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# 1978 Microwave Review:

## The Old Song and Dance Routine, or, When In Trouble, Blame the Press

It was a year of frantic scrambling and squirming on the part of officials in the Department of Defense, the Department of State, the Congress, and the various federal agencies, who were either responsible for protecting the public health from the adverse biological effects of microwave and radiofrequency radiation, or who had become embroiled in the controversy that was sweeping the nation. Indeed, there were times in 1978 when it seemed that virtually everyone involved in the microwave affair had taken pen to paper to put himself on the side of the angels. As might be expected, such subjectively motivated scribbling gave birth to the usual litter of self-serving reports, righteous statements, and vague denials, which contained the usual amount of official fretting that the press might be unduly alarming the public about the hazard.

It was, of course, the kind of song-and-dance response which the public should by now have come to expect whenever officialdom finds itself confronted by any large-scale, long-term biological dilemma. (Witness the government's initial reactions to the problem of asbestos pollution, the health hazard posed by nuclear waste disposal, and the massive chemical contamination of the nation's water and food supplies.) In the case of microwaves, however, the government was especially anxious to calm the waters of controversy, for it was desperately trying to avoid the fact that the entire population of the United States is being increasingly exposed to a harmful agent whose long-term health effects remain unknown, and also the admission that because it is far and away the largest user of microwave radiation in the nation, the government is the chief perpetrator of the problem. As a result, the federal song and dance routine contained even more than the usual quota of slurred lyrics and fancy footwork.

The year started out on an upbeat note, when Sharon Nelson, who was the principal staff member responsible for the 1977 oversight hearings on radiation health and safety conducted by the Senate Committee on Commerce, Science, and Transportation, sent a detailed memorandum to her fellow staff members in which she strongly recommended that the Senate Committee hold additional oversight hearings in 1978 "to assure that this public health issue is not ignored for another four years." Pointing out that the federal program to study the biological effects of microwave radiation was largely controlled by the Department of Defense, Ms. Nelson noted that the military had been charged with suppressing scientific data relating to such effects, and warned that "Coupled with the possibility of duplicity on the part of various spokesmen for the military and the State Department, radiation health and safety could become a politically live issue." Later, after resigning her government post, Ms. Nelson charged that classified research relating to the irradiation of the Moscow Embassy could not be located by the Senate Committee; that "classified research apparently is still being conducted on the biological effects of microwaves," and that in spite of promises made to the Senate in 1973, the President's Office of Telecommunication Policy (OTP) and its Electromagnetic Radiation Management Advisory Council (ERMAC) had failed to establish a coordinated research program on the biological effects of chronic exposure to low levels of microwave and radiofrequency radiation.

Strong stuff on the face of it. If, however, one had entertained the notion that such revelations would result in remedial action, one could not have been more wrong. In March, the President's Office of Telecommunications Policy was quietly abolished, and most of its functions, including its supposed coordination of all federally-sponsored research into the biological effects of microwaves were transferred to the new National Telecommunications and Information Administration. This outfit, it turned out, was under the jurisdiction of the Department of Commerce, an organization that has remained singularly unknown over the years for any interest in the public health. The official reason for the shuffle was described as budgetary. What seems far more likely is that OTP/ERMAC—widely discredited as a principal architect of the microwave cover-up—had become a potential source of embarrassment to the Oval Office.

As for the Senate Commerce Committee, presently chaired by Senator Howard W. Cannon, of Nevada, it not only failed to hold additional oversight hearings in 1978, but issued a "Report on Radiation Health and Safety" at the end of the year, which provides a model text for the kind of timidity and deceit with which Congress has customarily dealt with important questions of environmental and occupational health. In spite of Ms. Nelson's warning, the Committee's report reflects and accepts without apparent reservation the biased and unwarranted conclusions of witnesses from the military-industrial complex that has long dominated research into the biological effects of microwaves, and suppressed scientific evidence concerning the existence of serious health hazards. Moreover, again ignoring the findings of its former principal staff member, the Committee members accepted an utterly unfounded assurance

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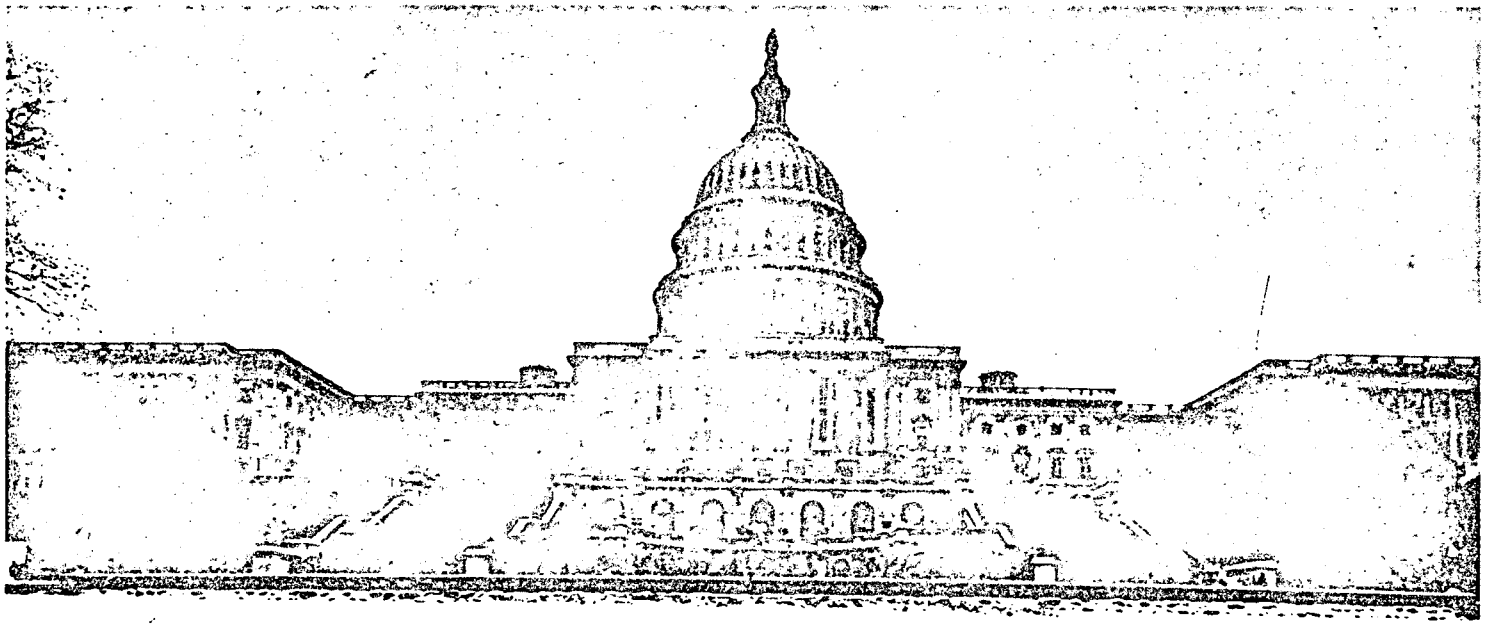
from the acting director of the OTP that low levels of microwave and radiofrequency radiation pose no threat to the general population.

One can only conclude that the members of the Senate Commerce Committee either failed to read, or chose to discount, a study issued in November by the General Accounting Office, which is the chief investigating arm of Congress. According to this study, which is entitled "More Protection from Microwave Radiation Hazards Needed," more than half of 112 scientific investigations that were reviewed showed that animals and humans exposed to microwave radiation levels at or below the present national standard "experienced biological effects, some undesirable." It is to be hoped that the committee members will take the time to read a lengthy study financed and recently released by the State Department, which purports to show that people living and working at the American Embassy in Moscow have suffered no apparent ill effects from the low-level microwave bombardment to which they have been subjected by the Soviets. When and if they do, they will discover that because of data deliberately withheld by the State Department, and because of the difficulty of obtaining proper records, the Moscow Embassy health study is virtually devoid of epidemiological validity.

In the middle of May, a technical review of the biological effects of microwave radiation was issued by an *ad hoc* working group for the President's Office of Science and Technology. The authors of the report appeared to be somewhat confused by the problem before them. On the one hand, they worried over the fact that "Recent magazine articles, books, television programs, the Seafarer Program, and reports associated with the microwave signals at the U.S. Embassy in Moscow have all alarmed the public." On the other hand, they found "a distressing lack of data" on the possible subtle, long-term, and cumulative effects of low-level radiation. Moreover, they made the astonishing observation that "Subtle central nervous system (CNS) effects, even if reversible, might disrupt or affect the judgment of individuals performing critical tasks (airplane pilots, drivers of automobiles, etc.)."

At the 36th meeting of the Electromagnetic Radiation Management Advisory Council, which was held in Washington, D.C., at the end of August, the question of public concern again raised its head. "The basis of the problem is that most people do not understand radiation, and what is not understood tends to be feared," the official minutes of the meeting explained. "Thus there is a definite need for education." What the minutes did not explain was why ERMAC, which had been in existence for ten full years, should suddenly be worried about educating the public when it had failed during that whole period of time to inform the public adequately about growing evidence concerning the harmful consequences of exposure to low-level radiation. Nor did the minutes explain why the Council members had never proposed any lowering of the obviously obsolete and grossly inadequate microwave exposure standard that had been in effect in the United States for 20 years. The minutes did indicate, however, that the Council spent part of the August meeting criticizing a proposal by the Bureau of Radiation Control of the New York City Department of Health to establish a standard for en-



Wide World Photos

vironmental exposure to radiofrequency and microwave radiation 200 times below the inadequate national standard.

One of the highlights of the August meeting was a detailed discussion of the Air Force's immensely powerful and highly controversial PAVE PAWS phased array radar, which is being installed on Cape Cod and in California. During this discussion, it was brought out that Air Force measurements of radiation power levels emanating from the PAVE PAWS on Cape Cod were up to 1000 times lower than the calculations of expected power levels that had been made by the Environmental Protection Agency. It was also speculated that summer foliage conditions might have attenuated the radiation and affected the accuracy of the Air Force measurements. Since the residents of Cape Cod had been warned, some weeks earlier, that the same Air Force team that measured microwave levels at PAVE PAWS had grossly underestimated the true microwave power levels emanating from the Air Force radar station at North Truro, it is difficult to understand why no Cape Cod or Boston newspaper sent a reporter to cover this important ERMAC meeting. It is also difficult to understand why not a single public official from any Cape Cod community felt obliged to attend. For that matter, it is difficult to understand why Senator Edward Kennedy, Senator Edward Brooke, and Congressman Gerry Studds—all of whom had previously written blistering letters to the Secretary of the Air Force concerning the potential health hazards of PAVE PAWS, and demanding that the Air Force produce an Environmental Impact Statement under the National Environmental Policy Act—did not see fit to send aides to observe the proceedings. Undoubtedly, the previous actions of these politicians had been engendered by letters of inquiry and concern from their constituents, and when they stopped receiving such letters, they saw no further need to take action. Cape Codders may come to regret that their political figures did not maintain an interest in PAVE PAWS, for at the end of December the Air Force produced an Environmental Impact Statement for the radar which is one of the most singly self-serving documents ever issued about the potential hazards of microwave radiation. Here, divided into fiction and fact, are a few of the inaccuracies it presents:

**Air Force fiction:** "The bioeffects literature indicates that the preponderance of biological effects are found at power densities in excess of 2,000 microwatts per square centimeter, with a few scattered effects of no medical significance occurring at levels down to about 500 microwatts."

**Fact:** Test animal studies conducted by researchers in the United States show that changes in the bio-electric function of the brain, changes in brain chemistry, changes in the permeability of the blood brain barrier, and changes in the immune system occur at levels far below 500 microwatts per square centimeter.

**Air Force fiction:** It is important to note that while the PAVE PAWS frequency of 450 MHz and its pulse repetition rate of 16 per second have produced changes in the chemistry of chick brains, there is no evidence that such findings imply an hazard in humans.

**Fact:** Nor is there any evidence that they do not. No such evidence will exist, of course, until a sufficient number of human brains are exposed to radiation emanating from PAVE PAWS for a sufficient amount of time. In other words, until the residents of Cape Cod become a population of test animals for the long-term chronic effects of such radiation.

**Air Force fiction:** A 1962 study showing that mice irradiated with leukemia is inaccurate. "There is no evidence that the radiofrequency radiation caused leukemia in the mice."

**Fact:** The authors of the study, which was published in the scientific literature, stated that a pathologic condition "found in 35 per cent of the irradiated mice and 10 per cent of the controls was cancer of the white cells." A recent report issued by the Food and Drug Administration's Bureau of Radiological Health, and notably absent from the Air Force's impact statement, describes this as "the most discomfiting finding in the available literature."

**Air Force fiction:** In a recent study, squirrel monkeys were exposed during the second and third trimester of pregnancy to levels of microwave radiation equal to the present governmental standard. Their offspring were subsequently irradiated for up to six months after birth. Four out of five of the irradiated infant monkeys died as compared with no deaths in a group of non-irradiated control animals. The Air Force claims this study is only marginally significant because of the small number of animals involved.

**Fact:** The study in question was performed by investigators at SRI International, of Menlo Park, California, which is the same organization that prepared the Environmental Impact Statement for the Air Force. Their finding is extremely significant, for it provides disturbing corroboration of an earlier study performed by investigators at the Southern Research Institute, of Birmingham, Alabama. In that study, an excessive fetal death rate was found among infants born to women at the regional hospital at Eglin Air Force Base, in Florida. The study concluded that this finding helped constitute "additional evidence that a health problem may be associated with radar." Eglin Air Force Base, it turns out, is the one installation in the nation that has housed an operational PAVE PAWS-type phased array radar over an extended period of time. In fact, a phased array radar has been operating at Eglin since 1965.

If the residents of Cape Cod are confused and dismayed by such information, the citizens of New York City have no less reason to be distraught. At a public hearing on the proposed environmental standard for exposure of the general population to microwave and radiofrequency radiation, which was held by the City's Board of Health, on October 5th, Professor Merril Eisenbud, who is director of the Laboratory of Environmental Studies at New York University Medical Center's Institute for Environmental Medicine, and who is a charter member of ERMAC, declared his opposition to the new regulation. "We need several years of additional research, perhaps even a decade, before a new standard is set," he declared. Two months later, at the 37th meeting of ERMAC, Professor Eisenbud elaborated on his position, stating that the proposed environmental standard was a "bad recommendation," and that the Health Department of New York City "should have said there was no problem."

In the meantime, Dr. Reinaldo Ferrer, Commissioner of Health of the New York City Department of Health, had asked Mr. Harald Rossi, chairman of his Technical Advisory Committee on Radiation, to provide guidance concerning the proposed regulation to lower the microwave exposure standard. And Mr. Rossi had called upon no one other than Professor Eisenbud to chair a subcommittee that would, in turn, provide guidance on the matter to the advisory committee. It is not known whether Mr. Rossi or Dr. Ferrer are aware that Professor Eisenbud has already made up his mind about the proposal he is now being asked to consider. It is known, however, whom Professor Eisenbud blames for the present dilemma being faced by the government concerning microwave radiation. Indeed, he made no bones about it at the December ERMAC meeting. He even provided a scientific solution. "The scientific community should square off against the media," he declared. "Scientists should attack the press."

***PAUL BRODEUR ends his Fellowship study on Microwave Radiation with this issue.***