



# HANDLING NEIGHBORHOOD NOISE COMPLAINTS.

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DEPARTMENT OF EDUCATION  
TRENTON, NEW JERSEY

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Noise problems range in severity from relatively quiet sounds that produce mild annoyance to more intense, penetrating sounds that interfere with sleep. Most complaints come from persons living near and objecting to noise from industrial plants, commercial air conditioners, truck terminals, railroad freight car storage yards, and airports. All complainers term these noises health hazards because they cannot obtain proper sleep, cannot eat, and life in general is made miserable. Evaluated against today's standards, these noises are not health hazards. They do not directly produce disease.

When all other means of endeavoring to obtain the desired noise control has failed, local or municipal health officials are called upon for assistance. They in turn refer these complaints to the State Department of Health. For several years, we have promoted a plan which appears to produce some degree of success—sometimes in controlling the noise and sometimes in developing a better understanding between the complainer and the offender.

Whenever a municipal official requests assistance, he is informed that the municipality must first adopt a specific noise performance code patterned after that in use in Warwick, Rhode Island or Chicago, Illinois. We further emphasize that such a code is not based on health implications but simply noise levels with which, experience has shown, people will live without complaining.

Copies of these codes follow:

### Performance Code No. 1 — NOISE (WARWICK)

In residential or commercial districts when measured at a point 25 feet distant from an establishment wherein a noise originates or at the lot line, whichever is closer; in manufacturing districts when measured at any point on the boundary of the nearest residential district:

the sound pressure level radiated continuously from a facility between the hours of 10 P.M. and 7 A.M. shall not exceed the following in any octave band of frequency:

Frequency Band cycles per second	Sound Pressure Level in decibels re 0.0002 microbar.
20-75	69
75-150	54
150-300	47
300-600	41
600-1200	37
1200-2400	34
2400-4800	31
4800-9600	28

If the noise is not smooth and continuous and is not radiated at nighttime, one or more of the following corrections shall be added to or subtracted from each of the decibel levels given above:

Type of operation or character of noise	Correction in decibels
Daytime operation only	+ 5
Noise source operates less than 20% of the time	+ 5*
Noise source operates less than 5% of the time	+ 10*
Noise source operates less than 1% of the time	+ 15*
Noise of impulsive character (hammering, etc.)	- 5
Noise of periodic character (hum, screech, etc.)	- 5

\*Apply one of these corrections only.

The sound pressure level shall be measured with a Sound Level Meter and an Octave Band Analyzer that conforms to the specifications published by The American Standard Association, New York, N.Y.

**PENALTY** - Any violator of this ordinance or any order made pursuant thereto or who shall refuse to comply with such an order shall, upon conviction thereof, be liable to a penalty of not less than \$25.00 nor more than \$200.00 for each violation.

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Performance Code No. 2 — NOISE  
(CHICAGO)

Any use established in a Manufacturing District shall after the effective date of this ordinance be so operated as to comply with the performance standards governing noise set forth hereinafter for the district in which such use shall be located.

Sound levels shall be measured with a sound level meter and associated octave band analyzer manufactured according to standards prescribed by the American Standard Association, Incorporated, New York, N.Y. Measurements shall be made using the flat network of the sound level meter. Impulsive type noises shall be subject to the performance standards hereinafter prescribed provided that such noises shall be capable of being accurately measured with such equipment. Noise capable of being so measured, for the purpose of this code, shall be those noises which cause rapid fluctuation of the needle of the sound level meter with a variation of no more than plus or minus two decibels.

Noises incapable of being so measured, such as those of an irregular and intermittent nature, shall be controlled so as not to become a nuisance.

Any violator of any provision of this ordinance or any order made thereto or who shall refuse to comply with any such order shall, upon conviction thereof, be liable to a penalty of not less than \$25.00 nor more than \$200.00 for each violation.

Maximum Permissible Sound Pressure Levels  
In Decibels re 0.0002 dynes per square centimeter

At no point on the boundary of a residence or business district shall the sound pressure level of any individual operation or plant (other than background noises produced by sources not under the control of this ordinance, such as the operation of motor vehicles or other transportation facilities) exceed the decibel levels in the designated octave bands shown below for the districts indicated.

<i>Octave Band Cycles per second</i>	<i>Along residence district boundaries</i>	<i>Along business district boundaries</i>
0 to 75	72	79
75 to 150	67	74
150 to 300	59	66
300 to 600	52	59
600 to 1200	46	53
1200 to 2400	40	47
2400 to 4800	34	41
above 4800	32	39

After a specific noise performance code has been adopted by a municipality and when requested, engineers from the State Department of Health will conduct noise studies using prescribed instruments to determine possible violations. These studies must often be conducted during night hours or on week-ends and holidays. A formal report is submitted to a responsible local government official showing results obtained and interpreting these readings against the limits prescribed by the respective municipal code. Enforcement of violations remains with the local government officials.

If the noise exceeds the prescribed limits, the report will recommend methods of control and the engineers who conducted the study are available for limited consultation with the offender. The noise can often be controlled by simple procedures such as limiting the work hours of certain noisy operations or providing simple baffles. When more complex problems are encountered, it is recommended that a private noise consultant be engaged and names and addresses of three such consultants are provided in the report. Pertinent information obtained by representatives of the State Department of Health is made available to the consultant.

When conducting the initial study, an attempt is made to discuss the situation with the person who registered the original complaint. In this way, many other factors are learned. Poor industrial plant conditions such as untidy yards, brightly lighted building exteriors, highly reflective surfaces as well as noise often stimulate complaints and the noise may well be within tolerance levels. When such conditions are made known to plant management, they are usually anxious to make corrections or changes which usually nullify all complaints. In numerous cases, certain persons in poor health and under mental strain are observed by the engineers. Upon their recommendation, the person may be visited by a State Department of Health physician who, if conditions warrant, may recommend or assist the person to obtain medical advice and treatment.

The control of industrial noise complaints has many facets. It may be achieved by baffling with sound absorbing materials, careful design of new machines or modification of existing machines, keeping machines in good repair, changing methods of processing, increasing the distance or constructing barriers between the work area and the source, or providing vibration mounts. Wooden fences or evergreen trees planted in a staggered fashion around railroad freight yards, truck terminals and industrial plants will provide little noise reduction, but the screening of bright light and general beautification of the area could provide the needed psychological effect to prevent continued noise complaints.

CURRENT THINKING  
NOISE PERFORMANCE CODES

The development of industrial parks, the approachment of residences on industry, and the greater use of air-conditioning or cooling equipment has increased the volume of ambient noise to the point where it has invaded the privacy of our homes and our daily life.

Recognizing that means exist for the suppression, absorption and reduction of these noises, codes have been written to legally require conformance with levels of noise at or below which reasonable persons will live without complaining. Therefore, certain codes were detailed in an article entitled, Handling Neighborhood Noise Complaints that appeared in the N.J. State Department of Health publication, PUBLIC HEALTH NEWS for November 1963. Featured in this article is the Warwick Code which, with some modifications for local conditions, is representative of those on the books of many New Jersey communities.

The increase in the use of air-conditioning equipment and its proximity to other residential properties raised questions as to the applicability of the Warwick Code which was originally designed to control noise from industry. At the same time, the need for an octave band analysis was questioned. The purpose of an octave band analysis was to determine the frequency most likely responsible for the annoyance and the use of this knowledge in applying noise reduction measures.

Consequently, attention is being focused on the use of a simple sound level meter and a one-figure overall value instead of the eight values in an octave band analysis. These simple sound level meters take readings on three curves or "weightings." The A curve is preferred as it most approximates the response of the human ear.

Codes utilizing the A weighting are in existence and take varied forms. The expression "decibels on the A weighting" is abbreviated to dBA. Examples of these are:

Air Conditioning, Heating and Refrigerating Institute.

60 dBA permitted at any point on the property line. To have valid readings, the levels must be at least 5 decibels above the levels prevailing at the same point when the source(s) of the alleged objectionable sound is not operating.

Wyckoff, West Orange and Englewood, N.J.

Air-conditioning units are in violation when the audible noise is in excess of 45 dBA measured in the center of a room wherein the annoyance exists.

Borough of Ramsey.

All sounds or noise radiating from any equipment cannot exceed 10 dBA during the daytime and 5 dBA during the nighttime over and

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above that existing when the equipment is not in operation. Measurements are taken at the property line but no closer than three feet to any wall. No maximum decibel limit is stated.

Trenton (proposed).

Noise radiated over a measurable period of time from a residence, business or establishment shall not exceed 50 dBA daytime and 45 dBA nighttime at any point on the complainant's property line. If the source of the noise is less than ten feet distant from the point of annoyance, the meter should be placed in the center of the room where the complaint originates, with one window open, and shall not exceed 45 dBA.

If the A weighting is exceeded, an octave band analysis may be made at the discretion of the enforcing officer. If the noise is a pure tone, an octave band analyzer must be used and the values of the Warwick Code will apply.

Kenilworth (proposed).

Noise created by industrial processes shall be contained within the confines of the property upon which the process is located. Such containment can be considered effective if the noise as measured on any point of the property line is not in excess of 50 dBA. If the property line is not accessible or within three feet of any wall, the containment can be considered effective if the noise is not in excess of 45 dBA when measured in the center of the room wherein the complaint originates, with one window open.

Sound Level Meters

All codes should require the use of a sound level meter that meets the requirements of Standard S1.4 - 1961 of the United States of America Standards Institute, New York, N.Y.

The Type 1565A of the General Radio Company meets these requirements. It is priced at \$240.00. A leather carrying case is an additional \$15.00. A sales office is maintained at 845 Broad Ave., Ridgefield, N.J. The range is 44 to 140 dB (re 0.0002 microbar).

The Type 412 of H.H. Scott Company, Inc., Maynard, Mass. meets these requirements. It is priced at \$495.00. The attractive feature is its range of 24 to 150 dB (re 0.0002 microbar).

General Radio Company Type 1551-C has a range of 24 to 150 dB (re 0.0002 microbar) and is priced at \$450.00.

Type 1555-A General Radio Company Survey Meter had been a popular low-price instrument even though it did not meet Standard S1.4 - 1961 mentioned above. It is no longer manufactured.