# NOISE POLLUTION


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# NOISE POLLUTION

## ❖ INTRODUCTION :

*The word 'Noise' is derived from the Latin word 'nausea' which means feeling of sickness at the stomach with an urge to vomit. According to Odum, noise pollution is the unwanted sound dumped into environment without regard to the adverse effect it may have. Noise pollution may be defined as any unwanted electromagnetic signal (sound) that produces a jarring or displeasing effect and which interferes with human communication, comfort and health. Noise pollution also caused when the loudness of the sound becomes irritating or unbearable. Noise pollution also refers to perturbations which interfere in the communication systems.*

*The unit of sound intensity is decibel (dB). The sound intensity from 0 to 100 dB is pleasant but when the sound intensity exceeds 120 dB, it causes noise. Sound intensity of 130 dB is the upper limit of the threshold of hearing and beyond this, is the threshold of pain which may cause damage to car and leading to hearing impairment. So, sound of more than 130 dB causes noise pollution.The EPA defines noise pollution as any unwanted or disturbing sound that reduces your quality of life or disrupts daily activities. Traffic, barking dogs, and loud music all qualify, but it's how noise impacts us that really matters. We are surrounded by sounds. Most aren't harmful, and many we just tune out, but noise can affect our health. A 2014 report published by the National Institutes of Health revealed that tens of millions of Americans suffer from health issues — heart disease, disturbed sleep, increased blood pressure, hearing loss and more — because of noise exposure. "Noise is an invisible pollutant that affects our breathing, brain waves and well-being, while silence replenishes and calms,"*

## ❖ SOURCES OF NOISE POLLUTION :

*Broadly speaking, the noise pollution has two sources, i.e. industrial and non- industrial. The industrial source includes the noise from various industries and big machines working at a very high speed and high noise intensity. Non- industrial source of noise includes the noise created by transport/vehicular traffic and the neighbourhood noise generated by various noise pollution can also be divided in the categories , namely, natural and manmade. Most leading noise sources will fall into the following categories: roads traffic, aircraft, railroads, construction, industry, noise in buildings, and consumer products*

### • Road traffic noise

*In the city, the main sources of traffic noise are the motors and exhaust system of autos , smaller trucks, buses, and motorcycles. This type of noise can be augmented by narrow streets and tall buildings, which produce a canyon in which traffic noise reverberates.*

- **Aircraft noise**

*Now-a-days , the problem of low flying military aircraft has added a new dimension to community annoyance, as the nation seeks to improve its nap-of the- earth aircraft operations over national parks, wilderness areas , and other areas previously unaffected by aircraft noise has claimed national attention over recent years.*

- **Noise from railroads**

*The noise from locomotive engines, horns and whistles, and switching and shunting operation in rail yards can impact neighbouring communities and railroad workers. For example, rail car retarders can produce a high frequency, high level screech that can reach peak levels of 120 dB at a distance of 100 feet, which translates to levels as high as 138, or 140 dB at the railroad worker's ear.*

- **Construction noise**

*The noise from the construction of highways, city streets, and buildings is a major contributor to the urban scene . Construction noise sources include pneumatic hammers, air compressors, bulldozers, loaders, dump trucks (and their back-up signals), and pavement breakers.*

- **Industry noise**

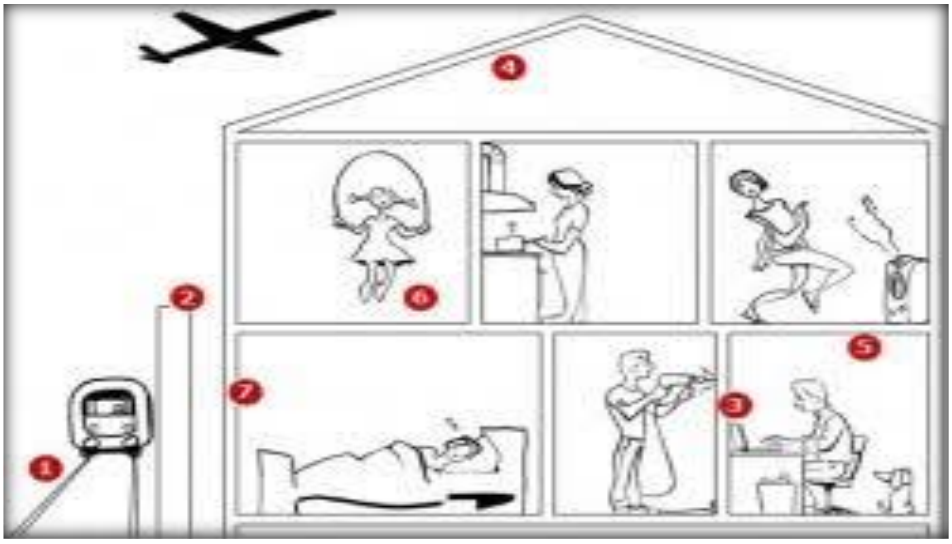
*Although industrial noise is one of the less prevalent community noise problems, neighbours of noisy manufacturing plants can be disturbed by sources such as fans, motors, and compressors mounted on the outside of buildings Interior noise can also be transmitted to the community through open windows and doors, and even through building walls. These interior noise sources have significant impacts on industrial workers, among whom noise- induced hearing loss is unfortunately common.*

- **Noise in building**

*Apartment dwellers are often annoyed by noise in their homes, especially when the building is not well designed and constructed. In this case, internal building noise from plumbing, boilers, generators, air conditioners, and fans, can be audible and annoying. Improperly insulated walls and ceilings can reveal the sound of-amplified music, voices, footfalls and noisy activities from neighbouring units. External noise from emergency vehicles, traffic, refuse collection, and other city noises can be a problem for urban residents, especially when windows are open or insufficiently glazed.*

- **Noise from consumer products**

*Certain household equipment, such as vacuum cleaners and some kitchen appliances have been and continue to be noisemakers, although their contribution to the daily noise dose is usually not very large.*




## ❖ EFFECT OF NOISE POLLUTION :

*Noise health effects are the physical and psychological health consequences of regular exposure to consistent elevated sound levels. Elevated workplace or environmental noise can cause hearing impairment, tinnitus, hypertension, ischemic heart disease, annoyance, and sleep disturbance. Changes in the immune system and birth defects have been also attributed to noise exposure.*

*Although age-related health effects (presbycusis) occur naturally with age, in many countries the cumulative impact of noise is sufficient to impair the hearing of a large fraction of the population over the course of a lifetime. Noise exposure has been known to induce noise-induced hearing loss, tinnitus, hypertension, vasoconstriction, and other cardiovascular adverse effects. Chronic noise exposure has been*

*associated with sleep disturbances and increased incidence of diabetes. Adverse cardiovascular effects occur from chronic exposure to noise due to the sympathetic nervous system's inability to habituate. The sympathetic nervous system maintains lighter stages of sleep when the body is exposed to noise, which does not allow blood pressure to follow the normal rise and fall cycle of an undisturbed circadian rhythm.*

*Stress from time spent around elevated noise levels has been linked with increased workplace accident rates and aggression and other anti-social behaviors. The most significant sources are vehicles, aircraft, prolonged exposure to loud music, and industrial noise.*

*There are approximately 10,000 deaths per year as a result of noise in the European Union.*

## ❖ PREVENTION :

*A hearing protection device (HPD) is an ear protection device worn in or over the ears while exposed to hazardous noise to help prevent noise-induced hearing loss. HPDs reduce (not eliminate) the level of the noise entering the ear. HPDs can also protect against other effects of noise exposure such as tinnitus and hyperacusis. Proper hygiene and care of HPDs may reduce chances of outer ear infections. There are many different types of HPDs available for use, including earmuffs, earplugs,*

*electronic hearing protection devices, and semi-insert devices. One can measure the personal attenuation rating through a hearing protection fit-testing system.*

*Earmuff style hearing protection devices are designed to fit over the outer ear, or pinna. Earmuff HPDs typically consist of two ear cups and a head band. Earplug style hearing protection devices are designed to fit in the ear canal. Earplugs come in a variety of different subtypes. Some HPDs*

*reduce the sound reaching the eardrum through a combination of electronic and structural components. Electronic HPDs are available in both earmuff and custom earplug styles. Electronic microphones, circuitry, and receivers perform active noise reduction, also known as noise-cancelling, in which a signal that is 180-degrees out-of-phase of the noise is presented, which in theory cancels the noise. Canal caps are similar to earplugs in that they consists of soft tip that is inserted into the opening of the ear canal.*

## ❖ CONCLUSION :

*We have made the law relating to noise pollution but there is need to creating general awareness towards the hazardous effects of noise pollution. Particularly, in our country the people generally lack consciousness of the ill effects which noise pollution creates ad how the society including they themselves stand to beneficiary preventing generation and emission of noise pollution. The target area should be educational institutions and more particularly school. The young children of impressionable age should be motivated to desist from playing with firecrackers, use of high sound producing equipments and instruments on festivals, religious and social functions, family get-togethers and celebrations etc. which cause noise pollution. Suitable chapters can be added into textbooks, which teach civic sense to the children and teach them how to be good and responsible citizen which would include learning by heart of various fundamental duties and that would obliviously include learning not to create noise pollution and to prevent if generated by others. Holding of special talks and lectures can be organized in the schools to highlight the menance of noise pollution and the role of the children in preventing it . For these purpose the state must pay its role by the support and cooperation of non-government organizations (NGOs) can also be enlisted.*