

# High voltage lines, love'em or leave'em

LITITZ — No matter where you travel across the United States, sometime or another you are bound to find yourself driving under or flying over those tall gray, or environmental green, towers of steel that support our nation's power lines.

There is a controversy going on about the effects these electrical fields have on people, animals, and crops. Some research groups say they're harmless, about like falling in love, and others say they are extremely hazardous.

According to Penn State animal behaviorist and researcher H.B. Graves, four years of studying the biological effects of animals exposed to the electric fields under high-voltage transmission lines is about the same as watching a football game, waking up to a ringing alarm clock, or falling in love. In other words, the impact on health is virtually nothing.

In experiments using rats, mice, pigeons, and chicks, Graves and his students created electrical fields stronger than those under the highest-voltage transmission lines. "Changes in physiology and behavior are mostly transitory and minimal, if there are any changes. Heart rates and blood pressures may rise at the beginning of the experiment and then gradually decline toward normal levels even if the electrical field remains on. When the field is switched off, these health indicators return to normal."

Another Penn State professor, Guy W. McKee, said the electrical field impact on vegetation is also negligible. The agronomist said he had to use fields several times the strength of those under power lines before he found damage, and that was mostly to needles and sharp-pointed leaves. He pointed out that "electrostatic fields concentrate their strength at high points and tips of objects."

"No economically significant damage to crops grown under transmission

lines is expected," he stated, citing cases where Indiana farmers routinely grow crops under 765-kilovolt lines (the highest voltage lines in the U.S.).

The controversy of health effects created by powerlines has been going on since 1972 when Russian powerline workers complained of headaches, nausea, and loss of sex drive. Graves pointed out that people are routinely subjected to similar but weaker fields from electric blankets, toasters, and hair dryers.

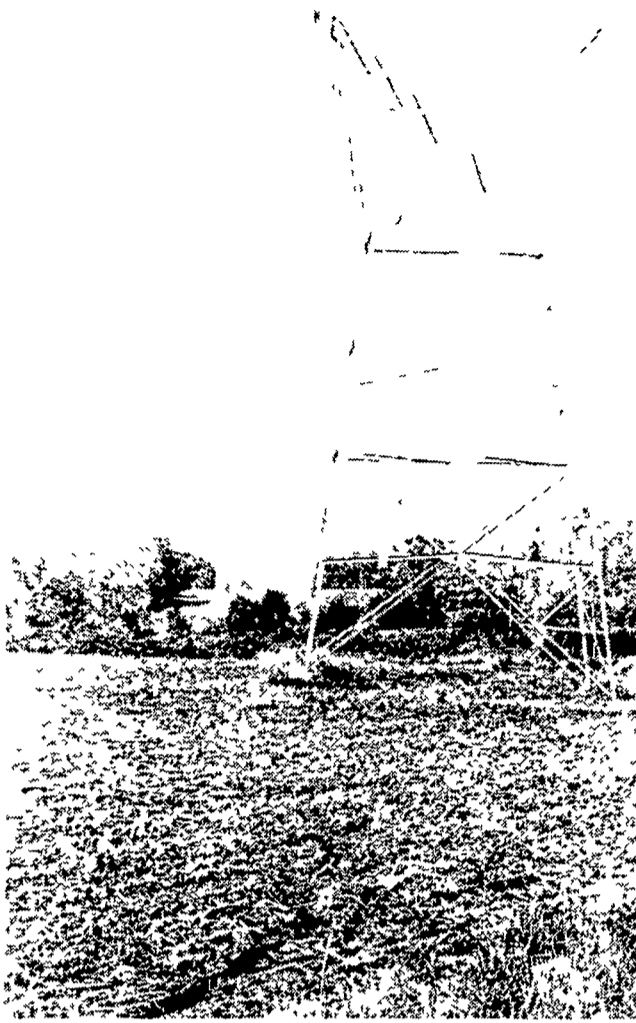
The Electric Power Research Institute funded Westinghouse Corporation, which is turn hired Graves and McKee to perform the studies.

In experiments that used different kilovolts per meter electrical fields, Graves said "birds and animals most likely 'feel' the field in vibration, mini-shocks, or in stimulation of their hair and feathers," similar to the hair standing up on a person's arms when standing in an electrical field.

In contrast to the Penn State report, science writer Lowell Ponte writes in the January issue of Readers Digest of an episode in upstate New York where people carried "eerily glowing glass tubes" under an ultrahigh-voltage power line.

"We're scared," said one of the people. "There's enough electricity in the air 200 feet from those wires to light these fluorescent bulbs."

"At issue is electromagnetic pollution — 'electric smog' — the unseen energy waves that spread outward like ripples in a pond around every electrical device we use," said Ponte. "The United States is wired with half a million miles of high voltage power lines." He explained that the typical American today gets 200 million times more intense electromagnetic radiation from television and radio broadcasting, CB radios, and microwave ovens, than what his ancestors took in



High voltage lines, like this one near Brickerville, are the subject of scientific controversy concerning animals, crops, and people.

from the sun, stars, and other natural sources. Marilyn Gruber, describing to Ponte the sensation of "It feels like a spider crawling on you," says being underneath a 765 kilovolt line that utility

companies began operating across her Minnesota farm in 1978. "You can hear it, you can feel it," says her husband Werner, "but you can't see it."

Ponte described standing 50 feet below the 765 kilovolt wires and said, "You become coupled with a 10,000-volt-per-meter electromagnetic force field. You can hear the crackle of air being cooked into ozone, a molecule found in smog."

"Energy within the field can burn leaf tips of plants under the line. It can send a painful spark jumping between your hand and a nearby tractor. Hairs on your scalp and arms twitch from the electrical forces at work."

Ponte cited research he said indicated the exposure to levels of electric radiation once considered safe had disquieting results.

"Andrew Marino, a biophysicist at the Veterans Administration Medical Center in Syracuse, N.Y., has studied people and animals exposed in laboratory experiments to electric smog simulating that around high voltage power lines. 'Exposure levels like those under the wire can cause a stunting of growth,' Marino reported. 'Levels like those 300 to 500 feet away cause physiological effects such as changes in blood chemistry

and heart rate. At 100 feet there are behavioral effects such as drops in human reaction time."

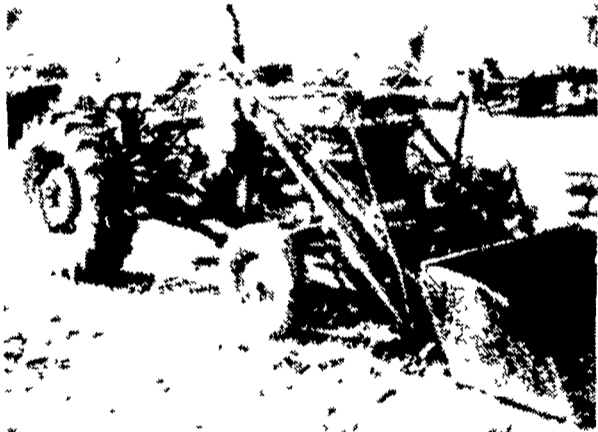
Ponte also cited research done by W. Ross Adey in 1973, at the Brain Research Institute at UCLA. Adey exposed laboratory monkeys to electric radiation of frequencies present around human beings every day. The results of the experiments — the monkeys' behavior changed and their sense of time was distorted.

According to Ponte, Adey believes that electric smog alters natural biological rhythms, the internal clocks that regulate waking and sleeping and thousands of more subtle body processes. This may put stress on the body with a resulting general resistance breakdown, Ponte reported.

"A person may fall victim to diseases he otherwise would have fought off. This may explain why, according to University of Colorado medical researchers, the death rate for certain cancers such as leukemia is twice the average in homes within 130 feet of high-voltage power lines."

Ponte also recalled the Russian incidents where electro-magnetic fields were said to cause a host of health problems, including hypertension, heart attack,

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