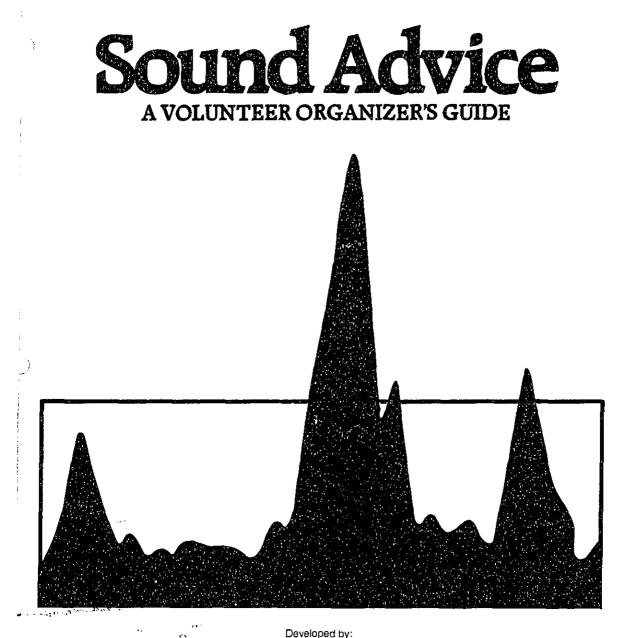


American Association of Retired Persons under a grant from the U.S. Environmental Protection Agency



Developed by:

Special Events Section Program Department American Association of Retired Persons Under a grant from the Environmental Protection Agency

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INTRODUCTION

In neighborhoods across the country, people are realizing that noise is a serious matter, and that practical stops are available to reduce noise. Many communities have been successful in reducing or eliminating noise problems. The success is usually the result of many individuals and groups working together. As an organizer of a noise abatement program, you can help to bring interested persons together to control or reduce noise. "Sound Advico" is a noise abatement program which can help to make your community a healthier and better place to live.

"Sound Advice" will focus on the use of older persons as volunteers in the noise abatement program. Older Americans are an excellent resource for the program. Many older persons have the time and interest in the community that are required for volunteer noise counselors. Older persons also have various skills from past work or volunteer activities which can be put to use in the campaign against noise.

This guide will help concerned individuals who want to organize a noise abatement program in their community. Suggestions are given for establishing a volunteer noise counselor program and for recruiting and working with volunteers. Also included are samples of organizational materials and resource materials for use in establishing your program.

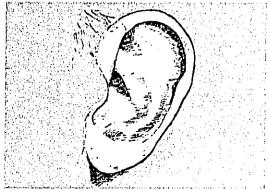
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THE EFFECTS OF NOISE

Noise can be defined as any loud or disagreeable sound. We are confronted with noise daily in our working and living situations. Sounds from trucks, motorcycles, airplanes, lawnmowers and appliances are some of the noises that are part of modern life.

In addition to being a nuisance, noise can be a serious health hazard. It can cause irreversible hearing loss as well as physical and psychological stress.

Hearing Loss. Of the many health hazards related to noise, hearing loss is the most clearly



observable. Noise loud enough to cause hearing loss is common. The places where we live, work, and play are filled with potentially harmful levels of noise. The Environmental Protection Agency (EPA) estimates that over 20 million Americans are exposed daily to noise that is permanently damaging to their hearing.

Hearing loss is usually gradual. People become aware of the damage when they start to miss occasional words in general conversation and have difficulty understanding telephone conversations. Unfortunately, there is no cure for this kind of hearing damage. Hearing aids do not repair noise-damaged hearing, although they can be of limited help to some people.

People with partial deafness from exposure to noise do not necessarily live in a quieter world. Many sounds they hear are distorted in volume, pitch, or clarity. Consonants of speech, especially high frequency sounds such as "s" and "ch" are often lost or indistinguishable from other sounds. Speech frequently seems garbled, and is difficult to understand. When exposed to a very loud noise, people with partial hearing loss may experience discomfort or pain. They also frequently suffer from tinnitus—irritating ringing or rearing in the head. **Stress.** Many of us know the irritation and annoyance of noise we cannot control. Our bodies automatically react to sudden or loud sounds as a defense for possibly dangerous or harmful situations. Generally blood pressure rises, heart rate and breathing speed up, muscles tonse, hormones are released into the blood stream, and perspiration increases.



Frequent or prolonged exposure to loud noise keeps our bodies in this state of tension and can lead to stress related ailments. Research has linked noise with the development or aggravation of heart and circulatory diseases. Noise in the workplace may cause the listener to develop ulcers. Workers in certain noisy industries have ulcers at a rate five times that of the general population. Other research has shown that noise may be a factor in lower resistance to disease and infection.

Sleep Disruption. Sleep is a restorative time of life, and a good night's sleep is probably crucial to good health. But everyday experience suggests that noise interferes with our sleep. Noise can make it difficult to fall asleep, it can wake us, and it can cause shifts from deeper to lighter sleep stages.

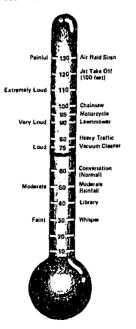
Human response to noise before and during sleep varies widely among age groups. The elderly and the sick are particularly sensitive to disruptive noise. Compared to young people, the elderly are more easily awakened by noise and, once awake, have more difficulty returning to sleep. As a group, the elderly require special protection from the noises that interfere with their sleep.

Other Effects. Noise in school and in the home can affect children's learning. In a school located near an elevated railroad track, students whose classrooms faced the track did significantly worse on reading tosts than did similar students whose classrooms were further away. Some school districts have built new schools in quieter neighborhoods to alloviate this serious concern.

The effects of noise are also seen in the workplace. Workers in noisy environments are more likely to be tense, irritable and upset. Their efficiency may be hampered by exhaustion, absentmindedness, mental strain and absenteeism.

NOISE LEVELS

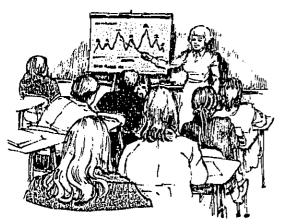
Decibels, often abbreviated as "dB" are measures of the intensity of sound. Typically people are exposed to decibels ranging from O, the point where hearing starts, to 140, which represents a very loud sound. Noise can begin to harm hearing at about 70 decibels, particularly when constant exposure occurs. Some common examples of sounds and their measurement are shown on the chart below.



VOLUNTEER ACTIVITIES

Noise counselors can contribute to the welfare of the community by engaging in a variety of noise-reducing activities. For instance, they might help by referring people with noise complaints to the appropriate authorities in the community. Or they might make presentations about noise to local community groups. They might also work with local groups to conduct hearing tests. These are just a few of the ways noise counselors can do something about noise in the community. These and other noise counselor activities are explained in more detail below. The volunteer noise program can choose those activities best suited to the particular needs of the community.

School Programs. One or more volunteer counselors may wish to undertake educating students to noise and its possible effects. Teachers and school principals will often agree to having a noise counselor present a lesson about noise to their classes.



A series of courses on noise has been devoloped by the Environmental Protection Agency for inclusion in school curricula. An excerpt from Sounds Alive, for children from kindergarten through sixth grade, is included with this guide book. An excerpt from Preparing for a Quieter Tomorrow, for grades seven through twelve, is included in Appendix A. Counselors might also choose to develop their own materials for class presentations.

Fairs. Many communities have county, state or health fairs which are open to everyone in the community. Noise counselors staffing a fair booth can be very effective in educating attendees about noise and its effects. Distributing brief educational materials is recommended. A brief explanation of the health effects of noise, suitable for photocopying, is given in Appendix B. Fairs also provide an opportunity to recruit volunteers for the noise abatement program.

Hearing Tests. Another valuable project is making arrangements for hearing tests for community residents. In addition to helping persons identify hearing problems, the testing project can also help raise the level of awareness about hearing and noise effects throughout the community.



The local school system may be able to conduct student hearing tests by the school nurse or by an audiologist. Many communities have free or low-cost speech and hearing clinics, some areas have mobile diagnostic units. Arrangements might be made for these clinics to do testing at senior centers, nursing homes, fairs, or at community group meetings. Or noise counselors might volunteer to transport interested persons to the clinic for a hearing test.

Quiet Day. Some noise abatement groups have successfully organized a community-wide event which emphasizes the importance of noise control to a large number of residents. A "Quiet Day" in your city or town can help to build interest in your program and to provide information and education to the general public. There are many activities which can be incorporated into a "Quiet Day" to help achieve your goals, for example:

- free speech and hearing tests
- kite flying
- frisbee competition
- · free muffler tests for motorcycles and cars
- silent films
- · mime show
- magic show
- nature walks
- demonstration of sign language
- hot air balloon rides
- hang glider demonstration

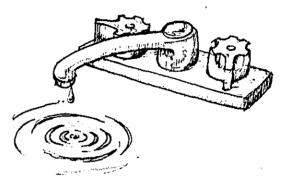
Community Presentations. There are a large number of community groups that invite speakers to their meetings. These groups are often looking for new and interesting topics, and you might approach them about making a presentation on noise. Addressing community groups is an excellent way to disseminate information about noise and to enlist interested persons in your efforts for noise control.

Counselors might start their presentation by showing a film or a slide-tape. This can be followed by a general question-and-answer session, or a description of a specific community noise project. An introductory level slide-tape program, The George Show, was developed by EPA and is available with this kit. Other slide or film programs may be available from the community library.

Barking Dogs. A common noise complaint in many communities is barking dogs. The Humane Society of the United States and other groups have developed an effective training method to control most dogs' barking. A copy of the dog training information is given in Appendix C. This copy of "Quiet, Man's Best Friend" is suitable for photocopying.

Noise counselors may be able to cooperate with the local S.P.C.A. or local veterinarians to promote this training. Distributing copies of the information to pet stores or veterinarian's offices or at special sessions for training dog owners can help to cut down on excessive barking.

Changes in the Home. There are many sounds in our homes, and several of these can combine to make the home a very noisy place. Fortunately, there are some simple ways to reduce noise in the home. Quieting noisy appliances, fixing dripping faucets, and reducing the noise from a neighbor's apartment are just a few of the changes which can be made.



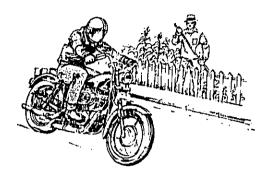
Noise counselors can advise local residents about some simple techniques to decrease noise. A list of possible solutions is provided in Appendix D as a starting place for advice to community residents. This list is suitable for photocopying, and can be distributed during group presentations, at county or health fairs, or in schools.

Referral Service. The volunteers might gather information about community organizations responsible for certain noise problems which can be used to develop a referral service. Volunteers can refer callers with complaints to the individual or agency best able to help them. While supplying a valuable service to the community, this program also acts to inform the noise counselors about the most common noise complaints.

It is best to use a phone in an office or public place rather than someone's home. Various volunteers can staff the phone on a regular schedule, and the phone number can be well publicized.

Noise Ordinances. A growing number of local jurisdictions have enacted noise control ordinances. Many communities have developed legislation that sets specific noise decibel levels and establishes the agencies responsible for enforcement.

Some model community noise control ordinances are available. These model ordinances may help in developing an appropriate ordinance for your community. Volunteers can contact some of the agencies in Appendix E for copies of various models.



Public Hearings. State, county, and municipal authorities hold regular hearings on public issues. When the issue is noise, a counselor may want to give testimony and answer questions. Keep in mind also that hearings on building codes, zoning ordinances, and even recreation facilities can also involve the noise situation. Find out what hearings are scheduled in your county or municipal government and try to have community concerns about noise represented.

THE VOLUNTEER ORGANIZER

The volunteer organizer is a person aware of the serious nature of noise, and committed to taking action to reduce it. The most important characteristics of the volunteer organizer are AWARE-NESS of the problem and COMMITMENT to action. The organizer does not need to be a noise expert to organize a volunteer noise abatement program in the community.

The role of the organizer entails recruiting, motivating and helping to train volunteers to act as counselors. Together they will be involved in studying the types of activities appropriate for volunteer noise counselors, and will help the volunteers carry out these activities in the community. The volunteer organizer will coordinate and guide volunteer activities to meet the program goal of noise abatement in the community.

RESOURCES

Noise counselors in the "Sound Advice" program will want to gather as much information about noise as possible. It will help to know what's being done about noise in your community, and who's doing it. Volunteer activities can then be developed to supplement present community efforts, not duplicate them. The resource list will include names, addresses and telephone numbers of various persons and organizations involved in noise enforcement and legislation. These individuals can act as resources for technical information, can share educational materials, and may be interested in working actively with the volunteer noise counselors.

Some agencies which may be included on the resource list are:

- local police or sheriff's department
- Mayor's office
- airport control tower and planning officer
- health department
- Humane Society
- park and recreation department
- port authority
- various industry complaint departments
- transportation systems
- refuse collection agencies and businesses
- public works department
- planning and zoning authorities
- office in charge of emergency vehicle sirens
- local representatives at each level of government

Other organizations or agencies which can act as resources include:

Acoustical Society of America (ASA). This group has regional coordinators who can act as technical resources to noise counselors. The regional coordinators, who are members of the Coordinating Committee on Environmental Acoustics, can answer technical questions on sound, sound measurement, and noise. To find the coordinator in your area, contact:

> The Coordinating Committee on Environmental Acoustics Acoustical Society of America 335 E. 45th Street New York, New York 10017 (212) 661-9404 ext, 564

American Speech-Language-Hearing Association. This national organization is working loward preventing noise-induced hearing impairment and reducing environmental noise. The local office may be able to provide technical informalion or program support. To find the office near you, contact: American Speech-Language-Hearing Association 10801 Rockville Pike Rockville, Maryland 20852 (301) 897-5700

Department of Defense (DOD). The DOD has a program to address the problem of noise generated by military airfields. The objectives of the program are the protection of the integrity of military operations at DOD bases and the protection of the safety, health and welfare of affected public. The program involves technically assisting communities in land use planning and controls that will ensure that local development is compatible with the noise levels generated by the airfield.

Department of Labor/Occupational Safety and Health Administration (OSHA). The Department of Labor is concerned with noise as an onthe-job hazard and deals with it through OSHA. OSHA programs include the development of noise exposure standards for workers; enforcement of those standards by inspections; and training, education, and information programs to assist employers, employees, and others in complying with standards.

Environmental Protection Agency (EPA). This agency has in the past been actively involved with noise education and noise abatement programs at the local, state and federal levels. However, because of funding cut-backs, most EPA regional offices and the federal office in Washington, D.C. no longer have noise control departments. You may want to contact your regional EPA office (see Appendix F) for advice on sources for assistance in your area.

Approximately half of the states still had a state-wide noise control program as of 1982. These state offices are also included in Appendix F.

Federal Aviation Administration (FAA). The FAA has a program to reduce noise exposure at civil airports. The objectives of the program are to reduce the noise at the airport boundary to a prescribed level as much as possible and to assist communities in achieving compatible land use for the remaining areas. The FAA encourages citizen participation in the process of noise compatible land use planning.

Federal Highway Administration (FHWA). The FHWA noise policy addresses noise associated with highway construction and use. The focus of the policy is to consider noise exposure in federal-aid highway location and design decisions by requiring studies of expected noise levels where the highway will be located.

FHWA also provides for noise reduction on existing federal-oid highways. This primarily involves the placement of noise barriers at particularly loud locations which present a problem to nearby residents.

National Association of Noise Control Officials (NANCO). NANCO is a non-profit organization dedicated to environmental noise control. The national NANCO office can act as a technical resource on noise legislation, and can refer you to interested persons or agencies in your area. NANCO publishes a monthly newsletter, Vibrations, for its members. A senior associate membership rate is available to interested older persons. For information, contact:

> National Association of Noise Control Officials P.O. Box 2618 Fort Walton Beach, Florida 32549 (904) 243-8129

THE ORGANIZATIONAL MEETING

The first step in organizing a volunteer noise abatement program is to identify community groups or individuals that may be willing to endorse the program and assist in its development. The information for your resource list will be useful in identifying many of the persons to contact for an initial organizational meeting.

The purpose of the organizational meeting is to bring all interested persons together to discuss a volunteer noise abatement program. The meeting will involve a discussion of present noise reducing activities in the community and additional activities that would be appropriate for volunteers.

Initial contact with the interested community groups or individuals should be made either by letter or by telephone. Emphasize the need for local noise abatement activities, and stress the positive results that might be attained from a community volunteer noise abatement program. Invite interested individuals or a group representative to attend the organizational meeting. Notify the persons of the meeting date a few weeks in advance to accommodate their schedule. The agenda for the organizational meeting might include:

- introductions: each person introducing themselves, explaining individual or agency interest
- noise control needs in the community
- present community attempts to meet these needs
- possible use of volunteers to help meet these needs
- discussion of initial steps to develop the volunteer network
- establishing a steering committee
- establishing a date and time for the next group meeting

Some people attending the organizational meeting may be interested in actively participating in the development of the volunteer program. These persons can be formed into a steering committee to give continued support and counsel. Others may not be able to commit themselves to ongoing participation, but may act as resource persons or technical advisers in their area of expertise.

Before the next scheduled meeting, contact the persons who will serve on the steering committee to reinforce the importance of their support and the value of the program. The advisory committee can be of valuable assistance in the next step of the project, the actual recruiting and working with the volunteers.

RECRUITING AND WORKING WITH VOLUNTEERS

Recruiting. Recruiting capable volunteers is one of the most important tasks in the development of a "Sound Advice" program. Those volunteers will be the backbone of the committee's efforts to educate the community and to reduce noise. Once the steering committee is established, and they have identified some possible volunteer activities, recruitment can begin.

A good way to reach large numbers of potential volunteers is through presentations to civic and community groups. The presentation should include an explanation of the community's noise problems and what volunteer noise counselors can do to help solve them. The slide-tape show Sound Advice is a good introduction to these issues. It runs for approximately 8 minutes and is included with this kit. The volunteer recruiter can then explain noise problems specific to the community and answer questions from the audience.

Local news madia can also be helpful in your efforts to recruit volunteers. Small local papers including weekly or bi-weekly papers and newsletters of AARP chapters or senior centers may be particularly receptive to including information about the "Sound Advice" program. A sample press release is included in Appendix G.



Local radio stations may be willing to air a short Public Service Announcement (PSA) about the program. Keep the announcement brief, and include the phone number of the volunteer organizer or some other informed person. Some samples are given in Appendix H.

Television stations may use this same type of announcement but they will want accompanying slides, perhaps of the telephone number to contact or other visuals. Find out about their requirements, and whether they will provide necessary visuals.

When recruiting volunteer noise counselors, the following qualifications should be considered:

- sincere interest in the issue of noise reduction
- effective speaking skills
- willingness to commit several hours a month to noise control
- effective written communication skills

A sample recruitment letter which explains the types of activities for volunteer noise counselors is included in Appendix I. A volunteer information form (Appendix J) can be included with this letter, or can be distributed at group presentations when recruiting volunteers. This form should help the volunteer organizer determine the most appropriate activities for each volunteer.

There are many community organizations that may be good sources for volunteers. These include:

- Area Agency on Aging
- Senior Centers
- Nutrition Centers
- AARP Chapters
- RTA Units
- Gray Panthers
- Church and Synagogue groups
- Community Service Organizations
- Retired Senior Volunteer Program (RSVP)

Orientation/Training. The orientation and training meeting will be the first opportunity to meet with the volunteers as a group. The purpose of the meeting is to explain the noise abatement program, provide the volunteers basic information about noise, and discuss volunteer activities in the community.

Planning for the meeting should begin about two months in advance of the scheduled date. This allows plenty of time to arrange for a meeting room and speakers, and notify the volunteer noise counselors. A volunteer welcome letter (see sample in Appendix K) can be sent to notify the volunteers of the meeting. The steering committee will be valuable help in planning the meeting.

Seek a meeting place that is easily accessible (Appendix L is a checklist for selecting a meeting site). A member of the steering committee might be able to make a meeting room available. A local senior center or nutrition site might be appropriate.

Plan the meeting agenda carefully to include educational sessions with speakers as well as group discussion. Speakers should be limited to 15-20 minutes. Allow plenty of time for questions. Copies of the agenda should be distributed at the start of the meeting. The agenda might include:

- 1) Review the purpose of the meeting
- Participants introduce themselves with a brief explanation of their interest in the noise abatement program
- A viewing of "The George Show," which is an introduction to noise in the community (included in this kit)
- Educational presentation on the health effects of noise (for handout, see Appendix D)
- 5) Small group discussion of noise problems in the community
- Return to large group, set priorities for the noise problems the volunteers want to work on first.
- Group discussion of possible volunteer activities to meet these priorities

Some experts in the field can be recruited to participate in the orientation session, especially to present educational information about noise and its health effects. Members of the steering committee may be qualified for these duties. Local colleges or universities, the local health department, or the local office of the American Speech-Language-Hearing Association may also be good resources.



In addition to this general orientation meeting, some specialized volunteer training may be desirable depending on the kinds of activities being undertaken by the volunteers. Training sessions in public speaking might be necessary for volunteers involved in school programs or community presentations. If some volunteers are to help with a hearing test program, they may want information about the equipment the nurse or audiologist will use.

Several kinds of volunteer activities might require the use of a sound level meter. This instrument is simple to use with proper training. The regional EPA office, the local Speech and Hearing Association, the police department, or the engineering or audiology departments of nearby universities, may loan a sound level meter to the program and provide the necessary training.

Motivating. People volunteer for many reasons, to meet a variety of needs. They might volunteer because of an interest in the activity itself, because of a concern for others, to keep busy, or perhaps to learn something new. To motivate a volunteer to remain interested and committed to the noise program, match the volunteer to a task that meets his or her needs. Finding the right job for the volunteer is the first step in a strong program.

It is important that the volunteer have a clear understanding of the task. Working with the steering committee, develop job descriptions for the volunteer activities the program will involve. These job descriptions should outline the basic duties and qualifications for a specific job. Some examples are given in Appendix M.

An important way to keep volunteers motivated and active is to involve them in the planning and decision making process of the program. This emphasizes the value of their opinions and experience. As the persons with ongoing duties in the community, they may be the first to see the need for changes or additions to the program, and can make useful suggestions.

Recognition of the volunteer is also a valuable motivating tool. There are several ways to show your appreciation to the volunteer and to publicly "recognize" his or her contributions. You can offer them new responsibilities as they show themselves capable of advancement, ask them to serve on committees or boards, include their name and picture in an article about the program, or honor them at an awards banquet.

Funding. Since there are no paid staff in the program, expenses can be kept to a minimum. Many program needs can be met by donations of services, rather than cash. Regular or occasional use of a telephone, dosk and filing space, typewriter, a copying machine, meeting rooms, and audio-visual equipment are some of the services that could be shared or donated to the program.

The organizations you have already contacted that expressed an interest in noise, or organizations represented on your steering committee may be willing to donate some services. Community or civic groups such as AARP, the Rotary Club, the Chamber of Commerce and many others might adopt "Sound Advice" as a community service project for the year. In contacting these organizations for donations of money or services, remember to emphasize that reducing noise is a benefit to **everyone** in the community and that their support can help to make your community a better place to live.

SUMMARY

Noise affects all of us. Almost everywhere we go, we hear noise. But it does not have to be that way. This guide has outlined a program for noise abatement in the community. As a volunteer organizer, you can play an important part in the affort to make your community a quieter place to live.

APPENDIX A

Objective: The purpose of this lesson is to develop an awareness of the adverse effects that excessive noise has on human health and welfare. Through this knowledge, students should become more concerned about protecting themselves from excessive noise exposure.

LECTURE SUMMARY

It has been estimated that over 20 million Americans are working, playing, and living around environmental noise that is dangerously loud. Exessive noise exposure is a well documented cause of permanent, irreversible hearing damage. Generally, the onset of noise-induced hearing loss is gradual. Hearing of highfrequency sounds is affected first. As a result, the individual begins to confuse high-frequency consonant sounds such as "s" and "f" and describes speech as slushy or unclear. As exposure continues, the hearing loss increases and ability to hear lower frequency sounds is also affected. The individual begins to experience greater difficulties in understanding conversational speech. Sometimes a hearing aid will help, however, it cannot in any way make speech sound normal again. A hearing impaired person often feels isolated from his/her environment because of the problems experienced in trying to communicate, listen to the radio, or participate fully in social gatherings or public meetings.

It is important for students to recognize that not all noise-induced hearing losses are caused by noise expesure in the workplace. In fact, the noise levels associated with many popular hebbies and recreational activities exceed the levels believed to cause hearing damage over a prolonged period of exposure. Therefore, students should be aware of the noisy activities in which they participate and consider protecting themselves both by limiting the length of exposure and using properly fitted earplugs or earmuffs during exposure.

Our bodies respond to noise as a form of stress. Researchers have observed temporary stress reactions to loud noise which include increased blood pressure, dilation of the pupils of the eyes, and changes in heart rhythm and respiratory rate. Since noise is one cause of stress and stress is known to have a wide range of adverse health effects, noise may well contribute to stress related illnesses such as heart disease, high blood pressure, fatigue, and irritability. Researchers are presently involved in numerous studies to learn more about the effects of the interaction of noise with other variables on our bodies.

Noise also results in annoyances which detract from rest and relaxation. Generally, noises which are higher in pitch, intermittent in occurrence and unlocalized are the most annoying. Other factors which influence the degree of annoyance include the location of

the noise, the time of day, whether the noise is considered necessary or appropriate, the type of living activitios affected, the degree to which fear is associated with the noise, and the individual's overall attitude about his/her environment. The most commonly mentioned noise related annoyances are loss of sleep and the interference with communication. Restful sleep is an essential element in the maintenance of good health. Noise affects our sleep by interfering with getting to sleep, waking us up, or causing changes in our sleep cyclo. Noise disrupts communication by making it difficult and, sometimes impossible, to converse above the background of noise. We try to compensate by speaking louder, moving closer together, and watching the face and gestures of the speaker. However, as noise levels increase in loudness, it soon becomes impossible to carry on a meaningful conversation. Sometimes loud noise obscures particularly important communications such as warning signals or shouts for help.

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It is also known that noise sometimes adversely affects work efficiency, and our social and emotional behavior. Noise also interferes with the educational process. Excessive noise disrupts the development of the language and reading skills which are so vital to a successful educational experience. In addition, noise interrupts and distracts both teacher and students in the classroom, thereby interfering with and prolonging the time required to understand a concept.

In summary, noise does present a significant health problem. Its effects on our hearing ability, its contribution to stress and its probable impacts on sleeping, communication, work efficiency, learning, and social and emotional behaviors should definitely be of concern to us all. It is important that we work with our state, local, and Federal officials in controlling the noises everywhere around us. In addition, as individuals and families we need to be aware of our personal noise environment and protect ourselves from the adverse effects of excessive exposure.

QUESTIONS FOR CLASSROOM DISCUSSION

- Can you think of situations in which you have had trouble talking to someone else because of noise interference?
- 2. Do you remember times when friends or family have complained about noise interfering with an activity such as relaxing or studying?

- Describe some of the effects associated with excessive noise exposure. If you know someone who works in a noise environment, discuss how noise affects them.
- 4. Do you think you would be bothered by a lot of noise when you are taking an important test or trying to read a good book?
- Do your parents or neighbors ever complain about noise in your community? What noise sources seem to concern them?
- 6. Can you think of some economic impacts associated with high noise levels in working or living arrangements?

CLASSROOM EXPERIMENTS AND PROJECTS

1. The most effective way to create an understanding of the adverse effects of excessive noise is to personally experience the situation. If there is a printing company, a mill, or some other noisy industry in your community, arrange a site visit. The students will benefit from learning about the particular industry, while experiencing the noise levels associated with the process. Encourage them to try to communicate while in the noisy environment. It would also be useful to arrange for them to try ear protectors to see how the noise levels are reduced. Also, the students should have the opportunity to talk to workers who have noise induced hearing loss. If possible, hearing tests for some of the students, both before and immediately after the plant tour would demonstrate the adverse effects of noise on the hearing mechanism. Arrangements for the hearing tests might be made through the school health program, or a university, community, or hospital speech and hearing clinic. Check the yellow pages of your telephone directory for a listing of area speech and hearing clinics.

- Have the students prepare an article for the school newspaper to educate fellow students about the adverse effects of exposure to excessive noise.
- Have the students prepare a display for the hallway bulletin board or the school or community library to share what they have learned about the health effects of noise.
- 4. The students could conduct a survey about noise, exploring individual reaction to noise, knowledge about ways to control noise, etc. Through interviewing community residents, the students can obtain information and also give information about what they have learned about noise pollution. The results of the survey could then be condensed into a report about noise in your community. The students might wish to consider transmitting their findings to your local government or writing a letter to the editor of your local paper.

This material was excerpted from a publication from the Environmental Protection Agency: "Preparing for a Quieter Tomorrow." It is appropriate for grades seven through twelve.

APPENDIX B

NOISE: A HEALTH HAZARD

Racket, din, clamor, noise. Whatever you want to call it, unwanted sound is Amorica's most widosprend nuisance. But noise is more than just a nuisance. It constitutes a real danger to people's health. At home, at work, and at play, noise can produce serious physical and psychological consequences.

Hearing Loss. Noise loud enough to cause hearing loss is virtually everywhere today. Twenty million or more Americans are estimated to be exposed daily to noise that is permanently damaging to their hearing.

When hearing loss occurs, it is in most cases gradual. At first there is the loss of occasional words in general conversation and difficulty understanding speech on the telephone. Many sounds are distorted in loudness, pitch, apparent location, or clarity. High frequency sounds such as "s" and "ch," are often lost or indistinguishable from other sounds. Speech frequently seems garbled.

The hard of hearing person faces other problems. Their inability to converse normally makes it difficult for partially deaf people to participate in lectures, meetings, parties, and other public gatherings. For a person with hearing loss, listening to TV, radio, and the telephone—important activities of our lives—is difficult, if not impossible.

Heart Disease. A growing body of evidence strongly suggests a link between exposure to noise and the development and aggravation of a number of heart disease problems. Noise causes stress and the body reacts with increased adrenaline, changes in heart rate, and elevated blood pressure. Some studies have shown that workers in high noise levels had a higher incidence of circulatory problems than did workers in quiet industries. The danger of stress from noise is even greater for those already suffering from heart disease.

Noise and the Unborn. While still in the mother's womb, the developing child is responsive

to sounds in the mother's environment. Particularly loud noises have been shown to stimulate the fetus directly, causing changes in heart rate. The fetus is also affected by its mother's response to noise, with the physical changes she experiences being transmitted to the fetus. These fetal responses may threaten fetal development, particularly early in the prognancy.

Special Effects on Children. Good health includes the ability to function mentally as well as physically. Research has shown that children may have learning difficulties because of noisy schools, play areas and homes. Students in classrooms near reilroad tracks, airports or other noise sources may learn less than students in quiet classrooms.

Sleep Disruption. Sleep is a restorative time of life, and a good night's sleep is probably crucial to good health. But everyday experiences suggest that noise interfores with our sleep. Noise can make it difficult to fall asleep, it can wake us, and it can cause shifts from deeper to lighter sleep stages.

Human response to noise during sleep varies widely among age groups. The elderly and the sick are particularly sensitive to disruptive noises. Compared to young people, the elderly are more easily awakened by noise and, once awake, have more difficulty returning to sleep. As a group, the elderly require special protection from the noise that interferes with their sleep.

A Final Word. Except for the serious problem of hearing loss, there is no human illness known to be directly caused by noise. But in dozens of studies, noise has been identified as an important cause of physical and psychological stress, and stress has been directly linked with many of our most common health problems.

This material was excerpted from a publication from the Environmental Protection Agency: "Noise: A Health Hazard,"

APPENDIX C

QUIET: MAN'S BEST FRIEND

GOOD DOG OR NUISANCE?

Determine for yourself whether your dog is a good companion, a good watchdog, or a neighborhood nuisance, by answering the following:

Does your dog bark excessively-

- When he is left alone and lonesome?
- When another dog barks?
- When the kids next door come out to play?
- When he's outside and wants to get in the house?
- When the neighbors leave or return home?
- When you come home?
- At garbage collectors, passing cars?
- When he hears a siren?

If your answer is "yes" to any one of these, your dog could be a neighborhood noise nuisance.

Dogs bark for many reasons: when other dogs bark, when they are generally excited or frustrated, or when a stranger intrudes on their territory.

Excessive barking can be extremely annoying to neighbors as well as to those who have to live with a noisy dog. A constant barker is more likely to be ignored if there is an intruder, since he seems to "cry wolf" all the time.

One of the most common public complaints is about neighbors' barking dogs. Is your dog an excessive barker and a potential public nuisance? The National League of Cities, together with the Humane Society of the United States, would like to pass on an effective training method to responsible owners.

WATER TRAINING METHOD

The Water Training Method WORKS for almost all dogs.

If possible, consider going to a reputable local obedience school. An obedience trained dog will stop barking on command, and knowing obedience signals will help you control your dog in other situations and make life happier for all.

Consider the times when your dog's barking is a nuisance. If it's when he's left alone all day, help his loneliness by leaving the radio on. If your dog is an outside pet, allowing it more freedom or movement in a fenced yard or pen may quiet its barking. If practical, you might consider a companion pet. Be sure you have plenty of toys available for amusement. Don't make a big thing out of leaving or returning home. Over-excited dogs are more likely to bark and velo.

- The first training rule is to be consistent and persistent. You can't expect a dog to learn—if barking for the wrong reason is corrected one time and not the next.
- Second, be ready for an immediate response. Have ready a plant mister filled with water.
- Say "QUIET DOG" (or whatever its name is) and give one or two squirts of water at the dog while it is barking. He will stop at once, If you wait until he stops barking it may confuse him.
- If the dog moves away, repeat saying "Quiet" as you go to him and give one more squirt of water at him. Repeat each time he barks needlossly.
- Usually a day or two of training is enough if you are consistent. (5 to 10 water treatments)
- Remember to reassure the dog that you are still friends by petting him later when he's quiet.
- With this conditioning procedure your dog will soon learn to expect a squirt of water when you shout "Quiet" for once he has made the association, you won't need to squirt him again only rarely, should he forget.

DEFINITION

Do you know what a nuisance barker is? According to the new law passed by the city and county of Honolulu in cooperation with the Hawaiian Humane Society and Citizens Against Noise, their definition is given as an example of the way one community is adopting a "Barking Dog Ordinance."

"(d) 'Barking dog' shall mean a *dog* that barks, bays, cries, howls or makes any other noise continuously and/or incessantly for a period of ten minutes or barks intermittently for 1/2 hour or more to the disturbance of any person at any time of day or night regardless of whether the dog is physically situated in or upon private property; provided, however, that a dog shall not be deemed a 'barking dog' for purposes of this Article, if, at the time the dog is barking or making any other noise, a person is trespassing or threatening to trespass upon private property in or upon which the dog is situated or for any other legitimate cause which teased or provoked the dog.' (End definition.) Honolulu also has a penalty for owners keeping or permitting a barking dog, within the limits of the city and/or county. After receiving a warning citation, the owner is required to follow specific instructions for the dog's training by the Humane Society.

TIPS FOR DOG OWNERS

- Always find out WHY your dog barks. Unless it has a watchdog reason, then you must correct it at that time.
- Do not turn a garden hose on a dog or throw rocks or tin cans at him.
- Spanking/hitting is an ineffective substitute for water treatment and rarely solves any problems.
- Whenever your dog barks for a trained watchdog reason, praise it or pat it.
- Remember, dogs are companion animals and should be kept in the house during the normal night hours whenever possible.

IS YOUR DOG TRAINABLE?

A dog that is chained up or left alone indoors and is allowed to bark hour after hour may no longer be trainable. Such a dog may have become too neurotic for an inexperienced trainer. If this is the case with your dog, consult your veterinarian or qualified dog trainer.

REWARDS

Correcting unnecessary barking is more convenient during the day, but getting up a few times at night will prove worthwhile. After that, you and your neighbors will know when your dog barks, there's a real reason. If your neighbors are home and you're not, they will check to see if police should be notified.

The security of knowing you have a real watchdog, as well as enjoying a peaceful and quiet night, and allowing your neighbors to enjoy one too, is well worth the effort.

This material was reprinted with permission from the Humane Society of the United States. It was adapted from materials provided by the City and County of Honolulu, the Honolulu Humane Society, and Citizens Against Noise.

APPENDIX D REDUCING NOISE IN THE HOME

PROBLEM	POSSIBLE SOLUTION		
1. Noise intrusion from	 install storm windows and doors 		
outside	 caulk cracks around doors and windows 		
2. Noisy washing machine	lubricate motor		
and other appliances	 VIBRATION—isolate heavy equipment from a floor using a rubber pad on thick rug. 		
	or thick rug isolate appliances from walls and cabinet enclosures; where practical 		
	and safe, surround with sound absorbing materials		
	 undercoat garbage disposals with damping compound (similar to auto 		
	undercoating); can also be used on outside drain of washers and dryers		
 Noisy power tools 	 use variable speed tools when possible use isolated area of home to work in 		
	 use isolated area of none to work in don't use late at night or early in the morning 		
	wear hearing protector		
. TV or stereo too loud	 install fireproof acoustical tile behind TV or storeo 		
	 turn down volume 		
	• use earphones		
i. Noisy car	 drive sensibly stank muffler and uttack 		
	 check muffler and wheels adjust or replace fan belt if there is a screeching noise under the hood 		
. Too much noise from	 caulk along wall and floor after removing molding 		
neighbor's apartment	• use rugs and drapes where possible		
	 ask neighbors to be more quiet 		
. Dripping faucet	 place a sponge or facecloth under the drip 		
	 tie a string or a shoelace to the faucet so the drip is channeled as a minimum atraam down the string. 		
	miniature stream down the string • a more permanent and cost-saving solution is to replace the worn		
	washer		
. Creaking doors and hinges	 install weather stripping to tighten door seal 		
	 lubricate hinges with oil or silicone 		
, Door slamming	 install door closure dampers on exterior or spring loaded self-closing 		
	doors • install a resilient gasket or weather stripping around the door		
	 Instan a resident gasket or weather stripping around the toor substitute a solid-core door for a hollow-core door 		
Fans and exhausts	• remember the saying "slow and low"; the slower the motor speed, the		
	quieter the fan		
Window rattle	• if window panes rattle, look for breaks in the putty; if the entire frame		
	rattles, check the adjustment of springs or weather stripping		
	 double-hung windows in aluminum guides can have the guide spacing adjusted for a good fit 		
Air conditioning noise	 select a unit with adequate power capacity 		
	 mount window units on resilient pads 		
	 install perimeter gasket of soft rubber to isolate unit from wall or 		
	window structure		
Maine alumbia	 locate unit away from neighbor's bedroom reduce units avagance 		
Noisy plumbing	 reduce water pressure install air lock 		
Noisy ventilation (forced	 natal in lock reduce air flow velocity 		
air heating and cooling	Install more grilles		
	 install padding around ducts where possible 		
systems)			
•· •·	 align blower pully and motor tubricate property (at least once a year) 		

New Jackson and Strategieses and

APPENDIX E MODEL COMMUNITY NOISE CONTROL ORDINANCES

T. Michael Taimi, Commissioner Kentucky Department of Environmental Protection 18 Reilly Road Fort Boone Plaza Frankford, Kentucky 40801 (502) 584-3382

National Environmental Health Association 1200 Lincoln Street, Suite 704 Denver, Colorado 80203 (303) 861-9090 League of Minnesota Cities 183 Universitý Avenue, East St. Paul, Minnesota 55101 (612) 227-5600

Florida Department of Environmental Regulation Twin Towers 2600 Blair Stone Road Tallahassee, Florida 32301 (904) 488-0300

APPENDIX F EPA REGIONAL OFFICE STATE NOISE CONTROL PROGRAMS (AS OF 1982)

REGION I Connecticut* Maine Massachusetts New Hampshire Rhode Island Vermont Regional Office: JFK Federal Building Boston, MA 02203 (617) 223-5708

*State Offices: Connecticut Department of Environmental Protection Office of Noise Control 122 Washington Street Hartford, CT 08115 Joseph B. Pulaski—(203) 566-7494

REGION II New Jersey* New York* Puerto Rico Virgin Islands Regional Office: 26 Federal Plaza New York, NY 10007 (212) 264-2110

*State Offices: New Jersey Department of Environmental Protection Office of Noise Control 65 Prospect Street Trenton, NJ 08618 Edward J. DiPolvere—(609) 292-7695 New York Department of Environmental

Conservation Division of Air 50 Wolf Road Albany, NJ 12233 Barbara Allen-(518) 457-7454 REGION III Delaware* District of Columbia* Maryland* Pennsylvania Virginia West Virginia* **Regional Office:** Curtis Building 6th and Walnut Streets Philadelphia, PA 19106 (215) 597-9118

*State Offices: Delaware Department of Natural Resources and Environmental Control Edward Tatnall Building P.O. Box 1401 Dover, DE 19901 Charles W. Wilkins, III—(302) 736-4791

Metropolitan Washington Council of Governments Department of Environmental Programs

1875 Eye Street, N.W. Washington, D.C. 20006 George Nichols—(202) 223-6800

Moryland Environmental Health Administration Division of Noise Control 201 West Preston Street Baltimore, MD 21201 Michael Hurney-(301) 383-2727

West Virginia Department of Health Bureau of Industrial Hygiene 151 Eleventh Avenue South Charleston, W. VA 25303 William Aaroe-(304) 348-3526

REGION IV Alabama Florida* Georgia Kentucky* Mississippi North Carolina* South Carolina* Tennessee

*State Offices:

Noise Control Section

2600 Blair Stone Road

Tallahassee, FL 32301

Noise Control Section

1050 U.S. 127 South

Frankfort, KY 40601

P.O. Box 27687

David Johnson

2600 Bull Street

REGION V

Illinois*

Columbia, SC 29201

Raleigh, NC 27611

Denis E. Wile-(904) 488-0300

and Environmental Protection

Thomas Jackson-(502) 564-3560

and Community Development

Division of Environmental Management

South Carolina Department of Health

and Environmental Control

Samuel H. McNutt---(803) 758-5506

Florida Department of Environmental Regulation

Kentucky Department of Natural Resources

North Carolina Department of Natural Resources

Regional Office:

Regional Office: 345 Courtland Street, N.E. Atlanta, GA 30308 (404) 881-4861

Ohio Department of Health Bureau of Environmental Health P.O. Box 118 Columbus, OH 43216 Richard Martin-(614) 466-1390

REGION VI Arkansas

Louisiana New Mexico* Oklahoma* Toxas

Regional Office: First International Bldg. 1201 Elm Street Dallas, TX 72570 (214) 749-3837

***State Offices:** New Mexico Occupational Health and Safety Bureau P.O. Box 968 Santa Fe, NM 87503

Dave Marble-(505) 827-3563 Oklahoma Department of Health 1000 Northeast 10th Street P.O. Box 53551 Oklahoma City, OK 73152

Dale McHard-(405) 271-5221

REGION VII Regional Office: Iowa* 1735 Baltimore Street Kansas Missouri (816) 374-3307 Nebraska* Lincoln-Lancaster County Health Department Regional Office: Denver, CO 80295

Kansas City, MO 64108

*State Offices: Iowa League of Municipalities Noise Control Program 900 Des Moines Street Dos Moines, IA 50316 Nebraska ECHO Program 230 South Dearborn Street 2200 St. Mary's Avenue Lincoln, NE 68502 Gary L. Walsh-(402) 474-1541 **REGION VIII** Colorado* Montana North Dakota* South Dakota (303) 837-2221 Utah

Colorado Department of Health

David Gourdin, Jr.-(303) 320-8333

North Dakota Department of Health

Jeffrey Burgess-(701) 224-2348

Lincoln Tower, Suite 900 1860 Lincoln Street

Indiana* Chicago, IL 60604 Michigan (312) 353-2205 Minnesola* Ohio* Wisconsin *State Offices: Illinois Environmental Protection Agency **Division of Land/Noise Pollution Control** 2200 Churchill Road Springfield, IL 82706 James Reid-(217) 782-9469 Indiana Association of Cities and Towns Noise Control Program 150 West Market Street, Suite 600 Indianapolis, IN 46204 Bradford G. Garton-(317) 635-8616 Minnesota Pollution Control Agency Division of Air Quality, Noise Section 1935 West Country Road, B2 Roseville, MN 55113

David Kelso-(612) 296-7373

17

Wyoming

*State Offices:

Noise Program

Donver, CO 80220

4210 East 11th Avonue

Noise Control Program

1200 Missouri Avenue

Bismarck, ND 58505

REGION IX Arizona* California* Hawali* Nevada Pacific Trust Regional Office: 215 Fremont Street San Francisco, CA 94105 (415) 456-4606

*State Offices: Arizona Department of Health Noise Program 411 North Twenty-Fourth Phoenix, AZ 85008 A.J. Battistone—[602] 255-1156

Callfornia Department of Heatlh Services Office of Noise Control 714 P Street, OB8-692 Sacramento, CA 95814 Ross A. Little-(916) 322-2097 *State Offices: Hawaii Department of Health Noise and Radiation Bureau P.O. Box 3378 Honolulu, HI 96801 Thomas Anamizv—(808) 548-3075

REGION XRegional Office:Alaska1200 Sixth AvenueIdahoSeattle, WA 98101Oregon*(206) 442-1253Washington

*State Office: Oregon Department of Environmental Quality Noise Pollution Control 522 S.W. 5th Avenue Box 1760 Portland, OR 97207 John Hector—(503) 229-5989

APPENDIX G

SAMPLE PRESS RELEASE

Please retype this release, substituting the correct information about your particular program in the underlined spaces, and take it to your local newspaper and radio and television stations.

FOR IMMEDIATE RELEASE

#

The Newtown Sound Advice Program

Ħ

November 8

John Jones

234-5678

Are you tired of motorcycles and buses disturbing your peace and quiet? Is the barking dog next door driving you crazy?

Unwanted noise is a serious matter that affects all of us. Noise will be the program topic at a meeting of the <u>Newtown Chapter #11 of the American Association of Retired Persons</u> scheduled for <u>11 a.m.</u>, <u>Thursday</u>, <u>November</u> <u>12</u>. The group will meet in the auditorium of the <u>First National Bank</u>, <u>123</u> <u>Main Street</u>.

The program will include a slide presentation that discusses the effects of noise and suggests some simple ways to reduce noise in our everyday lives. <u>Mary Smyth</u>, a volunteer noise counselor, will answer questions from the audience.

H

For further information, contact John Jones at 234-5678.

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APPENDIX H

SAMPLE PUBLIC SERVICE ANNOUNCEMENTS

10 seconds:

The Sound Advice program invites you to a lecture on the health effects of noise. Come to the Knights of Columbus Hall at 7:00 p.m. on Wednesday, March 3rd.

20 seconds:

Are you tired of being kept awake all night by barking dogs? Loud all night parties? Motorcycles roaring through the neighborhood at 1:00 a.m.? Act now to r_{υ} !uce noise in Newtown. Complain to the noise counselor at 123-4567. That's 123-4567!

30 seconds:

Noise is a health problem. It is estimated that 20 million Americans are exposed daily to noise that is permanently damaging to hearing. Noise may also contribute to such conditions as high blood pressure, ulcers, asthma, headaches and colitis. Noise is all around us, in our homes, at work and outside. But there are ways to reduce noise. If you would like more information on noise and what can be done about it, call Mrs. Bea Quiet at 123-4567! That's 123-4567!

APPENDIX I

VOLUNTEER RECRUITMENT LETTER

Dear Mrs. Jones,

SOUND ADVICE is a volunteer program being developed in Newtown to help reduce noise. Noise is a serious matter, which can cause irreversible hearing loss, as well as physical and mental stress. But in many communities, people are realizing that practical steps are available to reduce noise.

Volunteers for the SOUND ADVICE program can help in many ways. They can make presentations to community groups, distribute information at health or county fairs, work with local schools to educate students about noise, or be involved in developing noise control legislation.

Currently, we are recruiting volunteers to act as "noise counselors" for the program. All noise counselors will be asked to attend a one day training session to become familiar with noise control and the many volunteer opportunities.

If you are interested in learning more about being a volunteer noise counselor, please complete the enclosed volunteer information form and return it by October 12. We will contact you to discuss the volunteer role further. Please feel free to contact me at 123-4867 if you have any questions.

Sincerely,

Bea Quiet Volunteer Organizer

APPENDIX J VOLUNTEER INFORMATION FORM

Name	
Address	
Phone Number ()	
	ng as a volunteer noise counselor. As a nois o help reduce noise in our community.
Experience:	
Other volunteer activities (past o	r present):
Other experience or skills:	
	······································
I would be interested in volunteering	for:
community presentations	
writing news articles or p	
attending public hearings developing noise control le	scialstics
developing holse control is participating at county or	
I would like to recommend the following	ng person(s) to be a volunteer noise counselor:
Name	Name
Address	
Phone Number ()	
Please return form to:	
Mrs, Bea Quiet 105 Whisper Lane Newtown ^{©,}	
	20

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APPENDIX K

VOLUNTEER WELCOME LETTER

'Dear Mrs. Jones,

I am pleased to welcome you as a volunteer for the SOUND ADVICE program in Newtown. As a volunteer noise counselor, you can help reduce noise in your community.

An orientation and training meeting will be held Wednesday, November 15 at the Newtown Senior Center, 101 Main Street. It will begin at 9:00 a.m. and should last approximately 3 hours. The purpose of the meeting is to learn some basic information about noise and to discuss noise abatement activities in our community.

Welcome to the SOUND ADVICE program. I look forward to our meeting on November 18. If you are unable to attend or have any questions, please contact me at 123-4867.

Sincerely,

e.,

Bea Quiet Volunteer Organizer

APPENDIX L

CHECKLIST FOR SELECTING TRAINING SITE

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During training, participants will be seated at tables which need to accommodate six to seven persons. The site selected should be large enough to comfortably accommodate all participants in this arrangement.

Estimating Room Capacity

_____ Estimated number of participants

Round or rectangular tables seating 6-7 each-12 sq. ft. per person

Items To Be Considered

_____ Adequate lighting

- _____ Adequate acoustics
- _____ Suitable temperature-heat/air conditioning
- _____ Space for head table
- _____ Lectern
- _____ Adequate tables and chairs to set up subgroups (6-7 at a table)
- _____ Comfortable seating
- _____ Table available for registration and supplies (removed from group)
- _____ Table for coffee
- _____ Shades to darken room
- _____ Restroom conveniently located
- _____ Architectural barriers:
 - _____a. No steep steps
 - _____b. Quiet location
 - _____ c. Few obstructions-pillars, posts, etc.
 - _____ d. Other, specify _____
- _____ Adequate parking facilities—number of spaces available
- _____ Availability of audio-visual equipment
 - _____ Blackboard
 - ____ Screens
 - _____ Film and slide/projectors
 - _____ Easel for flip chart

APPENDIX M

SAMPLE VOLUNTEER JOB DESCRIPTIONS

SPEAKER BUREAU REPRESENTATIVE

Goal: To present the noise abatement program to general public through group presentations.

Qualifications:

- Ability to collect and arrange materials for interesting, thought provoking presentations;
- 2. Neat and professional appearance;
- 3. Ability to project vocally to audience;
- 4. Ability to deal with large groups of people;
- 5. Provide own transportation;
- 6. Ability to work independently.

Dutios:

- List your name and subject matter on the community speaker's bureau;
- Contact local organizations for speaking engagements;
- Prepare and present interesting presentations to many groups;
- Assemble resource materials for distribution to groups;
- 5. Attend training sessions as required;
- 6. Be available for 5-10 hours per week.

VOLUNTEER SCHOOL NOISE COUNSELOR

Goal: To inform primary and secondary school children of the hazardous effects of noise.

Qualifications:

- 1. Ability to communicate with school personnel;
- 2. Ability to relate to young people;
- 3. Ability to prepare interesting and informative presentations suitable for classroom use:
- 4. Ability to work independently.

Duties:

- Meet with appropriate school personnel to outline the program;
- Prepare program presentations appropriate to grade levels;
- Present programs in an interesting, informative and challenging manner;
- Guide students to appropriate resource materials when necessary;
- 5. Follow-up presentations to evaluate effectiveness;
- 6. Provide own transportation;
- Be available 5-10 hours a week during the school year. Some hours, however, may be required during the summer months for special projects, summer school, etc.
- 8. Attend training sessions as required.

VOLUNTEER PRESS CONTACT

Goal: To prepare and distribute news articles regarding Noise Program activities,

Qualifications:

- 1. Ability to write informative articles;
- Some previous experience in writing news articles or press releases would be helpful;
- 3. Ability to gather information for news releases,

Duties:

- 1. Collect informative, factual information regarding all phases of the Noise Program;
- Propare interesting articles, complete with symbols, illustrations, etc., when appropriate;
- 3. Distribute articles to appropriate recipients;
- 4. Attend training session when required:
- 5. Be willing to volunteer at least 5-10 hours per week.

VOLUNTEERS FOR HEARING SCREENING

Goal: To be involved in community basic hearing screenings.

Qualifications:

- The ability to work with groups, especially youth groups;
- The ability to learn to use scientific equipment;
- 3. The ability to maintain accurate records.

Duties:

- 1. Assist community based organizations, schools, etc., in carrying out hearing screenings;
- Keep abreast of health fairs and other such functions where screenings may be appropriate;
- Seek out health agencies which can provide hearing screenings;
- Keep accurate records of persons screened, results and follow-ups;
- 5. Attend training sessions when required;
- 6. Be available for 5-10 hours a month, probably very flexible.

VOLUNTEER LEGISLATIVE REPRESENTATIVE

Goal: Represent the Noise Program at meetings of government officials and enforcement personnel and work with community groups on local noise ordinances.

Qualifications:

1. Ability to meet and communicate with many different types of people;

- 2. Ability to present information in a concise, comprehensive manner;
- 3. Ability to search out data regarding the legal aspects of noise control;
- 4. Some knowledge of law would be helpful but not necessary.

Duties:

- Attend and participate in meetings of governmental or enforcement personnel regarding noise problems or noise logislation;
- Study data pertinent to the various aspects of noise control and the legal ramifications from existing documentary sources, such as law libraries, state, county, and local governmental offices;
- 3. Assist community groups in the development of local noise ordinances;
- 4. Be aware of resource material available for community groups;
- 5. Attend training session when required;
- Volunteer time should be flexible depending on the immediate need, approximately 5-10 hours per week.

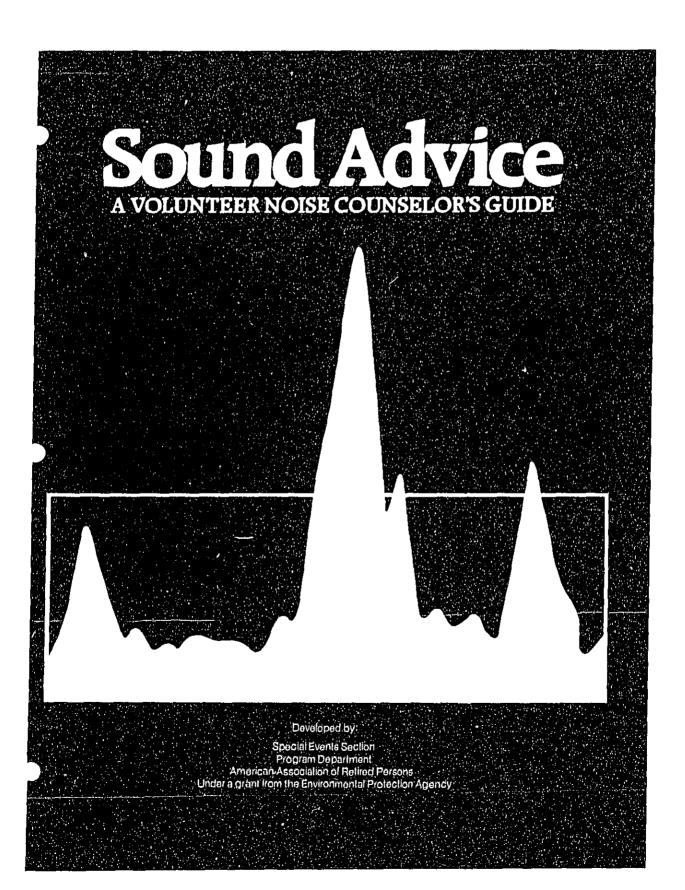
Developed by Special Events Section Program Department American Association of Retired Persons

The "Sound Advice" program was developed by the AARP Program Department under a grant from the U.S. Environmental Protection Agency. It was the culmination of an EPA funded project, administered by AARP, which utilized older persons as noise counselors.

This material is part of a kit on noise abatement, which includes: a volunteer noise counselor's guide, a volunteer organizer's guide, a slide-tape program The George Show, and a slide-tape program Sound Advice.

Special thanks to Glenn Northrup, National Director of the AARP Senior Community Service Employment Program; John Hart, National Coordinator of Special Programs; Linda Scott; and the AARP Noise Counselors for sharing their expertise in the field of noise control. We gratefully acknowledge the assistance of the American Speech-Language-Hearing Association, the National Urban League, the Florida Department of Environmental Regulation, and the National Association of Noise Control Officials in reviewing these materials.

The American Association of Retired Persons is a non-profit, nonpartisan organization dedicated to helping older Americans achieve lives of independence, dignity, and purpose. By providing a wide range of direct member benefits and services and a host of community service programs, the Association has become the nation's largest organization of older citizens. For additional information about programs and services, write: AARP, 1909 K Street, N.W., Washington, D.C. 20049.



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Written and prepared by Patricia A. Hoath Project supervision by Sharon A. McGaughey Graphics by Al Porter

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INTRODUCTION

In neighborhoods across the country, people are realizing that noise is a serious matter, and that practical steps are available to reduce noise. Many communities have been successful in reducing or eliminating noise problems. The success is usually the result of many individuals and groups working together. As a volunteer noise counselor, you can work with other volunteers to control or reduce noise. "Sound Advice" is a noise abatement program which can help to make your community a healthier and better place to live.

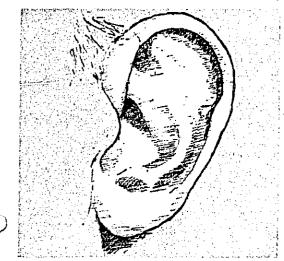
This handbook will help volunteers interested in acting as noise counselors in a community noise abatement program. It explains the reasons for a noise abatement program, the role of the noise counselor, and some of the techniques a noise counselor can use to reduce neighborhood noise. Also included is an appendix to help locate resource materials and key people in the community.

THE EFFECTS OF NOISE

Noise can be defined as any loud or disagreeable sound. We are confronted with noise daily in our working and living situations. Sounds from trucks, motorcycles, airplanes, lawnmowers and appliances are some of the noises that are part of modern life.

In addition to being a nuisance, noise can be a serious health hazard. It can cause irreversible hearing loss as well as physical and psychological stress.

Hearing Loss. Of the many health hazards related to noise, hearing loss is the most clearly



observable. Noise loud enough to cause hearing loss is common. The places where we live, work, and play are filled with potentially harmful levels of noise. The Environmental Protection Agency (EPA) estimates that over 20 million Americans are exposed daily to noise that is permanently damaging to their hearing.

Hearing loss is usually gradual. People become aware of the damage when they start to miss occasional words in general conversation and have difficulty understanding telephone conversations. Unfortunately, there is no cure for this kind of hearing damage. Hearing aids do not repair noise-damaged hearing, although they can be of limited help to some people.

People with partial deafness from exposure to noise do not necessarily live in a quieter world. Many sounds they hear are distorted in volume, pitch, or clarity. Consonants of speech, especially high frequency sounds such as "s" and "ch" are often lost or indistinguishable from other sounds. Speech frequently seems garbled, and is difficult to understand. When exposed to a very loud noise, people with partial hearing loss may experience discomfort or pain. They also frequently suffer from tinnitus—irritating ringing or roaring in the head.

Stress. Many of us know the irritation and annoyance of noise we cannot control. Our bodies automatically react to sudden or loud sounds as a defense for possibly dangerous or harmful situations. Generally blood pressure rises, heart rate and breathing speed up, muscles tense, hormones are released into the blood stream, and perspiration increases,



Frequent or prolonged exposure to loud noise keeps our bodies in this state of tension and can lead to stress related ailments. Research has linked noise with the development or aggravation of heart and circulatory diseases. Noise in the workplace may cause the listener to develop ulcers. Workers in certain noisy industries have ulcers at a rate five times that of the general population. Other research has shown that noise may be a factor in lower resistance to disease and infection.

Sleep Disruption. Sleep is a restorative time of life, and a good night's sleep is probably crucial to good health. But everyday experience suggests that noise interferes with our sleep. Noise can make it difficult to fall asleep, it can wake us, and it can cause shifts from deeper to lighter sleep stages.

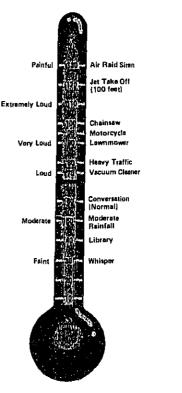
Human response to noise before and during sleep varies widely among age groups. The elderly and the sick are particularly sensitive to disruptive noise. Compared to young people, the elderly are more easily awakened by noise and, once awake, have more difficulty returning to sleep. As a group, the elderly require special protection from the noises that interfere with their sleep.

Other Effects. Noise in school and in the home can affect children's learning. In a school located near an elevated railroad track, students whose classrooms faced the track did significantly worse on reading tests than did similar students whose classrooms were further away. Some school districts have built new schools in quieter neighborhoods to alleviate this serious concern.

The effects of noise are also seen in the workplace. Workers in noisy environments are more likely to be tense, irritable and upset. Their efficiency may be hampered by exhaustion, absentmindedness, mental strain and absenteeism.

NOISE LEVELS

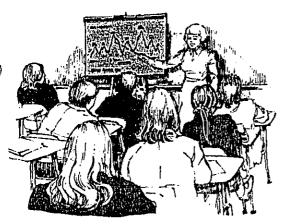
Decibels, often abbreviated as "dB" are measures of the intensity of sound. Typically people are exposed to decibels ranging from 0, the point where hearing starts, to 140, which represents a very loud sound. Noise can begin to harm hearing at about 70 decibels, particularly when constant exposure occurs. Some common examples of sounds and their measurement are shown on the chart below.



COMMUNITY ACTIVITIES

There are many activities which can be implemented in a community to help reduce noise. As a volunteer noise counselor, you will be able to work with other volunteers to help determine the kinds of activities best suited to the community and its needs. You can then volunteer for those community activities which meet your interests and capabilities. An individual noise counselor would not be expected to do all of these activities, but some volunteers working together might develop several of these activities in the community. Some activities which could be implemented in a community program for noise abatement include:

School Programs. One of more volunteer counselors may wish to undortake educating students to noise and its possible effects. Teachers and school principals will often agree to having a noise counselor present a lesson about noise to their classes.



Begin by contacting the school principal. He or she may want to talk to you directly, or may put you in contact with the appropriate teachers. Science or health teachers are usually interested in the topic of noise. You may also want to contact the curriculum directors for the school system, or the Parent-Teachers Association (PTA).

A series of courses on noise has been developed by the Environmental Protection Agency for inclusion in school curricula. An excerpt from Sounds Alive, for children from kindergarten through sixth grade, is included with this guide book. An excerpt from Preparing for a Quieter Tomorrow, for grades seven through twelve, is included in Appendix A. Counselors might also choose to develop their own materials for class presentations.

EXAMPLE

One noise counselor in New Mexico had her own ideas about the best ways to teach children about noise. She developed materials for different age groups and made class presentations herself. Younger children saw a puppet show with puppets, stage, and story all developed by the noise counselor. Older children received a homework assignment to keep a record of the noises around them for a few days before the class. They could then discuss the noises they heard with the noise counselor.

Because of the special effort she gave to the project, most teachers claimed that their students really enjoyed the lesson, and more importantly, learned a lot about noise.

Fairs. Many communities have fairs which are open to everyone in the community. This includes county fairs, health fairs, or state fairs. Noise counselors staffing a fair booth can be very effective in educating fair attendees about noise and its effects. Distributing brief educational materials is recommended. Many people will take these home to read them, and may also pass the information on to family and friends. A brief explanation of the health effects of noise, suitable for photocopying, is given in Appendix B.

Hearing Tests. Another valuable project is making arrangements for hearing tests for community residents. In addition to helping persons identify hearing problems, the testing project can also help raise the level of awareness about hearing and noise effects throughout the community.



The local school system may be able to conduct student hearing tests by the school nurse or by an audiologist. Many communities have free or low-cost speech and hearing clinics, some areas have mobile diagnostic units. Arrangements might be made for these clinics to do testing at senior centers, nursing homes, fairs, or at community group meetings. Or noise counselors might volunteer to transport interested persons to the clinic for a hearing test.

Quiet Day. Some noise abatement groups have successfully organized a community-wide event which emphasizes the importance of noise control to a large number of residents. A "Quiet Day" in your city or town can help to build interest in your program and to provide information and education to the general public. There are many activities which can be incorporated into a "Quiet Day" to help achieve your goals, for example:

- free speech and hearing tests
- kite flying
- frisbee competition
- free muffler tests for motorcycles and cars
- silent films
- mime show
- magic show
- nature walks
- demonstration of sign language
- hot air balloon rides
- hang glider demonstration

Community Presentations. There are a large number of community groups that invite speakers to their meetings. These groups are often looking for new and interesting topics, and you might approach them about making a presentation on noise. Addressing community groups is an excellent way to disseminate information about noise and to enlist interested persons in your efforts for noise control. Local organizations you might consider include:



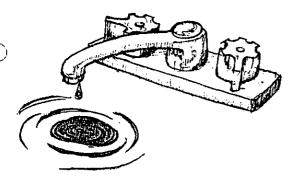
- Altrusa International
- American Association of Retired Persons
- American Legion
- Area Agencies on Aging
- Audubon Naturalist Society
- B'nai B'rith International
- Boy's Clubs of America
- Boy Scouts of America
- Business and Professional Women
- Camp Fire Girls
- Chamber of Commerce
- Church and synagogue groups
- General Federation of Women's Clubs
- Girl's Clubs of America
- Girl Scouts of the U.S.A.
- Gray Panthers
- Izaak Walton League of America
- Junior Chamber of Commerce (Jaycees)
- Kiwanis International
- Labor Unions
- League of Cities
- League of Women Voters
- Lions Clubs International
- National Urban League
- Neighborhood Associations
- Parent-Teachers Association
- Pilot Club International
- Professional Associations (Medical, Hearing, Gerontological, Architectural, Urban Planners, Engineers)
- Quota International
- Retired Teacher's Association
- Rotary International
- Senior Nutrition Centers
- Sertoma International
- Tenant's Associations
- Veterans of Foreign Wars of the U.S.
- Zonta International
- 4-H Clubs

Using a film or a slide-tape show is a good way to start your presentation. This can be followed by a general question-and-answer session, or a description of a specific community noise project. An introductory level slide-tape program, *The George Show*, is available with this kit. Other slide or film programs may be available from your community library. You should make arrangements for the necessary audio-visual equipment with the group receiving your presentation. Previewing the film or slide show is also recommended.

Barking Dogs. A common noise complaint in many communities is barking dogs. The Humane Society of the United States and other groups have developed an effective training method to control most dogs' barking. A copy of the dog training information is given in Appendix C. This copy of "Quiet, Man's Best Friend" is suitable for photocopying.

Noise counselors may be able to cooperate with the local S.P.C.A. or local veterinarians to promote this training. Distributing copies of the information to pet stores or veterinarian's offices or at special sessions for training dog owners can help to cut down on excessive barking.

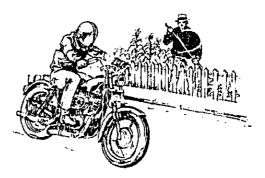
Changes in the Home. There are many sounds in our homes, and several of these can combine to make the home a very noisy place. Fortunately, there are some simple ways to reduce noise in the home. Quieting noisy appliances, fixing dripping faucets, and reducing the noise from a neighbor's apartment are just a few of the changes which can be made.



Noise counselors can advise local residents about some simple techniques to decrease noise. A list of possible solutions is provided in Appendix D as a starting place for advice to community residents. This list is suitable for photocopying, and can be distributed during group presentations, at county or health fairs, or in schools.

Referral Service. Volunteers can gather information about community organizations responsible for certain noise problems, and can develop a referral service. Callers with complaints can be referred to the individual or agency best able to help them. While supplying a valuable service to the community, this program also acts to inform the noise counselors about the most common noise complaints. It is best to use a phone in an office or public place rather than someone's home. Various volunteers can staff the phone on a regular schedule, and the phone number can be well publicized.

Noise Ordinances. A growing number of local jurisdictions have enacted noise control ordinances. Many communities have developed legislation that sets specific noise decibel levels and establishes the agencies responsible for enforcement.



Some model community noise control ordinances are available. These model ordinances may help in developing an appropriate ordinance for your community. Contact some of the agencies in Appendix E for copies of various models. One noise ordinance success story is outlined below.

EXAMPLE

Boulder, Col. has a noise ordinance because one man was disturbed by the increasing number of loud motor vehicles going up and down the street in front of his house. He liked to putter around in his yard and flower beds, and the noise really bothered him. So he formed a committee of citizens, and started working on an ordinance.

His committee, composed of an acoustician, some professional engineers, and a few high school students, published a questionnaire in the local newspaper asking people which noise sources annoyed them most. The responses, in order, were motorcycles, traffic, barking dogs, and alreafts. The committee collected evidence for about a year and a half, including a survey on the health effects of noise.

The committee presented their findings to the city manager and city attorney. An ordinance was draited, and the city council passed it in January, 1970.

Public Hearings. State, county, and municipal authorities hold regular hearings on public issues.

When the issue is noise, ask to be invited to give testimony and answer questions. Keep in mind also that hearings on building codes, zoning ordinances, and even recreation facilities can also involve the noise situation. Find out what hearings are scheduled, particularly in your county or municipal government. If these hearings relate to noise, make sure your concerns are represented. Generally, attending hearings is a good way to learn about community activities.

Problem Solving. Many of the noise problems in your community will not have a simple straightforward solution. You will need to work with the various people or groups involved to determine some possible solutions to the problem, and then help the groups agree on one course of action. Being a problem solver is one of the most challenging aspects of your role as a volunteer noise counselor. It can also be one of the most rewarding aspects!



EXAMPLE

For years, the residents of a neighborhood in one part of a large city lived in a quiet, almost small town environment. Often people would gather on a neighbor's stoop on a weekend or after dinner and visit for several hours at a time.

But as the city and the outlying suburbs grew, that neighborhood began to undergo a change. A new bus route was established to service the suburbs and several times an hour commuter buses rumbled through the narrow streets of the neighborhood.

"It got to the point," said one resident, "that we'd just stop talking when the buses went by. But they come so often we could hardly carry on a conversation." So a group of concerned citizens decided to take action. They gathered one afternoon on one of the front stoops and counted the number of buses that passed in an hour. They then met with the consumer representative of the transit company. Within three weeks, the transit company agreed to change the bus routes for most of the buses. The result was a slightly longer ride for commuters, but a quieter and more pleasant community for residents.

GATHERING INFORMATION

Noise counselors in the "Sound Advice" program will want to gather as much information about noise as possible. This will involve developing a list of names, addresses, and telephone numbers of various officials and agencies involved in noise enforcement and legislation. Determine what kinds of noise an agency is involved with and what the agency does regarding noise complaints or concerns. This list will be a useful resource for the noise abatement program as it begins community noise control activities. Many organizations have noise or hearing experts who can act as resources from your program. Some may wish to join forces in the fight to decrease noise.

Some agencies you should contact are:

- Iocal police or sheriff's department
- Mayor's office
- airport control tower and planning officer

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- health department
- humane society
- park and recreation department
- port authority
- various industry complaint departments
- transportation systems
- refuse collection agencies and businesses
- public works department
- planning and zoning authorities
- the office in charge of emergency vehicle slrens
- local representatives at each level of government

Other organizations or agencies which can act as resources include:

Acoustical Society of America (ASA). This group has regional coordinators who can act as technical resources to noise counselors. The regional coordinators, who are members of the Coordinating Committee on Environmental Acoustics, can answer technical questions on sound, sound measurement, and noise. To find the coordinator in your area, contact:

The Coordinating Committee on Environmental Acoustics Acoustical Society of America 335 E. 45th Street New York, New York 10017 (212) 661-9404 ext. 564

American Speech-Language-Hearing Association. This national organization is working toward preventing noise-induced hearing impairment and reducing environmental noise. The local office may be able to provide technical information or program support. To find the office near you, contact:

> American Speech-Language-Hearing Association 10801 Rockville Pike Rockville, Maryland 20852 (301) 897-5700

Department of Defense (DOD). The DOD has a program to address the problem of noise generated by military airfields. The objectives of the program are the protection of the integrity of military operations at DOD bases and the protection of the safety, health and welfare of affected public. The program involves technically assisting communities in land use planning and controls that will ensure that local development is compatible with the noise levels generated by the airfield.

Department of Labor/Occupational Safety and Health Administration (OSHA). The Department of Labor is concerned with noise as an onthe-job hazard and deals with it through OSHA. OSHA programs include the development of noise exposure standards for workers; enforcement of those standards by inspections; and training, education, and information programs to assist employers, employees, and others in complying with standards.

Environmental Protection Agency (EPA). This agency has in the past been actively involved with noise education and noise abatement programs at the local, state and federal levels. However, because of funding cut-backs, most EPA regional offices and the federal office in Washington, D.C. no longer have noise control departments. You may want to contact your regional EPA office (see Appendix F) for advice on sources for assistance in your area. Approximately half of the states still had a state-wide noise control program as of 1982. These state offices are also included in Appendix F.

Federal Aviation Administration (FAA). The FAA has a program to reduce noise exposure at civil airports. The objectives of the program are to reduce the noise at the airport boundary to a prescribed level as much as possible and to assist communities in achieving compatible land use for the remaining areas. The FAA encourages citizen participation in the process of noise compatible land use planning.

Federal Highway Administration (FHWA). The FHWA noise policy addresses noise associated with highway construction and use. The focus of the policy is to consider noise exposure in federal-aid highway location and design decisions by requiring studies of expected noise levels where the highway will be located.

FHWA also provides for noise reduction on existing federal-aid highways. This primarily involves the placement of noise barriers at particularly loud locations which present a problem to nearby residents.

National Association of Noise Control Officials (NANCO). NANCO is a non-profit organization dedicated to environmental noise control. The national NANCO office can act as a technical resource on noise legislation, and can refer you to interested persons or agencies in your area. NANCO publishes a monthly newsletter, Vibrations, for its members. A senior associate membership rate is available to interested older persons. For information, contact:

> National Association of Noise Control Officials P.O. Box 2618 Fort Walton Beach, Florida 32549 (904) 243-8129

PUBLICITY

Radio, television and newspapers can be important assets in your effort to reduce noise in your community. You can use the media to educate people about noise and its effects and to inform the community about efforts to decrease noise.

The most offective step in good media relations is to get to know personally those who report the news in your community. A good working relationship with an editor, news director or reporter is very important.

Your basic goals should be to make the editor or manager aware of your group and its involvement in the community, and to let him or her know that your group is a source of news and feature material of interest to community residents. You should also get to know the working reporters and radio or TV newsmen whose job it is to cover community service programs such as yours. Here are some tips on working with the media:

- Be available. Make sure reporters who cover your group know how to reach you.
- Know the deadlines and other working requirements of the newspapers and radio and television stations you work with. Don't hesitate to ask reporters and editors for this information; you'll be making their jobs easier in the long run by doing so.
- Plan ahead, Give your news contacts as much notice as you can before deadlines.
- Always remember to say "thanks." When someone is particularly helpful in reporting on your program, a short note of thanks will be appreciated and remembered.

Newspaper Articles. Newspapers reach a large number of persons in the community, and are a valuable promotion source for your program. You can make use of newspapers for news stories, feature stories, and editorials. You should begin by contacting key individuals to inform them about noise and your noise-reducing activities. Be prepared to discuss your ideas for possible articles now or in the future. The titles of the individuals you should contact include:

- publisher
- editor-in-chief
- managing editor
- news editor
- feature editor
- reporters and writers on environmental issues
- reporters and writers on education

Photographs of an event can be used to interest a newspaper in carrying the story. Sometimes a picture and caption will be used without an article, especially if the photograph and caption can tell a whole story by themselves. Be sure to use black-and-white photos and to check the required size for prints.



When writing an article, try to write the way reporters write their stories. The first sentence or two—the "lead"—must contain the WHO, WHAT, WHEN, WHERE and WHY. The lead is designed to give the readers information quickly and to interest them in reading the rest of the story. It should be kept to thirty words or less, if possible.

After the lead, write other details of the story in declining order of importance. This permits the editor to cut the story from the bottom, if necessary, without leaving out important facts.

Press Releases. When you are ready to prepare a news release about a specific event, there are several basic rules to follow. A sample is included in Appendix G. Remember to:

- Use standard size (8½ × 11) white paper, preferably without decoration.
- Type your release, double-spaced, on only one side of each sheet. Leave about onethird of the first page blank at the top for the editor's use. Leave at least an inch margin on both sides and at the bottom.
- Reproduce the release on some type of copying machine, or type an original for each recipient. Carbon copies generally make a poor impression.
- Type your group's name in the upper lefthand corner of the first page, and the date, your name, title, and telephone number in the upper right-hand corner.

- Two or three lines below your name and address, type "For Immediate Rolease" or instructions for a specified release date, if it is important that your story be held until a particular time.
- Try to hold your release to a single page. If you must use a second page, end the first page with a complete sentence and paragraph, then type the work "More" at the bottom of the page. On the second page, type your group's name at the upper left and "Page 2" at the upper right. Do not write headlines.
- At the end of the release, type "end."

Radio or TV News. Like newspapers, radio and TV can be a useful way to inform the public about noise. Again, begin by contacting appropriate personnel and discussing your noise abatement program. While you will not be working with the manager closely, you will want to meet with him or her to gain acceptance for your program. The manager will identify the staff people to contact, and these may include:

- news director
- public service director
- public relations/public affairs director
- program director

Timing and scheduling are of great importance to ensure adequate TV or radio coverage for your program and its events. In your initial planning, you should develop a schedule of events and milestones that are newsworthy. Provide your activity schedule to the contacts you have developed at the radio and TV stations. Most stations need this kind of advance information to coordinate their assignments and coverage of activities.

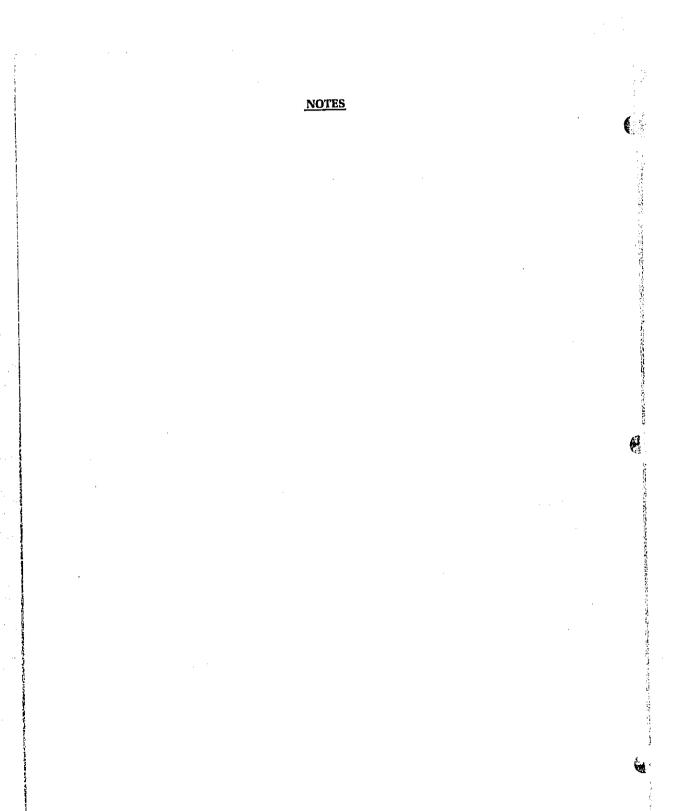
Talk Programs. Most cities have at least one radio or TV talk program. Try to persuade the producer to do a segment on noise in your community. You may want to be on the program yourself or you may arrange for others to participate. Keep in mind that the producers of these programs have a continuing need to develop good local stories. Noise issues might be on the program two or three times in one year as new angles for noise stories develop. For instance, one presentation might address the health effects of noise, another might deal with the major sources of noise in the community, and yet a third might review the status of a municipal noise control ordinance.



Public Service Announcements (PSAs). Radio and television stations usually provide free air time for announcements that are in the public interest. PSAs are brief, usually between 10 to 60 seconds. Because of time limitations, the PSA is best used to get across one single message. The most important information, such as telephone numbers, addresses, times or places, should be repeated if possible. Some samples are given in Appendix H.

SUMMARY

Noise effects all of us. Almost everywhere we go, we hear noise. But it does not have to be that way. This guide has outlined many practical and simple ways to control and reduce the noise around us. As a volunteer noise counselor in a noise abatement program, you can play an important part in the effort to make your community a quieter place to live.



APPENDIX A

Objective: The purpose of this lesson is to develop an awareness of the adverse effects that excessive noise has on human health and welfare. Through this knowledge, students should become more concerned about protecting themselves from excessive noise exposure.

LECTURE SUMMARY

It has been estimated that over 20 million Americans are working, playing, and living around environmental noise that is dangerously loud. Exessive noise exposure is a well documented cause of permanent, irreversible hearing damage. Generally, the onset of noise-induced hearing loss is gradual. Hearing of highfrequency sounds is affected first. As a result, the individual begins to confuse high-frequency consonant sounds such as "s" and "f" and describes speech as slushy or unclear. As exposure continues, the hearing loss increases and ability to hear lower frequency sounds is also affected. The individual begins to experlonce greater difficulties in understanding conversational speech. Sometimes a hearing aid will help, however, it cannot in any way make speech sound normal again. A hearing impaired person often feels isolated from his/her environment because of the problems experienced in trying to communicate, listen to the radio, or participate fully in social gatherings or public moetings.

It is important for students to recognize that not all noise-induced hearing losses are caused by noise exposure in the workplace. In fact, the noise levels associated with many popular hobbies and recreational activities exceed the levels believed to cause hearing damage over a prolonged period of exposure. Therefore, students should be aware of the noisy aclivities in which they participate and consider protecting themselves both by limiting the length of exposure and using properly fitted earplugs or earmuffs during exposure.

Our bodies respond to noise as a form of stress. Researchers have observed temporary stress reactions to loud noise which include increased blood pressure, dilation of the pupils of the eyes, and changes in heart rhythm and respiratory rate. Since noise is one cause of stress and stress is known to have a wide range of adverse health effects, noise may well contribute to stress related illnesses such as heart disease, high blood pressure, fatigue, and irritability. Researchers are presently involved in numerous studies to learn more about the effects of the interaction of noise with other variables on our bodies.

Noise also results in annoyances which detract from rest and relaxation. Generally, noises which are higher in pitch, intermittent in occurrence and unlocalized are the most annoying. Other factors which influence the degree of annoyance include the location of

the noise, the time of day, whether the noise is considered necessary or appropriate, the type of living activities affected, the degree to which fear is associated with the noise, and the individual's overall attitude about his/her environment. The most commonly mentioned noise related annovances are loss of sleep and the interference with communication. Restful sleep is an essential element in the maintenance of good health. Noise affects our sleep by interfering with getting to sleep, waking us up, or causing changes in our sleep cycle. Noise disrupts communication by making it difficult and, sometimes impossible, to converse above the background of noise. We try to compensate by speaking louder, moving closer together, and watching the face and gestures of the speaker. However, as noise levels increase in loudness, it soon becomes impossible to carry on a meaningful conversation. Sometimes loud noise obscures particularly important communications such as warning signals or shouts for help.

It is also known that noise sometimes adversely affects work efficiency, and our social and emotional behavior. Noise also interferes with the educational process. Excessive noise disrupts the development of the language and reading skills which are so vital to a successful educational experience. In addition, noise interrupts and distracts both teacher and students in the classroom, thereby interfering with and prolonging the time required to understand a concept.

In summary, noise does present a significant health problem. Its effects on our hearing ability, its contribution to stress and its probable impacts on slooping, communication, work officiency, learning, and social and emotional behaviors should definitely be of concern to us all. It is important that we work with our state, local, and Federal officials in controlling the noises everywhere around us. In addition, as individuals and families we need to be aware of our personal noise environment and protect ourselves from the adverse effects of excessive exposure.

QUESTIONS FOR CLASSROOM DISCUSSION

- Can you think of situations in which you have had trouble talking to someone else because of noise interference?
- Do you remember times when friends or family have complained about noise interfering with an activity such as relaxing or studying?

- Describe some of the offects associated with excessive noise exposure. If you know someone who works in a noise environment, discuss how noise affects them.
- 4. Do you think you would be bothered by a lot of noise when you are taking an important test or trying to read a good book?
- 5. Do your parents or neighbors over complain about noise in your community? What noise sources seem to concern them?
- Can you think of some economic impacts associated with high noise levels in working or living arrangemonts?

CLASSROOM EXPERIMENTS AND PROJECTS

1. The most effective way to create an understanding of the adverse effects of excessive noise is to personally experience the situation. If there is a printing company, a mill, or some other noisy industry in your community, arrange a site visit. The students will benefit from learning about the particular industry, while experiencing the noise levels associated with the process. Encourage them to try to communicate while in the noisy environment. It would also be useful to arrange for them to try ear protectors to see how the noise levels are reduced. Also, the students should have the opportunity to talk to workers who have noise induced hearing loss. If possible, hearing lests for some of the students, both before and immediately after the plant tour would demonstrate the adverse effects of noise on the hearing mechanism. Arrangements for the hearing tests might be made through the school health program, or a university, community, or hospital speech and hearing clinic. Check the yellow pages of your telephone directory for a listing of area speech and hearing clinics.

- Have the students prepare an article for the school nowspaper to educate follow students about the adverse effects of exposure to excessive noise.
- Have the students prepare a display for the hallway bulletin board or the school or community library to share what they have learned about the health offects of noise,
- 4. The students could conduct a survey about noise, exploring individual reaction to noise, knowledge about ways to control noise, etc. Through interviewing community residents, the students can obtain information and also give information about what they have learned about noise pollution. The results of the survey could then be condensed into a report about noise in your community. The students might wish to consider transmitting their findings to your local government or writing a letter to the editor of your local paper.

This material was excerpted from a publication from the Environmental Protection Agency: "Preparing for a Quieter Tomorrow." It is appropriate for grades seven through twelve.

APPENDIX B

NOISE: A HEALTH HAZARD

Racket, din, clamor, noise. Whatever you want to call it, unwanted sound is America's most widespread nuisance. But noise is more than just a nuisance. It constitutes a real danger to people's health. At home, at work, and at play, noise can produce serious physical and psychological consequences.

Hearing Loss. Noise loud enough to cause hearing loss is virtually everywhere today. Twenty million or more Americans are ostimated to be exposed daily to noise that is permanently damaging to their hearing.

When hearing loss occurs, it is in most cases gradual. At first there is the loss of occasional words in general conversation and difficulty understanding speech on the telephone. Many sounds are distorted in loudness, pitch, apparent location, or clarity. High frequency sounds such as "s" and "ch," are often lost or indistinguishable from other sounds. Speech frequently seems garbled.

The hard of hearing person faces other problems. Their inability to converse normally makes it difficult for pertially deaf people to participate in lectures, meetings, parties, and other public gatherings. For a person with hearing loss, listening to TV, radio, and the telephone—important activities of our lives—is difficult, if not impossible.

Heart Disease. A growing body of ovidence strongly suggests a link between exposure to noise and the development and aggravation of a number of heart disease problems. Noise causes stress and the body reacts with increased adrenaline, changes in heart rate, and elevated blood pressure. Some studies have shown that workers in high noise levels had a higher incidence of circulatory problems than did workers in quiet industries. The danger of stress from noise is even greater for those already suffering from heart disease.

Noise and the Unborn. While still in the mother's wormb, the developing child is responsive

to sounds in the mother's environment. Particularly loud noises have been shown to stimulate the fetus directly, causing changes in heart rate. The fetus is also affected by its mother's response to noise, with the physical changes she experiences being transmitted to the fetus. These fetal responses may threaten fotal development, particularly early in the pregnancy.

Special Effects on Children. Good health includes the ability to function mentally as well as physically. Research has shown that children may have learning difficulties because of noisy schools, play areas and homes. Students in classrooms near railroad tracks, airports or other noise sources may learn less than students in quiet classrooms.

Sleep Disruption. Sleep is a restorative time of life, and a good night's sleep is probably crucial to good health. But everyday experiences suggest that noise interferes with our sleep. Noise can make it difficult to fall asleep, it can wake us, and it can cause shifts from deeper to lighter sleep stages.

Human response to noise during sleep varies widely among age groups. The elderly and the sick are particularly sensitive to disruptive noises. Compared to young people, the elderly are more easily awakened by noise and, once awake, have more difficulty returning to sleep. As a group, the elderly require special protection from the noise that interferes with their sleep.

A Final Word. Except for the serious problem of hearing loss, there is no human illness known to be directly caused by noise. But in dozens of studies, noise has been identified as an important cause of physical and psychological stress, and stress has been directly linked with many of our most common health problems.

This material was excerpted from a publication from the Environmental Protection Agency; "Noise: A Health Hazard,"

APPENDIX C

QUIET: MAN'S BEST FRIEND

GOOD DOG OR NUISANCE?

Determine for yourself whether your dog is a good companion, a good watchdog, or a neighborhood nuisance, by answering the following:

Does your dog bark excessively-

- When he is left alone and lonesome?
- When another dog barks?
- When the kids next door come out to play?
- When he's outside and wants to get in the house?
- When the neighbors leave or return home?
- When you come home?
- At garbage collectors, passing cars?
- When he hears a siren?

If your answer is "yes" to any one of these, your dog could be a neighborhood noise nuisance.

Dogs bark for many reasons: when other dogs bark, when they are generally excited or frustrated, or when a stranger intrudes on their territory.

Excessive barking can be extremely annoying to neighbors as well as to those who have to live with a noisy dog. A constant barker is more likely to be ignored if there is an intruder, since he seems to "cry wolf" all the time,

One of the most common public complaints is about neighbors' barking dogs. Is your dog an excessive barker and a potential public nuisance? The National League of Cities, together with the Humane Society of the United States, would like to pass on an *effective training method* to responsible owners.

WATER TRAINING METHOD

The Water Training Method WORKS for almost all dogs.

If possible, consider going to a reputable local obedience school. An obedience trained dog will stop barking on command, and knowing obedience signals will help you control your dog in other situations and make life happier for all.

Consider the times when your dog's barking is a nuisance. If it's when he's left alone all day, help his loneliness by leaving the radio on. If your dog is an outside pet, allowing it more freedom or movement in a fenced yard or pen may quiet its barking. If practical, you might consider a companion pet. Be sure you have plenty of toys available for amusement. Don't make a big thing out of leaving or returning home. Over-excited dogs are more likely to bark and yolp.

- The first training rule is to be consistent and persistent. You can't expect a dog to learn—if barking for the wrong reason is corrected one time and not the next.
- Second, be ready for an immediate response. Have ready a plant mister filled with water.
- Say "QUET DOG" (or whatever its name is) and give one or two squirts of water at the dog while it is barking. He will stop at once. If you wait until he stops barking it may confuse him.
- If the dog moves away, repeat saying "Quiet" as you go to him and give one more squirt of water at him. Repeat each time he barks needlessly.
- Usually a day or two of training is enough if you are consistent. (5 to 10 water treatments)
- Remember to reassure the dog that you are still friends by petting him later when he's quiet.

DEFINITION

Do you know what a nuisance barker is? According to the new law passed by the city and county of Honolulu in cooperation with the Hawaiian Humane Society and Citizons Against Noise, their definition is given as an example of the way one community is adopting a "Barking Dog Ordinance."

"(d) 'Barking dog' shall mean a dog that barks, bays, cries, howls or makes any other noise continuously and/or incessantly for a period of ten minutes or barks intermittently for 1/2 hour or more to the disturbance of any person at any time of day or night regardless of whether the dog is physically situated in or upon private property; provided, however, that a dog shall not be deemed a 'barking dog' for purposes of this Article, if, at the time the dog is barking or making any other noise, a person is trespassing or threatening to trospass upon private property in or upon which the dog is situated or for any other logitimate cause which tensed or provoked the dog.' (End definition.) Honolulu also has a penalty for owners keeping or permitting a barking dog, within the limits of the city and/or county. After receiving a warning citation, the owner is required to follow specific instructions for the dog's training by the Humane Society.

TIPS FOR DOG OWNERS

- Always find out WHY your dog barks. Unless it has a watchdog reason, then you must correct it at that time.
- Do not turn a gardon hose on a dog or throw rocks or tin cans at him.
- Spanking/hitting is an ineffective substitute for water treatment and rarely solves any problams.
- Whenever your dog barks for a trained watchdog reason, praise it or pat it.
- Remember, dogs are companion animals and should be kept in the house during the normal night hours whenever possible.

IS YOUR DOG TRAINABLE?

A dog that is chained up or left alone indeors and is allowed to bark hour after hour may no longer be

trainable. Such a dog may have become too neurotic for an inexperienced trainer. If this is the case with your dog, consult your veterinarian or qualified dog trainer.

REWARDS

Correcting unnecessary barking is more convenient during the day, but getting up a few times at night will prove worthwhile. After that, you and your neighbors will know when your dog barks, there's a real reason. If your neighbors are home and you're not, they will check to see if police should be notified.

The security of knowing you have a real watchdog, as well as enjoying a peacoful and quiet night, and allowing your neighbors to enjoy one too, is well worth the effort.

This material was reprinted with permission from the Humane Society of the United States. It was adapted from materials provided by the City and County of Honolulu, the Honolulu Humane Society, and Citizens Against Noise.

PROULEM	POSSIBLE SOLUTION
1. Noise intrusion from	 install storm windows and doors
outside	 caulk cracks around doors and windows
. Noisy washing machine	lubricate motor
and other appliances	 VIBRATION—isolate heavy equipment from a floor using a rubber pad
	or thick rug • isolate appliances from walls and cabinet enclosures; where practical
	and safe, surround with sound absorbing materials
	 undercoat garbage disposals with damping compound (similar to auto
	undercoating); can also be used on outside drain of washers and dryer
3. Noisy power tools	 use variable speed tools when possible
	 use isolated area of home to work in don't use late at night or early in the morning
	 don't use faite at high of early in the morning wear hearing protector
4. TV or stereo too loud	 install fireproof acoustical tile behind TV or stereo
	• turn down volume
	 use earphones
5. Noisy car 6. Too much noise from	• drive sensibly
	 check muffler and wheels adjust or replace fan belt if there is a screeching noise under the hood
	 adjust or replace tan ben in there is a screeching holse under the nood caulk along wall and floor after removing molding
neighbor's apartment	 use rugs and drapes where possible
	ask neighbors to be more quiet
7. Dripping faucet	 place a sponge or facecloth under the drip
	• tie a string or a shoelace to the faucet so the drip is channeled as a
	 miniature stream down the string a more permanent and cost-saving solution is to replace the worn
	 a more permanent and cost-saving solution is to replace the worn washer
. Creaking doors and hinges	 install weather stripping to tighten door seal
	 lubricate hinges with all or silicone
9. Door slamming	 install door closure dampers on exterior or spring landed self-closing
	doors
	 install a resilient gasket or weather stripping around the door substitute a solid-core door for a hollow-core door
Fans and exhausts	 substitute a solution to a nontween s door remember the saying "slow and low"; the slower the motor speed, the
CANS UND CONCLOSE	quister the fan
 Window rattle Air conditioning noise 	 if window panes rattle, look for breaks in the putty; if the entire frame
	rattles, check the adjustment of springs or weather stripping
	 double-hung windows in aluminum guides can have the guide spacing adjunted for a coord fit.
	adjusted for a good fit • select a unit with adequate power capacity
	 select a unit with adequate power capacity mount window units on resilient pads
	 install perimeter gasket of soft rubber to isolate unit from wall or
	window structure
	 locate unit away from neighbor's bedroom
Noisy plumbing	 reduce water pressure install air lock
Noisy upptilation (forced	 Install air lock reduce air flow velocity
Noisy ventilation (forced air heating and cooling	• reduce air new velocity • install more grilles
systems)	 install padding around ducts where possible
. Loud furnace blower	 align blower pully and motor
	 lubricate properly (at least once a year)
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APPENDIX D REDUCING NOISE IN THE HOME

APPENDIX E MODEL COMMUNITY NOISE CONTROL ORDINANCES

T. Michael Taimi, Commissioner Kentucky Department of Environmental Protection 18 Reilly Road Fort Boone Plaza Frankford, Kentucky 40601 (502) 564-3382

National Environmental Health Association 1200 Lincoln Street, Suite 704 Denver, Colorado 80203 (303) 881-9090 Loague of Minnesota Cilies 183 University Avonuo, East St. Paul, Minnesota 55101 (612) 227-5600

Florida Department of Environmental Regulation Twin Towers 2600 Blair Stone Road Tallahassee, Florida 32301 (904) 488-0300

APPENDIX F

EPA REGIONAL OFFICE STATE NOISE CONTROL PROGRAMS (AS OF 1982)

REGION I Connecticut* Maine Massachusetts New Hampshire Rhode Island Vermont Regional Office: JFK Federal Building Boston, MA 02203 (617) 223-5708

*State Offices:

Connecticut Department of Environmental Protection Office of Noise Control 122 Washington Street Hartford, CT 06115 Joseph B. Pulaski—(203) 566-7494

REGION II New Jørsey* New York* Puorto Rico Virgin Islands Regional Office: 26 Federal Plaza New York, NY 10007 (212) 264-2110

*State Offices:

محارك معصافهم خرياتها ويراجا والقيحات

New Jersey Department of Environmental Protection Office of Noise Control 65 Prospect Street Trenton, NJ 08618 Edward J. DiPolvere-(609) 292-7695

New York Department of Environmental Conservation Division of Air 50 Wolf Road Albany, NJ 12233 Barbara Allen—(518) 457-7454 REGION III Delaware* District of Columbia* Maryland* Pennsylvania Virginia West Virginia* **Regional Office:** Curtis Building 6th and Walnut Streets Philadelphia, PA 19106 (215) 597-9118

*State Offices:

Delaware Department of Natural Resources and Environmental Control Edward Tatnall Building P.O. Box 1401 Dover, DE 19901 Charles W. Wilkins, III-(302) 736-4791

Metropolitan Washington Council of Governments Department of Environmental Programs 1875 Eye Street, N.W. Washington, D.C. 20006 George Nichols-(202) 223-6800

Maryland Environmental Health Administration Division of Nolse Control 201 West Preston Street Baltimoro, MD 21201 Michael Hurney—(301) 383-2727

West Virginia Department of Health Bureau of Industrial Hygiene 151 Eleventh Avenue South Charleston, W. VA 25303 William Aaroe—(304) 348-3528

REGION IV Alabama Florida* Georgia Kentucky* Mississippi North Carolina* South Carolina* Tennessee

Regional Office: 345 Courtland Street, N.E. Atlanta, GA 30308 (404) 881-4861

*State Offices: Florida Department of Environmental Regulation

Noise Control Section 2600 Blair Stone Road Tallahassee, FL 32301 Denis E. Wile-(904) 488-0300

Kentucky Department of Natural Resources and Environmental Protection Noise Control Section 1050 U.S. 127 South Frankfort, KY 40601 Thomas Jackson-(502) 564-3560

North Carolina Department of Natural Resources and Community Development **Division of Environmental Management** P.O. Box 27687 Raleigh, NC 27611 David Johnson

South Carolina Department of Health and Environmental Control 2600 Bull Street Columbia, SC 29201 Samuel H. McNutt-(803) 758-5506

REGION V Illinois* Indiana* Michigan Minnesota* Ohio*

Regional Office: 230 South Dearborn Street Chicago, IL 60604 (312) 353-2205

Wisconsin *State Offices: **tilinois** Environmental Protection Agency Division of Land/Noise Pollution Control 2200 Churchill Road Springfield, IL 62706 James Reid-(217) 782-9469 Indiana Association of Cities and Towns Noise Control Program 150 West Market Street, Suite 600 Indianapolis, IN 46204 Bradford G. Garton-(317) 635-8616 Minnesota Pollution Control Agency Division of Air Quality, Noise Section 1935 West Country Road, B2 Roseville, MN 55113 David Kelso-(612) 296-7373

Ohio Department of Health Bureau of Environmental Health P.O. Box 118 Columbus, OH 43216 Richard Martin-(614) 466-1390

REGION VI Arkansas

Louisiana New Mexico* Oklahoma* Texas

Regional Office: First International Bldg. 1201 Elm Street Dallas, TX 72570 (214) 749-3837

*State Offices: New Mexico Occupational Health and Safety Bureau P.O. Box 968 Santa Fe, NM 87503 Dave Marble-(505) 827-3563

Oklahoma Department of Health 1000 Northeast 10th Street P.O. Box 53551 Oklahoma City, OK 73152 Dale McHard-(405) 271-5221

REGION VII Iowa* Kansas Missouri Nebraska*

South Dakota

*State Offices:

Noise Program

Denver, CO 80220

4210 East 11th Avenue

Noise Control Program

1200 Missouri Avenue

Bismarck, ND 58505

Colorado Department of Health

David Gourdin, Jr.-(303) 320-8333

North Dakota Department of Health

Joffrey Burgess-(701) 224-2348

Utah Wyoming

Regional Office: 1735 Baltimore Street Kansas City, MO 64108 (816) 374-3307

*State Offices: Iowa League of Municipalities **Noise Control Program** 900 Des Moines Street Des Moines, IA 50316 Nebraska ECHO Program Lincoln-Lancaster County Health Department 2200 St. Mary's Avenue Lincoln, NE 68502 Gary L. Walsh-(402) 474-1541 **REGION VIII Regional Office:** Colorado* Montana North Dakota*

Lincoln Tower, Suite 900 1860 Lincoln Street Denver, CO 80295 (303) 837-2221

REGION IX Arizona* California* Hawaii* Nevada Pacific Trust

Regional Office: 215 Fremont Street San Francisco, CA 94105 (415) 456-4606

*State Offices: Arizona Department of Health Noise Program

411 North Twenty-Fourth Phoenix, AZ 85008 A.]. Battistone-(602) 255-1156

California Department of Heatlh Services Office of Noise Control 714 P Street, OB8-892 Sacramento, CA 95814 Ross A. Little-(916) 322-2097 *State Offices: Hawali Department of Health Noise and Radiation Bureau P.O. Box 3378 Honolulu, HI 96801 Thomas Anamizv—(808) 548-3075

REGION X Alaska Idaho Oregon* Washington

Regional Office: 1200 Sixth Avonue Seattle, WA 98101 (206) 442-1253

*State Office:

Oregon Department of Environmental Quality Noise Pollution Control 522 S.W. 5th Avenue Box 1760 Portland, OR 97207 John Hector-(503) 229-5989

APPENDIX G

SAMPLE PRESS RELEASE

Please retype this release, substituting the correct information about your particular program in the underlined spaces, and take it to your local newspaper and radio and television stations.

FOR IMMEDIATE RELEASE

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The Newtown Sound Advice Program November 5 John Jones

234-5678

Are you tired of motorcycles and buses disturbing your peace and quiet? Is the barking dog next door driving you crazy?

Unwanted noise is a serious matter that affects all of us. Noise will be the program topic at a meeting of the <u>Newtown Chapter #11 of the American</u> <u>Association of Retired Persons</u> scheduled for <u>11 a.m.</u>, <u>Thursday</u>, <u>November</u> <u>13</u>. The group will meet in the auditorium of the <u>First National Bank</u>, <u>123</u> <u>Main Street</u>.

The program will include a slide presentation that discusses the effects of noise and suggests some simple ways to reduce noise in our everyday lives. <u>Mary Smyth</u>, a volunteer noise counselor, will answer questions from the audience.

For further information, contact John Jones at 234-8678.

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APPENDIX H

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SAMPLE PUBLIC SERVICE ANNOUNCEMENTS

10 seconds:

The Sound Advice program invites you to a lecture on the health effects of noise. Come to the Knights of Columbus Hall at 7:00 p.m. on Wednesday, March 3rd.

20 seconds;

Are you tired of being kept awake all night by barking dogs? Loud all night parties? Motorcycles roaring through the neighborhood at 1:00 a.m.? Act now to reduce noise in Newtown. Complain to the noise counselor at 123-4567. That's 123-4567!

30 seconds:

Noise is a health problem. It is estimated that 20 million Americans are exposed daily to noise that is permanently damaging to hearing. Noise may also contribute to such conditions as high blood pressure, ulcers, asthma, headaches and colitis. Noise is all around us, in our homes, at work and outside. But there are ways to reduce noise. If you would like more information on noise and what can be done about it, call Mrs. Bea Quiet at 123-4567! That's 123-4567!

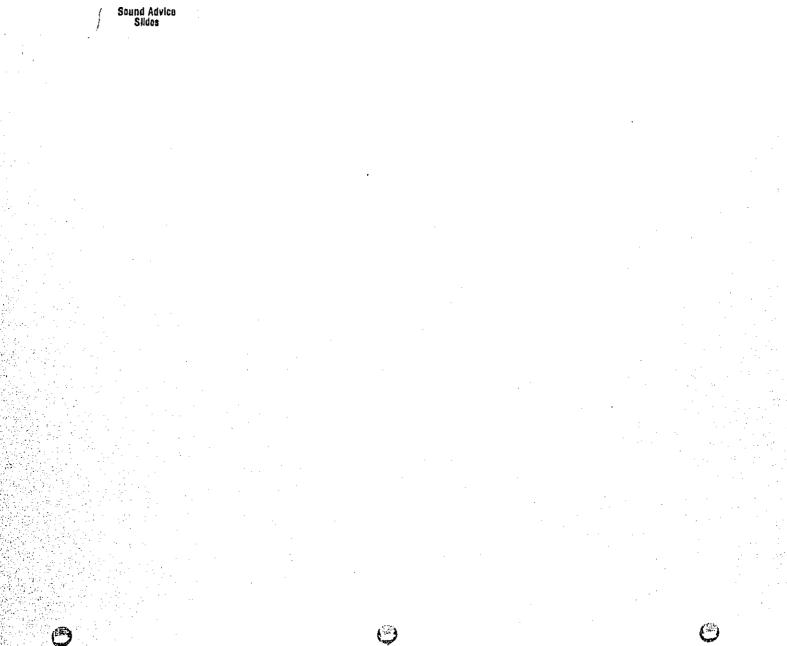
Developed by Special Events Section • Program Department American Association of Retired Persons

The "Sound Advice" program was developed by the AARP Program Department under a grant from the U.S. Environmental Protection Agency. It was the culmination of an EPA funded project, administered by AARP, which utilized older persons as noise counselors.

This material is part of a kit on noise abatement, which includes: a volunteer noise counselor's guide, a volunteer organizer's guide, a slide-tape program The George Show, and a slide-tape program Sound Advice.

Special thanks to Glenn Northrup, National Director of the AARP Senior Community Service Employment Program; John Hart, National Coordinator of Special Programs; Linda Scott; and the AARP Noise Counselors for sharing their expertise in the field of noise control. We gratefully acknowledge the assistance of the American Speech-Language-Hearing Association, the National Urban League, the Florida Department of Environmental Regulation, and the National Association of Noise Control Officials in reviewing these materials.

The American Association of Retired Persons is a non-profit, nonpartisan organization dedicated to helping older Americans achieve lives of independence, dignity, and purpose. By providing a wide range of direct member benefits and services and a host of community service programs, the Association has become the nation's largest organization of older citizens. For additional information about programs and services, write: AARP, 1909 K Street, N.W., Washington, D.C. 20049.





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