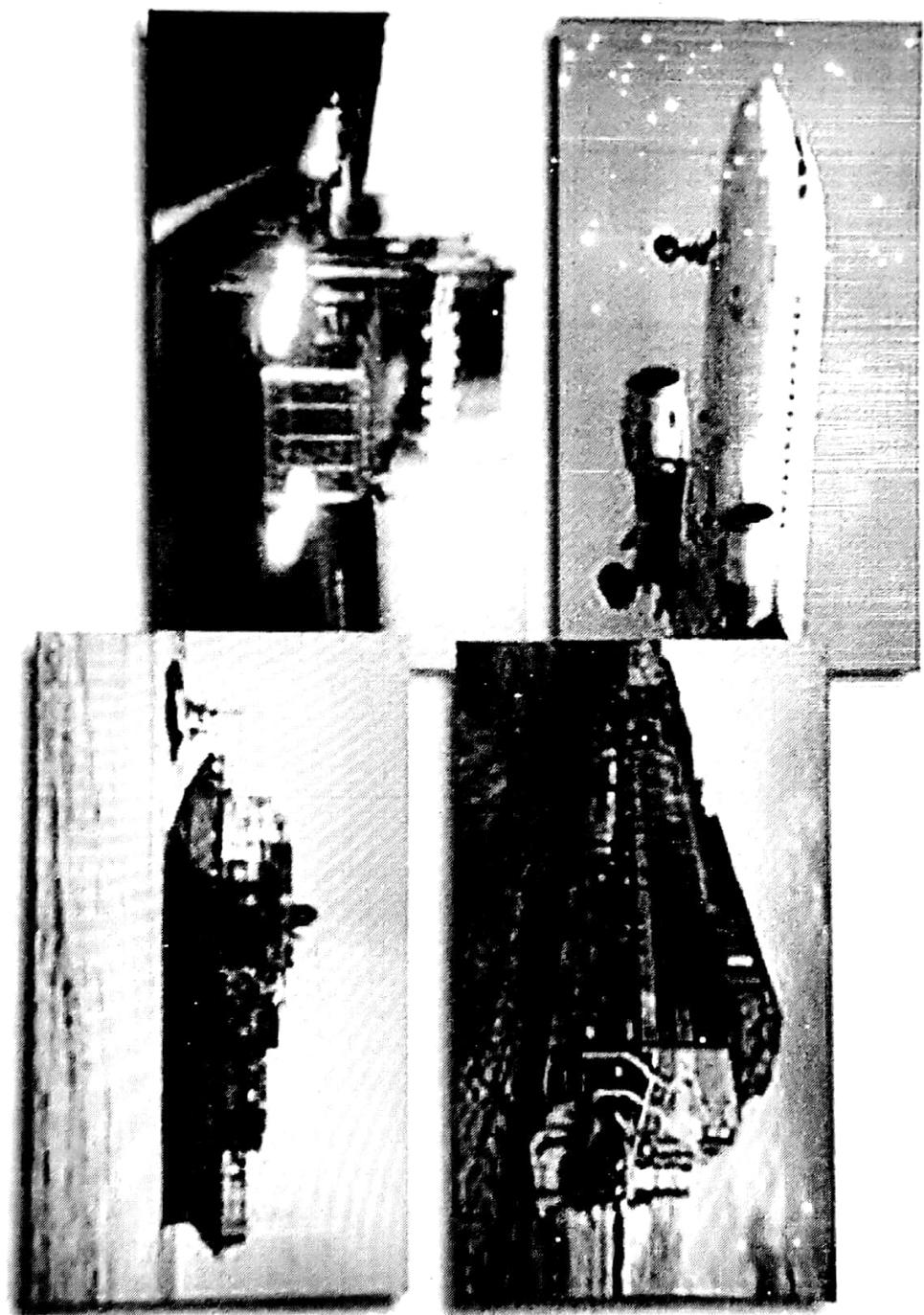


# Transportation:-

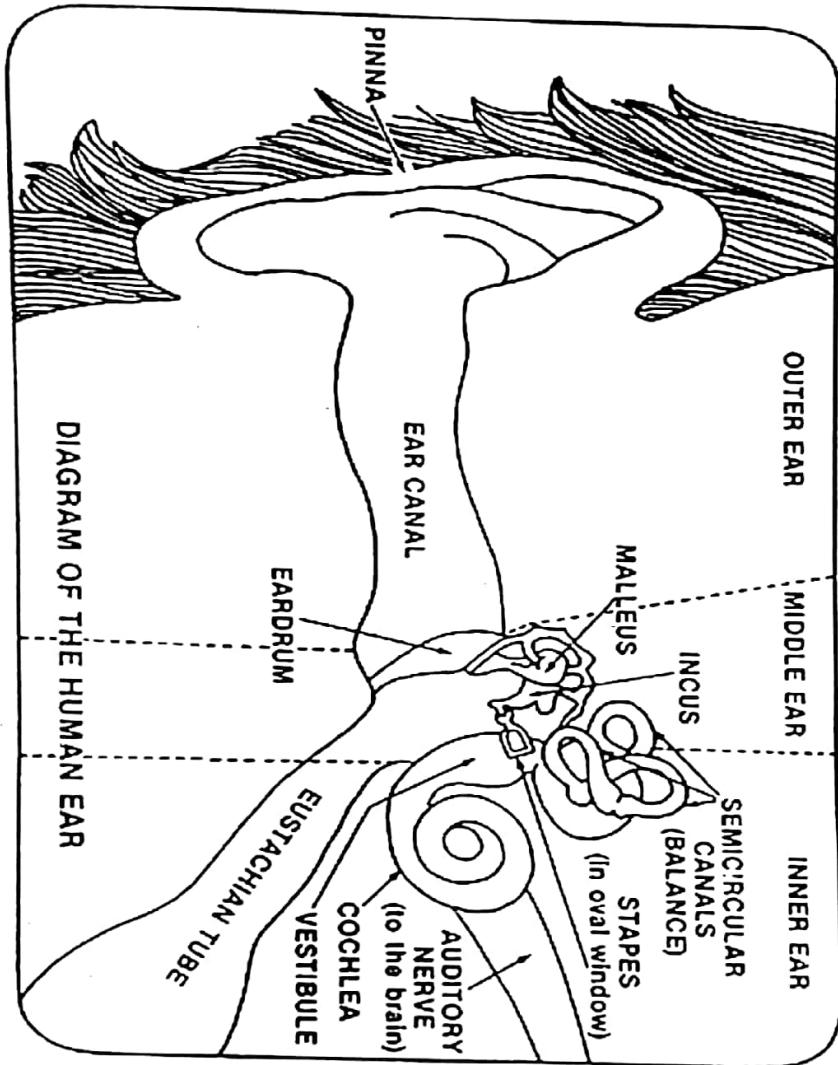
- Aeroplanes flying over houses close to busy airports.

- Over ground and Under ground trains vehicles on roads, these are constantly making a lot of noise.





# Our Magical Ears



# What does our ear drum do?



- Sound waves are collected by our ear canal and passed to the ear drum, which vibrates. The sound waves are then picked up by fluid in the inner ear and passed to the inner ear structures where the acoustic nerve connects to the brain.

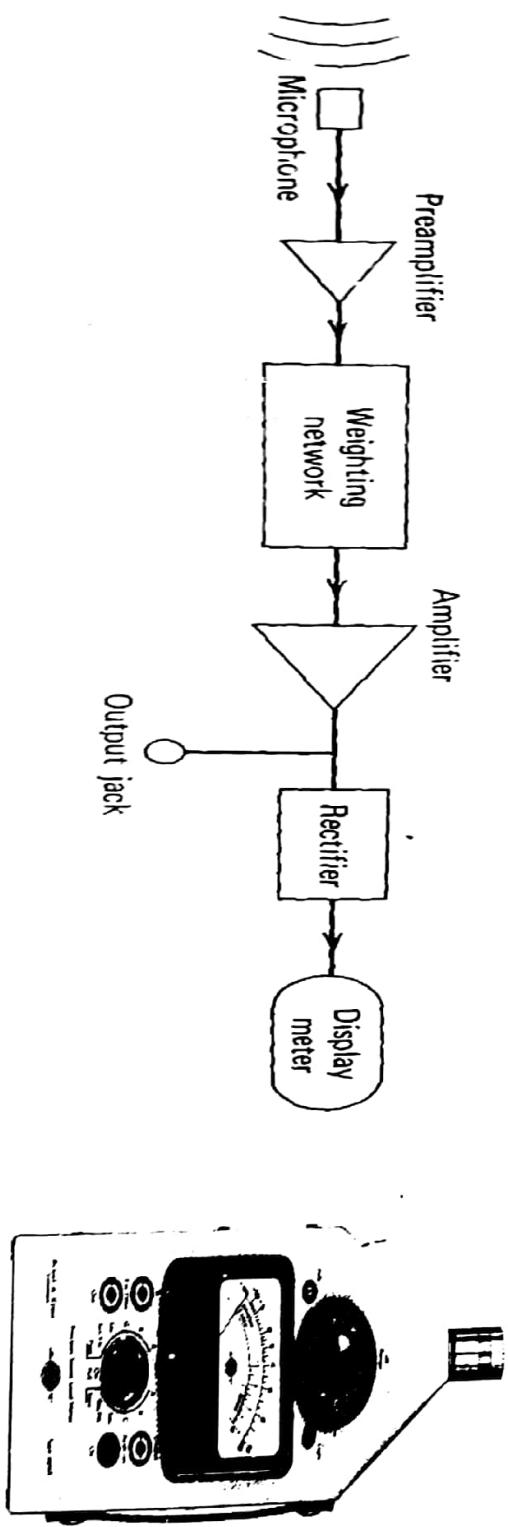
# The Mighty Decibel



- Hearing loss can occur from a single exposure to a loud noise or from repeated exposures.
- The Environmental Protection Agency has set a standard of 70 db in a 24 hour period as safe.
- Decibels measure the intensity of sound.

# Sound Level Meter

- Type 1 Precision Level Meter
- Type 2 General Purpose Sound Level Meter
- Type 3 Survey Sound Level Meter
- Type 4 Special Purpose Sound Level Meter



## The Numbers

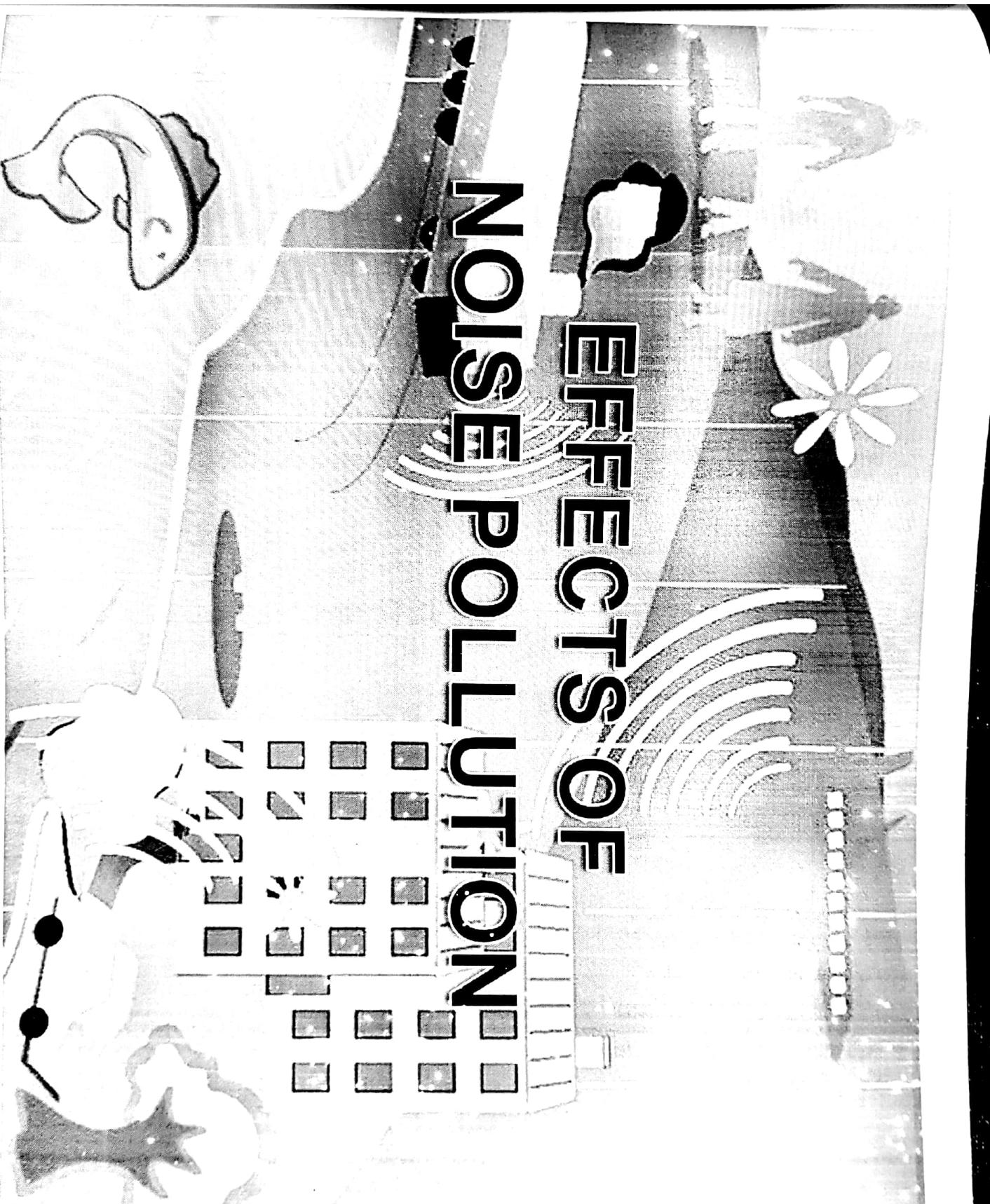
- Rustling leaves- 10db
- whisper - 30 db
- normal speech - 60 db
- television - 70 db
- traffic - 75-80 db
- blow dryer - 85 db
- noisy hall - 85 db
- classroom - 85 db
  
- Stereo - 90 db
- power saw - 100 db
- fire cracker - 115-120 db
- gunshot/train/jet - 150 db

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# Ambient noise standards

Area code	category	Limits in dB	
		Day	Night
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence zone	50	40

# NOISE POLLUTION EFFECTS OF



On  
HUMAN  
HEALTH

Effect of  
Noise  
Pollution

On  
ENVIRONMENT

On  
ANIMALS

# ON HUMANS:-

- Noise pollution is the reason for cause of nervous disorder, headache, high blood pressure and short memory.
- Depression and fatigue, which considerably reduces the efficiency of a person.
- Frustration and difficulty in concentration, disturbance of rest, physical and mental fatigue.
- Chronic exposure to noise may cause noise-induced hearing loss.

# More effects on humans:-



DEAFNESS

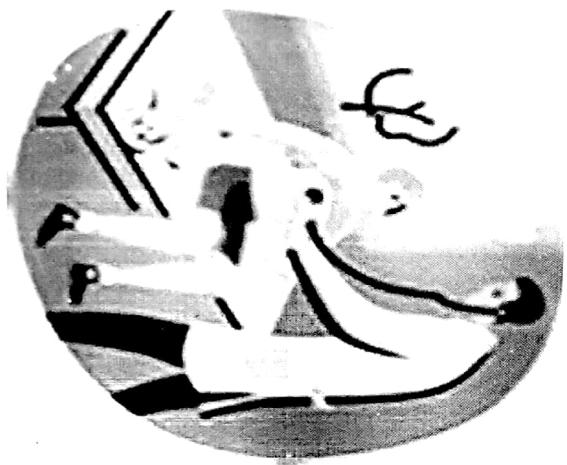


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# Physical Effects



□ **Examples:**

hearing loss,  
digestive disorders,  
birth defects,  
arthritis, cancer,  
heart disease,  
fatigue, headaches,  
asthma, hypertension,  
insomnia, sexual  
dysfunction, altered  
immune system.

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# Psychological Effects

- **Examples:**  
depression, anger,  
aggression,  
anxiety, increased  
violence, alcohol  
and drug use,  
fatigue, increase in  
suicide, decreased  
social skills,  
personality



disorders

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# Communicative Effects



- **Examples:**  
decreased  
learning  
capacity, memory  
loss, poor  
language skills,  
decreased  
speech  
development,  
decreased  
academic  
performance,  
decreased  
cognitive

## ON ANIMALS:-

- Noise pollution damages the nervous system of animal.
- Animal loses the control of it's mind.
- Creates problems in their use of sounds in reproduction and navigation.
- They becomes dangerous and attacking.

## **ON ANIMALS:-**

- Noise pollution from ship engines and sonar systems make it difficult for marine mammals like whales & dolphins, & prevent it from communicating, finding food, and avoiding hazards.
  
- Excessive noise has the ability to raise an animal's heartbeat speed and even harms an animal's metabolism.

## ON ENVIRONMENT:-

- Noise also has detrimental effects on the growth of some plants.
- Birds as well rely on hearing to help find them to prey, hence they are seriously disadvantaged by noise.
- Because the noise is breaking the earths barrier and that could lead to destruction of the world in about 2-3 yrs.
- Noise pollution causes poor quality of crops in pleasant atmosphere.

# Noise control

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- Reducing the Sound Producer
  - Interrupting the Path of the Source
  - Protecting the Recipient
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- Industrial Noise Control
- Community Noise
- Noise in the Home



# Remedies

- Administrative remedies
- Judicial Remedies
- Legislative Remedies
- Public Co-operation
- International Co-operation

- Wear ear plugs in very loud places. Filtered ear plugs, such as Sonic II can be purchased in any music or gun shop. They reduce the damaging decibels, whereas foam plugs will muffle sound but still allow too high a decibel range to enter your ears.

**Increase trees and shrubs around property.**

**Be aware of your surroundings and do whatever you can to reduce the noise level.**

**Find quiet time daily.**

**Carpeting, pictures and plants will absorb sound.**

**Limit your time in a noisy environment**

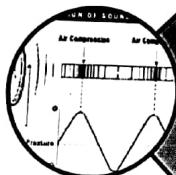
# NOISE ABATEMENT TECHNOLOGIES



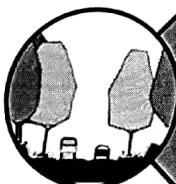
Installation of barriers between the noise source and the receiver



Use of acoustics in the design of building such as double glazing



Installation of panels or enclosures



Green belt development such as the attenuation of sound levels by plantation of trees and shrubs can

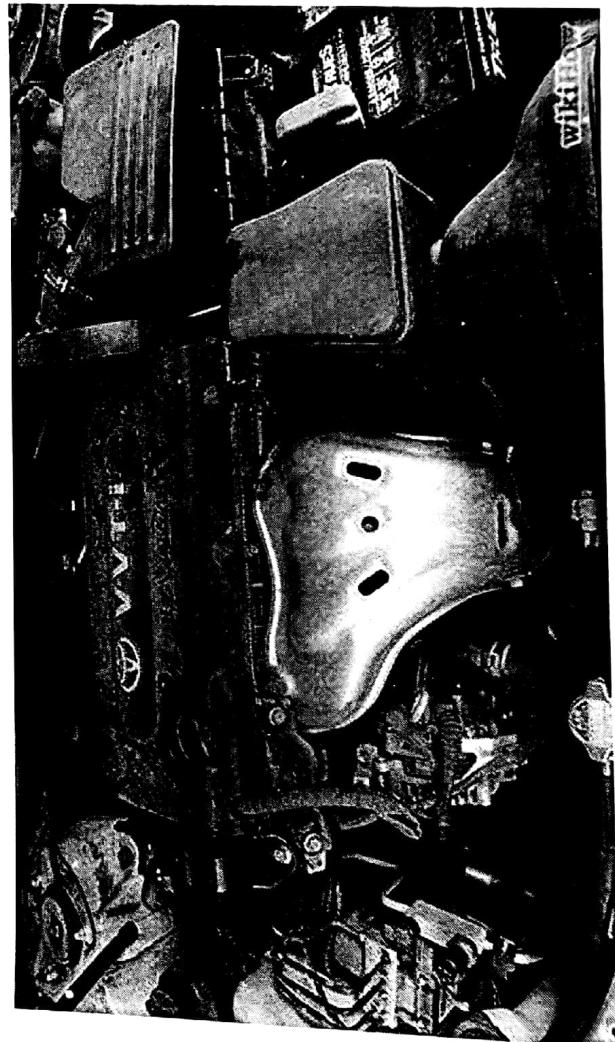
## Prevention of Noise Pollution:-

- Do not use car horns unnecessarily. Areas like hospitals and campuses are silence zones and horning is prohibited there.



# Prevention of Noise Pollution:-

- Motors, machines and vehicles also produce loud noises when not maintained properly. Proper maintenance should be carried out for better performance.



# Prevention of Noise

## Pollution:-

- Turn off the engine of your car or motorbike when you are not using it. It stops the annoying hum, and reduces air pollution also!

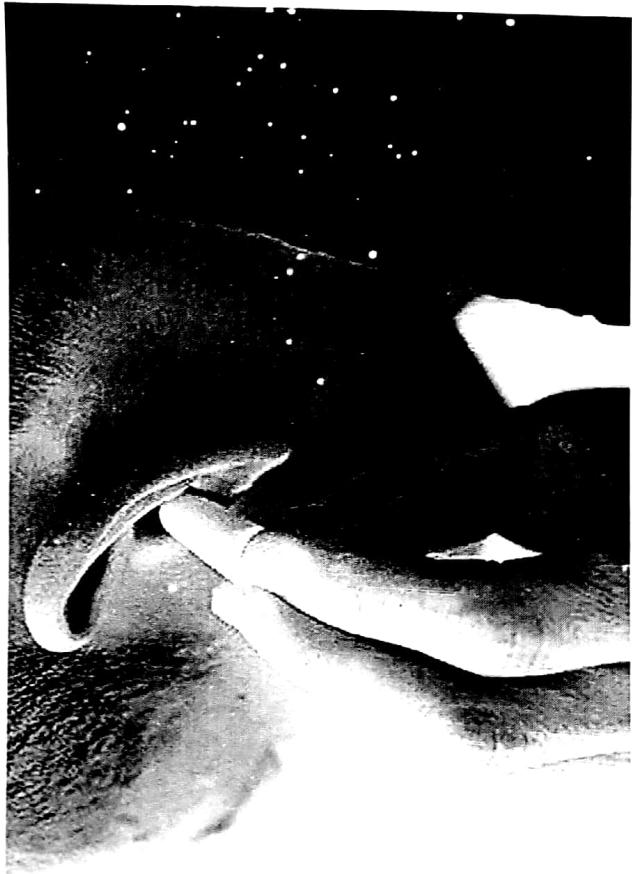


# Prevention of Noise

## Pollution:-

- If you are working in an area where there are loud noises, you must wear earplugs to prevent loss of hearing.

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# Prevention of Noise

## Pollution:-

- Rake leaves by hand, don't use a noisy leaf blower.
- Trim bushes or shrubs by hand, don't use a noisy bush trimmer.
- Don't blast music on the radio or computer or speakers. Be considerate of your own ears and those of other around you.
- Do noisy things (dishes, hammering, ect.) over or on a rubber mat to reduce noise