United States
Environmental Protection
Agency

Office of
Public Awareness (A-107)
Washington, DC 20460

Volume 5
Number 9
October 1979

EPA JOURNAL

Noise and the Environment

Noise in Our Environment

This issue of EPA Journal reviews the battle against noise—a pollutant that most of us are exposed to at home, at work, at play, and on the streets. Administrator Costle notes that noise control is critical and that ways can be found to keep abatement costs within reason. An article by Deputy Assistant Secretary Hales of the Department of Interior points out that modern noise is an intrusion that can detract from our enjoyment of national parks. Legislative aspects of noise control are outlined by Senator John Culver and Representative James Florio. A former Surgeon General describes the adverse impact noise can have on health. Other articles review the role noise plays in our cities, neighborhoods, and at work. Some of the ways we can deal with the problem of too much noise are described in articles about volunteer organizations, product regulation, and public information. A look at the impact of hearing loss on personal life and conflicting views on the need for sirens also are included. International steps to control noise and EPA's cooperation with Germany on environmental matters round out the issue. □

United States
Environmental Protection
Agency

Office of
Public Awareness (A-107)
Washington DC 20460

Volume 5
Number 9
October 1979

EPA JOURNAL

Douglas M. Costle, Administrator
Joan Martin Nicholson, Director, Office of Public Awareness
Charles D. Pierce, Editor
Truman Temple, Associate Editor
John Heritage, Chris Perham, Assistant Editors

EPA is charged by Congress to protect the Nation's land, air and water systems. Under a mandate of national environmental laws focused on air and water quality, solid waste management and the control of toxic substances, pesticides, noise and radiation, the Agency strives to formulate and implement actions which lead to a compatible balance between human activities and the ability of natural systems to support and nurture life.

Articles

Front cover This illustration, based on Grant Wood's famous painting "American Gothic," shows many of the sources that add noise to daily life. It was done for EPA Journal by Nathan Davies of the E. James White Design Company.

Opposite This illustration from the National Archives was a working model for a series of security posters during World War II.

Design Credits: Robert Flanagan, Donna Kazaniwsky and Ron Farrah.

Photo credits Cornelius Keyes,* Bruce Davidson/Magnum, Dan McCoy,* Erik Calonius,* Jonathan Scott Arms/USDI, National Park Service, Bill Stanton/Magnum, Yoichi Okamoto,* Henri Cartier Bresson/Magnum, National Archives and Records Service.

*Documerica

The EPA Journal is published monthly, with combined issues July-August and November-December, by the U S Environmental Protection Agency Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget

Views expressed by authors do not necessarily reflect EPA policy Contributions and inquiries should be addressed to the Editor (A-107), Waterside Mall, 401 M St , S W Washington, D C 20460 No permission necessary to reproduce contents except copyrighted photos and other materials. Subscription $12 00 a year, $1 20 for single copy, domestic, $15 00 if mailed to a foreign address No charge to employees Send check or money order to Superintendent of Documents, U S Government Printing Office, Washington, D C 20402

Text printed on recycled paper

A Balanced Approach to Noise Control

By Douglas M. Costle
EPA Administrator

A recent poll conducted by the U.S. Bureau of the Census showed that noise is considered to be the most undesirable neighborhood condition—more irritating than crime and deteriorating housing. The poll also pointed out that the proportion of Americans who feel this way has been increasing yearly. This information underscores the need for regulations and programs to abate noise pollution in our society.

Early in 1978, the U.S. Senate held oversight hearings to determine what amendments to the Noise Control Act of 1972 were needed to respond to the growing national constituency against noise. Two things surfaced as being necessary: additional research into the non-auditory health effects of noise, and stronger State and local programs equipped to administer noise administration and enforcement. Out of these hearings, the Congress drafted a set of amendments which became known collectively as the Quiet Communities Act of 1978.

I am pleased that, following the enactment of the Noise Control Act of 1972, research has made significant inroads toward an understanding of the effects of noise. What is too much noise? Research enables us to answer the question in terms of volume, duration, and character of the noise. Research thus provides a basis for regulations that give numerical noise limits. The answer to this question forms the health and welfare justification for local noise control ordinances and Federal product regulation.

There has never been any doubt that excessive noise can cause severe hearing impairment. Studies of the auditory effects of noise abound. There also is no doubt that we live in a world filled with potentially harmful levels of noise. Our jobs, our entertainment and recreation, and our neighborhoods and homes all expose us to excessive levels of noise. It is estimated that 20 million or more Americans are exposed daily to noise that is permanently damaging to their hearing. EPA's research has already established the limits of noise volume and duration above which exposure will result in hearing damage.

Recently, however, EPA's investigation of the health and physiological effects of noise has extended beyond the solely auditory effects. We are currently in the second year of a four-year study which is examining the non-auditory effect of noise on primates. The results to date give us something to worry about. When exposed to noise levels similar to those experienced by millions of Americans in urban areas, the laboratory animals experience a 30 percent elevation in blood pressure. Furthermore, when the primates are withdrawn from the noisy environment, their high blood pressure persists.

This suggests the possibility of something quite startling. That is, not only might our noisy living and working environments be giving us high blood pressure, but those occasional vacations we take to the country may not be giving us much of a respite from the ravages of noise. Since high blood pressure (hypertension) is a serious risk factor for heart disease and stroke and these two causes account for 48 percent of the deaths in this country each year, the public health implications of this study could be very serious indeed.

These significant findings correlate well with 40 epidemiological studies in 11 countries, which link noise exposure with cardiovascular disease. These findings highlight the need for noise abatement and for continued research. During the next two years, EPA will continue its research into the physiological effects with emphasis placed on cardiovascular effects, sleep, and reproduction.

The Quiet Communities Act gives us the opportunity to carry out noise abatement that is needed so critically. EPA's noise abatement initiatives have been and will be part of a well-balanced program that emphasizes both national standard-setting and State and local programs. Noise is viewed primarily as a local problem requiring local solutions. It is our intention to use the resources provided by the Quiet Communities Act to foster the development of State and local noise programs throughout the Nation. By so doing, we are using Federal dollars to initiate self-sustaining local programs that can work on their own to control noise in the future.

Principal features of EPA's State and local program initiatives are public education and information. EPA communicates with localities, providing information on the health effects of noise and the need for Federal product regulation. It also provides assistance to communities interested in adopting and maintaining noise control programs. When the information and education programs take hold in the local communities, EPA may follow-up with technical and financial assistance.

Those of us in government must always be aware of the needs, costs, and benefits of regulatory programs. The Agency's research program has amply demonstrated that the need for noise abatement is critical. EPA's reliance on State and local program initiatives should help keep the costs of abatement activities down. The benefits will speak for themselves in a quiet and healthy environment. □


TILL 6:30PM
ZONE 2 PERMIT
QUIET ZONE

Mount Moran reflected in Jackson Lake is only one of the peaceful scenes to be found in Grand Teton National Park.

Quiet: A National Resource

By David F. Hales

As I was growing up, in what was, for Texas, a large city, I do not recall being bombarded by the noises of civilization. I do recall, however, because I was fortunate enough to spend at least part of my summers away from the city, a sense of joy and wonderment at the natural sounds which seemed to penetrate pleasantly through more rural surroundings.

While I doubt if I could have articulated then the value of the absence of man-made sound, there is no doubt in my mind now that it was this very absence which enriched—in fact, made possible—some of my more treasured memories.

Much has been written of the changes brought about by the technology of the Twentieth Century. Since the beginning of this century, we have consumed more energy, expended more military firepower, artificially impounded more water, produced more written material, and generated more trash than all of our forebears had up until that time.

A perhaps overlooked result of the changes this century has seen is our geometrically expanded ability to make noise and, more significantly, our increased ability to spread that noise into places where the sounds of man were rarely, if ever, heard before.

This is not, of course, in and of itself, pernicious. Few of us would prefer walking from New York to San Francisco to occasionally hearing the sound of an airplane. As President Carter said, in his 1979 Environmental Message, "A certain level of urban noise is tolerable or even agreeable, reflecting the multitude of activities that make a city thrive."

The increasing pervasiveness of noise is, however, one of the reasons that many Americans place increasing importance on escaping to places where quiet and solitude still exist. One of the major responsibilities of the National Park Service is to ensure that such places continue to exist. Each year we host some 300 million visits by people who want to be refreshed and renewed by the historic and natural resources Congress has protected by inclusion in the National Park System. Quiet is one of those resources which deserves protection.

In the Act of Congress which created the National Park System, and in subsequent legislation, some of which applies only to the National Park Service, and some of which is of broader scope, Congress and Administrations of both major political parties have made it clear that the Park Service has the responsibility and authority to regulate sources of noise within National Parks. It also has responsibility to influence other Agencies with authority to control noise emanating outside of park boundaries but impacting resources within them.

The exercise of these duties in a reasonable and responsible way is a complex task, for the production of noise is almost always associated with someone's convenience, and quite often, particularly when the noise emanates from outside a park, with someone's livelihood.

Since one of the basic purposes of having parks is for people's enjoyment, some allowances for convenience should be made if it appreciably increases the individual's enjoyment of the resource without harming it. Allowances cannot be made, however, if the convenience of some significantly impairs the enjoyment of others, or if the very resource which one seeks to enjoy is harmed or endangered. In addition, we have the responsibility to maintain a few places where convenience is not a consideration and where people can address nature face to face, without mechanized buffers.

Although these types of situations (where the convenience of the visitor must be

David Hales is Deputy Assistant Secretary for Fish and Wildlife and Parks in the Department of the Interior.

weighed against the impact of the noise which accompanies the convenience) are complex, in these instances we can be guided by ample precedent; a history of decisions that have become accepted by the American people and by Congress as the standard which is expected from the National Park Service.

In several instances, however, the conflict between noise and park values is even more complex. Occasionally, the activities that produce noise which impacts directly and adversely on park resources have no relationship to the enjoyment of park resources, yet are important to the communities which are adjacent to the resource. Since it is not particularly useful to generalize about such conflicts, let me take two examples to illustrate the problems and our approach to resolving them.

Grand Teton National Park in northwest Wyoming, established in 1929 and expanded in 1950, encompasses some 500 square miles of breathtaking mountains that rise abruptly from the floor of Jackson Hole Valley.

The stark rocky peaks were formed by a combination of fire and ice—volcanic action caused land to rise and fall along the Teton Fault, then glaciers roamed the valleys shaping the present canyons. The ice sheets cleared soil from areas that now are dominated by sagebrush and deposited it in moraines that support pine, Engelmann spruce, and alpine fir. The Park is home to bighorn sheep, bear, deer, moose, and in fall welcomes a massive migration of elk to feeding grounds in Jackson Hole.

Jackson Hole Airport, located within the boundaries of the Park, evolved from an unpaved landing strip in the 1930's, as over the years a runway and terminal facilities were built on land leased from Federal, State, and private interests. When the land passed into the National Park System in 1950 the airport remained and became the only airport inside a National Park, through a continuing lease arrangement with the Park Service. In 1963, and again in 1967, the Federal Aviation Administration suggested extending the airport runway to accommodate larger propeller-driven planes, then jets. The National Park Service began studies of runway capacity in 1965, and in 1971, Congress appropriated $2 million to study and implement improvements to Jackson Hole Airport. The Service issued a draft environmental impact statement in 1973 on major airport improvements including a wider, longer, and stronger runway, runway lighting systems, an air traffic control tower, and a sewage treatment system. Most of these improvements were approved by reviewing agencies and are now complete, with the exception of runway changes.

In our final Environmental Impact Statement in 1974, the Service recommended denial for the runway extension and jet service to Jackson Hole Airport, and instead advocated the development of a comprehensive regional transportation plan that would meet valid transportation needs without unacceptable impacts on Grand Teton National Park and nearby Yellowstone.

Since 1974, the question not only of whether or not to expand the airport, but also whether it should continue at all within park boundaries has been fully debated and discussed by government agencies at the local, State, and Federal levels, and by concerned interest groups.

The impact of airport-associated noise has been studied by the Environmental Protection Agency and the National Park Service. What we found was that were it not for airplane noise, the quiet in some sections of the park would be so profound that scientists could not register the sound levels. What this meant was that the natural sounds of the Tetons, the murmuring of streams, bird calls, even the sounds of snow falling from the trees, could be heard.

The experiencing of these sounds is as integral to the full enjoyment of the Tetons as is an unobstructed view of the park itself. In a setting such as the Grand Tetons, where visitors actively seek quiet, the sound of airplanes; particularly jet airplanes, passes from being an annoyance into a major intrusion.

We also analyzed the relationship of the airport to the purposes of the National Park and found that only 1 percent of the people who visit the park each year use the airport.

In light of these facts, Interior Secretary Cecil D. Andrus, in August of this year, announced his refusal to approve any runway extension, and called for the implementation of a noise abatement plan for airport activities. The Secretary also indicated his belief that the special use permit for the airport should not be renewed when it expires in 1995, and urged that efforts to relocate the airport be begun immediately.

In announcing his decision, Andrus said: "With this much advance notice, I am confident that the people of Jackson, working with local, State, and Federal assistance, can locate and develop a new airport site or other means to satisfy the transportation needs of the area. This decision reflects our concern that the pristine setting of this beautiful national park should not indefinitely be degraded by unnecessary noise and disturbance."

In another, even more complex, situation, we are concerned about the impact of noise associated with the operations of Washington National Airport in Arlington, Va., on Park Service areas in and around the Nation's Capital.

National Airport is located just across the Potomac River from Washington, D.C., and serves some 13 million people each year. Because of past problems with noise complaints from suburban residents of Virginia and Maryland, air traffic from National is largely routed over the rivers just north and south of the airport.

This means that many of the Capital's most significant and heavily visited memorials and parklands are located either directly under, or immediately adjacent to, National Airport's approach and departure paths. These areas include Arlington Memorial Cemetery and the Iwo Jima Memorial, and Park Service-operated areas such as the Washington Monument, the Memorials to Lincoln, Jefferson, and Theodore Roosevelt, and a number of historic sites and recreational areas. Because of this proximity, aircraft noise effectively disrupts an otherwise moving experience for millions of park visitors each year.

Many of the memorials offer interpretive programs presented by National Park Service guides instead of signs. Park personnel at the Jefferson and Lincoln Memorials must contend with repeated noise interruptions during their talks. Some guides have developed a speak, pause pattern to accommodate the jets. Other guides on Theodore Roosevelt Island have resorted to using megaphones to get their message across. In addition, the intensified effect of the aircraft noise on the hearing of park employees, because of the acoustical properties of those structures, is a matter of some concern to Park officials.

The intrusion of aircraft noise is especially harsh at some of the historical locations. At Arlington House in the heart of Arlington Cemetery, tour guides attempt to recreate the mood of the home when General Robert E. Lee lived there, as jets roar by outside. Turkey Run Farm is a working replica of the farms that fed the residents of the Nation's Capital in the 18th Century. All the accoutrements are authentic except the noise from above.

In the past years, the Park Service has sponsored concerts, plays, and musicals at various places in and around the District of Columbia. The Watergate Concerts, which were held near the famous apartment complex starting in the '60's had to be stopped because of the noise. Symphony concerts at the Iwo Jima Memorial were cancelled when the Navy Band refused to continue playing in competition with the aircraft. Additionally, many possible visitor activities, such as readings and presentations, are automatically ruled out for the Capital area because of the noise interference.

Vacationing visitors are subjected to such extremes of sound at the base of the

Continued on page 33

Opportunities in the Quiet Communities Act

By Senator John C. Culver (D-Iowa)

In 1972, Congress passed the Noise Control Act to reduce excessive noise that jeopardizes the health of our citizens, and gave the Environmental Protection Agency the authority to develop noise control methods. In the years that followed, unfortunately, we found that the law did not do enough to help communities to resolve their unique problems.

The need to create community-level noise programs was brought to the attention of Congress when the Senate Resource Protection Subcommittee, which I chair, held oversight hearings on the Noise Control Act in March and April of 1978. This was the first comprehensive set of hearings by the Senate on the Noise Control Act since its enactment, and this examination was revealing.

One finding was that the 1972 Act had, in fact, simply not reduced environmental noise. Indeed, the subcommittee discovered that, despite the efforts of EPA, noise and its adverse health effects were increasing on the whole nationwide.

I took the March, 1978, hearings to Des Moines, Iowa, in order to learn more about problems of cities in dealing with excessive noise. One witness after another emphasized the need for effective noise education and abatement programs on a local level.

Elaine Szymoniak, a member of the Des Moines City Council, for example, stressed the need for public education and said more money should be provided to communities for self-help programs.

Charles Anderson, a professor of audiology at the University of Iowa Hospitals and Clinics, urged that three actions be taken to inform the public: "(1) the development of Federal grant programs supporting innovative research into the effects of noise on human health and welfare, (2) the support of local demonstration projects on public education, and (3) the broad dissemination to the public of information about the known effects of noise on human health and welfare."

Larry Crane, executive director of the Iowa Department of Environmental Quality, said he felt that EPA should do more noise research and should establish "realistic standards which would provide additional guidance to local governments in the kind of options they can implement." He, too, supported a grant program that would be responsive to local needs.

Finally, Ed Ryan, area director for the National Retired Teachers Association/ American Association of Retired Persons Title X program, explained the special requirements of our senior citizens for effective noise control programs. He indicated that the elderly represent an outstanding resource to help implement community noise education and control programs.

I was impressed with Iowa's response to the noise problem. Many Iowa cities, like cities in other States, have adopted or are moving toward noise control ordinances. Effective programs are already in operation in Des Moines, Council Bluffs, Dubuque, Sioux City, Davenport, and other mid-sized cities. It has been especially gratifying that Iowa realizes that noise is a pervasive problem which is not confined solely to industrial States, and that programs must be directed at specific regional and local needs.

At the April, 1978, hearings in Washington, D.C., the National League of Cities, the National Association of Counties, numerous State and local noise and health officials, former Surgeon General Dr. Luther Terry, and others all supported greater public education, research, and grant programs for our cities and towns.

The Subcommittee on Resource Protection concluded that few effective programs had been initiated at the Federal level to inform the public about the adverse health effects of noise, and to properly integrate local needs into any control strategies. The solution recommended by the subcommittee was for EPA to place greater emphasis on technical assistance to State and local levels, to begin a vigorous noise research program, and to strengthen the regulatory program.

In response to these problems, the Quiet Communities Act of 1978, which I introduced, authorized EPA to develop a range of programs to help State and local governments combat excessive noise at the local level. It allows communities to be the principal developers of programs that are responsive to their own special needs, desires, and capabilities. In addition, it not only encourages communities to assist one another but also encourages them to solicit the cooperation of volunteers and senior citizens. The Act also provides direct assistance from EPA in the form of grants, training programs, seminars, and a clearinghouse on noise information.

I have been very impressed with several innovative programs of EPA's Office of Noise Abatement Control.

First, *the Quiet Communities Program* was established in 1977 as a pilot project to demonstrate the best available techniques for local noise control. The first Quiet Community, Allentown, Pa., received an EPA grant in September of that year. The Quiet Communities program was made a nationwide, permanent effort with enactment of the Quiet Communities Act of 1978.

This pilot program, emphasizing community involvement in defining the major noise control problems and finding solu-

Continued on page 32

Aircraft Noise: An Abatement Priority

By Representative James J. Florio (D-N.J.)

Quiet is an essential element in the quality of our lives. Our citizens are increasingly conscious of the impact of noise and are no longer willing to dismiss it as an annoyance that must be tolerated. However, combatting the increasing onslaught of noise is a frustrating undertaking for even the most highly motivated communities.

Unfortunately, each level of government has unwittingly contributed to this frustration. Though Federal noise abatement and control activities were concentrated in the Environmental Protection Agency in 1972 with the passage of the Noise Control Act, the enforcement of noise standards and regulations is largely a State and local matter. This local emphasis was embodied in the Quiet Communities Act Amendments of 1978. However, with ever-increasing budgetary constraints, local noise abatement and control programs often suffer a low priority. Even at the Federal level, the EPA, charged with leadership responsibility, allots a modest one percent of its total budget for noise control activities.

It is time for us to recognize the impact of noise on the public health and welfare and to be resolved in our attempt to reduce and control its effect on our lives. As Chairman of the Subcommittee on Transportation and Commerce of the House Interstate and Foreign Commerce Committee, I have closely examined the problems and available means to decrease noise pollution in our environment. Testimony before the Subcommittee has persuaded me that prolonged exposure to noise adversely affects human health. The frequent interruption of sleep, high blood pressure, and emotional disorders can be exacerbated by the unrelenting bombardment of noise.

Similarly, high levels of environmental noise are often linked with the economic decline of neighborhoods. In testimony before the subcommittee, witnesses explained that the fiscal well-being of communities located near significant noise sources is threatened by the subsequent exodus of homeowners and shopkeepers seeking quieter surroundings. Though the causal relationship of noise to ill health and urban economic decline requires further investigation, we can agree that noise is certainly not an asset.

In the interest of decreasing environmental noise, preserving the public health and welfare, and observing public budgetary constraints, I am convinced that we must more narrowly focus our noise abatement effort in order to be effective. It is critical that we channel our resources toward reducing those sources of noise that have the greatest impact on the greatest portion of our population. Without doubt, the most widespread and universally experienced noise problem is aircraft noise. I strongly urge that combatting aircraft noise be our Nation's number one noise abatement priority.

Aircraft Noise: The Target of Special Interests

The 1970's have been called the decade of environmental legislation. Unfortunately, we are beginning to experience an all-out effort on the part of special interests to dismantle the intent of these laws. The Federal authority for reducing aircraft noise is no exception. It, too, has been the target of such dismantling.

Specifically, I am referring to the aviation noise abatement bills now under consideration by the Congress. If these legislative attempts are successful, the Federal authority to control aircraft noise will be seriously eroded. These bills would (1) exempt a substantial portion of commercial aircraft from compliance with established noise abatement deadlines; (2) discourage production of quieter aircraft, and (3) severely undercut both the FAA and the EPA's authority to implement noise abatement measures.

These bills represent a flagrant disregard by their supporters for the health and welfare of our communities. Further, I view these legislative proposals as testimony to the unwillingness of the air carrier industry to comply with long-standing regulations intended to provide long-awaited relief promised to communities plagued by aircraft noise.

Communities Take Action

On the basis of testimony, correspondence, and useful information discussions with local officials and citizens, it is clear that the callous dismemberment of existing noise abatement laws and regulations will not be quietly accepted. In lieu of Federal authority, local officials have indicated their willingness to bring noise control matters before city councils and county chambers. In the face of possible revocation of existing Federal aviation noise abatement authority, communities have already begun to pass their own ordinances to control the use of local airports by noisy aircraft. Precisely this sort of action was taken in June of this year by the members of the Los Angeles City Council.

Similar action by other communities near the major airports of our Nation could severely disrupt interstate commercial aviation. However, in lieu of Federal authority, local governments cannot be prevented from adopting their own means for resolving the aircraft noise issue. The supporters of legislation that effectively guarantees the continuation of aircraft noise

Continued on page 33

Noise: The Invisible Pollutant

Interview with Charles Elkins, Deputy Administrator for Noise Abatement and Control

You've worked in most of the programs in EPA. How is working in the Noise Program different?

I have a very hard time convincing people that noise pollution is important. In my other assignments in EPA, I've had the task of presenting issues and policies related to virtually all of EPA's programs, but noise is much harder to present. I find it easier to convince people of the hazards of some chemical which they have never heard of than about noise, even though I often have a stronger health case. We all seem to have an instinctive fear and respect of the unknown and, in contrast, a cavalier disinterest about those risks which we think we understand. I know. I used to have these very same views about noise until I took a closer look and realized how people's unconscious attitudes were getting in the way of their understanding of the hazards of noise. Noise is something we grow up with, and it is very difficult to believe that such a common pollutant could be doing anything serious to our health or environment.

EPA has a legal mandate to protect public health. Where does noise as a pollutant fit into the health picture? Is hearing loss the principal effect?

Hearing loss is one of the best understood harmful impacts of noise. Loss of hearing occurs at noise levels which most people would believe are completely harmless. With the limited monitoring we have done, we find that even some housewives are being exposed to noise on a 24-hour basis that could be hazardous to their hearing. This puts into perspective the risk of hearing loss to factory workers and other people subjected to high noise levels. Unfortunately, once a person loses hearing from over-exposure to noise, a hearing aid will usually not help.

Except for hearing loss, though, isn't noise something we can get used to?

No, in fact this is not the case. People who think they can get used to noise are deceiving themselves. If a child comes up behind you and shoots off a cap gun, you might stay in your seat and appear to be calm and undisturbed. But you cannot control your heart rate and adrenalin secretion and other internal reactions. These will increase, and your body will react because of your instinctive fear response. We can consciously control many of our reactions to noise, but some of the body's systems are not controlled by our consciousness. I am confident this kind of bodily response to noise will be recognized more in the future, as stress-related physiological studies are completed. Perhaps then we will recognize that we must take steps to protect ourselves from an overdose of noise, and we will begin to feel frustrated, as many citizens already do, because in our society it is so difficult to escape from noise.

I've heard that noise may contribute to cardiovascular disease. Has this been proven yet?

The evidence is not all in yet but 40 epidemiological studies conducted in Europe show a link between noise and cardiovascular disease. In addition, EPA and the National Institutes of Health (NIH) are now conducting a study of rhesus monkeys to determine the reactions of their cardiovascular systems to noise. We find that when exposed to levels of noise which many Americans receive day in and day out, these monkeys develop high blood pressure. After the noise was shut off this high blood pressure continued. These studies suggest that noise may be a contributing cause of cardiovascular disease. Thirty-eight percent of the people in this country die from cardiovascular disease, another ten percent die from stroke. Hypertension (high blood pressure) is a major cause of these diseases. In the next few months, we expect to expand our research on the link between cardiovascular effects and noise. If these studies continue the trend of previous studies, noise control may develop into one of EPA's major health protection programs.

Isn't one of the difficulties with noise the fact that some people like to make noise, that in some instances we equate noise with power?

Yes. We see this in our children's love for really noisy toys, such as the ubiquitous "Big Wheel." Region 5's Noise Program Chief, Horst Witschonke, came up with an excellent observation on this point. He was awakened at 2 a.m. one night by a motorcycle going by. Instead of counting sheep he lay there calculating how many people this one motorcyclist could wake up or disturb in one hour, driving at a normal speed through the streets of Chicago. He estimated it would affect something like fifteen or twenty thousand people.

How long will it take to bring noise down to an acceptable level?

Unfortunately under current programs I don't see a time when an acceptable level will be reached. Take traffic noise for instance: if there were no Federal regulations, the number of people exposed to traffic noise would double by the year 2000, as compared to when the Act was passed in 1972. With a very ambitious Federal regulatory program by the year 2000 we might be successful in holding down the noise exposure to the same number of people affected in 1972. But this assumes that the products will not degrade and that no one will modify or tamper with them. We all know, however, that people seem to enjoy modifying cars and motorcycles, so the outlook is not encouraging.

Is airplane noise a major problem?

Aviation noise seems to aggravate people more than any other source of noise even though it affects a smaller number of people than traffic noise. One reason is that airplane noise intrudes into peoples' homes—their refuge from the world—

and for many there is no escape because they cannot afford to move. The regulatory authority for controlling aviation noise lies with the Federal Aviation Administration. Recently they have put out some regulations that will result in a substantial reduction in the number of people exposed to aviation noise by 1985. That's the good news. The bad news is that immediately thereafter the number of people exposed will begin to rise again because of the expected increase in air traffic.

Is there anything that planners can do to minimize noise in residential areas?

There certainly is. In fact, prevention is a lot cheaper than trying to abate the noise after it is already there. Homes can be insulated and designed to shut out noise, if we know they are going to be exposed to a high noise level. Land bordering a noisy industrial site can be put to compatible use instead of being residential. Highways, of course, can be routed away from residential areas. There can be spacing between the highway and the homes themselves and barriers can be erected. It's easier and more cost-effective to erect a barrier along the highway or at the edge of a community at the time the original highway or community is being built. If we install barriers after the fact, as Virginia is now doing around the beltway in Washington, D.C., we find it's very difficult to buy the proper land and to place the barriers where they can be most effective. Prevention is really the best answer to noise problems for the future.

In the past Congress has sometimes been critical of the performance of some of the Agency's noise efforts. How is the Agency responding to this?

The Congress has been critical really on two points. One is the speed with which we put out regulations, and the other is the lack of emphasis on State and local programs. In the time since the criticism was originally voiced regarding the regulations, we have proposed a number of additional regulations and we expect to promulgate them very shortly. The question of State and local programs is more difficult because the 1972 act did not give us any real responsibility to deal with States and localities. That has been corrected and we feel that the performance that Congress will now see under the Quiet Communities Act will be responsive to their criticism.

Do we have any important noise standards that will be coming into existence in the immediate future?

At the present time, large trucks, rail cars and locomotives, and air compressors are regulated. Shortly we will promulgate final regulations on garbage trucks, buses, motorcycles, and other railroad equipment. In addition, we are initiating a labeling program to help consumers make informed choices about the products they buy. This is important because consumers can control the amount of noise pollution to which they are exposed more so than in the other pollution areas. Noise is such a pervasive pollutant, perhaps the most pervasive that this Agency deals with, that it would be impossible for us to protect people from all serious exposures. Individuals must help protect themselves.

We've found people complaining about disco noise. Do some feel that the Federal Government should say you can't go to a disco because the noise is too high and it will damage your hearing even though discoing is an individual choice?

Yes, but there really is a limit to what the Federal Government can and should do with regard to many noises including disco noise. EPA can inform people that their hearing can be damaged. But they must decide for themselves. We have also informed local communities about what other communities have done. For instance, in Montgomery County, Md., school dances are controlled below certain decibel levels and in a few communities signs are posted outside discos to warn people of possible harm to their hearing. Rock music performances could be handled in the same manner.

Do we have any indications that industries and manufacturers are interested in cooperating with the labeling program? Are there some that will voluntarily label their products in the near future?

Yes. Some manufacturers recognize that they can build quieter products and that this could be an excellent selling point, particularly for some consumer products. Consumers must let the manufacturers know that quieter products are more desirable.

We are working now with several industry groups on the development of voluntary labeling programs. The offer which the Agency has held out to them is that if they develop a voluntary program that meets our criteria, then EPA will postpone imposing a Federal labeling requirement on their product until their program has a chance to prove itself.

Are there any segments of our society that we can say are getting quieter? Do we have cause for optimism?

The neighborhoods around many airports will get significantly quieter by 1985. Unfortunately, the noise will start back up at a fairly rapid rate unless further steps are taken. Noise is no different from all the other pollutants that EPA controls. If we want to make the year 2000 clean or quiet, steps must be taken now to change the design of products and factories, since long lead-times are involved. With the present Federal effort in noise we are not able to promise that the year 2000 will really be any quieter than the year 1972, the year the Congress directed EPA to launch an attack on this pollutant.

If EPA is vigorous in its implementation of the Quiet Community Act, we may be able to hold the line on noise exposure. Of course, without a Federal program, the situation would be much worse.

Where do you see the noise program going in the next five years?

We see a tremendous enthusiasm for noise control at the State and local level. In fact, a recent Gallup poll showed that next to water pollution, noise was mentioned more often as a serious pollution problem than any other. The number of local noise ordinances has skyrocketed in the last several years. Therefore, we predict a very rapid growth in State and local programs to control noise.

I began my career in the Federal Government working on air pollution. Back in the 60's air pollution was viewed primarily as an irritant which made people's eyes water in Los Angeles, and few people recognized air pollution's more serious heath effects. The air pollution program and the public's understanding of the problem have grown tremendously. The noise control program is still at the "Los Angeles" irritant stage in terms of public awareness. The Noise Program is lucky to be in EPA, which has had the experience of these other growing programs. The noise program can profit from the insights gained. □

This interview was conducted by Chris Perham, Assistant Editor, EPA Journal.

Health and Noise

By Luther L. Terry, M.D.

The realization that noise is a pollutant has been very slow in coming to the general public. Yet it is clear that we are now fighting the same battle against noise pollution that we fought 10 to 15 years ago over air and water pollution.

As a physician, I am very concerned about this problem because of its insidious quality. First of all noise is invisible and its impact on our total environment, including people, has proven to be more difficult to define than that of other environmental pollutants.

Most of the scientific evidence available supporting the fact that noise is harmful to human beings is in the auditory area. At the recent Model Symposium on Community Noise, held last May in Washington, D.C., Dr. David Lipscomb reminded us that the cochlea in the inner ear is completed in the developing fetus by the third month of pregnancy and it is virtually of adult size and complexity by that time. This would indicate that the auditory mechanism is designed to serve an extremely vital part in a person's livelihood.

The insidious character of high level exposure is such that it may be weeks, months, years, or decades before the total influence and reaction is felt by the person so exposed. Dr. Lipscomb also brought out the fact that we don't have "earlids." We can't effectively close off our ears from the sound around us. Therefore, it is imperative that our ears have some quiet time because community noise levels are increasing. Our ears are more susceptible or predisposed to damage from high intensity sound because they are not rested but remain under continued assault.

Hearing is our major social and learning sense. The ear is a magnificent microcosm of creation. It may be small in size but it is mighty in its impact on the totality of human life. I believe that we should eliminate exposure to high level sound, which can destroy the structure and function of this beautifully engineered receiver of vital outside information.

There is another auditory effect from excessive noise and that is in speech interference. A good deal of study has been undertaken to discover what kind of speaking voice is necessary for an individual to be able to carry on an intelligent conversation with another person from various distances in the presence of noise. We now have a good feel for what happens when noise interferes with a person's communicating ability. Adequate communication has a bearing on everything including safety and the quality of life.

What has not been investigated but certainly should be, is whether the decrease in hearing sensitivity in response to noise exposure is a protective mechanism of our bodies against a perhaps greater danger—physiological damage resulting from noise exposure. We know that noise can constrict blood vessels, speed the heart rate, stimulate the outpouring of adrenal cortical hormones, and elevate the blood cholesterol level. And Dr. Robert Cantrell, Chairman of the Committee on the Medical Aspects of Noise, American Academy of Otolaryngology, feels very strongly that since noise enters the body through the ear, the body may wish to protect itself from greater damage by sacrificing the sense of hearing, which is not absolutely necessary for human survival.

In addition, there are other very important non-auditory effects of excessive noise. A partial list would include cardiovascular constriction, elevated blood pressure, increased heart rate, more labored breathing, measureable changes in skin resistance and skeletal muscle tension, digestive system changes, glandular activity altering the chemical content of blood and urine, vestibular effect, balance sense effect, changes in brain chemistry, and so forth.

Recent research has also indicated that excessive noise exposure during pregnancy can influence early embryo development. A very careful set of studies done at Research Triangle Park, N.C., attributed this fact to overproduction of corticosteroids, which induces congenital defects, and so we are beginning to see that noise can be a negative influence to coming generations. There are correlations also, which still are not well understood, between more noisy environments and mental disorders.

I am very much interested in a recent animal research report presented by Dr. Ernest Peterson of University of Miami, at the Model Symposium on Community Noise. He has exposed rhesus monkeys (whose cardiovascular system operates on the same general principle as human beings) to a noise exposure sequence resembling the exposure pattern that an industrial worker in the western world might experience on a daily basis. Various forms of household noise, transportation noise, cafeteria noise, work-place noise, air conditioner drone, aircraft fly-overs and noise from passing vehicles bombarded these animals for nine months.

The test showed an immediate rise in their blood pressure when the noise was turned on. Over a period of time blood pressure was elevated 30 percent, *which percentage was sustained over the nine month period.* But the most interesting result was the fact that their blood pressure remained at the 30 percent increased level long after the noise was turned off. If one chooses to translate this information to the human condition (although at present there are no clinical studies on people to confirm the hypothesis) it becomes evident that if you as a person are exposed to high noise levels and you wish to escape them for a few days by relaxing and allowing the effects of the noise to dissipate, you will be disappointed because the effects are going to last much longer than the noise.

Although it is a normal physiological response for a person to have elevated blood pressure during periods of stress, under most circumstances the blood pressure returns to normal when the stress is removed. Continued stress can lead to hypertension and be a contributing cause in decreasing life expectancy. Excessive noise in the environment falls into the category of "continued stress" and actually poses a safety danger as regards a person's ability to hear important warnings in our everyday pattern of life.

Even in the area of recreational activities, noise is important. A recent survey done by the Environmental Health Administration of Washington, D.C. measured the noise level of 18 discos in the District. Measurements were made at the edge of the dance floor, at the disc jockey station, and at the bar. On the basis of accepted standards it was found that: (1) Fifty percent of the discos constituted an occupational hazard to disc jockeys and bartenders, and that in three discos, the noise level was such that the exposure time for the disc jockey should be limited to one hour or less, and (2) if occupational limits are applied in the case of patrons, then at the noisier discos, the patrons should not be permitted to remain for more than two hours.

There are numerous reasons for stressing the need for a quieter environment. First, the human body is a wondrous device which uses a complicated set of counter-relevant forces that are kept in balance in order to maintain body health and equilibrium. Any unnecessary influence which interferes with the normal body function should not be tolerated.

Second, one most important human need is for a desirable quality of life. This is not possible in the case of half the citi-

zens of this country because of excessive noise in their work, recreational, or home environment.

And, third, "home" should be a place for rest and quiet after the labor and cares of each day. Community noise deprives most people of access to such a retreat. This is an unfortunate and unnecessary by-product of our industrialized society which may in fact be taking an unrecognized toll on human physical and mental health.

We need a great deal more research in the public health and welfare area of noise pollution. We need to fill in the voids that are still left. There is a definite need in this country for tight prospective studies dealing with the problem of noise and cardiovascular function in human beings and the effects of noise on the unborn. We need to know the effects of noise on children and infants, especially their susceptibility to hearing loss. There is an enormous need to understand immunologic mechanisms and their relationship to excessive noise.

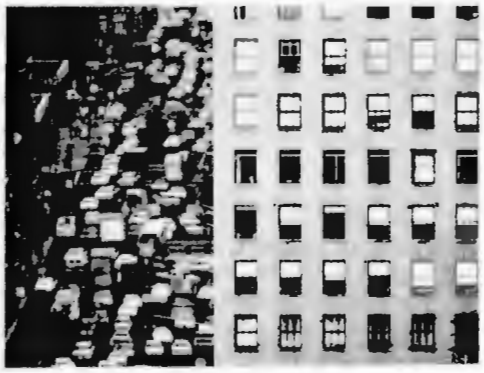
The Environmental Protection Agency has the mandated responsibility and authority to pursue the research to gain the knowledge needed for meaningful progress in achieving a more healthy environment. Especially in the areas of secondary health effects, it is a complicated task calling for the very best in scientific design and talent. It also calls for informed, creative leadership at the governmental and professional levels as well as cooperation between public and private agencies. This is a challenge to the Environmental Protection Agency. We hope the Agency will be able to demonstrate its capacity to offer the leadership needed.

The Environmental Protection Agency can give the leadership, but the final result will depend upon the aroused community concern and corrective actions at the local level. We simply cannot continue to accept the increased noise level without appreciation of its destructive effects on our lives. □

Dr. Terry is former U.S. Surgeon General and President of HEAR Foundation, Inc., a nonprofit organization that works to overcome hearing impairment in children.

Urban Noise and Neighborhood Organizations

By Milton Kottler



Tom and Janet Ross live in Queens, New York. For them, New York is a different city every Sunday morning. "It's not that there are no people around, but there is no noise," Tom said. "We can sit on the porch and have coffee and good conversation. You would never be able to do that during the week."

What Tom and Janet Ross discovered about their neighborhood is similar to what people around the country are discovering: neighborhoods are a lot more fun when they are quieter. While EPA is taking steps on a national level to reduce noise through a combination of regulatory and planning approaches, neighborhood organizations from Alaska to Florida are finding that they can be successful in reducing noise in their community by working together. The current noise control programs of the Federal Government will contain and reduce the escalation of noise, but a major portion of the solution to the problem of noise rests with local communities and neighborhood organizations.

There are many kinds of community organizations. Some have paid staff members. Some receive outside funding. Some primarily advocate neighborhood interests. Many operate programs such as food co-ops, health programs, and other services. A community organization must serve a small neighborhood or be a coalition of neighborhood organizations incorporating the entire city.

The one thing that all community organizations have in common is that they are controlled by the residents of the community. People become involved with community organizations to help themselves and their neighbors. By joining together in community organizations, residents concerned over the quality of life in their neighborhoods can have a pronounced impact on improving their surroundings.

Neighborhood organizations represent a growing force in American life. They are unique because they transcend politics in the traditional sense. They express the common interests of the average people of any community, and they are led by highly motivated and deeply concerned people who are playing leading roles in revitalizing American cities

Noise control and city revitalization go hand in hand. Noise is the unwanted companion of modern technology and urbanization. It insults and intrudes into people's lives, and it comes from a variety of sources —street traffic, aircraft, rail yards, construction activity, industry, the neighbor's lawnmower, and even barking dogs. Such noise is not only unwanted—in many cases it is unnecessary.

Noise is a leading cause of neighborhood dissatisfaction among residents in urban areas. Attempts to escape the noise are often given as reasons for moving out of the city. Noise is therefore a blighting influence as well as a health problem.

City vitality and noise seem to be practically synonymous. Yet, excessive noise can be harmful to city residents and serves to inhibit common patterns of behavior. Moreover, certain types of noise are especially irritating and can have an adverse effect on people. Noise reduction efforts will not lead to a quiet, dormant city. City noise is an integral element of a vibrant city lifestyle, and city patterns of commerce and communications need to be preserved and enhanced. But neighborhood noise programs can reduce, control, and/or eliminate those noises which are in actuality serving to retard urban living and the re-revitalization of cities.

While it is clear that vibrant, developing and expanding cities will not be silent, noise should not reach the point where the sound itself inhibits growth, where jackhammers drown out conversation, where trucks and buses and airplanes drown out all talk, where street noise hinders commerce, and where not even one's home is immune from eternal blaring noise.

Public concern has begun to find political expression at the local level. The number of local ordinances designated to control community noise levels has increased from 275 to over 1,000 in the last six years. These ordinances reflect the increasing frustration people feel from noise that is significantly disrupting their lives.

But it takes more than an ordinance to reduce noise in a neighborhood. The shelves at any City Hall are filled with ordinances that have never been enforced. In part, the reason has been because people have assumed that city neighborhoods have to be noisy. Many are now discovering that this need not be the case and are consequently turning to neighborhood organizations to develop or enforce city noise statutes.

Allentown, Pa., is a prime example. Allentown was the first city to receive Federal assistance for a demonstration program for noise reduction under the "Quiet Communities" program. The Community of Neighborhood Organizations (CNO) was the driving force that provided constant and sustaining grass-roots support to obtain and carry out this grant.

In addition, the organization worked closely with the city government in the development of Allentown's noise ordinance. Groups from various neighborhoods worked to ensure that their specific noise problems (motorcycles, nightclubs, industry, etc.) were addressed in the ordinance. Through its Environmental Issues Committee, the group was also a leader in the ultimate adoption of an effective ordinance.

On a smaller scale, the Basset Neighborhood Association serves a twelve-square block area in the central city of Madison, Wis. The area is made up primarily of small apartment buildings, housing mostly students and senior citizens. The population of the area is about 2,500.

The Association has been working for the past two years on a comprehensive neighborhood plan. A major component of the plan is a proposal to divert through-traffic away from interior neighborhood streets. Arterial streets would take traffic around the neighborhood and barriers and weight restrictions would keep traffic within the neighborhood to a minimum. The Association has worked to mobilize support for the plan among residents. The plan has made it through the city planning review process, and is now before the City Council. Association leaders feel that it will be enacted soon.

In Sarasota, Fla., Project Traffic was organized by a single neighborhood organization to deal with traffic noise problems throughout the city. The Project is presently completing research on the problem. A study of Federal, State, and local noise laws has been done and a draft noise ordinance developed. In addition, a consultant has just completed a city-wide traffic plan that calls for better signaling to improve traffic flow on major streets and the restriction of through-traffic on other roads. Project Traffic is initiating efforts to have the proposals for traffic noise reductions implemented by the city.

In Anchorage, Alaska, citizens have organized the Federation of Community Councils, which is a coalition of neighborhood organizations. Anchorage is a medium-sized city which has undergone tremendous growth in the past few years. Along with the growth has come an alarming increase in noise levels. After having worked closely with the city government in the four-year process of developing a city noise ordinance, the Federation is now working toward its enactment. Inasmuch as the proposed ordinance would operate on a citizen complaint-responsive basis, the community would play an integral part in its implementation.

In Baltimore, Md., the Greater Homewood Community Corporation has taken on a large and long-range project to reduce noise and congestion from traffic. The organization serves a number of neighborhoods ranging from wealthy to very poor and from single-family homes to large apartment and commercial buildings. The total population of the neighborhoods is 44,000.

The organization has been most active in the area of traffic. Residents were concerned about the noise, air pollution, and congestion resulting from traffic on arterial streets that run through the neighborhood. Greater Homewood was instrumental in setting up a coalition of organizations in neighborhoods affected by arterial street traffic. The coalition, Streets for People, led a two-year fight which resulted in an experimental traffic reduction plan.

The experimental plan allows 24-hour parking in one lane of each four-lane street. An additional lane is reserved for buses. The lane reduction is intended to divert traffic to other routes and to encourage people to use public transportation. The plan will be evaluated this year, and the coalition will work to make the change permanent.

These are just a few of the examples in which active and concerned residents working through neighborhood organizations have made their community a quieter place to live. The role of EPA in this process is to encourage the initiative of neighborhood organizations in reducing excessive urban noise and to provide the technical assistance these organizations need to be successful.

Few urban residents would enjoy their city if every day were as quiet as an early Sunday morning. But like Tom and Janet Ross, they would like to sit on their porch and carry on a conversation without the sound of a jackhammer or a diesel engine drowning out their discussion. Neighborhood organizations around the country are helping to make this happen. □

Milton Kottler is the Executive Director of the National Association of Neighborhoods and author of Neighborhood Government: The Local Foundations of Neighboring Life.

Memo from President Carter to Federal Department Heads

In my Environmental Message of August 2, 1979, I recognized that city noise is an integral part of a vibrant city lifestyle, reflecting city patterns of commerce that must be preserved and enhanced, but that much urban noise is harmful to urban living and could be abated.

I am initiating a program to reduce urban noise by making existing programs work better through interagency and intergovernmental cooperation. I am directing you, in consultation with other Federal agencies, to:

- initiate programs to achieve soundproofing and weatherization of noise-sensitive buildings, such as schools and hospitals;
- promote the use of quiet-design features in the planning, design, and operation of proposed urban transportation projects;
- encourage noise-sensitive developments, such as housing, to be located away from major noise sources;
- help Federal, State, and local agencies buy quiet equipment and products; and
- support neighborhood self-reliance efforts seeking to identify and address local noise problems.

The Federal Interagency Committee on Noise, chaired by the Administrator of the Environmental Protection Agency, shall coordinate the implementation of this program. The Chairman of my Interagency Coordinating Council will assist the Interagency Committee and other intergovernmental cooperative efforts to assure that this program is carried out fully and promptly, including consultation with State and local governments.

The Administrator of the Environmental Protection Agency will report to the Chairman of the Council on Environmental Quality and the Director of the Office of Management and Budget on the progress of this new program on February 1, 1980, and on August 1, 1980.

Quiet Comes to Evansville

By Nancy Shulins
Associated Press Writer

Evansville, Ind.—It's 3 a.m. before the lone lawman finally gets his man within range.

He springs from his wooded hiding place and before the outlaw can make a move, he draws and aims.

Zap! Eighty-five decibels at 50 feet. "Sorry, buddy," drawls deputy sheriff Buster Gordon. "You are gonna hafta get you a new muffler."

So ends another suburban showdown between Gordon and the enemy—the faulty mufflers, wailing stereos, and buzzsaw lawnmowers that keep his neighbors awake at night.

With his visored helmet, dusty boots, and police motorcycle, the 45-year-old Evansville native looks like a California highway patrolman who has taken a wrong turn on his way to L.A.

But he packs a noise detector, not a pistol, and he'd be the first to tell you that there's nothing he loves better than peace and quiet.

In the nine months that Gordon has been enforcing Vanderburgh County's noise ordinance, more than 300 offenders have been brought to justice, and Gordon has risen to the rank of hero among local insomniacs.

"Go get them, Buster," crowed an editorial in a local newspaper. "Buster made me a believer," pronounced Mayor Russell G. Lloyd. "We need more Buster Gordons in our society today," extolled an Evansville radio station.

Who is Buster Gordon?

He's a former Hell's Angel and a registered nurse, a disabled iron worker and an airplane pilot. By day, he's a mild-mannered field enforcement officer for the local environmental protection agency.

By night, he's a volunteer vigilante in this southwestern Indiana county's war against noise.

His dedication is unwavering, and his law is simple: "Thou shalt not make noise." If thou dost, thou shalt pay—from as little as $25 up to $1,000 for a single violation.

To determine whether a citation is warranted, Gordon stands 50 feet from the source of the disruption and turns on his noise detector. If it registers 85 decibels or more, it is deemed unlawful.

Asking Buster Gordon what's so bad about noise is like asking a Ford dealer why he doesn't drive a Chevy.

"Noise pollution destroys hearing; and it can cause neurosis and psychosis," he begins. "It makes you irritable and it makes you mean. And people are getting meaner all the time."

If that argument doesn't sway you, he'll pull out his calculator and try the scientific approach.

"Suppose it's 2 in the morning and one loud motorcycle is cruising the streets. Suppose there are 12 houses to a block and at least two people to a house.

"In the course of three hours, that biker is going to drive 17,400 people bananas. And one of them could be you."

Why do people make noise?

Gordon will tell you that, too.

"A lot of kids have nothing else to do. They drive around on a new motorcycle or in a $9,000 van and they're saying, 'Look at me.'

"They want to draw attention to themselves, to be different, to be special. That's why they put heel plates on their boots and why they rev their engines."

Gordon looks down at his own boots and flashes his engaging grin. "The reason I know so much about it is because I'm describing myself. You see," he confides, "I got heel plates on my shoes, too."

That, says one of Gordon's advocates, is one reason why he succeeds.

Gary Winn, a legislative analyst for the Ohio-based American Motorcycle Association, is trying to spread the word about Gordon's program.

"Buster Gordon has singlehandedly cleaned up the streets of Evansville, and it's not because he's running around in a cop suit," Winn says.

"The reason is because he knows motorcycles and he knows motorcycle language. When he talks to the bikers, they understand him. He's a 25-year member of the association, for God's sake."

Winn says that most cities fighting noise pollution "try to cure the disease by killing the patient."

"They either try to ban motorcycles outright or they try to solve the problem by throwing money at it. All they really need is someone like Buster."

City officials from as far away as Anchorage, Alaska, apparently are beginning to agree. Cambridge, Mass., Louisville, Ky., and Saginaw, Mich., also number among the cities that have requested information about the Evansville program.

Meanwhile, Gordon, with the help of State Rep. Gregory Server, an Evansville Republican, is hatching a plot to take his ordinance to the Indiana legislature with an eye toward seeing it implemented statewide.

"It's a good, fair ordinance, and it's directed at people like me," says Gordon, who likes to think of himself as a champion of the little people.

"I love bikes and I love bikers. All they do wrong is make noise. And I love to bust the noisy ones, because they're giving people like me a bad name."

The pickings are getting slim for Gordon, who describes Evansville streets as "99 percent quieter than they used to be." But he says his work in the city is far from over.

Next on his hit list are firecrackers, faulty air compressors, and loud parties.

The people of Evansville are applauding.

Very quietly. □

This article is reprinted with permission of the Associated Press.

Noise in Our Cities

John P. Rousakis
Mayor of Savannah, Georgia. President of the National League of Cities

This past summer *Time* magazine offered an essay on the subject of urban noise pollution; specifically those "surly troops" who manage a symbiotic relationship between roller skates and 90 decibels of nonstop disco while aimlessly meandering down our city streets. It noted that many cities are responding to this newest form of urban noise pollution by enforcing existing noise ordinances "to hold the volume down." Frank Trippet, a *Time* senior writer who authored the editorial, thought it remarkable that cities would single these people out for attention amidst the "incessant horn bleats—the ingenious cacophony of screaming sirens, screeching tires, shattering jackhammers, clangorous garbage cans, raucus trucks and roaring buses." He concludes from his observations that "still, the city dweller, though besieged by chronic noise among other civic abominations, is not indifferent to his plight. Certain noises, those of traffic for instance, are inherent in city life, essential and irreducible, they must be borne. The music of the (radio) boxes is not in that category."

I can only partially agree with this conclusion. Clearly the city dweller is not indifferent to his plight. On that point we agree. A recent Gallup survey conducted for the National League of Cities showed that forty percent of urban residents think noise pollution is a serious problem. Half believe urban noise levels have grown in the last five years and a similar number believe that not enough is being done to solve the noise problem in cities. The most astonishing of the Gallup results indicates that 1 out of 5 people see noise as a serious threat to health. All of these public perceptions of the problem are in fact true to a large extent.

However, Mr. Trippet classifies most urban noise as "essential and irreducible . . . inherent to city life." On that point we differ. Many of us have been led to believe this. We are victims of conditioning. The fact is none of these noises *must* be borne by the public. Like all types of pollution, noise has a manufactured source and people are involved along every step of the way from production to operation. People cause noise pollution and people can prevent it. None of us can deny the fact that urban noise levels are on the upswing. None of us can deny that not enough is being done about noise in our cities. The question is what is being done to reverse these current trends? Despite seven years of experience with Federal legislation to control noise (the Noise Control Act of 1972), noise seems to be becoming worse. Part of this current dilemma, I believe, rests with the previous focus of the Noise Act where accountability, authority, and responsibility to solve our Nation's problems were bestowed solely upon EPA.

The view was that Washington regulations would solve our noise problems. It's clear that this approach failed, that Washington could not solve the noise problem, that the problem refused to surrender to uniformity and central governance solutions.

The Quiet Communities Act of 1978, authored by Senator John Culver (D-Iowa), recognized the inadequacies of that Washington-based approach and embraced the notion of local solutions to local problems. In fact, the new law directs EPA to refocus its efforts toward local governments, since local leaders hold the key to quiet. Senator Culver said, ". . . The Quiet Communities Act may be the forerunner of future urban policies, which can be expected to place greater emphasis on the role of local communities with less dependence on the Federal Government."

Rather than solving our problems with nationally legislated solutions, Congress is recognizing that cities are qualified to solve urban noise problems, and are the level of government most likely to do so. This is American federalism in action. Unfortunately, it is an exception to the norm, which today views local government as an "extension service" of the Federal Government. This partnership approach is one which the National League of Cities supports to the fullest extent, since it recognizes the capability of local governments.

Helping, not regulating, is the most effective way the Federal Government can aid municipalities. There is a move afoot in Congress to ensure that such help is available to cities. Some members of Congress hope that EPA will divorce itself from its regulatory agenda and begin supporting and encouraging local noise efforts through partnership activities. Applying local resources and local institutions to reduce noise pollution is clearly the most logical step at this time, a course which Congress has quite wisely charted under the leadership of Senator Culver.

Cities and people want action on noise, not reams of shelf-sitting research reports and *Federal Register* reprints. No one needs to be told time and time again that noise is a health problem and that it causes stress. For the average person who wants quiet, researching and contemplating the noise problem doesn't reduce it. Positive action by applying resources to abatement and control at the local level is the answer.

It must begin now or our cities are apt to devour themselves with noise. Let's not wait until we can prove beyond a doubt that noise causes cardiovascular disease. Let's act now to reduce noise and prevent it from becoming a clear-cut contributor to health problems. Active prevention, not remedial reaction, should be the goal of a national strategy for noise control.

How EPA's noise program is structured in the future will either enhance or nullify efforts at the local level. I believe that EPA's efforts will positively demonstrate that an equal partnership between cities and the Federal Government can succeed in the Eighties . . . a partnership consistent with the President's articulated urban policies.

My good friend, Barbara Blum, summed it up quite clearly when she said, "Noise from a variety of urban sources is helping destroy the neighborhoods which the President is seeking to save under this urban program." In his Environmental Message to Congress *this* year President Carter spoke of an urban noise program and its importance, highlighting not regulatory programs, but substantive self-help programs aimed at accomplishments, not wishful thinking. Any partnership efforts between cities, States, and the Federal Government will recognize that cities and their people provide the decisive and critical difference between action and inaction, and between success and failure. □

Curbing Construction Noise

By Paul N. Howard, Jr.

We are subject to a multitude of wide-ranging sounds at home, work, and play.

But what differentiates everyday sounds from what we call "noise"? Noise is a distraction, an agitation, an inconvenience. Noise is rarely appreciated and, at best, only tolerated.

Over the years, construction noise has been tolerated as a necessary but temporary inconvenience attendant to progress. But today, government agencies at the Federal, State, and local levels are undertaking serious efforts to reduce or eliminate noise at construction sites. These efforts have produced mixed results.

Two principal types of noise—occupational and ambient—are the targets of the government's attention. Occupational noise is related to the safety of the worker, while ambient noise relates to the impact of noise on the community.

The Associated General Contractors of America, recognizing the benefits of protecting the health of its workforce, has long supported efforts to reduce noise at the construction site and has worked with assorted agencies to develop the most practical ways of achieving noise abatement.

Construction noise should be, and is, a serious concern to contractors. An industrial insurance survey reported that hearing loss is the largest compensable health problem today. In addition, nearly half of the American population experiences aggravating and potentially harmful environmental noise, according to the Environmental Protection Agency.

The most important question, then, is how best to achieve the goal of noise abatement in construction?

The Associated General Contractors of America support the inclusion of contractual requirements to reduce noise levels during construction provided the requirements are practical, feasible, and capable of accomplishment. This means that measures to control noise should be realistic and free of conflict. Unfortunately, this is not always the case.

For example, a conflict exists in the requirement that back-up noise devices on vehicles and equipment must be heard above the noise generated by the vehicles or equipment. This is a requirement of the Occupational Safety and Health Act and the Safety and Health Regulations for construction.

The necessarily high level of the warning signal, however, often disturbs residents nearby. In order to lower the noise level of the warning signal, the noise made by the equipment must be lowered.

Therein lies the principal problem for contractors. Few source controls (those built in with the equipment) for industrial equipment are now available. But, it is source controls which provide the best long-term approach to the problem of reducing noise.

Source controls are more economical in the long run than "retrofit" measures, which are extremely expensive to implement and seldom work as well as source controls. For example, while a contractor may build barriers, enclose equipment operations, and substitute equipment to reduce noise, these temporary, expensive measures often fail to adequately protect workers and construction requirements may require operations that cannot be accomplished without raising environmental noise levels.

Economic research has indicated that noise abatement regulations will significantly increase construction costs. Because no increases in productivity will accompany the higher costs of equipment with noise controls, regulations at all levels will be inflationary. (It has been estimated that built-in noise controls will add about three percent to present costs of new equipment. By contrast, retrofit controls designed to reduce noise levels by five decibels will add up to 10 percent to the equipment's initial cost.)

What should be the role of the Federal Government in the noise abatement process? Initially, government agencies should establish final equipment noise regulations. Any other role by the government should be extremely limited and directed at specific, well-defined problems such as the risk of hearing impairment, reduction of the number of people exposed, and the rate of progress in noise abatement by industry.

The Associated General Contractors recognize that some regulation is necessary and beneficial and we are committed to providing the most cost-effective product possible—whether it is a sewage treatment plant, a highway or subway, a building, a dam, or a power plant. The government must also recognize that increased costs are associated with virtually every government regulation.

Activities of the Federal Government should always complement those of the private sector, which must be responsible for furnishing the direction in noise abatement. The private sector possesses the necessary knowledge of what problems must be solved in order for the goals to be achieved. And, there are obvious incentives for a contractor to achieve noise abatement goals.

Most important of these is that reduction of noise in construction means complying with federally imposed occupational noise standards. In addition, the contractor has a concern for the health, safety, and welfare of his employees; wants to reduce costs associated with worker's compensation claims; and increase worker productivity. Finally the contractor wants to be as good a neighbor as possible to those who live around the construction site.

For these reasons, contractors believe that a market for efficient noise-controlled products currently exists. Manufacturers have said that they cannot invest in developing quieter equipment until there is an adequate market or until the noise factor is a strong selling factor. Contractors are convinced that the market does, indeed, exist.

While EPA should establish noise standards for newly manufactured equipment and require that those standards be met, certainly a reasonable lead time must be allowed to develop and produce this equipment. And, noise regulations should apply only to equipment produced after a specific date.

While more research is necessary to develop noise controls on many types of equipment, current technology exists to control noise levels on others. Some equipment—air compressors, for example—has already been so developed. But, until reasonable uniform standards and requirements are developed, manufacturers will not produce and contractors will not have available to them, equipment with reduced noise levels.

In the long run, substantial noise reduction at the construction site is attainable, provided the Federal Government, manufacturers, and contractors work in unison toward this goal.

The Association of General Contractors encourages the Federal Government to realistically assist the private sector in the research and development of noise-controlled equipment and calls upon manufacturers to accept the challenge of producing efficient, reliable, and quieter construction equipment.

By working together we can enhance the environment for the worker as well as the community, while continuing our Nation's progress through construction. Let's do just that and let's be realistic about it. □

Paul Howard is President, Associated General Contractors of America.

Noise in the Workplace

By Jeff Stansbury

Some work place hazards crush and kill instantly. Noise doesn't. It wreaks its havoc slowly through the years in ways workers seldom notice.

Noise doesn't get the front page coverage that air pollution does. It doesn't create the fear in people that nuclear waste does. It doesn't get the research dollars that water pollution does. Nevertheless, of all the countless types of pollution, it is unquestionably the most pervasive and varied—it is literally everywhere.

Nowhere is it more prevalent or more dangerous than in the work place. Not too long ago the National Institute for Occupational Safety and Health estimated that over 2.5 million U.S. industrial workers were exposed to harmful levels of noise. This, they said, was a conservative estimate.

The Occupational Safety and Health Administration (OSHA) and EPA are responsible for Federal noise control initiatives. OSHA is responsible for noise control in the work place. It sets and enforces decibel standards, for example. EPA reinforces OSHA's activities by establishing standards for hearing protection devices and for industrial equipment that have a direct impact on the environment. In addition, EPA establishes noise limits on certain occupation-related processes such as trash compaction.

American industrial workers—and industrial workers everywhere, for that matter—have always had to fight for health protection in the work place. We are currently locked in such a struggle to bring about noise control measures in America's manufacturing plants.

Why is it so important to us that noise is abated in the work place? Well, I think we have to look at the health effects of exposure to excessive levels of industrial noise.

Certainly, the most easily observed of these health effects is hearing loss. Researchers have found that excessive noise wears out the nerve cells of the inner ear. If the exposure is long-term, as it is for thousands of UAW workers, noise destroys the cells, and the hearing loss not only becomes permanent but grows worse. At what level does continuous noise become dangerous to hearing? There is no definite answer; however, the consensus is 80 decibels. In the U.S. the allowable industrial noise level is 90 decibels for 8 continuous hours. At this level, one-fifth of the work force will eventually suffer disabling loss of hearing.

When confronted by workers on this issue, most companies propose the use of hearing protectors. Why? Simply because ear plugs or ear muffs are inexpensive and put the burden of noise control on the workers. It is the opinion of the UAW health and safety staff, and many OSHA specialists, that personal hearing protectors should be used only as a last resort. Ear plugs readily work themselves loose, often cause infections, and can mask warning shouts and signals.

While we recognize that hearing protectors must sometimes be used for temporary protection, UAW insists that the long-term solutions to excessive occupational noise must be engineering and work-procedure controls. OSHA can recommend various operational and engineering procedures within the work place, and it can enforce them where necessary. EPA contributes to in-plant noise controls by setting standards for equipment manufacturers.

Hearing loss is by no means the only negative health effect that workers suffer from noise. Noise creates stress which causes blood vessels to constrict. Pulse rate, blood pressure, and breathing rate increase, and there are marked changes in blood chemistry. A German study has documented a higher rate of heart disease in noisy industries. In Sweden, several researchers have noted more cases of high blood pressure among workers exposed to high levels of noise.

In addition to heart disease problems, the increased flow of adrenalin and other hormones makes workers prime candidates for illnesses caused by stress. In the words of Leonard Woodcock, former President of UAW, the auto workers "find themselves unusually fatigued at the end of the day compared to their fellow workers who are not exposed to much noise. They complain of headaches and inability to sleep and they suffer from anxiety. . . . Our members tell us the continuous exposure to high levels of noise makes them tense, irritable, and upset."

Research is continually identifying the contribution of noise to other physical disorders. A five-year study of two manufacturing firms in the United States found that workers in noisy plant areas showed greater numbers of diagnosed medical problems, including respiratory ailments, than did workers in quieter areas of the plants.

The health and safety of industrial workers is jeopardized also by noise loud enough to mask warning signals. The effects of masking and speech interference can be dramatic, as in the case of an accident in an auto glass manufacturing plant. Noise levels were so high that a worker whose hand was caught in manufacturing equipment received no aid since no one heard his screams. And in a noisy Ohio plant, two pressroom auto workers were permanently disabled when they failed to hear approaching panel racks and warning shouts.

One point we try to make to management is that noise can interfere with work. When noise is particularly loud or unpredictable, errors in people's observation increase, perception of time is distorted, and greater effort is required to remain alert. Loud noises also can lead to breaks in concentration sometimes followed by changes in work rate.

A coal industry study indicated that intermittent noise conditions during mining are likely to cause distractions leading to poorer work. Other studies have confirmed additional effects of noise exposure, including exhaustion, absentmindedness, mental strain, and absenteeism—all of which increase the risks of accidents and injuries.

UAW has been intensifying its fight against workplace noise. We stiffened the health and safety provisions of our latest national contracts. At many locations we have won noise-monitoring rights. In addition, we have pressured a growing number of plants to work out noise-abatement schedules in consultation with local union health and safety representatives.

We also are aware that to truly protect our union members, we must inform them that noise does not necessarily stop when the workday ends. UAW supports EPA's programs to reduce environmental noise and to educate people about its associated health effects. A noisy environment only aggravates the effects of work place noise. We do not want to let this situation continue.

I am often asked by union leaders what they can do to protect their members from excessive noise. My advice is, first and foremost, to educate their whole membership about noise hazards and how to abate those hazards. They can then work with management to adopt comprehensive programs to engineer out noise on a definite timetable. OSHA can be called in to bring added pressure on companies. In addition, help can be obtained from their unions' regional offices, their national bargaining departments, and their health and safety staffs.

Noise can never be completely eliminated from manufacturing plants, but it can certainly be reduced to safe levels. It is management's responsibility to provide effective noise control engineering and procedures. But management seldom carries out its responsibility without a push from workers. For this reason, workers and their unions must remain ever-vigilant against noise hazards in the work place. □

Jeff Stansbury is a staff writer of Solidarity, *the official magazine of the United Auto Workers (UAW).*

By Chris Perham

The Sound of Silence

Jack G., a heavy equipment operator, and his wife Mary are arguing in their front yard again. He accuses her of mumbling so that he can't hear her over the noises of the neighborhood. She replies that he's just not paying attention. Mary knows perfectly well that when she talks to Jack in the house he hears her.

Sarah P. has been working in the mills for many years. Lately her family finds that she's cranky and irritable. She won't go along on outings, avoids social gatherings, and has even stopped going to church. She accuses them of talking about her behind her back and often makes comments that aren't relevant to the conversation going on around her.

Tommy L. is a drummer in a teenage rock group. He and his friends play for hours in family garages and basements. He sometimes notices a ringing sound in his ears for hours after practicing. His mother says he never listens to her any more and wonders what all that music is doing to his hearing. He discounts her fears, saying hearing loss is only for old people.

Hearing loss is one of America's most common chronic disorders. Some researchers estimate that approximately 19 million Americans have measurable hearing losses, and 13 percent of the U.S. population have hearing losses described as handicapping. How much of the damage can be attributed to noise exposure? Nobody knows for sure, but EPA research shows that workers, students, homemakers, and people in all walks of life are regularly assaulted by sounds that border or exceed the limits above which hearing is damaged.

Unfortunately when the ear is injured it often shows no visible signs, so few people realize the damage they suffer until it is too late. Hearing loss from noise is irreparable. Scientists note that a hearing aid cannot compensate for lost hearing the way glasses can improve poor eyesight. For a noise-induced hearing loss, the impact is especially profound because no operation or amplification can restore total sense to the jumble of sounds that the injured person hears in place of normal conversation.

What sounds are dangerous to hearing and why? According to EPA research the danger zone begins when the daily noise level averages about 70 decibels. This means that certain traffic sounds, power lawnmowers, jet planes, chainsaws, and jackhammers are all hazardous to healthy hearing if you are exposed to them for extended periods of time. What many people do not recognize is the danger posed by household appliances as well; food processors, mixers, hair dryers, and vacuum cleaners often exceed the safe noise limits.

The reason for concern is that prolonged and excessive exposure to noise can damage or destroy the hair cells in the inner ear, disrupting the sound transmission mechanism. While there are many thousands of hair cells in the inner ear, beyond a certain point the damaged cells will not heal. Under continued high level noise exposure damages accumulate and will eventually affect enough frequencies that a person's ability to comprehend speech is impaired. At this point the listener has trouble not only with the volume but also the clearness of speech.

There is as much variation in sensitivity to sound as there is in the sensitivity of skin to sunlight. Just as some people sunburn at the first exposure to sun and others can frolic at the beach endlessly without pain, so some people flinch at the sound of a car horn while others revel in the hair-raising blasts at discos. There is no way of predicting what a person's sensitivity to sound will be, and many people only find out when it's too late.

Dr. George W. Fellendorf, director of the EPA-sponsored National Information Center for Quiet, says, "The American public needs to have an awareness of the existence of hard-of-hearing persons. These are people who are not deaf, who do not use sign language, but who need an extra measure of consideration when it comes to sounds and communication. During conversations hard-of-hearing people may comprehend clearly only one or two of every ten words. Trying to communicate under those conditions is like being in a foreign country where you know only a fraction of the language. It's extremely frustrating."

Exposure to loud noises generally affects the high-frequency hearing range first. The people affected can lose the ability to hear things like clocks ticking, crickets chirping, the ring of telephone bells, and certain portions of speech, especially consonants. The sounds of **s, sh, ch, p, m, t, f,** and **th** are some of the first speech sounds to be lost, depriving spoken conversation of its meaning. Speech begins to sound like a meaningless string of vowel sounds.

Other hearing phenomena caused by excessive noise include ringing in the ears, distortion and discomfort associated with even moderately loud sounds.

Scientists report that the impact of this hearing loss is psychological as well as physical. People who cannot hear the

Continued on page 39

Fighting Noise Pollution Around the World

By Dr. Ariel Alexandre

In Sweden, some city officials are deliberately spending extra money to purchase quiet buses.

In Japan and France, proceeds of airport taxes are used to finance noise insulation of nearby buildings.

In Europe, major efforts are underway to standardize noise emission limits for motor vehicles and other equipment.

In Germany, buyers of exceptionally quiet lawnmowers and noncommercial aircraft are exempted from certain restrictions on use. Germany is studying how to apply this principle to traffic noise control.

In Lausanne, Switzerland, a police anti-noise brigade has enforced a vehicle noise emission law and educated the public on noise control since 1959.

In Darlington, England, school children participating in a project sponsored by the Noise Advisory Council and the Advisory Center for Education are measuring noise in the town and conducting simple social surveys on noise effects.

These are just a few of the technological, legislative, and incentive measures to control the growing menace of worldwide noise pollution that are cited in the 1978 report of a two-year study by the Paris-based Organization for Economic Cooperation and Development (OECD). Member countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States (and Yugoslavia as an observer).

The report, *Reducing Noise in OECD Countries*, was compiled as a result of some staggering projections made by the OECD's Ad Hoc Group on Noise Abatement Policies. A sample of some of their findings include: total noise energy output in OECD countries has doubled in the past 15 years; between 15 and 20 percent of OECD inhabitants (more than 100 million people) are now exposed to outdoor noise in excess of the 65 decibels often considered the upper limit of acceptability; by next year, the world's motor vehicle population will exceed 300 million units; air traffic worldwide (USSR and China excluded) will probably double between 1975 and 1985. And if stringent measures are not adopted, forecasts suggest that the number of people exposed to excessive noise will increase, as has been stated during the recent OECD meeting of the Ministers of the Environment (May, 1979).

The concern of the OECD member countries is reflected in the observations made in the report, which are meant to act as blueprints for fighting noise pollution through cooperation by government, industry, and the public at local, national, and international levels. The following are summaries of a few of these key task force action proposals; they include examples of measures already in force or being considered by different OECD countries.

Standardization of Noise Measurement

OECD countries are in agreement that it would be highly desirable to have a universal, standardized, simple method of measuring total noise received and compatible noise emitted from sources such as road vehicles, aircraft, and machinery. Work is under way to develop a standard measurement that would be practical, accurate, and useful for planning and enforcement procedures. Such a standard also would prove valuable for evaluating pervasive long-term noise in various areas under prescribed conditions.

Standardization measurements would have the additional benefit of minimizing barriers to trade by providing manufacturers with a universal "language." They also would help international organizations working in noise abatement, such as the International Civil Aviation Organization, the World Health Organization, and the International Standards Organization, to recommend standards and practices.

Noise Abatement: At the Source and Through Operation Regulations

OECD countries unanimously agree that noise abatement at the source is essential, particularly control through emission standards. Most countries have emission standards for motor vehicles. Many countries have, in addition, various regulations for aircraft, trains, construction, and light and heavy equipment. For example, Germany and the Netherlands are preparing noise emission standards for rail transport; a number of OECD countries have established reference limits for construction equipment; and some countries impose noise emission constraints during the planning or licensing process of light and heavy industrial plants.

When source regulations are not sufficient or applicable, regulations on operation are used in many countries. Restrictions in time are the most widespread operating regulation: for example, Switzerland prohibits driving of heavy trucks at night and on Sundays, and night curfews are imposed on many airports around the world.

Restrictions in place, common for mobile noise sources, are used mainly to regulate traffic or construction equipment near noise-sensitive areas (homes, churches, schools, hospitals). Care is taken in establishing such restrictions so that they do not merely lead to a transfer of noise from one critical area to another.

Another method is noise zone regulations which restrict the levels of noise allowable in land areas surrounding major industrial or transportation facilities. Regulations of this sort are already in effect in areas near Japanese and French airports, and have been recently advocated by Switzerland, the Netherlands, and Germany.

Noise-Related Charges Can Complement Other Forms of Control

Such noise-related fees as charges on aircraft designed to motivate product manufacturers and operators to develop, manufacture, and use quieter equipment are becoming popular in several OECD countries. Revenue from noise-related charges can finance comprehensive noise abatement programs, including research and development, and pay for building insulation and land acquisition.

Do We Need New Product Noise Regulations?

Jesse O. Borthwick
Executive Director, National Association of Noise Control Officials

With the passage of the Quiet Communities Act of 1978, Congress has recognized the importance of comprehensive State and local programs in the overall national noise control effort. Through the establishment of the Quiet Communities Program which authorizes noise control grants for the first time and through the expansion of technical assistance made available to State and local noise control agencies, Congress has finally filled the void in its program to curb this most pervasive pollutant.

State and local noise control officials couldn't be happier! For while the Noise Control Act of 1972 declared that the primary responsibility for control of noise rests with State and local governments, only 7 out of the Act's 921 lines of text supported State and local controls. More was said about what State and local governments could not do than what was to be done to support them. Therefore, it should be easy to understand why State and local officials are openly supportive of the new Quiet Communities Act and the resultant shift in EPA program direction away from new product noise regulation to State and local programs.

With all the emphasis now being placed on the new Federal grant program and the renewed national noise control effort stemming from the Act, we have perhaps lost sight of the fact that the Quiet Communities Act amended and strengthened the Noise Control Act of 1972 rather than abolished it. In all the furor, we seem to have forgotten the need for and the importance of new product noise regulations in the overall national noise control strategy.

Why Are New Product Noise Emission Standards so Important?

It seems that we have gotten along fine without them. Since the passage of the Noise Control Act of 1972, the EPA Office of Noise Abatement and Control has promulgated standards for two products, portable air compressors (January, 1976) and medium and heavy trucks (April, 1976). During the same time only a handful of States and cities have promulgated new product standards with most opting for in-use type standards. Why—is it because it was presumed that the Feds would handle new product standards and since such standards would preempt State regulations, they opted to put their resources elsewhere?

When one considers the investment required to get a standard out in terms of time, money, manpower, and politics it is a miracle that any ever get promulgated! Promulgating national standards has become even more difficult as a result of the new Federal philosophy of encouraging "non-regulatory strategies." The easy thing to do would be to ignore the need for new product regulations and concentrate on those sources which can be easily and quickly controlled by in-use ordinances. However, while in-use controls can offer immediate relief from worst case problems, the only way we will ever realize a reduction in general community noise levels in this country will be through the adoption of comprehensive new product regulations for major noise sources.

What Effect Can New Product Regulations Have On Our Future Acoustic Environment?

In controlling any noise at its source there are three basic approaches: (1) you can require that sources be manufactured to operate as quietly as possible (2) through anti-tampering provisions require that sources be properly maintained so as not to increase their sound level above that as originally manufactured and (3) through in-use controls require that they not be used in any manner as to create excessive and unnecessary noise. Anti-tampering and in-use controls affect only those individual sources which are considered to be excessively noisy when compared with the general population. However by establishing noise emission standards for new products the entire source population can be affected with average noise emissions dropping as the new quieter products are introduced. This is the type of change that will be needed if average community noise levels are to be reduced.

One source in particular will have to be controlled if we as Americans are ever to achieve EPA's goal of an environment free from noise that jeopardizes our health or welfare. That source is the automobile. As a result of its extensive use, over 87 million Americans are currently being exposed to environmental noise above those levels identified by EPA as required to protect public health and welfare. The number of people affected could increase to over 110 million over the next decade if diesel powered vehicles and subcompacts with high power-to-weight ratios become the backbone of our automobile population. Again, our only hope is to successfully reduce sources of noise through new product regulation.

Have Existing New Product Regulations Had Any Effect On Current Noise Levels?

Yes, as a result of new product regulation initiated by the State of California in 1967, supported by other States and communities in the early 1970's, and by EPA in 1976, average motor vehicle noise emissions appear to be dropping.

In 1967 California amended its Vehicle Code to make provisions for vehicle noise control. The law established this country's first sound level standards for new motor vehicles (applicable to vehicles manufactured after January 1, 1968). The new limits were a compromise between what was desired in terms of noise reduction and what was economically practical at the time. Under specified wide-open-throttle acceleration tests, limits were set at 88 decibels for trucks and buses, 86 decibels for passenger cars and pickups, and 92 decibels for motorcycles. In 1971 the California Legislature adopted a schedule of decreasing levels (see Table 1) with the following three objectives: (1) establish an eventual limit that was low enough to practically eliminate public annoyance and complaints (2) allow sufficient lead time so manufacturers could do necessary research and design and tool up to meet production deadlines and (3) allow the

page

TABLE 1.

	Trucks and Buses	Passenger Cars Pickups, and Motor driven Cycles	Motorcycles
1970	88	86	88
1973	86	84	86
1975	83	80	80
1978	80	75	75
1988	70	70	70

Initial vehicle sound level limits (in decibels) established for new motor vehicles sold in California.

Noise Control Through Education

By Martha Pennino

Excessive noise is the most frequently identified undesirable condition in urban neighborhoods. Moreover, neighborhood residents show increasing dissatisfaction about noise levels with each passing year. This alarming trend emphasizes the need for concerted effort at all levels of government to reduce intrusive noise levels.

As an elected official, I am keenly aware that legislation directed toward control of environmental problems is only a partial answer to reducing pollution. In my view, an effective public education and information program can contribute to significant noise reduction. Fortunately, in recent years the information available to assist in public education about noise pollution has grown. Increased public awareness leads to both implementation of individual and community noise control mechanisms and more effective communication with elected officials and administrators about noise concerns.

In the Metropolitan Washington area, I have observed a definite increase in public concern about noise issues in the past five years. During this period, most of the major jurisdictions have implemented noise control programs. In each case public concern and pressure have been instrumental. The noise pollution issues in our region range from aircraft, highway, and construction noise impact to noisy home air-conditioning systems.

The issue of aircraft noise from National Airport has consistently generated the greatest public concern. Residents and elected officials are both knowledgeable about this noise issue and equally frustrated by the complexity of attempting to reduce the noise impact. Citizens groups throughout the region have organized special committees and groups to monitor the situation and exert pressure to ease this growing noise problem. Through the Metropolitan Washington Council of Governments, the regional organization for this area's elected officials, we have had a noise monitoring system installed. Also, in August a test of a new flight pattern was initiated at National Airport. Area residents are participating in evaluating the impact of this noise control approach through a telephone survey and a hotline.

School children represent a vital link in noise reduction through public education and information.

It is important for young people to develop an appreciation of quiet as an environmental right and an understanding of the adverse effects that excessive noise exposure can have on their health and welfare. In recognition of the need to reduce noise exposure in the schools, two local school systems, Arlington County, Va., and Montgomery County, Md., have developed noise control policies that set decibel limits for school activities such as dances. In Montgomery County, student volunteers are involved in the monitoring process too.

Last year the Montgomery County School system also participated in the field testing of three brochures developed by the American Speech-Language-Hearing Association for EPA. The brochures, *Noise and Your Hearing, Hear Here!*, and *Think Quietly About Noise* were developed for distribution at the time of school hearing tests. The booklets provide students from kindergarten through high school and their parents with information about the effects of noise pollution on hearing. These brochures now have been incorporated into a complete hearing test package that will be available from EPA for use by educators, school nurses, and audiologists in the near future.

In 1974, the Metropolitan Washington Council of Governments initiated an Areawide Environmental Noise Program that was sponsored initially by the area's local governments and the U.S. Department of Housing and Urban Development. A major focus of this program has been to develop and disseminate information about noise pollution to the public, citizens associations, elected officials, and local government staffs.

Two years ago, the Council received funding from EPA to develop educational modules for elementary and secondary school levels. This year the author, Dr. Donna Dickman, will give seminars for teachers on the use of these units. Numerous school systems throughout the Nation have shown interest in these noise educational units.

Classroom discussions about noise pol-

Complaints about minibike noise decreased after youngsters in Montgomery County, Md., were counseled on how and where to ride without disturbing others.

lution can help inform parents on ways to control noise.

As the tools available for noise assessment are rapidly expanding, there is a continuing need for educational programs to help State and local governments develop and implement noise control programs. Three years ago, 90 area planners attended a workshop on Noise Control and Land Use Planning sponsored by the Metropolitan Washington Council of Governments and EPA Region 3. Six members of the Fairfax County, Va., Office of Comprehensive Planning were there.

Since then, noise has received increased attention from our planning staff. Specific guidelines for analysis of noise impacts have been developed and applied. When potential problems are identified, the staff assists the developer in creating a compatible noise control plan.

To assist developers and builders in planning noise reduction projects, the Montgomery County, Md., noise staff arranged a seminar on building noise. It was attended by 30 area builders and developers. They received information on site planning, acoustical, and architectural approaches to noise control. Again, application of this information in future developments will result in quieter homes and offices for area residents.

Recently, local and regional purchasing officers met at the Council of Governments to discuss noise reduction through specifying (at the time of requests for bids) the acceptable noise levels for various products. A pilot project conducted by the Federal Government to acquire quieter lawnmowers was successful. Many of these quieter lawnmowers are loaned to local governments for use by groundskeepers in noise sensitive areas such as hospitals and schools. Local governments represent a substantial market and emphasis on the desirability of quieter products should not be ignored. But the push for quieter products must come from a concerned public which makes quiet a priority for local government officials.

In the past year, noise control personnel in this area have received frequent calls from people about specific home noise control problems. *Quieting in the Home*, a National Bureau of Standards publication that has been reprinted by EPA, gives valuable aid in solving many home noise problems. This "quiet it yourself" book and other materials on noise are now being distributed through the National Information Center for Quiet in Rosslyn, Va. The EPA-funded center has been created to serve as a resource for people who want a quieter personal and community environment. The center for noise information will aid public participation in noise reduction efforts.

For several years, I have seen the effectiveness of an information sharing concept through the work of the Council's Noise Technical Committee. In this program, noise staff from the region's major jurisdictions meet monthly to discuss noise issues and to help one another develop plans to ease noise problems.

It has been my experience that maximum public commitment and support for almost any issue result from going to the people rather than waiting for them to come to you. For example, several years ago EPA sponsored a Noise Exposition in a large area shopping center. Locally, Montgomery County has held two "Noise, Sound and You" Expos. Each of these has sensitized thousands of people to noise pollution as an environmental problem.

Last fall the Council of Governments sponsored a Minibike Roundup for youngsters in Montgomery County. Minibike noise was a frequent cause of complaints in the County. The youngsters received noise and air pollution analyses for their minibikes, participated in a skills contest, and received information about areas where they could ride minibikes without disturbing others. At last check minibike noise complaints were less frequent in the County. Similar educational efforts directed toward other noise problems could be equally successful.

Two other efforts in the Metropolitan area show the potential for noise reduction through user education. Both were developed in cooperation with the Council of Governments. In a pilot inspection program, Prince George's County, Md., noise control officials conducted noise measurements on refuse collection vehicles. Owners and operators were then counseled about the use of quieter trucks in residential areas. The State of Maryland noise control staff developed brochures on air conditioning and refrigeration condensing noise and grain dryers, which were distributed throughout the State. The brochures tell how to quiet these noise sources. The pilot inspection counseling program and the brochures are ways to augment noise control efforts beyond a program of individual responses to complaints.

As an elected official, I recognize the concerns of my constituents in governmental regulation to foster environmental change. There is both an aversion to overregulation and understanding of the limits of regulation as an effective control. I strongly support public education and information programs as an adjunct and an alternative to legislative restraint. An educated public can help achieve a quieter tomorrow. □

Martha Pennino is Vice Chairman of the Fairfax County, Va., Board of Supervisors and President of the Metropolitan Washington Council of Governments.

Volunteers Against Noise

EPA scientists record sound levels along highways and in other areas as part of research into the effects of noise.

The major part of the struggle for a quieter society is carried on by private citizens working through voluntary local organizations. While EPA's Office of Noise Abatement and Control plays an essential role in coordinating noise control efforts nationwide and providing technical support and advice to local communities, the success of any local noise control program depends on the support of that community's citizens. Indeed, if it were not for the vigorous efforts of local volunteer groups, most local noise control programs would not exist.

EPA's efforts to reduce noise pollution involve giving support to local communities

to help them develop and enforce their own noise control efforts. One aspect of this is the ECHO program (Each Community Helps Others), in which EPA reimburses out-of-pocket expenses to enable experienced local noise control officials to travel to other communities to provide advice and assistance in developing an effective, enforceable noise control program. The "local" orientation of these experts is important, because a thorough familiarity with the workings of local government units is essential to develop effective local noise control efforts.

In authorizing EPA's noise activities, Congress recognized that excessive noise is essentially a local problem demanding local solutions. Every community is unique and requires a noise control program tailored to its specific needs. No one is better qualified to determine what those needs are than residents of the community, and no one is in a better position to see that things "get done."

Noise in Paradise

Getting things done can require some "informed nagging," according to Joan Hayes, president of Citizens Against Noise, a voluntary citizens' group with over 1,200 members in Honolulu, Hawaii. Hayes has led the campaign against noise in Hawaii since 1970 when a "screeching" air-conditioner unit near her apartment proved beyond the power of the local government to handle. There was a city noise code but no enforcement, a common condition. Put off by the bureaucracy, Hayes slipped notices under the doors of neighbors saying "Let's start a Citizen's Campaign Against Noise (CAN)." Within 10 days, 70 people had contributed a dollar each and CAN began. Since that time, CAN has worked steadily to raise the community's concern about noise, promote legal action against chronic offenders, and carry out public education programs about noise. In the past 10 years, CAN has:

- Pioneered a noise education program in the Oahu school system, which one principal called "one of the most successful innovations" he had seen at his school
- Brought a San Francisco Police Community Noise Control Officer to Honolulu to show city and State officials how to handle noise problems
- Placed noise awareness posters on buses and in schools and libraries
- Distributed radio public service anouncements about noise
- Purchased noise films which CAN loans to interested parties
- Purchased sound level meters which CAN loans to private citizens for testing noise levels
- Achieved extensive newspaper coverage for noise control activities

"Our experience suggests more than volume motivates people," Hayes said. "Another is awareness of what noise really does to people. Third is disappointment with enforcement." Hayes added that the best thing that can happen for noise control is for enough people to become concerned, thereby creating a voting constituency for noise control that elected officials will respond to.

Mobilizing Older Americans

The Hawaii group is the largest of its kind in the country. However, a nationwide volunteer effort for noise control being developed by the American Association of Retired Persons may eventually outstrip it.

The Association is a non-partisan association of older Americans with approximately 12 million members and more than 3,000 local chapters. Membership is open to people over the age of 55, though associate memberships are available to those over 45. It has been involved in environmental issues for years through the Senior Community Service Employment Program in which older citizens receive training and are placed in community service jobs with various government agencies and non-profit organizations.

The Association is currently managing a Noise Counselors Program, an outgrowth of its general environmental effort, in which senior citizens receive training in noise control and are then assigned to work in their local communities. Currently, there are about 20 Noise Counselors.

Of the Noise Counselors now at work, some receive part-time compensation with funding provided by the Department of Labor under the Older Americans Act. The remainder are volunteers. EPA provides technical equipment and educational materials for the Noise Counselors.

The Association plans to use the experience gained in this "pilot program" to determine exactly how much training and technical support is necessary to enable the Noise Counselors to be effective in dealing with noise issues. Once this evaluation is complete, it anticipates developing a complete training package for use as a national program activity, setting up noise control committees in many of its 3,000 chapters, and providing necessary assistance and support so that each chapter can contribute to the development of effective local noise control programs. While some of the current Noise Counselors receive part-time compensation, the Association plans to develop a completely volunteer program mobilizing thousands of members.

According to the Association's Sandra Sweeney, experience gained so far indicates that older citizens can be especially effective in dealing with noise problems. They need some encouragement and direction to get started, she said, but once started, they "go like mad." The Noise Counselors handle a tremendous volume of noise complaints. They seem to have an advantage over younger people, Sweeney said, especially in the resolution of noise complaints that require negotiation in potential adversary situations. The Noise Counselors are more readily accepted, especially by business operators, and the result is usually an amicable settlement of the noise problem. If the Association's plans are successful, within a few years there should be a tremendous increase in the number of local noise control programs spearheaded by a group of volunteer Noise Counselors.

The National Urban League embarked on a similar program in July of this year. This initiative, targeted toward inner-city residents, will address the noise problems associated with urban environments.

A National Coalition

A national coalition of volunteer citizens' organizations concerned with noise issues, the National Alliance for Quieter Communities, has just been formed. According to Frank Sordyl, treasurer, more than 30 organizations across the country have been contacted, and virtually all of them expressed enthusiasm for the concept of a national coalition, and willingness to participate in its development.

As presently envisioned, the alliance will play a vital role in assisting and supporting efforts of volunteer groups to deal with noise problems. □

Sirens

By John Heritage

"There's the road noise—the tires screeching. There's the sirens and the air horn. It's all quite devastating." —a description of a firetruck ride by Vincent Riccordella, fireman with Ladder 81 of the New York City Fire Department.

"Over the past 20 years, it's been one of the most profoundly pervasive noise abatement problems that we have—the virtually endless proliferation of emergency warning signals," says Dr. Thomas H. Fay, an audiologist who has advised the New York City Fire and Police Departments and is a member of the Council on the Environment of New York City .

"It's been enormously hazardous to the hearing of the men that have to ride on these vehicles," says Dr. Fay. "The general public is simply tortured by all this, particularly those that live near the medical centers."

Fay's view is supported by Joan Hayes, Chairperson of the Board of Citizens Against Noise, a nationally-concerned public interest group. Noise control is a jigsaw puzzle and the siren piece is an important part of the whole picture, she says.

Fireman Riccordella describes the effects from his own personal experience. He starts his workday "pretty relaxed." Then, as the number of trips on the fire engine builds, he describes it this way: "I get a little hyper. We have to talk louder to hear. The TV goes up. After upwards of 40 to 45 runs, we've got to talk up to each other. Our tolerance for noise decreases. Our sleep is interrupted."

"Noise makes you sick in many, many ways," Riccordella comments. As a result of this, he was instrumental in setting up a meeting in February, 1978, with New York City labor groups and Federal, State, and local agencies on the emergency noise problem.

Providing evidence in support of adverse noise effects, a recently published study by three University of California researchers found that firefighters appear to suffer greater hearing loss than the general population.

Such research has convinced Howard McClennan, president of the International Association of Firefighters, that siren noise is a problem, and he is now bringing the issue up during meetings with the Occupational Safety and Health Administration.

Sirens affect everyone, adds Norman Waitzman, author of "Siren City USA," a report for Ralph Nader's Public Interest Research Group of Washington, D.C., on sirens in the Nation's Capital. "I can't even sit down and read this report without some siren blaring outside," he says.

Advocates of stiffer controls on emergency warning noise see several possible steps.

As one measure, Waitzman believes 50 percent of ambulance noise could be eliminated. A siren can be shielded, he says, making it more precise and effective and reducing the noise for the hundreds of thousands of people who hear it.

In most cases flashing lights are adequate, says Hayes, who believes there should be a maximum decibel limit for sirens as well as the minimums that are often set.

Ear muffs help for firemen, says fireman Riccordella.

There could be a different kind of warning system, says New York audiologist Fay. He suggests a radio signal with receivers on all vehicles.

Limits could be set on the use of sirens depending on how serious the call, Waitzman says. Sirens could be prohibited between 11 p.m. and 7 a.m., according to a 1976 recommendation of a Washington, D.C., health and environment advisory committee.

While there may be steps that can be taken to reduce emergency warning noise, how to implement them is another concern.

Putting solutions into effect is a local matter, says Hayes of Citizens Against Noise. "But I think suggesting to a local community how it can be done effectively could be a very appropriate national undertaking.

"A Federal organization could do some testing easily and see what makes sense and put out a simple, easy to understand flyer," Hayes explains.

But there is another side in the emergency warning noise issue. Some don't believe the noise is a problem needing tighter controls. Even louder signals may be justified, they add.

In fact, emergency warning signals are actually getting noisier, not quieter. This trend is acknowledged by Harry Foster, northeast region district manager of Federal Signal Corporation, one of the biggest siren makers in the country.

Louder equipment is necessary, he says, because automakers are making their cars tighter and tighter to keep out noise and provide a seal for air conditioning.

Siren noise isn't a problem, Foster continues. "The easiest and best way to give the alert is the siren and the air horn. They save many millions of dollars a year and many lives."

Louder signals aren't justified, counter those concerned about emergency warning noise. The continuing push for more volume is due to tradition and economic interest, they argue.

"Noise is a vastly overused tool," says Hayes of the citizens group. "I think it's an old fashioned solution, one that does more harm than good."

Foster of the Federal Signal Corp. denies that his company encourages louder signals to make a dollar. "The marketplace has asked for it. Fire, police, and other emergency departments have said that people don't see or hear. So they've asked for better light and sound, both of which we have responded to."

Several observers agree that many emergency departments favor louder warning equipment, because they may feel that the more noise they make, the more people will get out of the way.

If trends and old attitudes are going to be changed, two key problems need to be solved, several of those concerned about emergency warning noise say.

First, says fireman Riccordella, there isn't enough education on the problem and the answers. Second, says audiologist Fay, basic auditory principles haven't been applied when left up to industry itself, and when restrictions have been imposed, those principles have only been used within certain limits. □

John Heritage is an Assistant Editor of EPA Journal.

The Hummer's Voyage

Hundreds of tiny and remarkable ruby-throated hummingbirds often fly at this time of year across the Gulf of Mexico to their winter homes in Latin America.

They are carried on this remarkable flight by wings beating at a furious rate of 60 strokes a second or better. The wings move so rapidly that they are seen only as a blur and the thrumming sound of their motion gives the bird its nickname of "hummer."

The ruby-throated hummingbird, the only species of this type of bird that nests east of the Mississippi River, sometimes migrates as much as 2,000 miles from its breeding site to winter quarters.

Some of these tiny creatures starting their migratory flights are being caught in almost invisible mist nets erected in the Dolly Sods area of the Monongahela National Forest on the Allegheny Front, some 200 miles west of Washington. The Brooks Bird Club members who tend these nets as part of a bird banding operation always swiftly release the fragile hummingbirds so they can resume their journey without injury.

These birds have proportionately immense wing muscles and, for their size, the hummers outperform any other warm-blooded animals. Their daily intake of sugar, a principal food, may amount to half the bird's weight. These creatures take food 50 to 60 times a day and use their tubular tongues to suck up nectar from flowers such as gladioli.

They also frequently visit glass feeders hung by bird lovers for free sugar water often colored red with a food dye to help attract their attention. Thousands of these birds summer on the East Coast and many visit feeders in the Washington area.

When two or more hummingbirds gather at a feeder, they often engage in mock aerial combat, darting at each other at speeds of up to 30 miles an hour. However, they never seem to actually make physical contact, contenting themselves with playing an aerial game of "chicken."

In order to sip sugar water from feeders, they hover in the air in one position until their hunger has been sated. The hummingbird must be refueled every 10 to 15 minutes. Scientists have found that in order to save energy these birds will sometimes pass into a state of torpor at night instead of sleeping. In this condition, the bird's body temperature drops and its energy output sinks to only one-twentieth that of normal sleep.

For a tiny creature weighing only about one-tenth of an ounce, the hummingbird shows a remarkable lack of fear of people. It will often fly or perch within 15 or 20 feet of humans and, in some cases, these birds have been induced to take sugar water from hand-held feeders and to alight on a finger. This may reflect their confidence in their ability to make a quick escape if they see danger.

Yet the hummers are wary of the bees that often find the sugar water dispensers appealing and cling to the feeder tip. Since hummers frequently refuse to visit when a bee is at the sugar water, some feeders come equipped with "bee guards" which permit only the stiletto-like beak of this bird to gain access to the fluid.

The ruby-throat is only one of more than 300 species of hummingbirds. The family includes the smallest bird in the world, the 2¼-inch Cuban "bee."

Until the discovery of America, no European had ever seen a hummingbird. All members of this family are found in the western hemisphere only.

Most of the 300 types are tropical. Like many beautiful birds, they often were slaughtered for their feathers. Before such commerce was outlawed, a total of 40,000 skins reportedly were sold to a London firm in one year.

In courtship, the male ruby throat puts on an aerial circus as he dives in front of his future mate. The male's resplendent red throat consists of iridescent feathers, which glow with astonishing intensity when struck by sunlight. The female perches on a branch, her head turning from side to side as she watches the display.

The nests are walnut size and are tied to a branch with spider silk woven by the needle-like bill of the female. Two pea-sized white eggs are laid in the nests, which have been camouflaged with lichen and are often lined with thistle down. The mother bird feeds newly hatched young by thrusting regurgitated food into the gaping mouths with her long bill.

Although hummingbirds are relatively safe from non-human predators, there have been reports of bass, frogs, and hawks occasionally swallowing them. A more significant cause of death for hummingbirds is the unexpected storms they sometimes encounter while migrating over the Gulf of Mexico.

Workers stationed on offshore oil rigs and sailors on vessels in the Gulf occasionally report the arrival of large numbers of starving and exhausted small birds such as hummers and warblers.

Like all living creatures they are vulnerable to an environment that can sometimes be unpredictable and lethal.—C.D.P.

Cooperating With Germany on the Environment

By David H. Strother

Administrator Douglas M. Costle will greet an old friend of EPA this month when his counterpart in the Federal Republic of Germany, State Secretary Guenter Hartkopf, arrives in Washington.

Dr. Hartkopf is attending a meeting of NATO's Committee on the Challenges of Modern Society, which is rounding out its tenth year. CCMS was initiated in 1969 by the United States in cooperation with the other 14 NATO member countries to seek solutions of pressing environmental problems. Costle is scheduled to address the CCMS meeting.

Dr. Hartkopf last year presented Costle with the special German Environmental pin, only the second foreigner ever to receive this symbolic award, as a measure of the cooperation between the two countries in environmental matters.

The United States and the Federal Republic of Germany as two of the most advanced industrialized nations share many environmental problems. In recognition of this, Dr. Hartkopf represented his country five years ago in signing an "Agreement between the Government of the United States of America and the Government of the Federal Republic of Germany on Cooperation in Environmental Affairs."

Today the two countries are not only jointly pursuing several projects under the Agreement but also are working together in environmental programs under the auspices of the Organization for Economic Cooperation and Development (OECD) and the CCMS.

The most active and productive project under the U.S.-German agreement deals with emission control technology for energy processes. Five subprojects under way in this category are flue gas desulfurization, utilization of products from this desulfurization, control of nitrogen oxide, of particulates, and other control technologies.

Both countries are faced with increasing demand for the use of easily accessible supplies of coal which is relatively high in sulfur content. EPA and the German Ministry of Interior and Ministry of Research and Technology are carrying out ambitious programs to control pollution from this source in order to help their countries use domestic supplies of coal effectively.

In another area, EPA is now in the process of providing a grant for an evaluation of the Andco-Torrax pyrolysis process to convert solid waste to useful resources. The facility, located in Frankfurt, makes use of high temperature in a vertical shaft furnace to convert municipal refuse into a burnable fuel gas. The noncombustible materials are converted to a glassy aggregate which may be used by industry. The $100,000 investment by EPA will provide valuable technical information which is otherwise unobtainable since there are no identical facilities in the U.S. Test results will be available to both countries.

Another project involves the exchange of information by the two countries on successful enforcement of environmental laws. The German legal decisions on the feasibility of existing technology for control of emissions from coke ovens and casting houses, for example, already have been useful to EPA. The comparison of monitoring and enforcement philosophies and practices helps to identify both strong and weak aspects of each country's approach.

Each time a new pollutant is identified as hazardous, one of the major problems facing scientists is the lack of information about the pollutant prior to the time that they began focusing attention on it. Existing specimen banks of pollutants don't always help because the new chemical compounds often are subtle, and their existence may be masked by preservatives used in storage of tissues and other specimens in these banks.

To solve this problem, EPA in cooperation with the National Bureau of Standards and the German Federal Environmental Agency has undertaken to create a specimen bank to identify samples which will be of the greatest potential use, and then devise a foolproof method of storing them where they are unaffected by preservatives.

EPA and its German counterpart maintain close contact in order to harmonize their positions on toxic substance regulation and to address problems not covered by international organizations. Last May Steven D. Jellinek, Assistant Administrator for Toxic Substances, met with his counterparts in Bonn and Berlin to study the question. As a result, it is now likely the U.S. inventory of existing commercial chemicals will be adopted as the *de facto* international inventory, with great savings for international trade in these products.

A key aspect of an effective environmental program is the availability and exchange of pertinent information. The importance of this was recognized in a memorandum of understanding signed by Administrator Costle and Dr. Hartkopf last May. Policies and practices for establishing and maintaining useful data systems are now under constant review by the two countries' environmental agencies.

A problem linked with industrial growth is air quality planning and maintenance. As a U.S.-German project this has been focused on new source siting. Other common concerns such as long range transport measurement and control of pollutants are being addressed by the OECD and the Economic Commission for Europe.

Although not the subject of a formal project, both auto emissions including diesel fumes and problems in radiation also are being jointly studied by the two agencies. □

David Strother is the European Program Manager in EPA's Office of International Activities. Edward Olson and Jeffrey Gallup of the Department of State also contributed to this article.

Helping Preserve Greek Temples

It was a celebrated 19th century German, Heinrich Schliemann, who investigated the origins of Greek civilization and in the process put classical archaeology on a more scientific basis.

Today the Federal Republic of Germany is playing a new environmental role in helping to preserve ancient Greek architectural works and statues. It is one of the leaders in a new pilot study by NATO's Committee on the Challenges of Modern Society on the conservation and restoration of monuments. The project seeks to combat deterioration of such classical treasures as Greek temples, along with medieval cathedrals elsewhere, from the ravages of 20th century air pollution.

This and numerous other environmental problems will be the subject of a CCMS conference at the State Department in Washington, D.C. October 22-24. Of its 14 pilot studies, West Germany leads two, on air pollution assessment methodology and modeling, and hazardous waste disposal, and is an active participant on half a dozen others.

In addition to being "co-pilot," in the Committee's phrase, of the study of monuments, West Germany also plays the same role in projects on flue gas desulfurization and drinking water.

Gas Mileage

The EPA recently released gasoline mileage figures for 1980 cars and trucks. The ten cars with the best mileage ratings were four Volkswagens, two Japanese Hondas, and four Chrysler cars made in Japan. EPA expects all of the major manufacturers to meet or exceed the 1980 corporate average fuel economy standard of 20 mpg for passenger cars. Under the Energy Policy and Conservation Act, manufacturers must increase the efficiency of their passenger car fleets each year until they meet the final fleet average of 27.5 mpg in 1985. For the 1980 cars tested through August 29, 1979, the top ten miles per gallon ratings are:

Estimated MPG	Manufacturer	Car Line	Engine*
42	Volkswagen	Rabbit (Diesel)	90 CID**
40	Volkswagen	Rabbit (Diesel)	90 CID
37	Dodge	Colt	86 CID
37	Plymouth	Champ	86 CID
36	Honda	Civic	91 CID**
36	Volkswagen	Dasher (Diesel)	90 CID
36	Volkswagen	Dasher Wagon (Diesel)	90 CID
35	Dodge	Colt	86 CID***
35	Honda	Civic	91 CID
35	Plymouth	Champ	86 CID***

*Cubic-inch-displacement **5 speed manual transmission
***Dual range manual 4 speed transmission.

Joan Z. Bernstein

EPA General Counsel Joan Z. Bernstein has decided to accept the General Counsel position at the Department of Health, Education, and Welfare. Ms. Bernstein has served at EPA since July 1977, and also was briefly Acting Assistant Administrator for Enforcement.

States Served by EPA Regions

Region 1 (Boston)
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
617-223-7210

Region 2 (New York City)
New Jersey, New York, Puerto Rico, Virgin Islands
212-264-2525

Region 3 (Philadelphia)
Delaware, Maryland, Pennsylvania, Virginia, West Virginia, District of Columbia
215-597-9814

Region 4 (Atlanta)
Alabama, Georgia, Florida, Mississippi, North Carolina, South Carolina, Tennessee, Kentucky
404-881-4727

Region 5 (Chicago)
Illinois, Indiana, Ohio, Michigan, Wisconsin, Minnesota
312-353-2000

Region 6 (Dallas)
Arkansas, Louisiana, Oklahoma, Texas, New Mexico
214-767-2600

Region 7 (Kansas City)
Iowa, Kansas, Missouri, Nebraska
816-374-5493

Region 8 (Denver)
Colorado, Utah, Wyoming, Montana, North Dakota, South Dakota
303-837-3895

Region 9 (San Francisco)
Arizona, California, Nevada, Hawaii
415-556-2320

Region 10 (Seattle)
Alaska, Idaho, Oregon, Washington
206-442-1220

EPA Journal Subscriptions

Name-First, Last — Please Print

Company Name or Additional Address Line

Street Address

City | State | Zip Code

☐ Payment enclosed
☐ Charge to my Deposit Account No. . . . . .

Do you know someone in industry or in a civic group who wants to keep up with national environmental developments involving EPA? Let them know about EPA Journal. If they want to subscribe, give them this form. The subscription price is $12 per year and $15.00 if mailed to a foreign address. A single copy sells for $1.20. (Agency employees receive this publication without charge.) Anyone wishing to subscribe should fill in the form below and enclose a check or money order payable to the Superintendent of Documents.

Mail order form to:
(Superintendent of Documents)
Government Printing Office
Washington, D.C. 20402

Grants Awarded

EPA's Boston office has awarded a total of $519,700 for studies of the effects of urban runoff on three New England waterways. The Massachusetts Department of Environmental Quality Engineering will receive $334,200 to study the Mystic River and $110,500 to study Lake Quinsigamond in Worcester, Mass. The Mystic River project will assess the impact of urban runoff on a highly urbanized stream and lake. The Lake Quinsigamond project will look at what contribution runoff makes to the eutrophication of the lake, in conjunction with a study funded through the Clean Lakes program. Region 1 also has given the New Hampshire Water Supply and Pollution Control Commission $75,000 for a project on the Oyster River in Durham to find cost-effective runoff controls, which can be applied to a statewide program of permits.

US/USSR Water Symposium

Region 1 recently held a symposium on "River Basin Water Quality Planning and Management" for 200 American and Russian scientists in Cambridge, Mass. The meeting revolved around the water protection planning techniques of both countries with emphasis on technological, regulatory, and institutional constraints. The American scientists prepared a river basin water protection plan for a segment of the Severski-Donet River in the Ukraine Republic, applying U.S. laws, regulations, and technologies. The Soviet scientists prepared a similar water plan for a segment of the Connecticut River in Massachusetts, based on Soviet constraints and planning approaches. The Russians discussed some of their treatment technologies and pollution abatement procedures, which are not used in this country. Research and design of water pollution control systems in the USSR is the responsibility of the All-Union Scientific Research Institute for Water Protection, an equivalent of EPA, which sent researchers to the symposium.

Sludge Dumping Cut

Nine municipalities in Region 2 plan to stop dumping their sewage sludge into the ocean during the next year. Sewage sludge from the ten treatment plants involved, some 95,000 wet tons, will not go into the waters off New York and New Jersey as in the past. The communities are using environmentally acceptable alternatives for sludge disposal. In Lincoln Park, N.J. the Two Bridges sewage authority has completed an incinerator. The Modern Transportation Company's facility in Kearny, N.J. has completed a sludge/septic tank waste treatment plant. Other municipalities involved, all in New Jersey, are Atlantic Highland, Cedar Grove, Pequannock Township, West Paterson, Totowa, Washington Township, West New York, and Wanaque.

Burn Permit Stalled

EPA's New York office will not issue a permit to Rollins Environmental Services, Inc. for incineration of wastes containing polychlorinated biphenyls (PCB's) at its waste disposal facility at the present time. The company must have the permit before it can handle PCB wastes. Speaking to local officials in Logan Township, N.J., where the facility is located, Region 2 Administrator Chris Beck said, "I do not intend to issue a PCB permit to Rollins until all the environmental questions have been thoroughly assessed to my satisfaction, and the company's problems with meeting its current operating conditions have been corrected." Beck added that there will be no test burning of PCB's at the Rollins site until EPA is satisfied that the company can operate its incinerator properly.

Reclamation Project Initiated

Builders broke ground recently for an EPA-supported resource recovery system in New Castle County, Del. The system, called the Delaware Reclamation Project, will convert solid waste and sewage sludge into energy and marketable products. EPA's Office of Solid Waste Management is contributing an $8.25 million demonstration grant toward the construction. Region 3 will add approximately $21.5 million from the Agency's grants program for construction of municipal sewage treatment facilities. The remainder of the more than $60 million cost will come from State and local funds. The project will handle all of the county's recyclable solid waste, some 1,000 tons per day. It also will process 250 tons per day of sewage sludge from Wilmington's treatment plant, which handles most of the county's sewage. The resource recovery system will separate combustible materials from the waste stream, to burn in a nearby commercial power plant for electricity production. The remaining waste will be separated into marketable metals and glass, which will be sold. Any solid waste left after this step will be mixed with the sludge, composted in closed digesters, and processed into a high-grade humus material that can be used as a soil conditioner or a light burning fuel. The project is expected to ease the pressure on New Castle County's dwindling landfill capacity and result in near-complete recycling of municipal wastes.

Florida Fish Kill

A major fish kill occurred in the Hillsborough River in Tampa, Fla., after large quantities of untreated sewage from the city were dumped into the sewer. The decomposing sewage depleted oxygen in the river below the level needed by the fish. Officials blamed heavy summer rains for overloading the main north-south sewage line, which is already in bad repair. Federal funds for improving the sewage system were approved in late 1977 but equipment shortages have caused a delay in delivery for construction. During the summer, bacteria counts reached 115 times the maximum level allowed by the State. County officials posted warning signs along the banks of the river, due to their concern about the threat of disease to people drinking or touching river water. During the week just before the fish kill as many as two to three million gallons of raw sewage a day were overflowing the system into the river.

Clean Air Program Promoted

Region 4 Public Awareness Branch has completed a slide/cassette show on the Clean Air Act. The 22-minute program outlines important provisions of the law and shows the contrast between scenic beauty and pollution-filled skies in the Southeast. The program shows the impact of pollution control on stationary source emissions. It also describes the health effects of air pollution. Copies of the slide presentation have been furnished to EPA-funded local and State air agencies throughout the Region.

Noise Ordinance Enforced

EPA's Chicago office has developed a noise control ordinance that is being enforced by police officers in several Midwestern cities. The policemen tell Region 5 Noise chief Horst Witschonke that they like the ordinance because it can be integrated quickly with radar speed checking. They report that rather than diverting personnel to direct

noise control enforcement, police forces can continue to perform their regular duties and enforce noise control ordinances as the need arises. Witschonke and the Region 5 noise staff have built up an inventory of sound-measuring equipment for vehicle noise control, which they lend to local police departments on a trial basis. One officer told EPA personnel that because the equipment is unusual the noise monitoring has more impact than radar equipment on slowing down speeders. The Chicago Regional Office also offers a noise control sign, which can be used to notify residents that a local noise control ordinance is in effect.

Oil Spill Response

Region 6 personnel joined other Federal and State agencies in a massive effort to ease the impact of oil on the Texas Gulf Coast from the runaway Mexican oil well in the Bay of Campeche. The Coast Guard is On-Scene Coordinator, with the Dallas Regional Response Team and the EPA National Response Team active. Contingency funds have been made available for the containment and cleanup effort. EPA provided staffing for the Regional News Office set up in Corpus Christi, Texas, to answer media inquiries from around the world. The Agency sent its new research vessel, the Antelope, to help track the oil slick. The ship will locate and protect environmentally sensitive areas, and determine the condition of oil that hits the coast. Beneficial winds and currents helped keep much of the oil offshore. But oil is known to be mixed with water as deep as 40 feet below the surface. Scientists fear that much ecological damage may be done to the Gulf even if the coast is spared. The first oil blobs reached the Texas coast two months after the blowout occurred, and experts feel that the threat will continue for a similar period after the well is capped.

Inspection and Maintenance Discussed

The Kansas City, Kan., police cars were among the vehicles tested when EPA Region 7 brought the Inspection and Maintenance emission van to town. The Agency provided this service in conjunction with a public meeting being held by the Kansas Special Legislative Committee on Air Quality and Pollution Control. The Committe sought public views on proposed legislative amendments to State air quality laws. One bill under consideration provides for a mandatory inspection and maintenance program for vehicles in areas that do not meet Federal air quality standards. EPA staff at the testing van answered questions about air pollution and gave free emissions inspections. Despite very hot weather interest was high. More than 100 cars took the test and over half of them passed.

Oil Shale Permit Set

EPA's Denver office approved a crucial air pollution permit for Colony Development Operation, a joint venture of Atlantic Richfield Co. and Tosco Corporation, which plans an oil shale development on Colorado's Western Slope. The proposed facility will mine and process 66,000 tons per day of oil shale and will produce nearly 15 million barrels of oil, more than a million barrels of liquid propane, and more than 50,000 tons of ammonia and sulfur each year. The "prevention of significant deterioration" permit contains air pollution limits far more stringent than the national standards, as is required when air quality in an area is cleaner than national standards. The permit process is designed to protect pristine air in places like the energy-rich West. Several environmental organizations were involved in the permit review process. According to Kevin Markey of Friends of the Earth, which was involved in the process, the EPA review was "hard-hitting and well done." He added "informed public participation can help produce approvable permits."

Radiation Support

Region 9 provided technical assistance and support in the case of an application to the Arizona Atomic Energy Commission by the American Atomics Corporation for termination of its license to handle radioactive materials. The San Francisco Regional Office coordinated the participation of technical staff from EPA's Office of Radiation Programs and the Office of Research and Development. Agency scientists found tritium in samples of food, water, and urine collected in Tucson and analyzed at the Nevada lab. American Atomics Corporation produced tritium-filled tubes used to illuminate watch dials and exit signs, and the company had been emitting unacceptably high levels of radioactive tritium gas. The State Atomic Energy Commission has accepted the company's application for termination of its license pending agreement to certain conditions, which include the closure and decontamination of the Tucson manufacturing plant. Dr. Al Moghissi of EPA's R&D program testified in hearings that, while individual exposure would probably be low, the plant had emitted more tritium in one year than all 72 nuclear power plants in the U.S. American Atomics Corporation is currently negotiating the relocation of its operations to an unpopulated area of southern Nevada.

Water Pollution Seminar

The San Francisco office recently hosted a seminar for U.S. attorneys, State attorneys general, and FBI personnel from Regions 8, 9, and 10 to create an awareness and understanding of the Water Pollution Control Act. The increased knowledgeability will help EPA to better cooperate with these law enforcement agencies to fight fraud and abuse in the construction grants program. Several hundred law enforcement officials from 15 Western States attended the seminar.

Fuel Switching Penalties

Region 10 has proposed penalties totalling more than half a million dollars in response to charges by the Agency Enforcement Division that 114 motor vehicles were illegally fueled with leaded gas. The vehicles were operated by the Loomis Courier Service, Inc. and Gelco Courier Service Inc. EPA alleges that the vehicles, designed for unleaded fuel, were supplied with leaded gasoline in Seattle and Portland from pumps that were equipped with nozzles made for use only on pumps that contain unleaded gasoline. Region 10 proposed penalties of $245,200 against Loomis and $297,700 against Gelco.

Drinking Water Advisory

EPA's Seattle office found excessive levels of bacteria in water supplies of two Oregon communities, Cove and Haines, and advised residents to boil their water before drinking it. The Agency made the discovery during spot checks of water supplies in 13 communities. EPA's frequent spot checks are designed to augment the monitoring and reporting performed by water system operators throughout Oregon, which has not yet assumed enforcement responsibility for the Safe Drinking Water Act of 1974. □

Opportunities in the Quiet Communities Act

Continued from page 6

tions, was the guide for the Quiet Communities Act. The Act enhances this effort by authorizing:

- grants to States, local governments, and regional authorities for identifying noise problems, developing abatement plans, and evaluating control techniques.
- loan of equipment to State and local governments and:
- studies to determine the needs of State and local governments for noise control.

Second, *Each Community Helps Others* (ECHO) enables communities to obtain assistance from other communities which are already dealing effectively with noise problems. Local officials from communities with successful noise control programs volunteer to assist other areas requesting technical help.

Two examples of local initiatives assisted by the ECHO program are Des Moines and Council Bluffs, Iowa. Both of these cities received help through ECHO from noise officials in Lincoln, Neb., and Des Moines is now preparing to aid other Midwestern communities in establishing local noise abatement strategies.

Ultimately, noise can only be controlled by having a strong constituency willing to devote time and effort to local programs. The Quiet Communities Act offers many opportunities for communities to receive technical and material assistance from EPA for their own initiatives. EPA is marshalling the efforts of volunteers dedicated to enhance this country's quality of life.

The Senate intends to maintain close oversight responsibility in this environmental area to guarantee that the Quiet Communities Act is implemented according to the desires of Congress. I hope that our noise abatement programs will not be given a low priority in the budgeting process now that research is beginning to show that excessive noise has adverse implications for our health. The noise programs, especially those assisting communities, are already understaffed, and budget cuts could leave them unable to function effectively.

Nevertheless, I am optimistic about the future. Noise has been a neglected environmental concern both in research and control programs. The Quiet Communities Act and further health research, however, are helping to make the public aware of the need to control the Nation's growing noise problems, and to provide communities with the tools to fight local noise problems. □

Implementing the Act

EPA's Noise Program recently began funding cooperative agreements to State, city, and local entities to implement the provisions of the Quiet Communities Act.

State Cooperative Agreement Awards

California	California Department of Health Services	$28,000
Colorado	Department of Health	$27,990
Connecticut	Department of Environmental Protection	$35,644
Delaware	Department of Natural Resources and Environmental Control	$25,000
Florida	Department of Environmental Regulation	$45,000
District of Columbia	Metropolitan Washington Council of Governments	$42,750
Minnesota	League of Minnesota Cities	$38,000
Nebraska	Department of Environmental Control	$26,473
New Hampshire	Bureau of Occupational Health	$25,000
New Jersey	Department of Environmental Protection	$35,109
New Mexico	Health and Environmental Department	$17,000
North Dakota	Department of Health	$28,008
Ohio	Ohio Department of Health	$27,293
Oregon	Department of Environmental Quality	$28,414
Utah	Department of Social Services	$25,000
Washington	Department of Ecology	$30,000

Local Cooperative Agreement Awards

Brookline/Newton, Massachusetts	Brookline Conservation Commission	$12,000
Stamford, Connecticut	Health Department	$12,170
Teaneck, New Jersey	Teaneck Health Department	$14,250
York, Pennsylvania	Office of the Mayor	$9,279
Kingsport, Tennessee	City of Kingsport	$9,500
Mentor, Ohio	City of Mentor	$2,200
Akron, Ohio	City of Akron Health Department	$12,000
Norman, Oklahoma	City Manager's Office	$12,000
St. Louis County, Missouri	Department of Community Health and Medical Care	$10,000
National City, California	Planning Department	$12,000
Boise, Idaho	Department of Community Development	$14,172
Thornton, Colorado	City of Thornton	$7,600

Demonstration Cooperative Agreements

New Orleans, Louisiana	Office of the Mayor	$49,774
Des Moines, Iowa	Building Inspection Department	$28,297
Massachusetts	Massachusetts Port Authority	$31,610
National Association of Neighborhoods	Washington, D.C. 20009	$35,474
Portland, Oregon	City of Portland	$11,414
National Institute of Governmental Purchasing	Washington, D.C. 20036	$60,000
State of New Jersey	Department of Environmental Protection	$34,440
State of Oregon	Department of Environmental Quality	$33,978
City of Chicago	City of Chicago	$24,035
Delaware Valley Regional Planning Commission	Philadelphia, Pennsylvania	$130,000

Regional Noise Technical Assistance Centers

Region 1	University of Hartford Hartford, Connecticut 06117	$90,000
Region 2	Rutgers University New Brunswick, New Jersey 08902	$90,000
Region 3	University of Maryland College Park, Maryland 20742	$90,000
Region 4	North Carolina State University Raleigh, North Carolina 27650	$90,000
Region 5	Illinois Institute of Technology Research Institute Chicago, Illinois 60616	$90,000
Region 6	University of Texas at Dallas Richardson, Texas 75080	$90,000
Region 7	University of Iowa Iowa City, Iowa 52242	$90,000
Region 8	University of Colorado Boulder, Colorado 80309	$90,000
Region 9	University of California at Berkeley Berkeley, California 94720	$90,000
Region 10	University of Washington Seattle, Washington 98195	$90,000

Aircraft Noise: An Abatement Priority Continued from page 7

would do well to carefully reconsider the benefits of dismantling existing Federal authority in this area.

The National Noise Abatement Effort

Of course, aircraft are not the only source of noise in our environment. The Noise Control Act authorizes the EPA to identify and control other major sources of environmental noise as well. However, aircraft noise does affect a substantial portion of our population as represented by increasingly well-organized citizen groups protesting such noise.

More important, however, is that the aircraft noise issue represents the symbolic battle between interest groups pitted against one another in the legislative arena. Some parts of the commercial aviation industry continue to stall efforts to comply with existing regulations in the hopes that the authorizing laws will be adjusted in their favor. Other members of the airline industry have already complied, or intend to comply with noise regulations, in the expectation that regulations will be enforced. At the same time, community groups have mounted increasing pressure on lawmakers to preserve, at the very least, if not strengthen laws that have been held up to them as the source of relief from ever present aircraft noise.

Aircraft on takeoff and landing add substantially to the noise that people are exposed to in many urban areas.

It is crucial that the existing authority to reduce aircraft noise, as well as other sources of environmental noise, be upheld and fulfilled as Congress intended in the passage of the Noise Control Act. □

Quiet—A National Resource Continued from page 5

Washington Monument that conversation can be all but impossible.

There is also concern for the continuing architectural integrity of the monuments we have built to honor our country's leaders. The possibility of accelerated structural deterioration due to noise-induced vibrations has not been sufficiently investigated, but is a matter of major concern.

When the Federal Aviation Administration last year issued a Draft Environmental Impact Statement on proposed policies for the future of National Airport, we recommended that the plan include development of all possible measures to minimize harm from aircraft noise. These should include the enforcement of strict flight regulations to reduce noise: site specific means to reduce noise impacts inside national monuments and memorials, and provision of an adequate mechanism to handle public complaints about aircraft noise.

While the public has for the most part tolerated the existing noise levels as an inevitable nuisance, I disagree with the premise that these noise levels should be allowed to continue without close examination of their impacts on the visitors to the Nation's Capital and upon the monuments themselves.

At the very least, the conflict must be publicly acknowledged and addressed, and responsible officials must work cooperatively to develop and implement all possible measures to reduce and mitigate this conflict. While these measures may not, for various valid reasons, include the rerouting of most traffic to Dulles Airport or Baltimore's Friendship Airport, a solution similar to that which many cities across the Nation have resorted, we should definitely consider suggestions such as that of the National Capital Planning Commission to limit the annual allowable passenger volume to present numbers. This approach, combined with extensive use of wide-bodied jets, could result in the maintenance of present levels of service and convenience while reducing the number of flights, noise exposure time, and negative impacts on parklands and memorials.

In the case of National Airport, two things appear obvious at this point. First, the future operating regime at National must consider many factors, including environmental ones; and secondly, we do not now have enough objective information to allow us to responsibly balance competing values. The National Park Service has increased its efforts to gather necessary information within its realm of expertise, and continues to encourage other agencies to do so as well.

The cases of Jackson Hole and National Airports only highlight the complexities of weighing the advantages of activities which produce sound against the impact of the sound which is produced. The task will not be easy, but it is necessary.

Of one thing, however, I am certain. A most appropriate, in fact, necessary role of the National Park Service in years to come will be the preservation of some special places which are not polluted by sound, just as we would not allow them to be polluted by dirty air or water. In these places, the artificial and unnecessary introduction of sound into a natural environment is more than just an irritation caused by what you can hear. It is, in essence, an act of robbery, a theft of those sounds which naturally belong in these environments, and which are part and parcel of the natural and cultural heritage of this Nation.

I think back to moments of my childhood when my father had me convinced that if I listened very carefully, I could hear the music made by the stars as they travelled across the sky. It is a legend as old as written language. What a shame it would be if we could only pass this legend on to our children by beginning it with "If it weren't for all this noise, you could hear. . . ." □

Update

A review of recent major EPA activities and developments in the pollution control program areas.

AIR

Conditional Approvals

The EPA recently agreed to conditionally approve the sale of 228,000 Fords, Lincolns, and Mercurys equipped with an electronic engine control system known as "EEC-III."

The conditional approval means the cars can be sold pending additional tests on the electronic engine control system.

The EEC-III functions as an onboard computer that controls the emission control system and other aspects of the engine operation. While Ford Motor Company expects that this computer will function properly in use, the durability of this system has not yet been fully demonstrated in the certification program as required by the Clean Air Act.

Also, EPA recently said that, pending the successful completion of tailpipe emission tests, it has agreed to conditionally approve the sale of General Motors' 1980 diesel cars equipped with 5.7 liter (350 cubic inch, V-8) engines. This accounts for all of GM's currently planned diesel passenger car production for this engine.

EPA said the diesel cars could not be fully certified because of failure of an emission control device to pass the 50,000 mile durability tests as required by the Clean Air Act.

The conditional approval means the cars can be sold pending additional tests of an exhaust gas recirculation valve.

ENFORCEMENT

Steel Agreement

The EPA and Cooperweld Steel Company have reached agreement on a program to completely eliminate water pollution discharges from the firm's Warren, Ohio, plant.

Copperweld, headquartered in Pittsburgh, has agreed to totally eliminate discharges of oil, grease, and suspended solids (big particles of dirt that do not degrade in water) from its Warren plant into the Mahoning River by June 1, 1980. The company, which currently employs about 2,500 people, serves a nationwide market and is one of the largest specialty steel firms in the U.S.

Additive Okay

The EPA recently announced that it has granted a waiver to Suntech, Inc. (Sun Oil Company) permitting the sale of a new anti-knock fuel additive.

The Suntech additive has high anti-knock qualities and can be used in unleaded gasoline without adversely affecting automobile emissions, according to EPA. This additive has the potential to slightly increase gasoline supplies, and Sun states its use will significantly increase the percentage of customers satisfied with gasoline anti-knock performance, the Agency says.

The 1977 Clean Air Act Amendments banned the use of certain fuel additives unless a waiver is granted. Suntech requested a waiver on December 19, 1978.

Parts Review

A regulation designed to make it easier for automobile owners to know which parts will not cause emissions to increase when used in the maintenance and repair of pollution controls on cars has been proposed by the Environmental Protection Agency.

This voluntary regulation provides a simple procedure for parts manufacturers to certify that the use of their parts will not cause automobile emissions to increase. Manufacturers who are now producing parts which are the equivalent of parts installed on a new car will be able to comply with the proposed regulations with only minimal adjustments in their present operations, according to EPA.

Motor Homes

The EPA has denied a request by the manufacturers of motor homes to exempt these vehicles from the Agency's noise regulations for new medium and heavy trucks.

Under the EPA ruling, motor homes must be in compliance with the regulations a hundred and twenty days after publication in the *Federal Register*. Motor homes manufactured before this compliance date are not required to comply with the regulation.

In turning down the manufacturers' petition, EPA said no burdens in the regulation are placed upon motor home manufacturers that are not placed upon similarly situated manufacturers in the rest of the truck industry.

PESTICIDES

Citrus Fruits

EPA Administrator Douglas M. Costle has ordered a ban on most uses of the pesticide chlorobenzilate but is allowing treatments on citrus fruits to continue, provided farmers and others using the pesticide take certain safety precautions.

Costle found the pesticide a suspect cancer agent capable of causing testicular effects in men. But he also determined that its use on oranges, grapefruit, and other citrus can be done safely provided it is sprayed by certified applicators wearing protective clothing and respirators, or applying it from tractors with enclosed cabs.

At the same time, Costle ruled that an environmental group, the Environmental Defense Fund (EDF), is not "adversely affected" by the restrictions on the citrus use of the pesticide, and that EDF cannot use this action to request a total ban on chlorobenzilate.

"On the other hand," Costle explained, "as my decision emphasizes, EDF is not precluded from challenging the original determination not to propose a total ban on the citrus uses. EDF may petition the Agency to initiate a separate proceeding to consider a total ban, and if the petition is judged to be meritorious, an evidentiary hearing will be held with full rights of cross-examination and opportunities to present supporting evidence. If the petition is denied, FIFRA (Federal pesticides law) also gives EDF the right to have that decision judicially reviewed. Consequently, my ruling does not mark a departure from the past Agency commitments to provide for public participation in pesticide decisions."

Endrin

The EPA has decided to allow growers to continue to use the pesticide endrin on such crops as wheat, apples, and some cotton.

In doing so, however, the Agency has placed certain restrictions on the way it is used to help protect the health of field workers and the general public, as well as the environment. These include special protective clothing in some instances, and precautions on the product label.

To prevent contamination of waterways, EPA cancelled endrin's use on cotton crops in areas where contamination of water is most likely to occur. Specifically, EPA's decision does not allow spraying on cotton in Louisiana, Arkansas, Missouri, the eastern parts of Texas and Oklahoma, and any State east of the Mississippi River.

Granular Pesticides

Farmers must be certified to use most of the widely-used granular pesticides under a new proposal by the EPA.

The proposed regulation, which would classify certain uses of these granular pesticides for restricted use, is necessary to protect the users, children, pets, farm animals, and birds and other wildlife from potentially harmful exposure, according to EPA.

Granulars are solid particles larger than dust, and consist of carrier compounds such as clay that are mixed or impregnated with a pesticide. Most farmers using them on such crops as corn, cotton, tobacco, and soybeans already have been certified during a nationwide EPA-State-USDA Cooperative Extension Service program of applicator training which instructed users of potentially hazardous pesticides in correct ways to mix and apply these products. Training also included instruction in recognizing pests, calibrating equipment, assessing environmental hazards, and recognition and treatment of pesticide poisonings.

SOLID WASTE

EPA Guidelines

The EPA has issued guidelines for use by State and local governments in planning and managing solid waste programs.

After their plans have been approved, States will be eligible to receive financial and technical assistance to improve their management of solid waste.

To be approved by EPA, State plans must aid the recovery of materials and energy from solid wastes and provide for environmentally acceptable disposal for unrecoverable wastes.

State plans, covering at least a five-year time period, will be developed within the next eighteen months and must be adopted by the States.

Resource Savings

The Resource Conservation Committee recently sent its final report on beverage container deposits and nine other conservation-related policies to the President and Congress.

The Resource Conservation Committee is a Cabinet-level committee established by the Congress to study Federal incentives and disincentives to materials conservation. The report is entitled *Choices for Conservation.*

"While we do not appear to be facing an imminent shortage of material resources similar to that which we face with energy resources," said EPA Deputy Administrator Barbara Blum in transmitting the report, "we have no cause for complacency about the rate at which we consume our natural endowment. Our materials use practices affect environmental quality, energy consumption, waste generation, the balance of trade, and other important national concerns. Individuals, private companies, local governments, and the Federal Government all make choices every day which affect our use and conservation of resources."

TOXICS

Asbestos

The EPA plans to develop regulations to reduce or eliminate hazards in public schools from walls and ceilings containing asbestos material.

EPA will consider several options to reduce asbestos hazards in the nearly 10,000 public schools nationwide that are estimated to contain asbestos materials, the Agency reports. As these materials deteriorate, or if they are damaged, they release asbestos fibers into the air—which in turn may be inhaled by school children and others. Inhaled asbestos fibers remain in the lungs and can cause lung cancer and mesothelioma, a cancer of the lining of the chest and abdominal cavities.

Last March, EPA asked the States to inspect public schools for asbestos-containing materials. The Agency has provided States with technical assistance to assess the degree of hazard and select the most appropriate remedy. At the moment, State compliance with EPA's request is not mandatory.

"We are prepared to require immediate action to substantially reduce asbestos hazards in schools not examined or repaired under our technical assistance program," said EPA Deputy Administrator Barbara Blum.

WATER

Savings

EPA recently announced new regulations that will save industries up to $200 million in water pollution control costs. These savings represent about 50 percent of previously estimated future clean-up expenditures for affected industries.

EPA's decision is a key part of the Agency's continuing effort to review and reform its regulatory programs. By eliminating some future clean-up requirements, the action will help to ensure that industrial water pollution control expenditures are cost-effective in improving the Nation's water quality.

Regulations are being withdrawn for 64 industry groups, which affect hundreds of individual companies in such industries as food processing, glass manufacturing, and ferroalloys. This rulemaking will save money for industries by eliminating future clean-up requirements which EPA found to be unreasonably stringent, or which require further review.

Ocean Dumping

Thirty-two communities and companies stopped dumping sewage sludge and industrial wastes into waters off the United States during 1978. This is the largest number of dumpers to be phased out during any one year, an EPA report shows. In addition, 38 more dumpers are scheduled over the next two years to cease using the ocean to dispose of their wastes.

This information is contained in EPA's 7th Annual Report to Congress on the status of the Agency's program to regulate waste dumping in waters off the United States. The 48-page report covers activities in 1978.

Health Aid

High blood pressure patients could benefit from new EPA proposals calling for the periodic measurement and announcement of sodium levels in municipal water supplies.

The sodium monitoring proposal is but one of several health-related issues addressed by the new regulations. They also call for a program to limit water's corrosiveness, which can add contaminants and ruin pipes. In addition, the rules provide further Federal endorsement of the fluoridation of water as a safe and effective dental health measure.

The new EPA rules are proposed amendments to the Agency's interim primary (health-related) drinking water regulations, which went into effect in June, 1977. Under the 1974 Safe Drinking Water Act, EPA has the authority to establish and amend water purity rules that are necessary to protect public health.

Other issues covered in the new regulations are designed to help small communities.

Taste and Odor

EPA has issued final regulations to guide the States in controlling drinking water contaminants which normally are not dangerous to human health, but which may make water less palatable or useable.

The new rules are intended to deal with those contaminants which can cause aesthetic problems for the consumer, even though they are generally harmless to health. Such problems include offensive taste or odor, the staining of fabrics and plumbing fixtures, precipitations in cooking utensils, and the accelerated deterioration or encrustation of pipes and plumbing fixtures.

"The existence of a taste, odor or color problem does not always mean that a health threat exists, but it can be a warning signal," said EPA Deputy Administrator Barbara Blum. "Even though these regulations are not enforceable by the Federal Government, controlling these types of problems is important. If a drinking water system has such problems, for example, they can cause consumers to lose confidence in the healthfulness of their public water supply. This could result in their choosing an alternate source of water that is ultimately less safe to use."

Tuna Fish

EPA recently announced a change in the water pollution clean-up rules for tuna processing plants. Based on new information, one aspect of the industry's clean-up regulation is being relaxed.

EPA's action formally cancels that specific part of existing clean-up rules that limits the amount of tuna processing wastes that would reduce dissolved oxygen in receiving waters.

AGENCYWIDE

An American Indian programs staff has been established within EPA's Office of Environmental Review. Working together with EPA's Regions and programs offices, the staff will help make Agency programs responsive to the status of Indian tribes and lands and will serve as an overall Agency contact point for Indian environmental matters. The establishment of this function formalizes EPA's commitment to work with Indian tribes to protect the vast areas of the Nation occupied by Indian Reservations.

Eckardt C. Beck

He will join the Administrator's staff to help direct the Water and Waste Management Program. Beck has been Regional Administrator in EPA's New York office since 1977. During his tenure in Region 2 he was selected by President Carter to chair the Federal Regional Council there. Beck was Deputy Assistant Administrator for Water Planning and Standards in the Office of Water and Hazardous Materials from 1975 to 1977. Before joining EPA he was Deputy Commissioner of the Connecticut Department of Environmental Programs for several years. Earlier he helped to establish the State energy agency, acted as the agency's first administrator, and was chief energy advisor to the Governor. Beck graduated from Emerson College in Boston, did graduate work there in communications, and earned a Master's Degree in public administration from New York University in 1972, where he is a doctoral candidate. He attended the Yale University Graduate School of Epidemiology and Public Health and holds a Graduate Certificate in Air Pollution Administration from the University of Southern California Graduate School of Public Administration.

• Administrator Douglas M. Costle has announced the appointment of James Smith and Swep Davis as Associate Assistant Administrators for Water and Waste Management. Their appointment follows the resignation of Thomas C. Jorling as Assistant Administrator for the Water program. Jorling held the post since 1977, when he came to EPA from the Center for Environmental Studies at Williams College. As Associate Assistant Administrators, Davis will focus chiefly on strategy development and the superfund for dealing with hazardous wastes and Smith will concentrate on program operations. The Administrator noted that these appointments will ensure strong program leadership until a new Assistant Administrator for Water and Waste Management is named and given Senate confirmation.

• A reception and inauguration ceremony was held recently at EPA Headquarters for the 131 people in the Agency's Washington, D.C. offices who are part of the Senior Executive Service. After an introduction by Bill Drayton, Assistant Administrator for Planning and Management, Administrator Costle, Deputy Administrator Blum, and Office of Personnel Management Director Scotty Campbell addressed the group. Each member of the Senior Executive Service received a membership certificate at the ceremony. The Service is a new position/pay system established by the Civil Service Reform Act of 1978, which includes all executive type supervisory and managerial positions in the Federal Government that were previously in pay grades GS-16 through Executive Level IV.

David M. Rosenbaum

He has been appointed Deputy Assistant Administrator for Radiation Programs at EPA. In this post Rosenbaum will oversee the development of all Agency radiation standards, as well as criteria and recommendations that establish guidelines for other government agencies to follow when developing their own regulations. He will direct a staff of 175 people with a budget of $13.7 million. Administrator Costle said, "The environmental and health impact of radiation exposure constitutes one of this Nation's most pressing priorities. David Rosenbaum is a radiation expert who can give us excellent guidance as we deal with crucial radiation programs."

Rosenbaum has been a consultant in the nuclear field since 1976, previously serving as a management consultant to the Comptroller General at the General Accounting Office. He helped prepare GAO studies on the safety of liquefied energy gases and on the health effects of ionizing radiation. From 1974 to 1976 he was Senior Staff Analyst with the MITRE Corporation, where he supervised a conference on Nuclear Energy Centers and directed a study on the threat to licensed nuclear facilities. In 1973 he was a consultant at the U.S. Atomic Energy Commission. He has also served as Assistant Director, Office of Narcotics Intelligence in the U.S. Department of Justice, was president of his own firm, Network Analysis Corporation, and worked with the Office of Emergency Preparedness and the Institute for Defense Analysis. Rosenbaum earned a BS from Brown University in 1956, a Master's degree from Rensselaer Polytechnic Institute in 1958 and a Ph.D. from Brandeis University in 1964.

Cooperative Education

The Western Florida University students who are part of EPA's Cooperative Education Program (Co-op) met recently with their supervisors: EPA officials and representatives of the university, to review their program.

The Co-op program began at EPA in 1971 and is run by Amy Kearns, Chief of Headquarters Employment Center; Tom Wyvill, EPA Program Coordinator; and Thelma Jones, Headquarters Program Coordinator. Students in the Co-op program alternate periods of related study and work experience in a cooperative curriculum. The work experience is closely tied to the student's major field of study and provides the student with learning opportunities.

The program is available to students from a variety of backgrounds, permitting them to test their career choices through work experience. Students may receive credit toward their degrees while helping to finance their educations. Once Co-op students have graduated, they need not compete for a rating, but are listed directly on the Civil Service Register.

Since EPA hopes to retain these Co-op students after their graduation, Personnel is increasing its efforts to find students who are interested in protecting the environment. Presently, 35 to 40 percent of the Co-op students convert to full-time, permanent EPA employees after graduation.

Jan Geiselman

She has been named director of the Air and Hazardous Materials Division in Region 2. She will oversee 60 employees charged with carrying out Federal laws governing air pollution, asbestos, pesticides, radiation, and other hazardous materials. Geiselman joined EPA in 1975 as an attorney in the Headquarters Division of Stationary Source Enforcement. In 1977 Geiselman moved to the New York Regional Office and organized its first Office of Congressional and Intergovernmental Relations. She won an EPA Special Achievement Award in 1975. Geiselman has her degree from the University of Texas at Austin Law School, where she received a teaching excellence award in environmental law.

Herbert Barrack

He has been appointed Assistant Regional Administrator for Planning and Management in EPA's New York office. In this position he will be responsible for analyzing the success of Regional programs and integrating their activities to ensure that policies and programs are consistent. Barrack began his government service with the U.S. Atomic Energy Commission in 1960. He joined EPA in 1971 and has held positions of increasing responsibility with the Agency. In 1975 Barrack received an EPA Gold Medal for Exceptional Service. He holds an MBA from the Graduate School of Business Administration at New York University.

Loretta Stevenson

She has been nominated by EPA's Kansas City Regional Office for the Outstanding Handicapped Federal Employee of the Year Award. Mrs. Stevenson was diagnosed as having multiple sclerosis in 1969. The disease affected her mobility balance, motor coordination, hearing, and sight. She persevered with plans for a college degree, despite the problems posed by her illness. During summers and college breaks she worked part-time for EPA as a student aide in the Region 7 office. In 1974 Mrs. Stevenson received a BS in Elementary Education from the University of Kansas. After graduation she continued to work for the Agency. "I wanted to teach very much, but I realized I couldn't give 100 percent," said Mrs. Stevenson. "I knew I couldn't run down the court with the children when they wanted to play basketball. Then I decided that since EPA has been so good to me while I was in college that I would see what I could do for them. I believe it has been good for both of us." She is work leader in the Enforcement Division Data Section, and is responsible for maintaining the automated Permit Compliance System. In 1977 she received an Outstanding Performance Rating. The ten Outstanding Handicapped Federal Employees of the Year will be announced later this month in Washington.

Lewis Hughes

He has been appointed Acting Associate Administrator, Office of International Activities.

Dr. Hughes had served for the past year as Deputy Associate Administrator of the Office, with responsibilities for development of policies for EPA's overseas activities, coordination with the State Department, and other foreign relations with U.S. Government organizations, and management of bi- and multilateral environmental programs.

Previously he was Acting Chief of the Institutional Operations Office of the National Aeronautics and Space Administration, Ames Research Center, Moffett Field, Calif. He received a Ph. D. from the University of California at Berkeley in 1972 and was Radiological Safety Officer there. He is the author of 34 scientific reports and manuals.

Fighting Noise Pollution

Continued from page 20

Since noise is an important social cost produced by motor vehicles, certain countries (such as the Netherlands) are considering charges on motor vehicle noise based either upon emission levels established under test conditions or upon the vehicle's estimated noise impact. These could be levied as a purchase charge, an annual charge, or combination of both.

The Dutch Noise Nuisance Law relates the amount of noise fee as closely as possible to the potential nuisance of the noise source, and thus takes into account the total amount of noise emission, duration of noise production, and quality of noise. It anticipates noise charges on industrial plants to cover noise emitted outside the plant. Such charges are to be based on the severity of the noise impact which will be determined through scientific measurements taken of each plant's noise "footprint."

Noise Control Enforcement

OECD countries vary considerably in the comprehensiveness of their noise abatement legislation and in the extent to which control and implementation are centralized. In fact, while some countries have found that legislation which sets national standards is most effective, others have discovered that their most positive noise abatement results have come when local authorities have had the power to establish limits.

A good example of local enforcement is the United Kingdom's system in which local authorities can establish noise abatement zones where increasing noise levels from industrial, commercial, or entertainment sites are lowering the quality of the environment. Such establishments must first not increase their noise level and later take steps to reduce it.

Of concern to all countries is that enforcement be as simple, inexpensive, and straightforward as possible. Since police workloads and budget constrictions are often cited as problems in noise abatement enforcement, some OECD countries have started using civilians to enforce noise laws, and have adjusted the laws if necessary to grant the civilians appropriate authority.

Compensation for Unacceptable Noise-Control Damage

While OECD countries believe that compensation for damage caused by noise should be a last resort, some countries have found that this tactic motivates public developers to consider ways to soften noise generated by public works. The potential cost of compensation is an incentive both to reduce noise at its source and to improve noise control measures at the design stage.

Germany's Federal Pollution Control Act provides for compensation in kind to owners of buildings where traffic noise from a new road, highway, or railroad exceeds the limits defined in the implementing regulation. The regulation stipulates the required quality of sound insulation and that the cost of insulation be borne by the authority responsible for the new traffic way.

Dutch noise legislation will soon provide for the possibility of compensation in kind (noise insulation of buildings) and in cash (acquisition of buildings and land) for noise caused by aircraft, rail traffic, road traffic, and industry.

Other countries will not provide financial assistance to projects that would result in unacceptable noise. The Netherlands has enacted legislation that prohibits the construction of industrial plants, airports, and roads unless such structures conform with noise exposure standards.

Noise and Acoustical Education

Many OECD countries believe that educating children is the most promising long-range solution to the noise problem. Since children schooled in noise control may educate their parents in noise abatement, this approach has short-term benefits as well.

The Swiss Institute for Research into the Built Environment prepares school courses on environment protection that include noise control. Swiss police courses on road traffic focus primary school children's attention on the need not to cause noise. The French government plans to distribute, through the national education service, booklets educating children about noise, including the need for young motorcyclists to respect other people's desire for peace and quiet.

Public education is at the heart of almost all the noise abatement proposals made in the OECD report. To date, public awareness of noise and public commitment to noise reduction have been modest. In urging that all possible low-cost measures be taken to increase public awareness and commitment, the report concludes with the statement:

"By making people more aware of their rights, of the technical problems and of the progress with research and development, low-cost measures might pave the way for more stringent legislation as controls which might otherwise be considered unacceptable. They can also make possible better living conditions by making people more noise conscious." □

Dr. Ariel Alexandre is an Urban Environment and Land Use Specialist in the Environment Directorate of the OECD. Opinions expressed in this article are those of the author and do not necessarily reflect the views of the Organization.

EPA Deputy Administrator Barbara Blum Comments on the Problem of Noise Pollution.

During the past few years, the level of noise that Americans are exposed to daily has increased alarmingly. Not merely an urban phenomenon, it has spread to the suburbs and rural areas as well. The situation has become so serious that the May, 1979, report on the State of the Environment by the Organization for Economic Cooperation and Development suggests that if the entire U.S. population slept with its windows open, 13 percent would be awakened by aircraft noise, 40 percent by road traffic.

According to international experts, noise pollution in the U.S. is far worse than in other Western countries. Noise that can permanently damage hearing is twice as likely to happen in the U.S. as in Canada or Japan. By 1985, it is possible that the number of people exposed to harmful levels of noise could triple or even quadruple because so many live near major transportation facilities.

Considering that the noise problem has worsened in the past 15 years, the task of effectively controlling it becomes urgent, especially in view of what we already know about the range of adverse health effects of noise. The situation cries out for effective Federal action. We also need viable State and local noise programs. Even more important are effective public education programs that will help the American people recognize the dangers and what can be done about them. Without public involvement, no noise program can be successful. The Environmental Protection Agency, realizing the need for Federal, State, and local action and the importance of public awareness, will be using the authority of the Noise Control Act to launch meaningful programs.

Noise is not something which has to be tolerated as a consequence of the modern world. The U.S. is joining the Western European countries to develop innovative solutions to the world noise problem. There is plenty we can do, and a role for each of us to play in the effort. It's a responsibility none of us should take lightly.

The Sound of Silence

Continued from page 19

speaker at a convention or their table partner at a company dinner because of the interference from other sounds are at a distinct disadvantage. They can become reluctant to take part in activities necessary for a successful career because of the insecurity caused by impaired hearing.

A recent EPA report, *"Occupational Hearing Loss: Worker Compensation Under State and Federal Programs,"* notes that occupational hearing loss can have a profound effect on social and work life. The report notes that one study of weavers, who had a slight hearing handicap by U.S. medical criteria, showed that the vast majority of the workers had trouble hearing in public, talking with friends, or conversing with strangers on the phone. Most had seriously restricted their social lives and more than half used lip-reading to aid understanding.

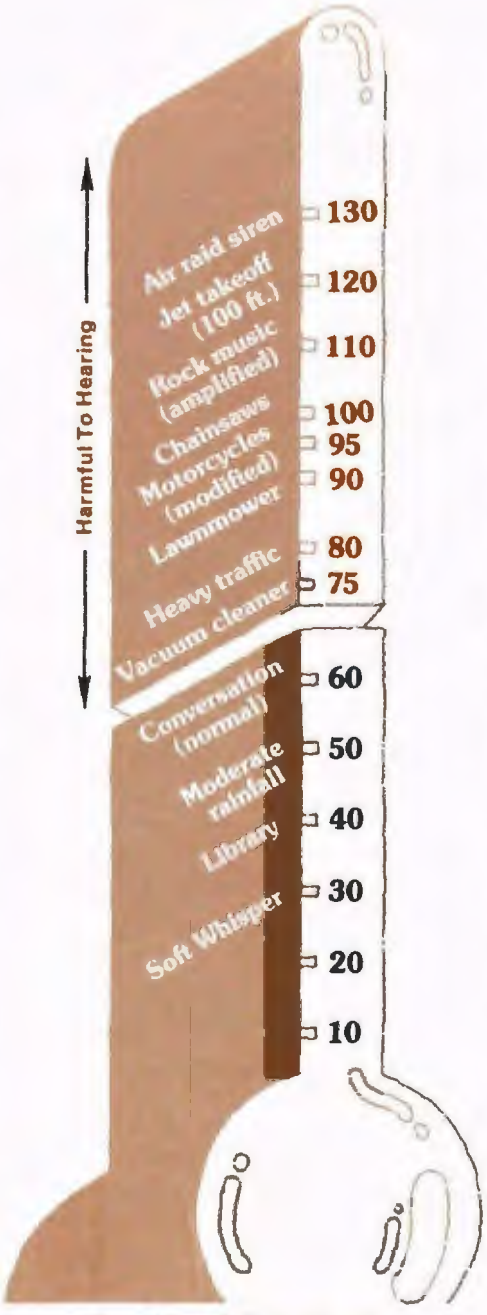
Humanitarian Helen Keller, who was both blind and deaf due to a childhood disease, said that of the two handicaps she felt the loss of her hearing most keenly because it shut her off from human social interaction.

A worker who can hear well enough to do the job at hand may be cut off from promotion or transfer possibilities because of impaired communication ability. Some researchers feel that the level of noise in a worker's job can serve to mask the seriousness of a hearing loss. A man who says, "I can talk to the guys at work OK," may be discounting the limited nature of much workday conversation where brief exchanges occur in tones raised to carry over the noise of machines. Such persons can find themselves totally lost in conversations that involve a large group of people and get beyond the "How are you doing? Nice day" stage.

Hearing conservation workers note that people with hearing losses can have feelings of isolation that are directly related to the degree of difficulty comprehending conversation. The inability to hear or understand what is going on around them can lead people to withdraw socially or to believe that others are talking about them.

People with certain degrees of perceptive hearing loss do not hear normal sound even with amplification. What they hear can sound like a short-wave radio that is not properly tuned in. Gaps in sound, distortion, and muffling accompany the transmission of sound. This can make it very difficult for them to translate the noises they hear into something meaningful.

One point of view on these problems is expressed by comedian Norm Crosby, National Honorary Chairman of the Better



Sound Levels (in decibels)

Hearing Institute, who suffered hearing impairment from depth charges he was exposed to in the Coast Guard during WW II. He says "I've made a career out of entertaining people by butchering the English language. It's very funny for people who catch all the lines. But it's not for people who suffer from a hearing impairment. And what they miss hearing can be the difference between a life of happiness and one of withdrawal and loneliness."

Former Governor George Wallace of Alabama has a hearing impairment. He says, "Loss of hearing is not only an invisible handicap, but it is burdened with centuries of half-truths and outright myths. It is often mistakenly associated with senility, yet some three million school-age children suffer from hearing problems. Many people feel there is a terrible stigma attached to losing one's hearing, to wearing a hearing aid. I was no exception. But because I value good hearing, I am no longer a reluctant hearing aid wearer. I continue to enjoy the marvelous sounds of life, thanks to hearing help."

Hearing experts point out however, that amplification will not completely correct all hearing losses. In some cases increasing the sound can be a source of annoyance because of a phenomenon called recruitment. Recruitment is abnormal sensitivity to sounds in a certain range that occurs in people with hearing impairment. People with recruitment reach a pain level with noise much sooner than most, even unaided, and a hearing aid can compound the problem. This causes difficulty in finding the "comfort range" for hearing aids. An aid that is uncomfortable will not be used, and does no good sitting in a drawer.

It is important for people who already have hearing losses to protect their remaining hearing. Even if you have lost some hearing, continued exposure to loud noise can erode it further. Lower sensitivity can mean that the hearing loss is slowed but still occurs.

Another problem that can accompany hearing loss is that of head noises or tinnitus. Many people notice a ringing in their ears after periods of exposure to loud noise. The ringing is tinnitus, which scientists believe usually indicates some damage to the auditory pathway.

After exposure to loud noise the ringing noises will usually fade and normal hearing return within several hours. However, hearing researchers warn that with repeated and prolonged exposure it takes longer for the ears to recover, and a permanent impairment in hearing can occur.

The continued presence of tinnitus is very disturbing to many people. While ear noises are not always caused by hearing loss (they can be a sign of arteriosclerosis or Meniere's disease), they often accompany it. The American Tinnitus Association reports that some 36 million Americans suffer from ringing, buzzing, and roaring sounds in their heads. Such an affliction can interfere with sleep, distract from conversation, and generally wear out its hapless victims. Some sufferers obtain relief with masking devices, tiny receivers that fit into the ear like a hearing aid and emit sound sometimes called "white noise," which is somewhat like hissing, to mask or cover up the intruding internal noise. But many people continue to suffer with "racket inside the head" in addition to their hearing impairment.

EPA is working with a number of organizations to present information to the public

Continued

about the hazards of noise and to reduce environmental noise so that noise-induced hearing impairments might be prevented. If such efforts are successful, perhaps fewer people will find themselves in the predicament of writer Jonathan Swift, the author of Gulliver's Travels, who in his later years described himself as "Deaf, giddy, helpless, left alone, To all my friends a Burden grown." □

Further information on hearing impairment available from:

American Council of Otolaryngology
1100 17th St. NW
Washington, D.C. 20036

The American Speech-Language-Hearing Association
10801 Rockville Pike
Rockville, Maryland 20852

American Tinnitus Association
P.O. Box 5
Portland, Oreg. 97207

Better Hearing Institute
1430 K St., NW Suite 600
Washington, D.C. 20005

The National Information Center for Quiet
Box 57171
Washington, D.C. 20037

Chris Perham is an Assistant Editor of EPA Journal.

Hearing Protectors

People who wish to conserve their hearing in noisy situations have had to choose protection from among the many and various types of protective devices that are both readily available and relatively cheap. Protective devices have widely varying noise-reducing effectiveness.

Earplugs fit into the ear canal to block the entry of sound, and are found as moldable, putty-like material that can be re-used several times, ear-down that is intended to be used only once, universal fit pre-molded plastic available in several sizes, and custom-fitted pre-molded plastic inserts.

Ear-muffs fit over the entire outer ear and cling tightly to the head to block out noise, and are basically two cup-like covers joined by a metal or plastic headband.

Ear-caps are a combination of the two previous devices, and fit into and on the ear.

Up to the present time, for people to choose hearing protection that is adequate for the noise situation in which they find themselves, they would have to have had some prior use or knowledge of protectors and the perceived variations in their ability to reduce noise; have had the aid of someone directly involved in a hearing conservation program; or have done some personal library research. However, approximately one year from now, all protective devices that are sold wholly or even in part on the basis of their effectiveness in reducing noise will have a label on them stating—in decibels—the noise reducing effectiveness of the particular model of protector. This will occur because EPA has issued a regulation requiring manufacturers of hearing protectors to uniformly test and label their products.

The label will have on it the Noise Reduction Rating for the particular model of protector, and the range of ratings for all presently available protectors for the purpose of product comparison.

The intent of this regulatory action is to provide notice to a prospective user of these devices of the effectiveness of a device *before* it is purchased or used, and that others are available.

Noise Regulations

Continued from page 22

Legislature to consider in an orderly manner any needs that might arise for future revisions of the time-table.

The 1988 requirement of 70 decibels for all classes of new vehicles was included because it seemed to be an acceptable limit below which further quieting of vehicles would not be necessary to eliminate general complaints. Information was not available to indicate that far in advance whether it would be an acceptable low limit for the public and whether it would be economically feasible for the manufacturers.

The 70 decibel limit was not technically feasible with then-current type of trucks, tires, and engines, but it would allow manufacturers a lead time of at least 16 years to attempt to meet the goal. This philosophy of "holding industry's feet to the fire" until they either come up with the solutions or can convince the regulatory body why the solution can't be reached has proven to be an effective approach. As a matter of fact the little progress that we have made to date in the area of new vehicle noise control is primarily the result of a few strong programs which weren't willing to accept current vehicle noise levels as acceptable.

Truck noise levels appear to be dropping as a result of the new product regulations which have been in effect since 1968.

How Effective Has EPA Been in Regulating New Noise Sources?

Unfortunately, the philosophy adopted by State and local programs as described earlier has reversed itself in EPA. As a result of legal and administrative problems we see industry holding EPA's feet to the fire until they back off enough on their standards to protect industry. EPA instead of industry has the onus of proving whether or not a standard is technologically and/or economically feasible. As a result we're seeing EPA propose and promulgate standards which may be weaker than some of those currently enforced by State and Local noise control agencies. In such cases these standards would do little more than "legalize noise pollution" and preempt States and cities from dealing with the problem.

How Can Noisy Products Best Be Controlled in the Future?

Many noise control officials feel that State and local governments can best regulate new product noise. Their feelings are based largely on the initial success of State and local regulatory efforts and perhaps more out of frustration with the lack of a strong Federal program.

Unfortunately, regulating major manufacturers at the State and local level is becoming increasingly difficult. The use of "bluffing tactics" which work initially when decisions are easy, prove to be less effective as standards become more stringent and serious technological and economic questions are raised. In recent years, State and local governments have been backing down. For example, new motor vehicle standards have been holding at the 1975 California levels with further reductions doubtful.

Only the Federal Government, with EPA in the lead role, has the capability of adequately addressing the technology and economic issues and establishing an appropriate accounting system for compliance. In order to more effectively regulate, EPA should:

1. Concentrate its limited resources on the most important products,

2. Be willing to force industry to expend money in search of "quiet" technology, and

3. Base future noise emission standards more on public health and welfare and less on economic impact.

The fate of our Nation's acoustic environment is heavily dependent upon a strong Federal new product noise regulatory program—without which we are fighting a losing battle. □

☆U.S. GOVERNMENT PRINTING OFFICE: 1979 O—620-064/9REGION 3-1

Above: Copies of this poster will be available late this year from the National Information Center for Quiet, Box 57171, Washington, D.C. 20037 (See story on P. 4.)

Back cover: The sound level at rock concerts is often high enough to endanger the hearing of the musicians and audience.

United States
Environmental Protection
Agency
Washington D C 20460

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335

Official Business
Penalty for Private Use $300

Third Class
Bulk

Return this page if you do not wish to receive this publication ( ), or if a change of address is needed ( ), list change, including zip code.