

# Television reception will suffer if wind used as energy source

A U-M scientist predicts that large-scale power windmills would have no bad effects on the audible portion of television reception—which would be fine if you only want to listen to your favorite programs.

But as for the picture portion, "windmill blades slicing the air to produce pollution-free power can also slice nearby TV reception to tatters."

So says Thomas B.A. Senior, U-M professor of electrical and computer engineering, who is studying the potential for FM and TV interference resulting from the kind of large-scale power windmills envisioned for the future. His research is supported by the U.S. Energy Research and Development Administration (ERDA).

He concluded that the higher the broadcast frequency, the more pronounced the interference, and the larger the blades, the farther the bad

effects will carry. "At distances up to two miles from a windmill, a horizontal black line will issue from the bottom of the television screen and then climb slowly upwards," Senior predicts. "On screens closer to the mill, the lines will develop colored fringes, and 'snow' will appear." "Closer yet, pieces of the picture will detach and fly away—the top of a man's head or his jaw might disappear. At one mile, the entire picture will flip over in rhythm to the blades."

Senior explains that the windmills ERDA is planning to test around the country have blades equal to three wing span of a 747 jet. ERDA has a prototype power-generating windmill at Plum Brook, near Sandusky, Ohio, with blades about half that diameter (125 feet).

"To radio waves 1-15 feet long—

those in the UHF-TV band—the metallic faces of the blades act very much as mirrors," Senior notes. "But according to tests done at Plum Brook and through computer simulation, the huge rotating mirrors would add their flashes to the signals entering TV sets. The blades would insert pulses electromagnetically into the TV signal stream each time they pass through horizontal."

"Although the audible (frequency-modulated) portion of the program would remain unaffected, the picture (amplitude-modulated) portion would

suffer." Senior notes that power windmills, because they are fuel-less and non-polluting, are a very desirable means to supply energy. "But at least in their present form, they will have to be sited with great care to avoid these TV interference side-effects," he observes.

In his research, Senior is considering non-reflective coatings for the "mirrors," as well as altogether new possibilities for blade materials, in hopes of solving the TV reception problem.

## Towne & Country Interiors' Presents THE MAKE YOURSELF COMFORTABLE SALE

Storewide savings 10%-50% off

Towne & Country Interiors

Dearborn—23600 Michigan Ave.  
Bloomfield—4107 Telegraph Rd.  
Rochester—1110 S. Rochester Rd.

## Sun leaves for summer while we're stuck...

Although it couldn't have been much hotter this Fourth of July, the sun couldn't have been much farther away from the earth.

"As a matter of fact, the greatest annual distance between the sun and earth occurred on July 5 this year," reports Jim Loudon, staff astronomer at the U-M exhibit museum planetarium in Ann Arbor. "And when was the earth closest to the sun this year? 'In the beginning of January—during one of the winter's coldest cold snaps,'" reports Loudon.

"That just goes to show you that the earth's seasons are not caused by its distance from the sun, as many people assume."

"The greatest distance is about 94.5 million miles, and the average distance is 93 million miles—so the difference is only about 1.7 per cent."

It is basically the tilt of the earth's axis in relation to the sun, rather than its distance from the sun, that is responsible for the earth's seasons. "And because the seasons vary ac-

ording to the tilt, we have opposite seasons in the northern and southern hemispheres," he adds. "On planets where seasons do indeed vary by the distance from the sun, such as Mercury (which has no significant tilt), the seasons are alike in the northern and southern hemispheres."

"And then you have seasonless planets, like Venus and Jupiter, which have neither varying tilt nor varying distances from the sun, or Mars, which has both—huge (11 per cent) variations in distance from the sun, as well as changing tilt, resulting in a complex cycle of extreme temperature changes."

### Interior design course planned

A one-session workshop that will explain "How An Interior Designer Works," is scheduled at The Community House on Thursday, July 14, from 1-3 p.m.

### Try a tasty centerpiece

A centerpiece which can be eaten as a first course, will stimulate both appetite and conversation, says Holly Cantus, author of "The Pocketbook of Household Hints."

Place a pinpoint flower holder in a low dish and group scallions, celery hearts, carrot sticks, radish roses, pepper strips and olives in an arrangement such as you would make with flowers.

### LOOSE RUG CLEANING

free pick-up and delivery



Carpet Cleaners  
32485 Schoolcraft  
Livonia  
525-1220

### If you hate pests, you'll love Terminix.

Terminix hates pests. The Terminix hates pests. For professional pest control with complete satisfaction call your Terminix man. Ask about safe, economical regular treatments. Assure a sanitary home or business.



TERMITE AND PEST CONTROL  
834-6900

## THE VIC TANNY EXECUTIVE CLUB SUMMER BONUS



# FREE! EXERCISE DAYS

Get a summer bonus of exercise at Vic Tanny. Sign up now and get today and every day until September 21 added free to your annual membership. What a great way to get in shape this summer! And we'll help you every step of the way with our exercise programs and equipment. Don't put it off. The sooner you sign up the more free days you get. You're only inches away from a great summer. And Vic Tanny has made it even greater with a summer bonus of exercise.

VIC TANNY BLOOMFIELD EXECUTIVE HEALTH & RACQUET CLUB  
6420 TELEGRAPH RD. AT MAPLE RD.  
Men... Women CALL NOW 855-2300

Begin Your Week ... The Monday Eccentric

### REAL ESTATE ONE CAREER OPPORTUNITY

Real Estate One Sales Associates are selling over 5,000 homes a year. Immediate openings available for "realistic ambitious" people to earn and grow with us as we expand across the nation. Famous fast start training program, sales aids that competition can't match. Attend our next Career Seminar on Tues. July 12, 7:30 p.m. at 23603 Farmington Rd. (So. of Grand River). Call 477-1111 for your complimentary reservation.

An Equal Opportunity Company

# FREE KODAK FILM

OF EXTRA CHARGE

WITH THIS COUPON

When you leave a roll of 110-126 or 35mm color print film for developing and printing at any Fox Photo walk-in or drive-up store, you will receive a fresh roll of genuine Kodak film FREE! Same size and number of exposures.

GOOD UNTIL JULY 16, 1977

COUPON MUST ACCOMPANY ORDER

FOX PHOTO

## Look for the Fox

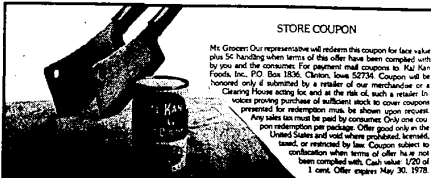
FOR THE STORE NEAREST YOU CALL  
453-5410

## Kal Kan. It's meat made complete.

Kal Kan brings your dog plenty of the rich, juicy meat he loves. And much more. Meat-by-products for extra protein. Whole egg for even more vitamins and minerals. That's important extra nutrition for your dog's coat, eyes, teeth and bones. Ask your veterinarian. Kal Kan. It's meat made complete.

7¢ EITHER SAVE 7¢ ON 14-OZ. KALKAN DOG FOOD 7¢

STORE COUPON  
USD/77REP/KNOE17



STORE COUPON

Mr. Green: Our representative will redeem this coupon for face value plus 5¢ handling when terms of this offer have been completed with you and the company. For payment read coupons to Kal Kan Foods, Inc., P.O. Box 1833, Canton, Iowa 52534. Coupon will be honored only if submitted by a retailer of our merchandise or a Clearing House entry loc and at the risk of such a retailer. No other purchase of sufficient stock to cover coupons presented for redemption must be shown upon receipt. Any sales tax must be paid by consumer. Only one coupon per redemption per package. Offer good only in the United States and void where prohibited, limited, taxed, or restricted by law. Coupon subject to confirmation when terms of offer have not been completed with. Cash value .020¢. 1 cent. Offer expires May 30, 1978.

15¢ STORE COUPON  
USD/77REP/KNOE18

15¢ OR SAVE 15¢ ON 2 1/2-OZ. KALKAN DOG FOOD 15¢