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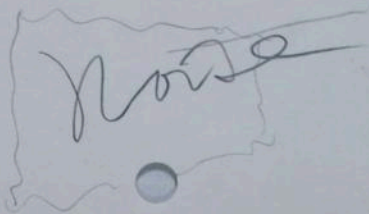
The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.



St. Louis Mo  
Beth Campbell 540 Polk

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# noise

## POLLUTION

The Advisory Committee on  
Environmental Science  
and Technology

by Robert M. Alexander



extension  
environmental  
education  
program

Extension Service  
Oregon State University  
Extension Circular 807 May 1972

unless the handbill is folded or otherwise prepared or placed so that it will not be blown therefrom by the wind.

(5) No person other than the owner shall distribute or in any manner place a commercial or noncommercial handbill in or on an automobile or other vehicle. The provisions of this section shall not prohibit the handing, transmitting or distributing of a noncommercial handbill to an operator or occupant of a vehicle who is willing to accept the same.

4.065 Method of Distribution. Bill distributors and their agents or employes making the actual distribution of handbills shall utilize only public ways, streets, alleys or sidewalks and the private walkways provided for customary approach to private premises to deposit the distributed material.

4.070 Name of Distributor to Appear on Commercial Handbill. No person shall distribute a commercial handbill in a place, under any circumstances, which does not have printed thereon the name of the person who caused it to be distributed.

4.075 Effect on Peddler, Etc., Regulations. Sections 4.045 to 4.075 shall not repeal, amend or modify other provisions of this Code prohibiting, regulating or licensing canvassers, hawkers, peddlers, transient merchants or any person using the public streets or places for a private business or enterprise or for commercial sales.

4.080 Unreasonable or Raucous Noise - Prohibited. No person shall make any unreasonably loud or raucous noise which disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the limits of the city. [Section 4.080 amended by Ordinance No. 16299, enacted September 13, 1971.]

4.083 Unreasonable or Raucous Noise - Specific Acts.

(1) The following acts are declared to be unreasonable or raucous noises in violation of this Code; however, this enumeration shall not be deemed exclusive:

(a) Horns, signaling devices, etc. The sounding of any horn or signaling device on any automobile, motorcycle, bus or any other vehicle, except as a reasonable signal as required by the exigencies of vehicular or pedestrian traffic; the creation by means of any such signaling device of any unreasonable loud or raucous sound; the sounding of any device for an unnecessary or unreasonable period of time.

(b) Radios, phonographs, etc. The using, operating or permitting to be played, used or operated any radio, musical instrument, phonograph, television set, tape recorder, or other machine or device for the producing or reproducing of sound in

such manner as to disturb the peace, quiet and comfort of other persons, or at any time with louder volume than is necessary for convenient hearing for the person or persons who are in the room, vehicle or chamber in which said machine or device is operated and who are voluntary listeners thereto. The operation of any such set, instrument, phonograph, machine or device in such a manner as to be plainly audible at a distance of 50 feet from the building, room, structure or vehicle in which it is located shall be prima facie evidence of a violation of this section.

(c) Loud speakers, amplifiers, etc. Using, operating or permitting to be used or operated, any mechanical loud speaker or sound amplifier, either stationary or mobile, for producing or reproducing sound which is cast upon the public streets or other public property. This section does not prohibit the reasonable use of mechanical loud speakers or sound amplifiers in the course of public addresses which are noncommercial in character.

(d) Yelling, shouting, etc. Yelling, shouting, hooting, whistling, or singing on the public streets, particularly between the hours of 10 p.m. and 7 a.m., or at any time or place, so as to disturb the quiet, comfort or repose of other persons.

(e) Animals. The keeping of any animal which by frequent or long continued noise disturbs the comfort or repose of any person in the vicinity.

(f) Steam whistles. The blowing of any steam whistle attached to any stationary boiler, except to give notice of the time to begin or stop work or as a warning of fire or danger, or upon request of proper city authorities.

(g) Exhausts. The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, motor boat, or motor vehicle except through a muffler or other device which will effectively prevent loud or explosive noises therefrom, except where such discharge is from vehicles used for participation in vehicle spectator sports activities between the hours of 7 a.m. and 10 p.m., where such activities are properly licensed by the city and consistent with the Zoning Ordinance of the City of Eugene.

(h) Defect in vehicle or load. The use of any automobile, motorcycle, or other vehicle so out of repair, so loaded, or in such manner, as to cause unreasonably loud or raucous noise.

(i) Loading, unloading, opening boxes. The creation of unreasonably loud or raucous noise in connection with loading or unloading any vehicle or the opening and destruction of bales, boxes, crates and containers.

(j) Construction or repairing of buildings, streets, sidewalks, and driveways. The erection (including the excavation), demolition, alteration or repair of any building, street, highway,

sidewalk or driveway other than between the hours of 7 a.m. and 10 p.m., except in case of urgent necessity in the interest of public health or safety, and then only with a permit from the responsible city building official, which permit may be granted for a period not to exceed three days while the emergency continues, and which permit may be renewed for periods of three days or less while the emergency continues.

(k) Special permits for construction, buildings, streets, sidewalks and driveways. If the building official should determine that due to the location of the building or other site, the comfort, repose, sleep and public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or the excavation of streets and highways within the hours of 10 p.m. and 7 a.m., and if he shall further determine that loss or inconvenience would not result to any party in interest, he may grant a permit for such work to be done within the hours of 10 p.m. and 7 a.m. upon application being made.

(1) Schools, courts, churches, hospitals. The creation of any unreasonably loud or raucous noise on any street adjacent to any school, institution of learning, church or court while the same are in use, or adjacent to any hospital, nursing home or other institution for the care of the sick or infirm, which would tend to unreasonably interfere with the workings of such institution, or disturb the peace, sleep and comfort of, or unduly annoy patients in the hospital or institution for care of the sick or infirm.

(m) Pile drivers, hammers, machinery, etc. The operation between the hours of 10 p.m. and 7 a.m. of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliance, or machinery, the use of which creates unreasonably loud or raucous noise which disturbs the quiet, comfort or repose of other persons.

(n) Blowers and compressors. The operation of any noise-creating blower, power fan, internal combustion engine, electric motor, or compressor, the operation of which causes noise due to the explosion of operating gases or fluids, or the compression of air, unless the noise from such blower, fan or compressor is sufficiently muffled so as to be minimal.

(2) Permit fees, if any, required under section 4.083(c), (j) or (k) shall be set by resolution of the council.  
[Section 4.083 added by Ordinance No. 16299, enacted September 13, 1971.]

4.085 [Repealed by Ordinance No. 16299, enacted September 13, 1971.]

# Public, government, industry begin campaigns against excessive noise

By GLADWIN HILL  
Of the New York Times

WASHINGTON — Noise, long tolerated around the world as an inevitable concomitant of accomplishment and progress, is reaching a historic peak of unpopularity.

Belatedly recognized as the most ubiquitous and most annoying, if not the most deleterious, of all the pollutions, it is under new attack on many fronts.

The current debate in New York City over a proposed new antinoise ordinance is symptomatic of the growing clamor against din — a movement now involving the United Nations, federal, state and local governments, science, industry, the legal profession and citizens.

Their common goal is to revitalize a public asset so fundamental that, ironically, it is cited in the first sentence of the constitution: "... to insure domestic tranquility..." — a reference that courts have held covers noise.

At stake in the effort are countless billions of dollars and possibly the mental and physical health of millions of people.

Evidences of the mounting concern about noise include the following developments:

- The U.N. Environmental Conference in June pinpointed noise as an important area for international study and control.

- Congress is now processing the nation's first comprehensive antinoise laws.

- Cities are abandoning ancient ineffectual "nuisance" laws on noise in favor of more enforceable scientific standards.

- Courts have been handing down an increasing number of rulings granting citizens physical or monetary relief from noise.

- The medical profession, long preoccupied with the specialized problem of noise within industry, is giving more attention to the effects of noise on ordinary citizens.

- Industry is giving quietness new emphasis in the design of many kinds of machines.

To date no one has noted any marked increase in quietude across the nation. But many signs suggest that a start is being made on stemming the steady ominous increase in background noise in recent decades, and that an actual rollback of the country's cacophony level may not be far in the offing.

At the same time, the conquest of noise gives indications of being the most intricate and difficult of all efforts against pollution. On the troublesome side are such considerations as the following:

- A certain level of noise, probably in an objectionable degree, is inherent in present patterns of urban life — although these can be changed.

- Enforcement of antinoise laws is difficult because noise is intangible and so often fleeting.

- Amelioration of a major noise source, airplanes, is a legal mare's nest that will be years in resolving.

- Although persistent noise has irritated people to the point of murder, and there is evidence it can cause mental illness, noise's long-term effects generally are inconspicuous and scientifically imprecise.

- Mobilizing public opinion against noise is difficult because people have become accustomed or even addicted to it (subconsciously, for instance, equating the thud of car doors and the roar of vacuum cleaners with solidity and power).

Noise is measured in decibels, on a scale that runs, for practical purposes, from zero, the threshold of human hearing, to around 140, in the area of loudness that causes pain and permanent ear damage. Each increase of 10 on the scale represents a tenfold increase in sound intensity.

Thus, while 30 decibels is approximately the quietness of a library, 60 decibels represents a thousandfold increase in noise, and is about the point where it becomes objectionable. This is roughly the equivalent of big-city traffic noise.

Ninety decibels is the federal limit for all-day exposure of factory workers, and constant exposure to more than 90 decibels can cause permanent hearing impairment.

Memphis in 1938 simply banned unnecessary horn blowing and began issuing tickets for it. This reduced offenses to a current rate of only about 150 a year. This has won Memphis numerous "quietest city" awards, although some Memphis residents say that in other respects it is not notably quieter than other cities.

Until recently the most explicit effort to abate din was the action of a number of states in limiting vehicle noise on highways to around 85 decibels. But here also enforcement has been sketchy.

Federal officials say California has the most comprehensive vehicle noise law. Its state highway patrolmen handed out 18,000 tickets last year for noisy cars. But with only six two-man teams to cover 162,000 miles of highways, the level of enforcement is admittedly low.

The first comprehensive state noise legislation was enacted by New Jersey last January. The law made excessive noise a state offense, with fines up to \$3,000, and directed the state's Department of Environmental Protection to draw up antinoise regulations.

The agency is now in the process of implementing that legislation. A 13-member citizen council provided for in the law to review regulations is just being appointed.

Illinois, Colorado, and some other states are in similar preliminary stages of noise regulation.

## Chicago starts program

In July, 1971, Chicago put into effect the most comprehensive program to curb noise of any American city.

Its 3,000-word ordinance sets noise limits for a dozen categories of sources, from bulldozers to garden tools. The limits range from 94 decibels for heavy machinery down to 55 decibels as the maximum that may emanate from a residence. Progressive reductions bring the limits on vehicles and machinery down as low as 65 decibels by 1980. The law carries a penalty of up to a \$500 fine and a six-month jail term.

The law is administered by the city's Department of Environmental Control, under a novel technique designed to overcome the classic obstacle in noise law enforcement: the fact that police officers do not have the time or technical knowledge to issue citations, while technical people generally do not have police power.

In Chicago three-man teams comprising two noise inspectors and a police officer cruise the city. When violations are spotted, citations can be issued on the spot.

Under this system, 1,649 cases were brought to court in the year ending last June. Of about 1,000 cases completed to date, convictions were obtained in 809 and compliance was obtained in most of the others.

Since Chicago instituted its program, another group of cities has adopted or moved toward similar legislation. The group includes New York, Washington, Baltimore, Kansas City, Dallas, St. Paul, Minneapolis and Grand Rapids, Mich.

## Airplanes acute source

The most acute single source of noise is airplanes. About one out of every 10 persons in the country lives close enough to airports to be bothered by plane noise and the number of airports and the amount of air traffic are expected to multiply in the years ahead.

Abatement of airplane noise is a legal puzzle that has lawyers and public officials, as well as airport area residents, in a quandary. The Federal Aviation Administration has jurisdiction over all civilian air traffic and over many aspects of airport development, but it has no authority to regulate noise from the airports.

# Noise pollution studied

Noise, a destructive polluter, no longer is going quietly unrecognized in Oregon.

The community noise level in the state is less pronounced than in states with higher levels of urbanization and industrialization: only limited motor vehicle traffic and jet aircraft problems now exist.

"However, with continuing population growth, in-

dustrial development and associated urbanization, the problem will become more intense unless control programs are initiated," said Robert M. Alexander, director of the Oregon State University Air Resources Center.

He wrote "Noise Pollution - A Background and Status Report for Oregon," just published by the OSU Extension Service as Ex-

tension Circular 807. The report was prepared by the Advisory Committee on Environmental Science and Technology, established in 1970 by Gov. Tom McCall and OSU to provide a more effective interchange of ideas and mobilization of resources to meet Oregon's environmental problems.

Copies of the report can be obtained from the OSU Bulletin Clerk, Corvallis, 97331.

Milton B. Larson, OSU professor of mechanical and nuclear engineering, worked with Alexander on the report which includes the effects and sound levels of different noises, physiological and psychological effects of noise, sources of noise and way to reduce them, legislation for noise control and a list of publications on noise pollution.

Alexander, who defines noise as unwanted, disturbing sound, names 3 concerns about effects of noise: hearing loss, interrelated physiological and psychological impacts thought to foster hypertension and reduce cardiovascular function and, third, loss of amenities or of livability associated with noisy environment and annoyances to peace and well-being.

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*Thy long blue solemn hours serenely flowing,  
Whence earth, we feel, gets steady help and good.—  
Robert Browning, "Pippa Passes"*

## *Noise—The Ultimate Insult\**

*By Alfred Etter*

I speak for a little black girl who recently visited the Morton Arboretum where I am the Naturalist. During our walk together, she discovered a small piece of a tree. Unable to recognize wood that had never been sawed or nailed she asked what it was. When she learned that it was a piece of genuine tree, just the way God made it, she was so delighted that she embraced it like a doll and carried it home to the ghetto with her on the bus. That is how ignorant of nature our people, especially our children, have become. For many of them, the unnatural has become the usual—so it has been with noise.

I think I speak not only for this little girl, but for people of every age who, because of rising levels of noise everywhere, are searching for something they feel they have lost. Without knowing it, they need to walk and sit together in a quiet place and look at the earth, listen to how the birds sing, and perhaps to puzzle about how much plants, growing and developing, can accomplish without ever making a sound.

When I requested permission to testify at this hearing, I was asked whether I wanted to testify as an expert. How does one qualify as an expert in these matters? Must we have a Ph.D. to speak out against the inhumanity of man's noise? Isn't just being alive enough? Aren't ears sophisticated enough to tell the difference between what is strident and what is soothing? Aren't irritation and anger as good a measure as decibels?

If it helps impress someone, then yes—I have a Ph.D. I have spent eight years in college and the rest of my life in studying the earth, and the life on it. I have made it my responsibility to understand how the world is put together—and not a little of this understanding has come from listening to the sounds of nature—the silent sounds of stars, the timeless flowing of rivers, the enthusiasm of wrens, the gnawing of squirrels as they husk walnuts in the fall.

In the past fifteen years of my life, I have travelled among the largest cities in the nation, and so I have become somewhat expert not only on sounds but on noise. I have heard most of the sounds of nature obliterated from the lives of people—worse than that, the sound of the people has been obliterated too.

Now that I am living at the Morton Arboretum in Lisle, I am receiving an involuntary post-doctorate in suburban noise. Though people have a vision of the Arboretum as a nice quiet

*\*Testimony given at the Chicago hearings sponsored by the Environmental Protection Agency, Office of Noise Abatement and Control, July 28-29, 1971.*