

## MICROWAVES IN THE MEDIA: TRUTH OR CONSEQUENCES

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Over the last decade there has developed a public concern and in many cases public fear over potential biological hazards of exposure to non-ionizing radiation - with a unique fearful connotation to "microwaves." How did this happen and what can be done about it. We believe the basic problem is that of a propaganda war - not scientific or technical. The tools required to restore rational perspective are rhetorical and require expression in the media if the public is to be reached.

### Microwaves in the Media

Years ago very few people knew of the word "microwave." The development of the consumer microwave oven in the late sixties began to expose the public to the word. The Congressional hearings and the publicity following a television "radiation" scare swept in "microwaves" along with all radiation to be controlled in an umbrella fashion by the Radiation Control for Health and Safety Act of 1968 (P. L. 90-602). At about this time a series of Jack Anderson columns began to focus on the dangers of microwaves with allegations of injuries among veterans due to exposure to radar. This was soon extended to microwave ovens. In Fig. 1 we show a sampling of the variety of headlines for one Jack Anderson column<sup>1</sup> in 1971 which attacked microwave ovens. It demonstrates the power of headlines which is an editorial prerogative. Would you more likely read the article with the headlines "leaky ovens cook eyeballs" or "microwave risk played down."



Fig. 1. A Variety of Headlines for an Article on Microwave Oven Leakage

In 1973 in testimony<sup>2</sup> before the U. S. Senate, Dr. Milton M. Zaret stated, "There is a clear present and ever increasing danger to the entire population of our country from exposure to the entire non-ionizing portion of the electromagnetic spectrum." True to his belief Dr. Zaret over the years has alleged hazards from weak 60 Hz fields to infrared and has not missed many of the spectral regions in between.

Coincident with Dr. Zaret's testimony Consumers Union publicly<sup>3</sup> attacked the adequacy of U. S.

emission standards on microwave oven leakage. This played a role in assuring a key place for "microwaves" in the spectrum of fears.

Over the years the newspapers occasionally ran a feature article on "microwave" hazards with limited impact. Several news events, however, helped stimulate broader and more intense media coverage. These included the public discussions of Project Seafarer, proposed high-voltage lines and the serial installments on the Soviet "microwave" irradiation of the U. S. Embassy in Moscow. This helped stimulate the writer Paul Brodeur to tackle the subject after having covered environmental and public health issues like the celebrated asbestos hazard. By the time his book,<sup>4</sup> "The Zapping of America," appeared Brodeur had joined Dr. Zaret in the sweeping indictment of electricity.

With Brodeur's stimulation the media (print and electronic) coverage of "microwaves" has increased. In Fig. 2 we see a sampling of recent typical headlines which often plant strong association by the words "Zapping," "killing," "lethal," etc. Although power lines are not exempt, the most intense fear is still reserved for "microwaves."

### The trouble with microwaves: Interference

## MICROWAVES

No one knows what dangers they pose



Fig. 2. A Recent Sample of Unfavorable Headlines

A sampling of favorable headlines is shown in Fig. 3 from a more limited supply than that for Fig. 2. Unfortunately, while those in Fig. 2 usually represent national or syndicated circulation, most of the favorable stories in Fig. 3 represent limited circulation - in local papers, trade journals or even an advertisement by industry. Note well, however, the prominence of COMAR, including its chairman, Dr. Justesen, in the rebuttal efforts which these headlines represent.

What is this all about? In short, the microwave industry faces a propaganda war, not of its own making, and also one that is unrecognized by many in industry. As I point out in my editorial,<sup>5</sup> "The Conning of America," there has been a somewhat undirected media campaign to heighten fears of "microwave" radiation and to question safety of a growing list of devices and systems - from anti-theft systems, burglar alarms, all types of radio,



TABLE I. Breakdown of NIR Spectrum

Name:	Static	Quasistatic	Microwave	Quasioptical	Optical
Frequency Range:	$\lambda \rightarrow \infty$	$\lambda \gg L$	$\lambda \sim L$	$\lambda \ll L$	$\lambda \lll L$
	or $\lambda \ggg L$				

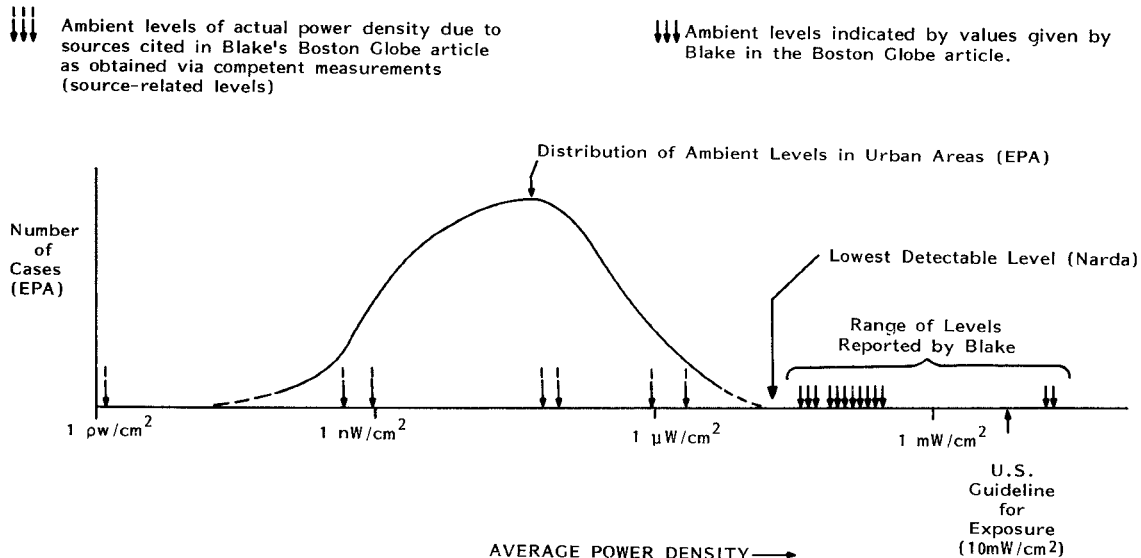


Fig. 4. Comparison of Boston Globe Data on Ambient Microwaves with EPA Data and Actual Levels

as potentially hazardous even though exposure levels are orders of magnitude below those in the most stringent safety standards in the world. Review of these cases shows a tragic waste of time and energy of all involved.

#### Public Education

What we are involved with is a propaganda war. For too long competent knowledgeable people have washed their hands of this kind of thing. Instead the alarmists occupy most headlines, appear on TV, publish articles and books, write letters to newspapers, and stimulate and organize grass-roots opposition to "microwaves." The output of their activities is what most people (including M.D.'s and lawyers) get for their basic education on "microwaves."

The propaganda war is real. We can honestly say that it has created a false view of "microwaves" in the public mind which is bound to affect the acceptability of all "microwave" products and "microwave" facilities. It is the duty of microwave engineers as honest professionals to become informed and inject themselves into public discussions in the media. Only in this way can we hope that the truth about "microwaves" will find its way into the media. The consequences of not doing this are already clear and tragic.

#### REFERENCES

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