

Dale King: 4-H'er with a 'heart'

(continued from page 6)

"We run preventative maintenance on the equipment based on a planning schedule we keep. We perform safety tests to ensure patients' safety. Most of the tests are performed on a monthly basis," he said.

King's schedule is a 40-hour week, Monday through Friday, 7 a.m. until 3:30 p.m. That's the basic week. The nature of the work and King's sense of responsibility make it a 24-hour job. "I'm on call 24 hours," he said. "Some days I am here much later than 3:30.

"I have one class during the daytime and the hospital lets me take off an hour for it. Then I make up the time by working extra," he said.

He carries a class load of seven hours at John Woods and does the CREI studying in what other time he has available.

How did King land his job?

During King's senior year in high school, Mike Sullivan, then the biomedical engineer at Blessing, spoke to seniors at Quincy High. "I was trying to determine which area of electricity and electronics I wanted to enter. Mike told the seniors he was looking for an assistant. I applied and went to work in March of 1975. In June, Mike left the hospital for another job. That's when I became head of the department," King explained.

Before going to work for Blessing, King worked for Richards Electric Motor Co. in Quincy, repairing and rewinding motors and generators.

The study at John Woods and CREI will lead to a bachelor's degree, King said. He then plans to gain certification as a biomedical engineer.



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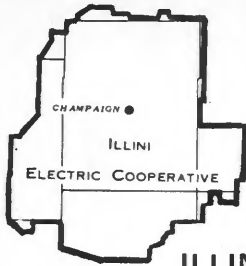
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IR 156



Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

39th Annual Meeting

The 39th Annual Meeting will feature a new meeting place and a new menu for those wishing to eat lunch before the meeting.

The Ramada Inn Convention Center will host this meeting. With excellent dining facilities available, your board of directors felt that more members would come to the meeting and those attending would enjoy a good meal to start the afternoon off right.

In order to plan a meal for each person, the cooperative must know in advance how many people will be attending. The annual meeting notice will be sent to each member in late January, along with a reservation card entitling you to the noon luncheon. This reservation card must be returned to our office by February 3. At this time we must turn in an exact count for the meal. Please help us by returning these cards as soon as possible.



Wilbur Gady, president of Illini Electric Cooperative, welcomes each and every member to the annual meeting.

Manager Walter Smith remarked, "I would like to invite each and every member to attend the annual meeting and hear the officers' reports on the past year's activities and to exercise his democratic right to vote in the election of directors."

In addition to the officers' reports, directors will be elected from the following areas: Champaign County North East; Champaign County South West; and Douglas County West. The nominating committee, appointed by the board of directors, will submit names to be voted upon at the meeting. Nominations will also be accepted from the floor.

The Ramada Inn Convention Center is located at 1505 South Neil Street in Champaign, just one block north of Illini Electric Cooperative office. Plenty of free parking is available, so plan to be there. For those in attendance, many good prizes will be awarded at the close of the meeting.

For an informative and interesting afternoon, mark your calendar for February 10, and return your reservation card by February 3.

39th Annual Meeting

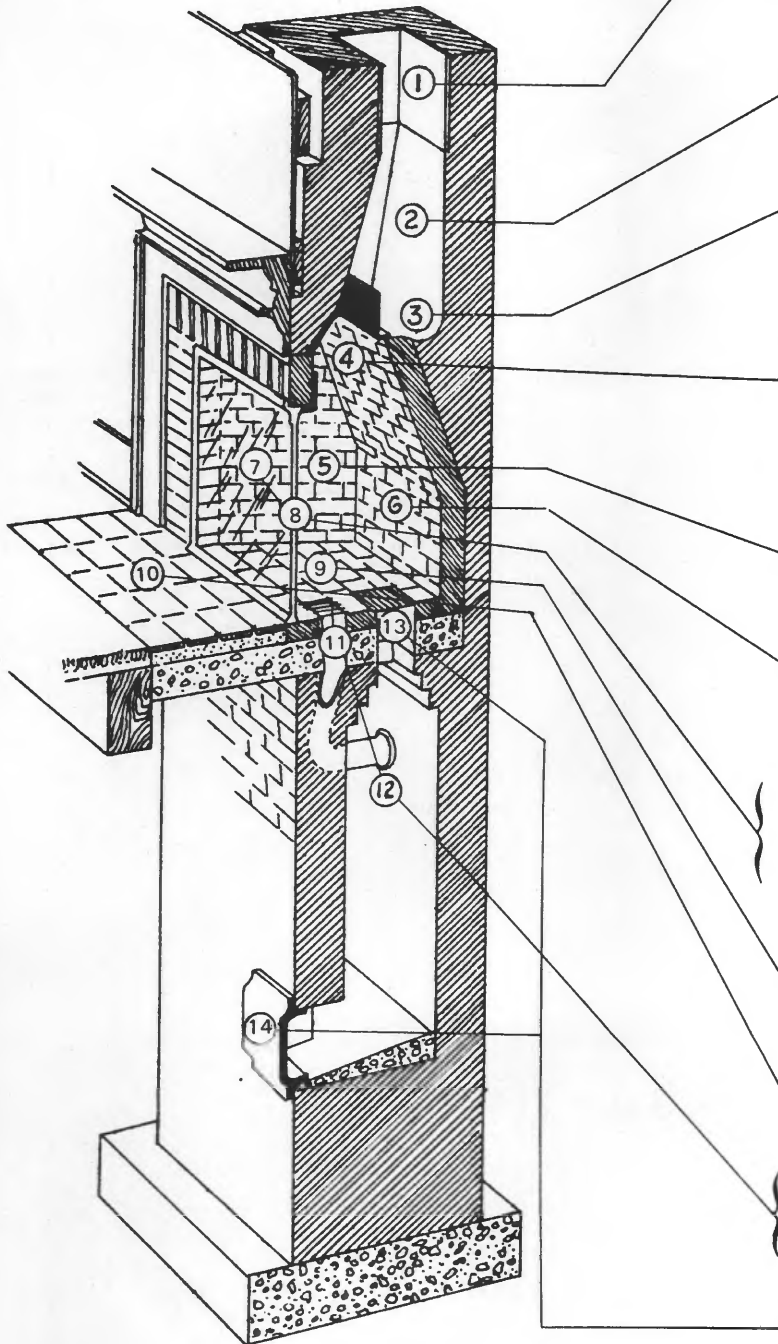
Place: Ramada Inn Convention Center
1505 S. Neil
Champaign, Illinois

Date: Thursday,
February 10, 1977

Time: Registration—11:00 A.M.
Luncheon served at 12:00 Noon
Meeting starts—1:00 P.M.
Officers' Reports
Entertainment

Attendance prizes will be drawn.

An Energy Conservation Fireplace



1. The flue carries combustion gases out of the house. A flue liner should be used. The minimum flue area is 70 square inches, and should be about 1/10 of the fireplace opening area. For example, 48" wide by 29" high opening has an area of 1,392 square inches, for which a 13" by 18" rectangular flue lining is recommended. See the table below for flue liner size recommendations.

2. The smoke chamber is the transition area which connects the damper with the flue and eases the flow of gases into the chimney.

3. The smoke shelf is the transition area which connects the damper with the flue and eases the flow of gases into the chimney.

4. The damper is used to close the flue when the fireplace is not in use, and is located at the throat above the the fireplace opening. It should cover the entire throat and consist of a movable plate hinged at the back.

5. The fire chamber is the space in which the fire burns. It is lined with firebrick or a steel fireplace form.

6. Fire brick is a special heat-resistant brick. Fire clay is used for setting the fire brick and the flue lining.

7. The fireplace opening to be covered with glass front. Common sizes of the openings are listed in the table below.

8. Glass doors tightly fitted.

9. The back hearth is the surface on which the fire is built.

10. The front hearth protects the floor from sparks and embers. It should be supported entirely by the fireplace structure.

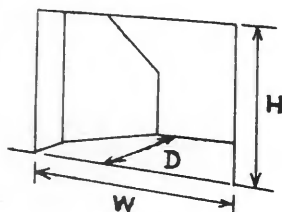
11. 2 1/4" by 12" outside air inlet with damper.

12. 6" outside air vent with screen.

13. The ash dump and (14) cleanout door are installed in basement and crawl space houses to simplify ash removal.

Average proportions for Single-opening Fireplaces

Width	Height	Minimum Depth
24"	20"	18"
30	21	18
36	24	20
42	24	20
48	25	21
54	28	24
60	30	26
72	33	28



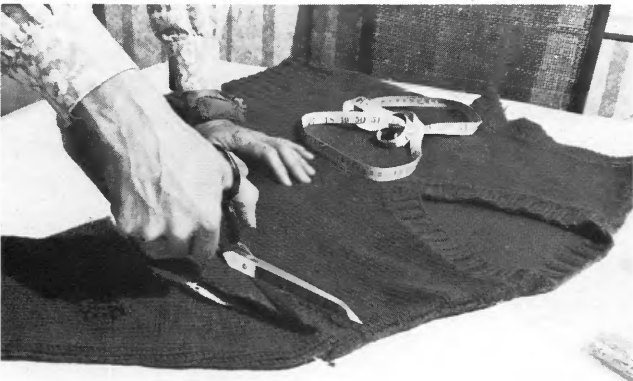
Flue Lining Sizes

Rectangular	Area (sq. in.)	Equivalent round
8 1/2" x 13"	079	10" diameter
8 1/2" x 18	108	12
13 x 13	125	
13 x 18	169	15
18 x 18	232	18
20 x 20	279	20
20 x 24	338	
24 x 24	420	24

..... 'Recreate

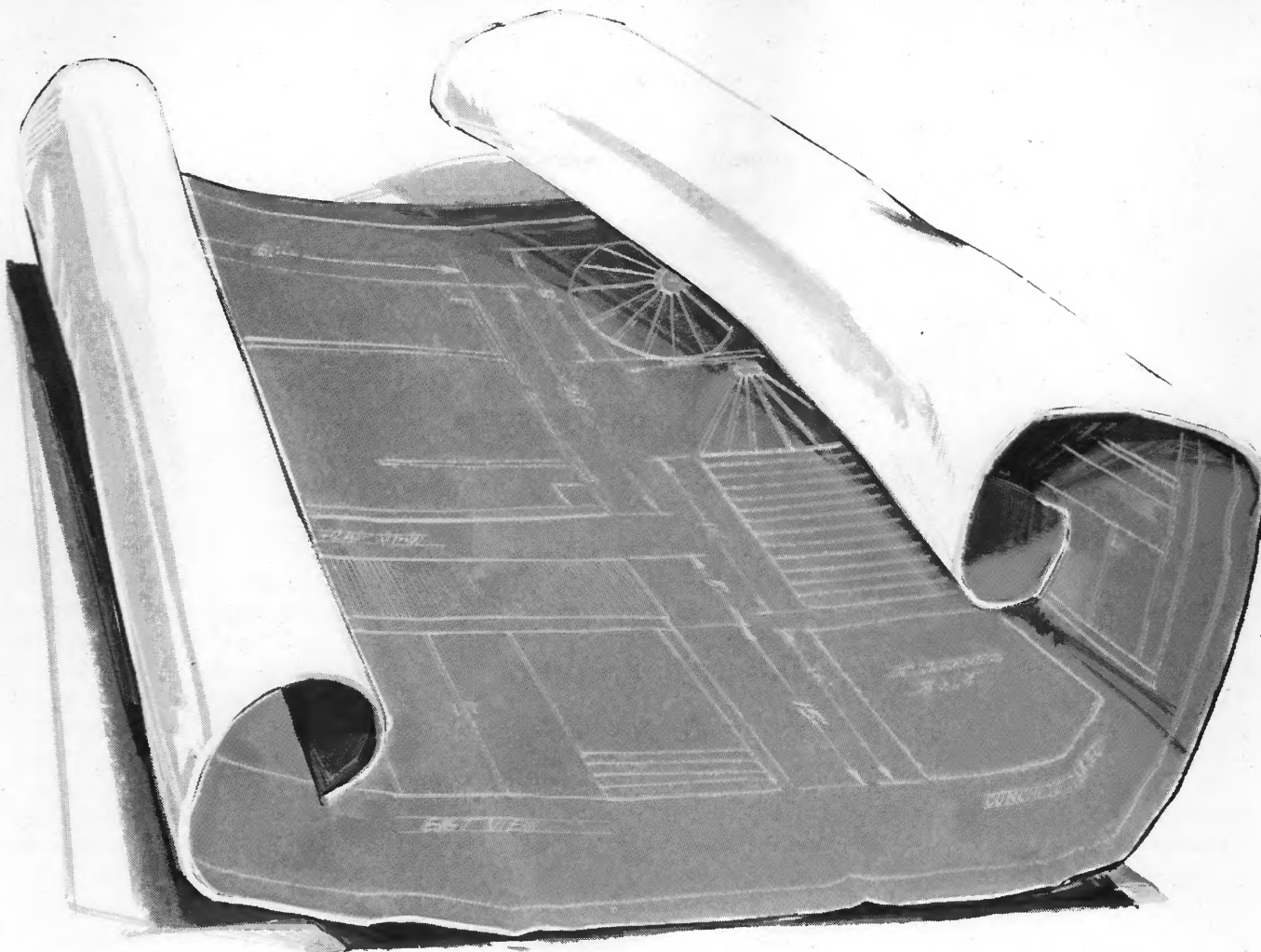


If jeans become too short, but the fabric is good, create a fashionable jeans skirt. Open inner leg seams, lay front and back flat, measure length of wearer, cut off bottom of pant legs and use to fill in the triangles created when you lay the garment flat. With some topstitching, the skirt is ready for wearing.



Except for the bad hole in the sleeve, this sweater is in good condition. Cut the worn sleeves off leaving about 1½ inches of sleeve. Finish the cut edge by adding a zigzag hem. Turn the 1½-inch portion inside and tack loosely into place, making it a sweater vest.





**If you have
a good reason to build
...you have a good reason
to visit your local Land Bank.**

If you have plans for building or improving, chances are the Land Bank can help with a long-term loan at reasonable cost. Maybe it's a new farrowing house, a carousel milking parlor or new grain drying and storage facilities. Maybe you're planning to build a new home... or remodel the old one. Whatever your plans, stop in and discuss them with your local Land Bank Association.





Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Degree-Day Figures Foretell Heating Cost

Are your heating bills too high? Of course they are. Everybody's heating costs are too high.

Would you like to know whether it is the weather or your heating system? Would you like to find out if this winter is colder than the average for your locality?

You can do this with some simple calculations. Professional heating engineers have been doing it for years and they vouch for the system.

You start with the "degree-day"—the official statistical measure of coldness. For example, when the daily mean temperature is 65 degrees or higher, most buildings require no heat to maintain an inside temperature of 70 degrees.

The daily mean temperature is obtained by adding together the high and the low temperatures reported by the local weather bureau for the day and dividing the total by two. Thus if the high is 70 degrees and the low 52 degrees, the daily mean temperature is 61 degrees.

Now, each degree of mean temperature below 65 is considered to be one degree-day. Thus in the example given, four of these degree-days accumulated during the 24-hour period. In other words, the mean temperature for that period (61) was four degrees below 65.

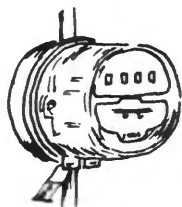
For every degree of mean temperature below 65, more fuel is going to be needed to keep a 70-degree temperature indoors. Suppose the mean temperature for a day is 35 degrees. This means 30 degree-days (65 minus 35). Such a day would

require twice as much heating fuel as a day with a mean temperature of 50 (65 minus 50 or 15 degree-days).

To apply the degree-day concept to your own home, you should keep a record of the accumulated degree-days and of energy consumption for a week or two. Then divide the cost of heating your home during this period by the degree-day total to find the cost per degree-day to heat your home.

Using the resulting figure, you can estimate the quantity of energy (electric or other) you will use in a normal winter in your locality (fig. 1). Actually the weather bureau has tables of normal total heating degree-days for all areas of the United States.

This is also one way to check on your heating bills. In fact, according to heating engineers, you should be able



to a
meter

Little meter on the pole
Ain't you got no heart or soul?
Through the month out there you squat
Recording every kilowatt.

Sometimes without regard to season
Your speed seems to be out of reason
But statistics from the past
Show that you are rarely fast.

But even if you are not living
Accurate answers you keep giving,
And what is shown upon our bill
Is what we ought to pay

to estimate your monthly bill before it arrives by keeping a record of the accumulated degree days. And you can check on your home heating system to see how efficient it is.

At the time this is written, degree days are running better than 30 percent higher than normal and steadily gaining over the normal amount. This simply means your heating costs will be better than 30 percent higher than normal.

Please, before you complain, remember the weather conditions and try to recall any extra items, such as heat tapes, heat lamps, portable heaters, etc., that were being used. Generally you will find a reason for the higher bills.

Illini Electric

Mailing Address — P. O. Box 637,
Champaign, Illinois. Phone
352-5241.

Headquarters Location — 1605
South Neil Street

Office Hours — 8:00 A. M. to 5:00
P. M., Monday through Friday
— closed all day Saturday,
Sunday and Holidays.

Holidays Observed — New Years,
Lincoln's Birthday, Good
Friday, Memorial Day, Fourth
of July, Labor Day, Veteran's
Day, Thanksgiving and
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Reporting Service Interruptions,
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Ponder's Country Garden



Located two miles south of Pesotum and 1 3/4 miles west of Route 45 is a long plastic bubble-shaped structure. Roger and Jeanine Ponder grow and house over 300



Adequate light is provided naturally in a greenhouse. Once plants are taken home, some artificial light can be provided to stimulate growth.



Over 300 varieties of plants are ready to be sold.

varieties of indoor garden plants in this bubble. From just cuttings, seed and leaves, the Ponders have accumulated the many varieties available for purchase by individuals. In addition, they have vegetable and outdoor bedding plants in the spring for gardens.

The greenhouse environment is kept at 80 degrees. With the large number of plants in a confined area, the humidity is nearly 100 percent. Although many plants do not need high humidity, it does not hurt any of them. Roger waters the plants daily and fertilizes them every month or two. Each variety requires different amounts of light and water, therefore, each plant must be treated individually.

When a plant is sold, specific instructions are given on its care for best growth.

"One of the stranger things we have found when growing indoor plants is the effect of L.P. gas fumes," Mrs. Ponder said. "L.P. causes plant growth to be stunted and causes rapid leaf changes. Some varieties do not seem to be bothered since the fumes rise, but hanging plants should be avoided" remarked Mrs. Ponder.

For those of you interested in purchasing plants directly from the greenhouse, stop by between 8 a.m. and 5 p.m. seven days a week.



Mrs. Ponder must give just the right amount of water to each plant daily.

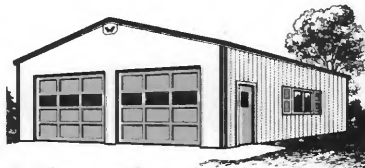
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A low-cost Wickes utility building can solve the problem for you—right now, and for years to come. These handsome, maintenance-free structures are available in the size, model or plan you need for a spacious garage, storage place or workshop, or all three in one if you want. In beautiful color steel or aluminum—your choice.

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IR258

**Solar Grain
Drying Conference**

(continued from page 5)

collectors are in use each year, it also has the advantage of being relatively inexpensive—once the collection system is built—and readily available.

Solar's potential was summed up by Sims, who said, "I think this thing is really going to catch on, and there are a lot of farmers out there ready to start using it. There is plenty of energy out there."

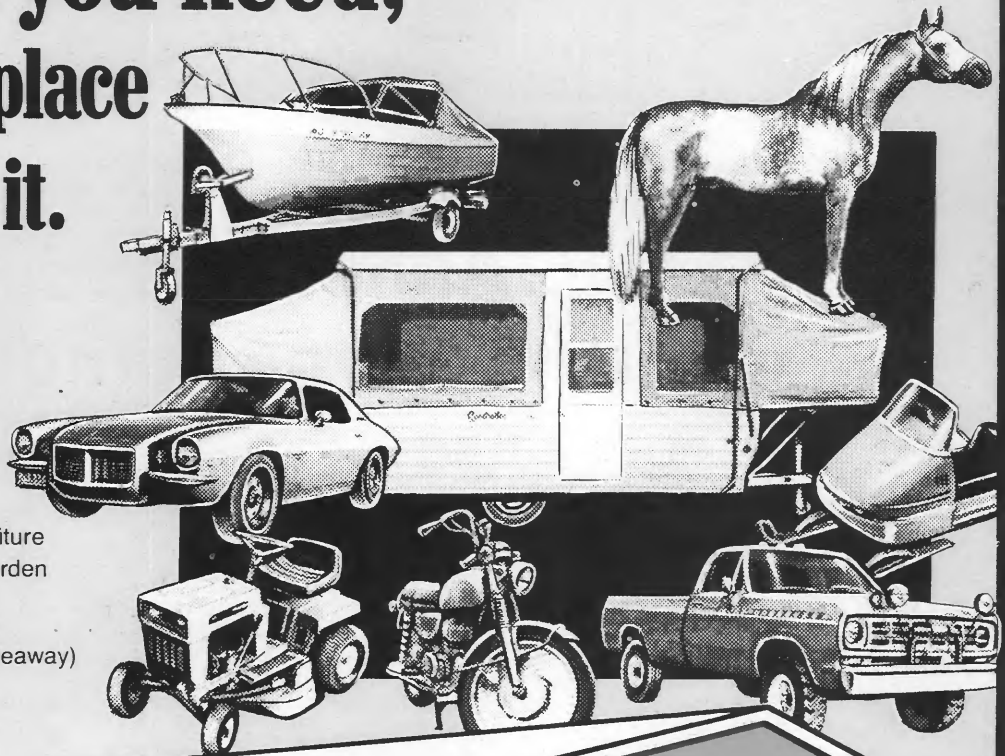
Several Illinois electric cooperatives sent representatives to the conference. Attending were: Roger Mohrman, Adams Electrical Co-Operative; John Kober, Egyptian Electric Cooperative Association; Vince Ijams and Charles Kyle, Corn Belt Electric Cooperative; Randall Beasley, Holly Shriver, Rick Phelps and Frank Gibbons, Coles-Moultrie Electric Cooperative; Victor Ketten and David Barbey, Southwestern Electric Cooperative; Ray Weiss, Howard Schweighart and Leo Klingelhoffer, Illini Electric Cooperative; Lowell R. Riffey, M.J.M. Electric Cooperative; and Bob Lands, Southeastern Illinois Electric Cooperative.

Below, John Kober, member services director for Egyptian Electric Cooperative Association, and Terry Heffernan, assistant director of member services for AIEC, compare grains dried with and without heat. The display was set up at the Solar Grain Drying Conference in Champaign.



Now all you need, is a good place to put it.

- Trucks
- Cars
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- Campers
- Trailers
- Outdoor Furniture
- Lawn and Garden Equipment
- Snowmobiles
- (A Handy Hideaway)

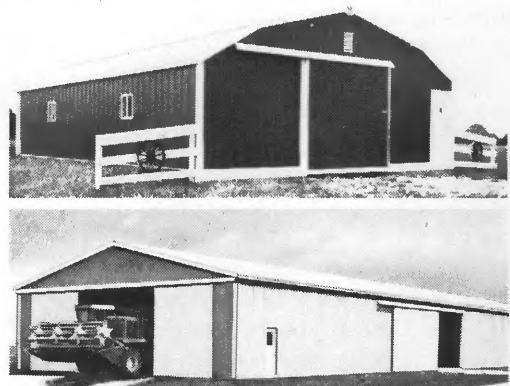


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IR 384



Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Illini Annual Meeting Draws Large Turnout

Member response was highly favorable following the change in format of Illini Electric Cooperative's annual meeting February 10 in Champaign.

Departing from the Saturday meeting day and the Rec-Arena location south of Champaign, members met this year on a Thursday at the Ramada Inn Convention Center and enjoyed a meal of Swiss steak, potatoes, broccoli and desert before the business session.

Wilbur W. Gady of Sadorus, Illini President, greeted the members at the meeting, saying, "We hope that changing the location and different eating arrangements meet with your approval. We certainly welcome any suggestions you might have in improving your meeting, because we are here to serve you.

"We want you to enjoy yourself. We want you to become more acquainted with the operations of the cooperative and participate in the business of providing adequate electric service at the lowest possible cost."

Three area agriculture leaders were reelected by members to three-year terms on the Illini board of directors. Chosen were Charles C. Cole of Penfield, Gady and Erhardt S. Wetzell of Atwood.

Gady further stated, "Electric energy is costing more for several reasons. We are in the grip of the coldest winter in 100 years. Spiraling inflation and rising costs of wholesale power, labor and materials and environmental rules are making yesterday's budgets obsolete. These costs will continue to rise as are costs

for all forms of energy."

Cooperative Manager Walter R. Smith said, "We completed more than one-half million dollars worth of new construction in 1976 to increase the capacity of our system to meet your electrical needs, and devoted another half-million to maintaining and operating the system for your ultimate benefit.

"Our peak demand during the past grain-drying season exceeded our former peak demand by over 21 percent," Smith added. "Our total energy use increased by over seven percent," he said.

Smith said the net result of these figures was a decrease in the cooperative's load factor. Because wholesale power costs are directly related to load factor, the decrease in load factor resulted in an increase of over 23 percent in average wholesale power costs from 1975 to 1976, Smith explained. Wholesale power costs represent over half of the cost of supplying members of Illini Electric with power.

During 1976, Illini's total operating revenue was \$2,482,824, compared to \$1,910,096 in 1975, Treasurer Irvin E. Liestman of Mahomet reported.

Net operating margins for 1976 were \$222,909, he added. In 1976, the cooperative paid over \$45,000 in taxes.

Cost of wholesale power for 1976 climbed to \$1,345,575 from just over \$1-million in 1975, Liestman's report said.

Guest speaker was Thomas H. Moore, executive vice president and general manager of the Association of

Illinois Electric Cooperatives, Springfield.

Moore said that for the United States to continue to be the breadbasket of the world, Illini Electric Cooperative and the remainder of the country's rural electric cooperatives must remain strong. He said there were similarities between investor-owned utilities and cooperatives, but there were many differences, explaining that electric cooperatives serve 12 percent of the consumers in the nation and receive only seven percent of the electric industry revenues. Yet, the rural electric systems include over half the pole-miles of electric service lines in the nation.

"Rural electric cooperatives provide central station electric service to three out of four farms in the United States. Those farms produce 75.4 percent of the wheat grown in the U.S., 80.4 percent of the corn, 70.3 percent of all crops, 72.1 percent of the livestock and 71.5 percent of the total agricultural production," he added.

Also featured at the meeting was Mrs. Kay Nowlin of Elgin, a lyric soprano, who sang a selection of operatic and gospel music.

Following the members' meeting, the board reelected Gady president; James F. Beatty of Philo, vice president; Cole, secretary, and Liestman, treasurer.

Other board members are Merle A. Buddemeier of Longview, Clarence P. Day of Bement, Clarence C. Maddox of Allerton and C. V. Swanson of Paxton.



A large turnout of Illini Electric Cooperative members filled the meeting room at the Ramada Inn Convention Center in Champaign. Members enjoyed a luncheon prior to the business session.



Walter R. Smith, right, manager of Illini Electric Cooperative of Champaign, offers congratulations to three reelected directors of the cooperative. Chosen to serve three-year terms by Illini's members during the electric cooperative's 39th annual meeting were, from left, E. S. Wetzel, Atwood; Wilbur W. Gady, Sadorus, and Charles C. Cole, Penfield.



Lyric soprano Mrs. Kay Nowlin of Elgin provided entertainment for the meeting. Mrs. Nowlin sang a selection of operatic and gospel songs.



Winter bitterly cold temperatures froze the Mississippi along Illinois' western border, halting barge traffic and delaying shipments of vital supplies north. In addition, Ohio River barge traffic was halted because of ice, leaving hundreds of barges and towboats virtually stranded.

Degree-day records illustrate winter's severity

(continued from page 14)

no matter what kind of energy provided the heat.

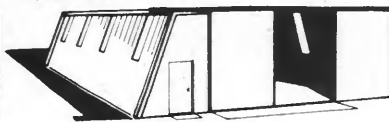
To make matters worse, the degree-day figures do not take into account the wind-chill factor. As far as the degree-day is concerned, the wind makes no difference at all. And, when it comes to heating your home it may not—provided your home is well-sealed against the wind with caulking, weather stripping and storm windows.

Even as cold and expensive as the weather has been here, we have been fortunate. To the east of us, the weather was much worse. Schools closed and factories reduced hours or went completely out of production. Millions of workers were idled; many are still not back at work.

All in all, it has been the kind of winter our grandparents talked about, but this one was worse, according to the records. Throughout Illinois, it has been a winter to remember, even though most of us would rather forget it.

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helps Weather Service



Tornadoes were the topic of discussion at Spoon River Electric Co-operative recently when the cooperative hosted a tornado spotters meeting. Manager Bill McCamey, left, talked weather with Roger Geer, center, official-in-charge of National Weather Service office in Peoria, and Gene Burchett, coordinator of the Fulton County Emergency Services and Disaster Agency (formerly Civil Defense). Geer praised the area tornado-spotting organization, calling it "one of the best in the nation."

"and we always ask spotters to look for rotation. In fact, we have a slogan that goes like this: 'If it doesn't spin, don't call it in.'"

"On the average," Geer told his audience, "about 700 tornadoes strike each year in the United States, and no state is really safe from them. We hope that by having spotters we can keep loss of life to a minimum. We can't save property, but we can save lives, and that's the most important thing."

A good estimate of wind speed is helpful in keeping track of storm systems, Geer said, and it is possible to estimate wind speeds fairly closely.

"If large branches are moving and

you can hear whistling in overhead wires, the wind velocity is about 25 to 31 miles an hour, and if whole trees are moving and it's inconvenient to walk against the wind, that indicates speeds to 32 to 38 miles an hour.

"If small branches or twigs break, and the wind impedes walking, the wind is blowing 39 to 46 miles an hour, while speeds of 47 to 54 miles an hour will cause slight structural damage and break larger branches and weak limbs," Geer said.

"Winds of 55 to 63 miles an hour will cause moderate structural and tree damage," he continued, "and winds of 64 miles an hour and above cause

heavy-to-severe structural and tree damage."

Information on hailstorm activity is appreciated by the weather service, too, Geer said, and the data is more useful if the size of hailstones is reported. "It's helpful if you relate the size of the hailstones to the sizes of such common objects as peas, marbles, golf balls, and so on," he told the utility men, "or if you tell us its approximate diameter in inches."

Geer also outlined what should be done in the event a tornado watch is broadcast. "A tornado watch is issued

(continued on page 22)



Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Your Electric Bill Should Be the Same as Your Neighbor's

That is, if your gasoline bill, your grocery bill, your laundry bill, your house payment, your car payment and your other expenses are also the same as your neighbor's.

The point we're trying to make is that no two families have the same living habits. Some families use more hot water requiring the water heater to run more. Some families take showers, others tub baths. Some bathe daily and others less frequently.

The number and size of hot meals cooked each day also make a difference. Even if all appliances in the homes are identical, people's living habits would make a big difference. And there's also the important factors of the amount of insulation in ceilings and walls and the number of square feet in the home to be cooled or heated. Bad wiring can also greatly increase the amount of electricity used.

So you see, the cost of electricity, like so many other items in the budget, varies greatly from one family to another.

PLAN POWER NEEDS NOW

FOR YOUR GRAIN DRYING EQUIPMENT



DON'T WAIT TILL SEPTEMBER

**Or you may not get
the proper power
for your new grain dryer.**

You Too, Can Save A Watt!

The September issue of *Current Ripples*, published by the Wabash County REMC for its members, carried some good suggestions on how members could save money on their electric bills.

Some of the cost cutting advice we have seen before, but several ideas were new to us, including the following:

1. Keep your wife from setting the furnace thermostat too high. Train

her to keep on the move and keep warm nature's way.

2. Cook everything rare. A little step each day and you can soon eat it raw.
3. Marry girls off young. Let some other dope heat their irons.
4. Go to bed earlier.
5. Don't bathe your kids too often. If they smell, send them outside to play.
6. Ditch your TV set.

7. Don't pay your electric bill and be disconnected. This will save everything.

8. Go to church frequently. While there, your TV, radio, and other equipment will not be in use.

9. Visit your friends and relatives as often as possible. Accept their invitations to stay for meals—even for baths if invitations can be wrangled. Their water is just as good as yours.



Installing a CB Radio Antenna Can Be Hazardous to Your Health

Not all CB (citizen band) radios are going into trucks and cars these days. Many are being installed and operated in homes across the country. And as a result a serious problem has surfaced.

A nationwide insurance company recently found that careless installation of base station CB radio antennas is causing shocks, severe electrical burns and in some cases death.

This insurance company alone has received reports over the last 16 months of 26 accidents in which do-it-yourself installers have let metal CB radio or television antennas touch uninsulated 7,200-volt power lines above or next to their properties.

Fifteen of 31 people involved in the 19 most serious accidents were electrocuted and most of the 16 survivors suffered severe burns. More recently, in a one-week period, five persons were killed while installing CB antennas in North and South Carolina.

During the early part of the 16-month period, most accidents resulted from the installation of television antennas. But with the growing number of CB radio installations in the home, the most recent mishaps (11 of the last 13) involved CB antennas.

Home installation of base station CB radios requires an antenna, usually mounted atop a metal mast standing

upright on the ground and rising 50 feet or more in height. It's easiest for installers to "walk" their antenna/mast into an upright position, supporting it from above with guy wires or the eave of a house.

Unfortunately, the antenna/mast is so long that unwary installers often walk them into contact with overhead power lines. Most people only get one chance at this type of mistake. The tragic lesson is not easily forgotten by the survivors. All but one of the 15 fatalities reported to the insurance company involved people standing on the ground, holding antenna/masts, when electrocuted.

A case in a small Florida town last June is typical. A 28-year-old woman and her brother, age 21, were putting up a CB antenna alongside her home. The antenna was over 17 feet long and was connected to a 20-foot mast. The antenna/mast combination was being walked up into an upright position by the brother, with the sister holding the base to the ground, when its tip touched a power line. Both installers were killed instantly.

The lethal situation has been found to be most prevalent with the lightweight, vertical, omni-directional CB antennas that measure 17 to 18 feet before being mounted atop long, metal masts.

Some antenna manufacturers

provide general instructions with their products that call for installation to be made in clear areas away from wires, other antennas, etc., in order to maintain proper efficiency of CB antennas. Few antenna manufacturers enclose specific warnings to avoid overhead power lines or give a description of the potential hazards. Printed warnings are a step in the right direction toward preventing some tragedies, but what about the manufacturer who refuses to accept moral and legal obligation to warn consumers of the hazards of installing such antennas?

Because most electrocutions result from carelessness or ignorance of existing danger, awareness is a strong preventative. CB radio enthusiasts are advised to be aware that primary power lines are not insulated and that contact with those lines by home-installed antennas may be fatal.

All antennas, regardless of type, should be kept far away from power lines. If there is any doubt about the safety of making an antenna installation, professional help should be called in to do the job. If existing antennas need to be moved and there is danger of contact with nearby power lines, your electric cooperative should be notified before antenna removal is attempted. No amount of time or money saved is worth the risk of losing a human life.

Agriculture leaders

hear Governor for Century



Governor James Thompson talks with Senator John L. Knuppel, Virginia, left, and Senator Thomas C. Hynes, Chicago. Knuppel is chairman of the Senate Agriculture, Conservation and Energy Committee and Hynes is President of the Senate and Majority Leader. At the far right is Sid Hutchcraft, executive vice president of the Illinois Pork Producers Association, who served as master of ceremonies.

Robert W. Vander Pluym, left, manager of Clinton County Electric Cooperative, Breese, and Representative Dwight Friedrich, Centralia, discuss matters of interest to lawmakers and agriculture leaders.



Characterizing the program as one which could “potentially revolutionize food production as we know it,” Governor James Thompson told over 330 persons attending the Illinois Agriculture Legislative Breakfast in March that he had recommended fiscal year 1978 commitment of \$3.7-million to a program which will cost about \$36-million during the next two years.

The Governor said the “Food for Century III” project “is to build the facilities that are necessary for expanded research efforts in the field of agriculture—research efforts directed toward increasing the overall productivity of agriculture.”

The annual breakfast is sponsored by 32 commodity groups, including the Association of Illinois Electric Cooperatives.

Noting that agricultural programs, services and research are closely tied to colleges and universities, the Governor pointed out that many people still think of agriculture in the context of the classical dirt farmer of several decades ago, buying seed, planting it, reaping the crop and hauling it to market.

“Yet we know that the tremendous crop yields that result year after year are tied directly to research advances,” the Governor said, “and we also know that farming, therefore, involves a continuing education aspect for farmers. This education occurs directly through the Cooperative Extension Service of land-grant universities and state agricultural experiment stations.

“Also, there is a need for professionals in the agriculture fields, such as the specialists involved in providing services to farming or running agriculture-related industries,” he said.

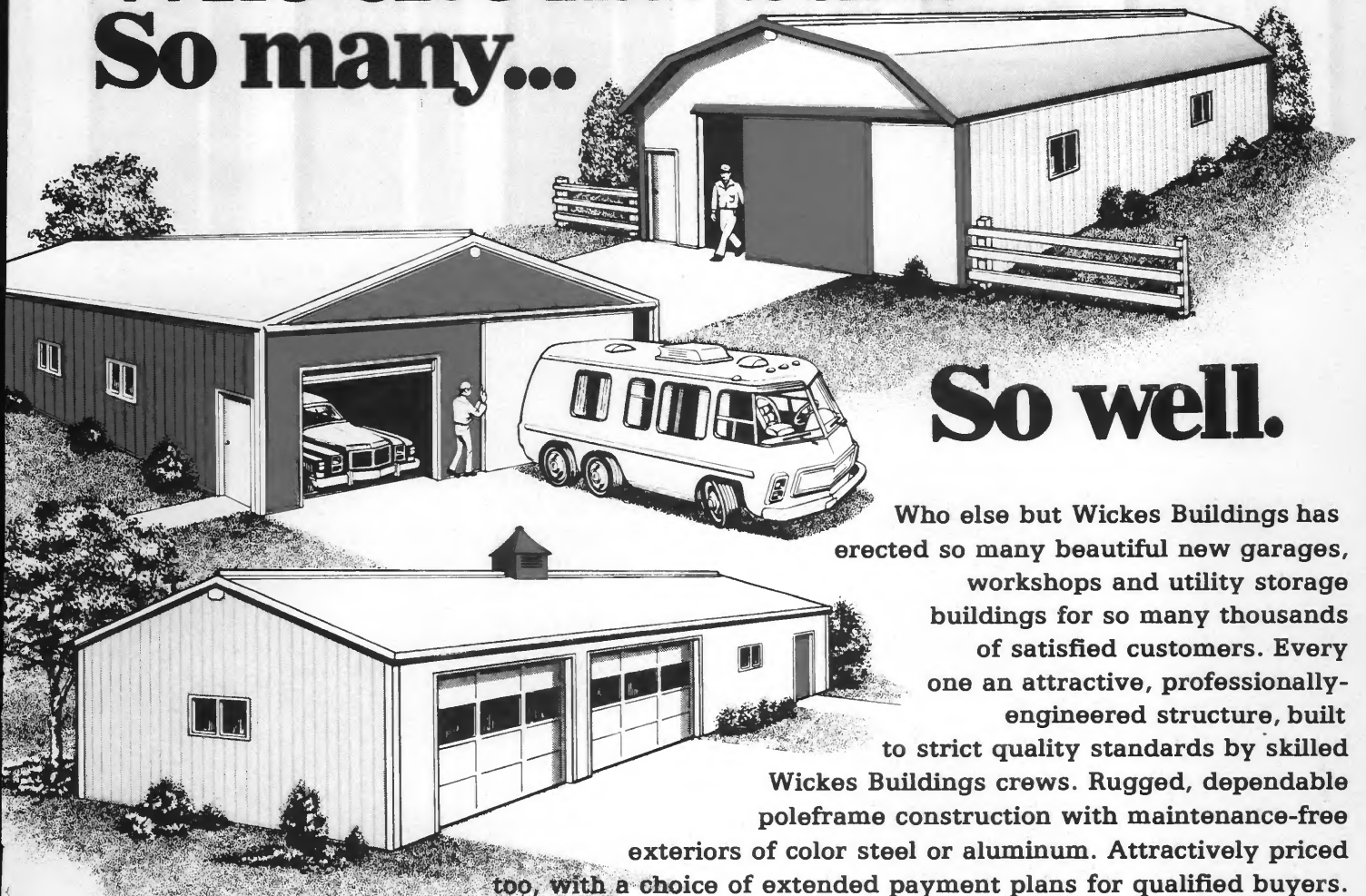
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Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

In the News Bin

by Walter R. Smith

Weatherization Loans Available

In the interest of assisting in the national effort toward energy conservation, Illini Electric Cooperative has entered into an agreement with Farmers Home Administration providing for low-interest loans to homeowners who need additional insulation, storm windows, weather stripping and the like to reduce energy requirements for heating and cooling. Illini Electric Cooperative has agreed to process loan applications for its homeowner members who are interested (and qualify) and to service loans through its established billing cycle.

In order to qualify for these low-interest weatherizing loans the following criteria must be met:

The applicant must:

1. Be an active member of Illini Electric Cooperative and a user of its service.
2. Meet insulation standards established by Illini Electric Cooperative.
3. Have an ownership interest in the housing to be weatherized and it is occupied by the applicant or is located on the applicant's farm and

is occupied by his tenant, sharecropper, farm manager or farm laborer. The dwelling, after improvements are completed, must be adequate for family needs and be decent, safe and sanitary.

4. Have an income of not more than the moderate-income limit for Illinois, as defined by FmHA, which is presently \$15,600 per year.
5. Be unable to pay for the needed improvements without a loan and unable to obtain a loan from another source on terms they could reasonably expect to meet.

These FmHA loans will not exceed \$1,500 and will be evidenced by a promissory note on FmHA Form 444-20 "Application and Promissory Note for Rural Housing Weatherization." The term of the loan will not exceed five years; a shorter repayment period is recommended for smaller loans. The interest rate will be the current rate in effect for FmHA Section 502 RH loans (presently eight percent). The loan funds may be used to buy and install weather proofing items such as insulation, caulking material, and storm windows and doors.

Illini Electric Cooperative's board of directors decided to cooperate in this program by furnishing the expertise of its staff, and its established billing procedures, in order to help promote energy conservation which is very much needed on a national basis. Added insulation, storm windows and doors, weather stripping and proper caulking of dwellings are major factors in the over-all energy conservation program.

If you have an ownership interest in a dwelling that you are an active member of Illini Electric Cooperative, and your adjusted gross annual income is less than \$15,600, and you desire a FmHA loan to improve the insulation

of that home; Illini Electric Cooperative invites you to contact its Member Service Adviser, Ray Weiss, for further details on the program.



Energy Conservation Now

The energy crisis is still a reality. It's a problem which the Electric Cooperatives of Illinois and other power suppliers battle daily in their endeavors to satisfy the energy requirements of consumers.

It's our job to make sure electric energy is always available when you need it. It's your responsibility to make the best possible use of energy . . . every day. As a reminder of these roles in energy management, a new symbol is being introduced.

Three important elements for successful energy management make up the symbol—C for conservation; E for energy, and a strong inward-pointing arrow representing the immediate need for conservation of our energy resources and focusing consumer attention on our nation's heavy dependence on energy.

Efficient use of electricity IS energy conservation. . . use energy wisely.

What's Missing from This Meter?

The Seal Is Gone

Meter Seals Are Like Locks

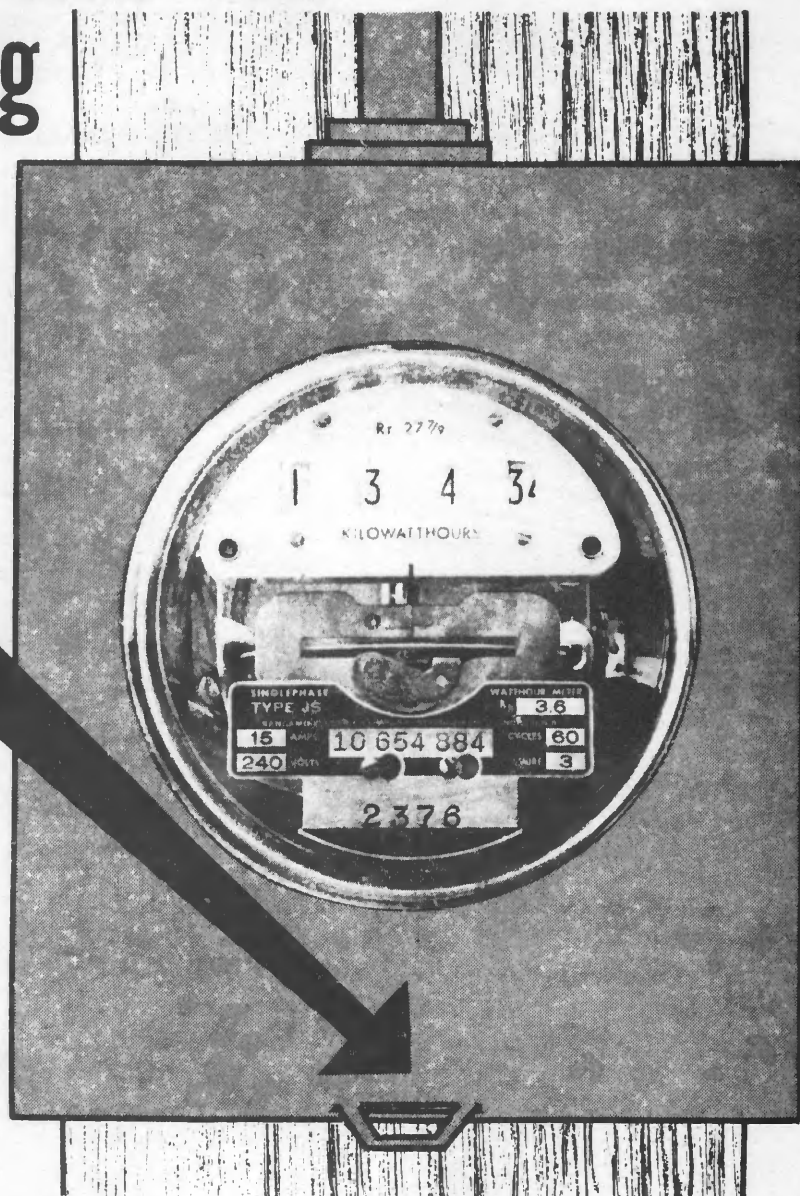
Seals which your cooperative places on each of its electric meters are the same as the locks on your doors. Your cooperative affixes these seals on meters to protect both the member-owner and the cooperative. Breaking the meter seal is the same as breaking a door lock, an illegal entry. AND, it is extremely dangerous to break a meter seal because wires located at the meter base are energized. Serious injury or electrocution could result if contact is made with these meter wires.

Broken Seals Indicate Tampering

When your cooperative's personnel observe a meter without a seal or with a broken seal, they automatically suspect that the seal has been broken for the purpose of removing the electric meter. Your cooperative requires that special permission be obtained from the cooperative's headquarters office before a meter seal can be broken. Therefore, your cooperative must assume that a meter found without a seal has been tampered with.

Honest Members Pay the Bill

Your cooperative is a nonprofit organization, owned and controlled by



its local members. One member taking electricity without paying for it contributes to the overall increase in the price of electricity for ALL members. Since your cooperative purchases its electricity from a power supplier and passes it on to members through its distribution system, the membership actually pays the real cost of providing electric service. Honest members who pay for their own electric energy use also pay the electric bills of dishonest members who tamper with meters or take electricity fraudulently by sending in meter readings showing less kilowatt-hours than were actually used.

We believe that our members are honest. We need the help of the majority to police the small number of members who are not so honest. Any member who knows or learns of

someone taking electricity fraudulently or tampering with one of the cooperative's electric meters in order to steal electricity should contact the cooperative immediately so that the proper authorities can take action.

Under Illinois statutes, a person who knowingly tampers with their electric meter in order to steal electricity is subject to criminal prosecution.

Notify Your Cooperative

If it becomes necessary for an electric meter to be removed, such as during initial hook-up for the safety disconnect below the meter or because of necessary wiring changes, you are responsible for notifying your cooperative in advance.

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Home weatherization loans

(continued from page 5)

Shuman, a member of Coles-Moultrie Electric Cooperative, Mattoon, told Illinois cooperative leaders, "We in the FmHA are very enthusiastic about this new loan program. We have had a weatherization loan program, but to be frank, we have not been effective." He said FmHA expects the new system, working through the electric cooperatives, to effectively reach rural residents who need help to finance weatherization of their homes.

"This will cost the cooperative time and money," Shuman said, "but it will make for a better living standard in rural America." He urged cooperative personnel to contact his office or any one of the 42 county FmHA offices in Illinois if additional information is needed by local boards of directors who must decide on program participation.

Jim Tucker, FmHA housing chief in Illinois, cautioned that not all cooperative members would be eligible to participate in the loan program even if they meet FmHA ownership and income standards. Under federal law, FmHA loan funds cannot be used for improvements on property located within metropolitan areas or in certain other densely populated areas. Tucker said each participating cooperative would be given a map outlining areas outside the FmHA loan-making authority.

In order to qualify for a home weatherization loan of up to a maximum of \$1,500, a borrower must be a member of a participating electric cooperative and must certify that he owns the property to be improved and that he has an adjusted family income of no more than \$15,600. The cooperative will process the one-page loan application, assist its members in contracting for the weatherization work to be performed and obtain the loan funds from the FmHA for disbursement to the member. The member will repay the loan plus interest over a period of up to five

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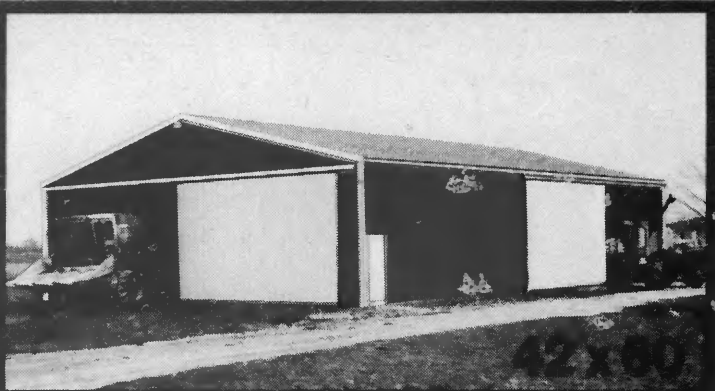
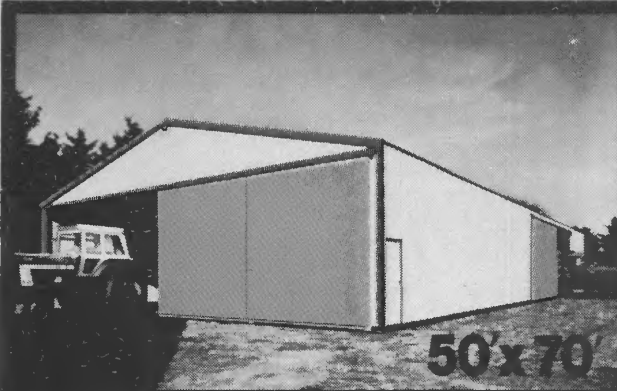
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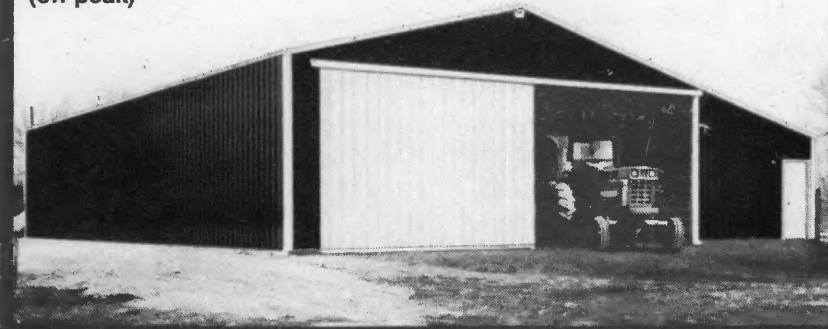
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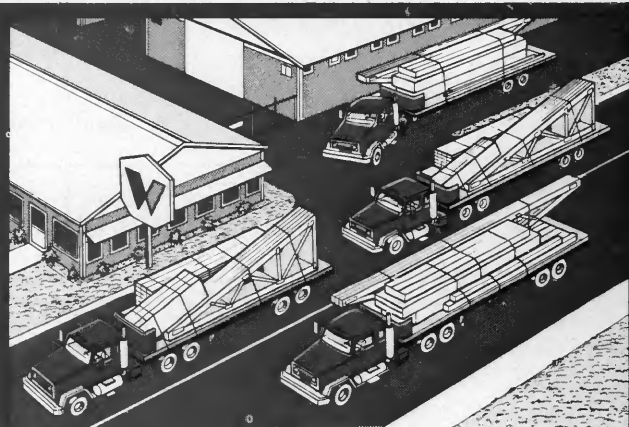


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Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

10 Ways to Reduce Your Power Bill

It has been estimated that people waste about fifteen percent of the electric power that they pay for. Check these ways to stop needless waste:

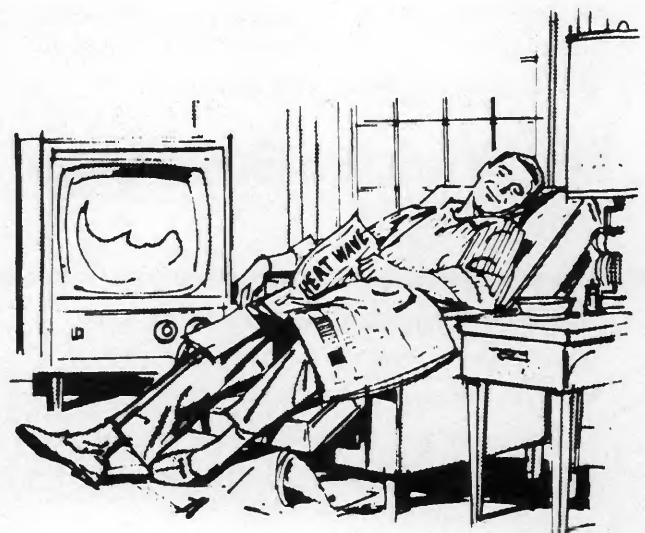
1. Use large wire to haul power around your buildings. In small wires, it wastes itself trying to crowd through.
2. Check your wiring and be sure that it does not come in contact with water pipes, eave spouting, lightning rods, windmills, trees and roofs of buildings. We find that many high bills are caused by leaks or faults in the wiring system. Why not have that wiring checked over by a good electrician and brought up to date?
3. Oil motors and equipment. The squeaky wheels need more kilowatts.
4. Learn to cut off the units of your range before the food is completely cooked: finish the job with "free heat" left in the unit.
5. Avoid switching lights off and on in an area where light will be needed for several minutes for different little tasks as it is cheaper to let the bulb burn if light is necessary several times within a given period. More power is required at the time of switching the light on than just to let it burn for several minutes.
6. Don't leave unnecessary lights burning when you are not at home.
7. Place your water heater as near the sink, washbowl and bathtub as possible. Use small pipes, insulate well on long runs.
8. Stop all faucet leaks.
9. If you are blowing fuses, find and correct the shorts right away. Never put a penny behind a fuse. This will not only waste electricity, but will probably cause a fire.
10. Place your refrigerator or freezer in areas where they are not in direct blast of your heating system. Also check the door latch and gaskets of your refrigerator.

To be Really Cool this Summer, Be Sure to Buy the Right Equipment

When you decide to "go electric" for clean, healthful central air conditioning, be sure to install the right equipment. Your Rural Electric friends can help you.

- **THE UNIT SIZE** is important. You get the full advantage of electric cooling only if the equipment is right for your home. (think about electric heating, too.)
- **OUTDOOR TEMPERATURES** in your area must be considered. If the equipment's cooling capacity is too great, dehumidification may not be satisfactory.
- **GOOD INSULATION** is a must for satisfactory operation of electric comfort—cooling or heating.

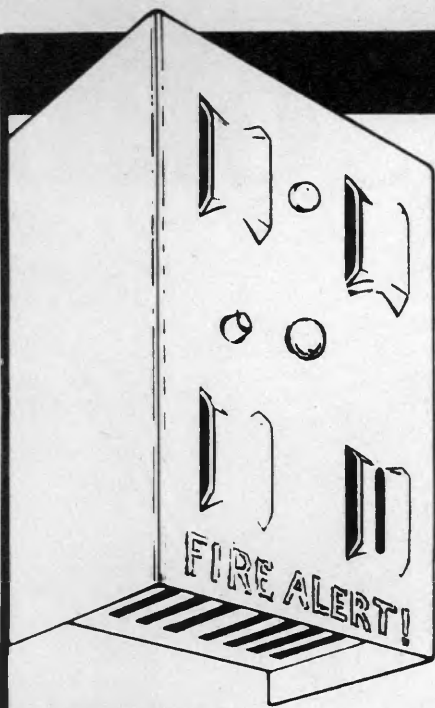
Contact your Rural Electric system for insulation tips and other money saving, electric saving ideas. Electricity is too good to waste.



The electric way is clean.

Smoke Detectors

A Good Investment? You Bet Your Life!



Have you ever had a nightmare where you wake up and find that your house is on fire and you or your family are trapped inside with all of your worldly possessions going up in smoke? You probably woke up in a cold sweat, but you were happy that it was a bad dream. When the real thing occurs, it's more than just a nightmare—it's a tragedy.

Of course, we are sure it can't happen to us, but nevertheless, we take out thousands of dollars in household and personal property insurance and install a fire extinguisher or two around our homes and apartments. That takes care of fire danger fairly well, right? Dead wrong!

What happens if a fire breaks out while you're in the house—asleep? Can you depend on Lassie to come to the rescue and dramatically drag your family to safety? Most of us can't.

The human body can sense fire in several ways. You can see the flame, you can feel the heat and you can smell the smoke—but none of these senses are functional when you're sleeping.

When a home or apartment burns, there is more than lumber and plaster burning. There is a great amount of plastic, insulation, rubber, paint and varnish burning and they all give off gaseous fumes. Fumes such as hydrogen cyanide and hydrogen sulfide, common in many fires, are

fatal within four to seven seconds. Of the people who die in fires, 94 percent die from the poisonous gases and super-heated air.

There are presently devices on the market that will stand guard for us while we're asleep. They can give us an early warning of any gases, smoke or flames. They are smoke or flame detectors. Smoke detectors are known by many brand names, but there are only three basic types available—ionization units, photoelectric units and heat detector units.

Set at a predetermined temperature, the heat detector unit is activated when a fire causes the temperature to exceed the setting. In most cases, however, gases and smoke are evident before heat would cause this unit to sound a warning.

The photoelectric unit is equipped with an electric eye which is activated by smoke. When smoke gets to a certain density, the unit will sound an alarm.

The ionization unit is designed to detect gases which many times are evident before smoke or flames appear at the early stages of a fire.

When shopping for a detector, it is most important to consider the type of protection offered rather than the cost. Detector units are either battery powered or electrically operated from a 12-volt power source.

When selecting a plug-in unit, it is important to remember that some fires are electrically oriented. Should the

power to the unit be interrupted, the alarm would not sound. With a battery unit, the batteries should be changed at least once a year to insure proper alarm functioning.

Underwriter's Laboratories (UL) and Factor Mutual (FM) are nationally recognized by the Fire Protection Engineering Profession for testing of fire devices. Be sure to look for these approval marks on the equipment you might purchase.

Here are a few eye-opening statistics on fire. About 7,500 fires occur in this country every day—that's about one fire every 45 seconds and one life every 44 minutes. Homeowners average one fire every 12 years—over two million people are seriously burned each year.

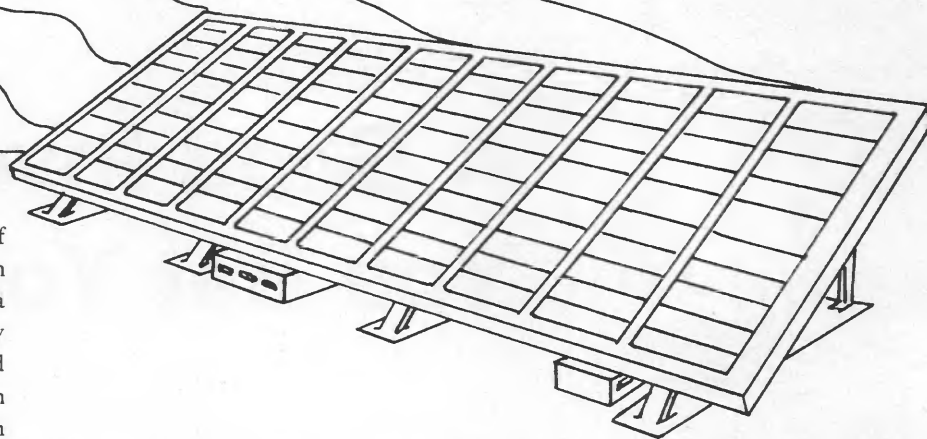
If that isn't enough, there's one more shocker. Twelve percent of fatal home fires occur between midnight and 6 a.m.—when you are asleep.

Research of tragic experiences has indicated that without prompt fire detection and quick alert of occupants, the critical margin of escape time decreases considerably.

Reliable detecting units can detect fires and alert people to the danger before injury or death occurs. Contact your Cooperative's Member Service Department for further details on the merits of a smoke detector for your home. The cost of these detector units is reasonable—a very small price to pay for your safety and that of your family.



Going solar



Among the several facets of President Carter's energy program is his emphasis on conservation as a means of meeting the nation's energy demands. The President has included increased use of solar energy as an integral part of this conservation effort.

There is a provision in his program for tax credits to homeowners who install solar equipment, an incentive which should lead to increased demand for solar energy systems.

But, the increase in the demand for solar energy may also bring the charlatan and the fly-by-night installer. While most of the installers are honest and competent, many still do not know exactly what may be needed for your particular situation. The field is new and there are no really firm standards as yet.

However, there are some things you can do to protect yourself if you do decide to go solar shopping.

First, check with your electric cooperative or your state homebuilders association to assist in locating a reputable, knowledgeable contractor, and get in touch with your county extension office, which also may be a source of useful data.

Then, know what you can expect from your solar apparatus. One Illinois resident installed 60 square feet of flat plate collectors in his yard and was disappointed that the unit would not heat his entire house. Actually, such a solar array could be reasonably expected to heat a 180- to 240-square-foot area, provided the space was well insulated and the collectors are fairly efficient.

Flat plate collectors—the most common, least expensive kind—collect low-yield heat. To make them work

for you, you will need a large volume, and to get a large volume, you will need a large collection area.

If you expect to heat your entire home on sunny winter days, you will need a collector array about one-fourth to one-third as large as the floor area of your house. In other words, to heat a 1,500-square-foot home, you will need 375 to 500 square feet of collector panels. If a contractor tries to sell you a small array, ask him how big a percentage of your heating needs it can fill.

Solar's low-yield heat brings on another problem: insulation. Electrically heated homes need a lot of insulation, but solar-heated homes need more yet. Before a builder can tell you how much collector area you need for an existing home, he will need to know how much insulation you have in your home. Chances are it will not be enough. Solar-heated homes need to be heavily insulated and tightly-sealed. Some authorities are recommending 18 inches of insulation in the attic of a solar-heated home, with proportionate amounts in the walls and floor.

The gist of all this is that if a contractor tells you what to expect from a solar furnace without doing a thorough heat loss study of your home, be wary. He will need a lot of data before he can make any predictions.

If he tells you he can heat your home with a tiny flat plate collector,

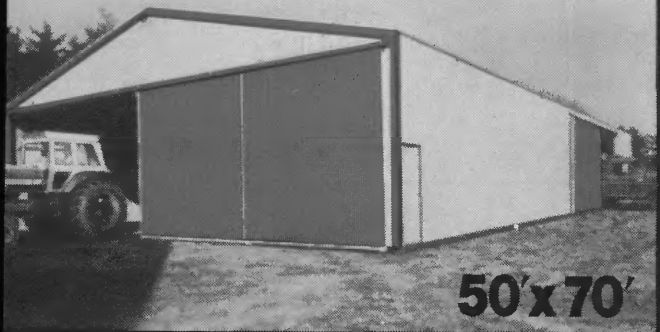
take his promise with a grain of salt. It cannot be done.

A small collector can, however, do part of the job. Still, you will need to know exactly what you want, and realize that a system that will provide all your winter heat would cost a lot of money, both for collectors, and for storage, which is necessary for sunless days. A solar collection system which is usable only for space heating, will probably cost you in the neighborhood of \$20 per square foot of collector area, including installation, controls, and a storage system. Prices are expected to come down gradually in the future.

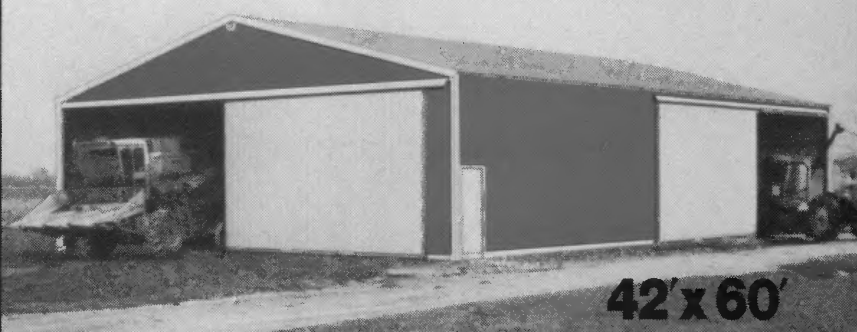
Most systems are built around a water or air heat transfer system. For an air system, hot air is blown over gravel, which absorbs the heat from the collector panels and stores it for later use. For a couple of days of heating, in the event the sun refuses to shine, you will need about one cubic foot of rock for each two square feet of collector area. A water storage unit needs a smaller amount of storage than a gravel bed. A cubic foot of water will usually do the same job as two and a half cubic feet of gravel. Storage tanks must be very heavily insulated to be really useful. Check with your contractor to determine how much insulation he installs around the storage medium. A poor job here may indicate a lack of good engineering.

Still, how well your storage medium holds usable heat will depend on many

Introducing our new VALU-MASTER line



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(off-peak)

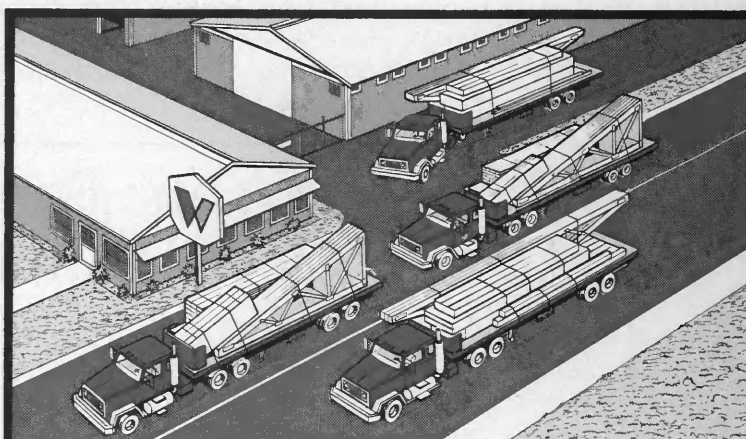


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Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Do We Need a Fuel Crisis?... or How to Avoid a Blackout

A fuel crisis affecting automobiles is bad enough, but when a fuel crisis affects the whole structure of our living pattern, then that is *bigger than all of us*.

Does it need to happen? We say no, it does not. The fact that too many people have taken too many things for granted too long has finally caught up with us. And maybe it is just as well that we learn now, that we can change our ways—ways of thinking and ways of living.

Here is one example to think about. Johnny Cash of TV fame urges us to drive slower (about 50 miles per hour) and use one gallon less of fuel each week, as this will be a great help.

We would like to ask your homemakers to consider the time of day that they are using the most electricity and then determine which of those jobs could be done at another time of the day. It is amazing, with a little

forethought, what jobs can be changed to another time of the day or night and still keep the household running smoothly.

What is the busiest time of the day for your electric meter? Is it supper time? Does this sound like your situation? You are cooking and baking and using the electric range surface units to prepare the evening meal. You have hurried home from a job or meeting and just threw a load of clothes into the automatic washer to dry later in the electric dryer. This sends the electric meter spinning. As the electric water heater delivers the hot water for the wash load, it starts to heat the cool water that came into the tank to replace the water drawn off for the load of clothes. Then, the kids come from their respective work and play. Showers and baths for everyone? Another big demand is made on the hot water heater.

Illini Electric

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Champaign, Illinois. Phone
352-5241.

Headquarters Location — 1605
South Neil Street

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Sunday and Holidays.

Holidays Observed — New Years,
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Day, Thanksgiving and
Christmas.

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Broken Poles and Fallen Wires
— Phone 352-5241 — day or
night — 7 days a week.

Did you turn up the air conditioner to cool faster? (It should be set on automatic at a comfortable setting.)

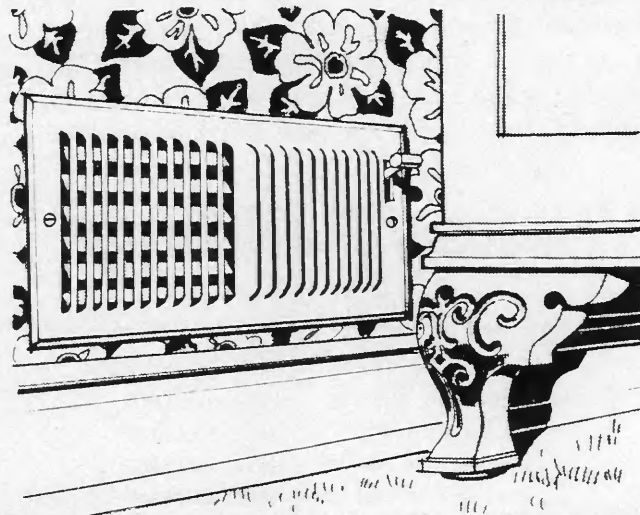
To Add to Your Family's Comfort, Add on Electric Central Air Conditioning

Adding the comfort of electric central air conditioning to your home? Consider these advantages:

- **CLEANER.** Since windows and doors will be closed, your home will stay cleaner. Electric power is cleaner than flame power, too!
- **VALUE.** You'll find that your home will command a higher resale value if it includes comfortable electric central air conditioning.
- **HAPPINESS.** Your family will sleep better, feel better and live better when the air is cooled cleanly and efficiently with central air conditioning, the "electric" way.

Electricity is too important to waste. Contact your Rural Electric system for money saving, electric efficiency hints.

The electric way is clean.



Low-Cost Weatherization Loans Available

Low-cost loans to finance the cost of home weatherization are now available to low and moderate income member-consumers of electric cooperatives in Illinois. Your board of directors recently approved an agreement between the cooperative and the Farmers Home Administration (FmHA) to participate in the program.

The Cooperative-FmHA loan agreement calls for the FmHA to advance federal funds to the cooperative, which will re-lend the money to qualifying cooperative member-owners. The loan funds will assist cooperative members to install insulation and other energy-saving devices in their homes and members will repay the loans along with their monthly electric bills.

Effective home weatherization can be done for an average cost of \$500 to \$600 and will result in major savings in fuel and energy costs; savings which may exceed the investment in home weatherization. Now, with the new cooperative-FmHA loan program, home weatherization savings should be within the financial ability of most all cooperative members.

In order to qualify for a home weatherization loan of up to a maximum \$1,500, a borrower must be a member of an electric cooperative and must certify that he owns the property to be improved and that he has an adjusted annual family income of no more than \$15,600. The cooperative will process the one-page loan application, assist the member in planning the weatherization work to be done and obtain the loan funds from the FmHA for disbursement to the member. The member will repay the loan plus prevailing FmHA interest, currently eight percent, over a maximum of five years.

"Adjusted annual family income" is the total income expected within a one year period by all family members over 18 years of age, less a five percent allowance and less a deduction of \$300 for each child under the age of 18. For example, a family consisting of a husband and wife and two children under the age of 18 could earn \$17,000 between the husband and wife and have an "adjusted annual

family income" of \$15,550, just under the maximum of \$15,600.

Although the loan funds are provided by the FmHA, the member will not have to face an avalanche of paper work and credit investigations to obtain a weatherization loan. All that is needed to process a loan application is for the member to contact the cooperative for assistance in determining the amount of weatherization work that the home needs to become energy efficient.

The member simply completes the single-page application and certifies that his family meets the FmHA income standard, that the property to be weatherized is owned by the member and that after the weatherization is complete the property will provide decent, safe and sanitary living conditions. After the work is completed the

member also certifies he is satisfied with the improvements and authorizes the FmHA to release the loan funds to the cooperative.

The loan program in which your cooperative is participating was developed over the past three months by FmHA and the Rural Electrification Administration, both agencies of the U.S. Department of Agriculture, as a "no-red-tape" program that will help the nation's low and moderate income rural families lower their heating and cooling costs and at the same time help achieve national energy conservation goals being established by President Jimmy Carter.

Members with questions on the weatherization loan program or needing technical assistance in planning home weatherization are urged to telephone the cooperative office.

Something Old, Something New

The weatherization loan program that has been developed to help members finance insulation and other energy-saving improvements in their homes may appear to our newer members as a new service from their cooperative to meet a new need. Actually, our older members will recognize this program as similar to programs offered by cooperatives in the early days of the rural electrification program.

Today's home weatherization program is "new" in so far as this is the first time the Farmers Home Administration (FmHA) has provided federal funds to electric cooperatives for lending to cooperative members. The low-cost loan funds will make it possible for low and moderate income members to insulate their homes to higher standards which will conserve energy and result in lower heating and cooling costs. Weatherization is an investment which will pay for itself many times over during the life of a home.

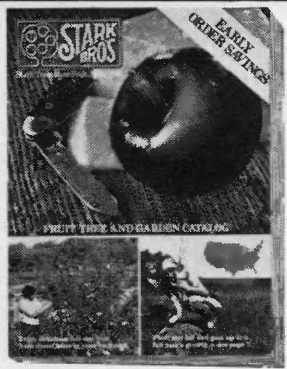
To meet the capital investment needs of rural Americans, the Rural Electrification Act of 1936 contained a provision, Section 5, that provided

funds which electric cooperatives could lend to their members at low interest rates to finance the cost of home wiring and purchase of electrical and plumbing appliances and equipment.

Over the life of the Section 5 program, more than \$47-million was advanced by the Rural Electrification Administration (REA) to electric cooperatives for re-lending to member-consumers. Section 5 loans were terminated in 1969 by REA when the cooperatives' need for construction loans reached a critical point.

Some cooperatives have continued a modest loan program for their members, lending cooperative general funds or reserves. Since increasing energy costs have made home weatherization more imperative, the National Rural Electric Cooperative Association sought to have the old Section 5 program revitalized. When Secretary of Agriculture Bob Bergland determined this would require new federal legislation, REA and the FmHA quickly teamed up to develop a joint Cooperative-FmHA loan program to meet today's consumer need.

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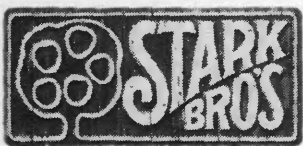
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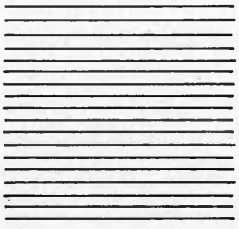
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Newman named Soyland manager

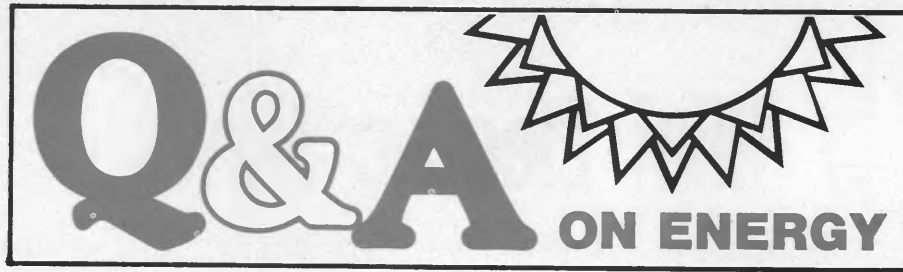
Royal B. Newman, former executive director of the Florida Keys Aqueduct Authority, Key West, Florida, is the new general manager of Soyland Power Cooperative, Inc. Announcement of the appointment was made by Soyland President Walter R. Smith of Champaign, manager of Illini Electric Cooperative.

The cooperative, which will be headquartered at Decatur, was reorganized in 1974 to provide the bulk power requirements for 15 central and south central Illinois electric distribution cooperatives. The power cooperative has entered into an agreement with Illinois Power Company to purchase and acquire 10.5 percent ownership of IP's Nuclear Clinton Power Station, now under construction near Clinton, Illinois. Soyland's cost is estimated at \$190-million.

As general manager of Soyland, Newman will be responsible for the cooperative's overall operations, negotiations and for assisting the 15 member-systems in securing, through purchase or self-generation, an adequate supply of power to meet the needs of the nearly 100,000 member-consumers served by the cooperatives. Consumers of the 15 member-cooperatives are currently using 1.5 billion kilowatt-hours (kwh) annually. Power costs for the 15 cooperatives last year exceeded \$16.8-million.

An electrical engineer with degrees from Auburn Community College and Syracuse University, Newman's professional experience includes serving as executive director/chief engineer for the Virgin Islands Water and Power Authority from 1971 to 1975 and five years as utility director/project manager for the City of Lodi, California.

In addition to his 20 years experience in power and water administration, operation, engineering,



Geothermal Energy

This is another in a series of questions and answers about specific energy problems and opportunities. They were prepared by the Electric Power Research Institute in cooperation with the National Rural Electric Cooperative Association.

Q: What is geothermal energy?

A: It's the natural steam, hot water and very hot rock inside the earth that is shallow enough to be tapped for generating electricity and other uses, such as heating buildings.

Q: How much geothermal energy do we have in the United States?

A: The U.S. Geological Survey estimates there is enough geothermal energy at practical depths beneath the earth's surface to generate electricity at present rates of use for the next hundred years. But we won't get even a fraction of that potential unless we solve some very tricky economic and technological problems.

Q: How much electric power are we generating from geothermal sources today?

A: About one-tenth of one percent of U.S. capacity is from geothermal sources, all of which comes from a stream field at the Geysers in northern California.

Q: Why haven't we exploited more of the potential?

A: The Geysers is the only place in America where we've found dry steam that can be commercially developed. Geothermal steam is

very economical because it is just piped from the ground into turbines. Geothermal hot water systems are more complex and maintenance is costly because the water is so full of dissolved minerals.

Q: How important are the various forms of geothermal energy?

A: Natural steam, which is so easy to use, represents less than one percent of the potential. Hot water accounts for another 10 percent. Geopressured water, which contains dissolved methane gas as well as hot water, represents 20 percent. Hot rock represents about 70 percent of total geothermal potential.

Q: Why aren't we getting more energy from hot water, geopressure and hot rock?

A: We're not sure of the economics of extracting energy from hot water and geopressure systems, and new technology is required for hot rock systems. The future of these geothermal sources will depend on how successful we are in bringing the cost of producing electricity from them down to compete with other fuels. We also are looking at them as direct sources of heat.

Q: How much research is being conducted?

A: The U.S. Energy Research and Development Administration (ERDA) is spending about \$400-million over the next five or six years. The electric utilities together are planning to invest

some \$2-billion in commercial geothermal development over the next decade if the basic technical problems are resolved and the economics are competitive. For example, rural electric cooperatives for several years have been involved in the Raft River experimental geothermal project in Idaho, partially funded by ERDA.

Q: Are there any other problems besides economics and basic technology?

A: Yes, there is a pollution problem with contaminants in some steam and hot water systems, but that can be handled.

Q: Is geothermal energy found all over the nation?

A: If you go deep enough, there's hot rock all over the world. But within reach of present drilling methods and within the bounds of anticipated economics, usable geothermal areas are concentrated in the western states, Alaska, Hawaii and along the Gulf Coast.

Q: Given all the problems that still must be solved, how much of our electric power is likely to come from geothermal sources in the year 2000?

A: It could be as high as five percent or less than one percent. The actual amount will depend on how rapidly existing hot water fields can be developed and how successful we are in developing new technology that makes geothermal energy forms economically competitive with other fuels.



Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Don't Die in the Grain Bin

CONSIDER THESE Case Histories:

*An Indiana Farmer found flow blocked when he started to unload a bin. He took a pipe, climbed the bin and poked through the crust. Next thing he knew, he was waist deep in flowing grain. He sank so fast he couldn't free himself. Luckily, the pipe hit the hopper and jammed the auger. He was rescued a few hours later.

*A father and his son walked across grain in a bin. Grandpa followed but broke through the crust and suffocated.

*A farmer raced to his bin hatch to retrieve a scoop he'd forgotten. Just as he reached for it, the shovel slid into the withdrawal cone. He lunged to grab it and fell headfirst into the flowing grain. He got out by using the shovel to paddle himself up the cone.

*Another man left his two children in his truck and went to turn on the auger. A few minutes later he returned to the loaded truck but couldn't find his children. He thought they might be in the grain so he dumped the load in the yard. He found them but one had already smothered.

THESE ARE just a few examples; pages could be filled with others. There are no accurate statistics on grain handling deaths, and further, near-misses often go unreported. However, research indicates fatal and non-fatal accidents like these probably

occur at least 100 times each year in the grain belt.

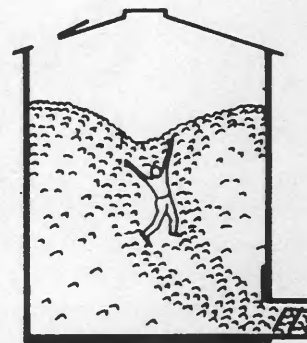
Few people realize how flowing grain acts, according to Bruce McKenzie, Agriculture Engineer, Purdue University. He says: "It flows almost like a fluid when it's drawn from the bottom of a bin. You start with your legs about a foot deep in grain and you're helpless when it gets above your knees."

Accidents are occurring now because we're handling more grain, faster, with bigger equipment and with fewer people.

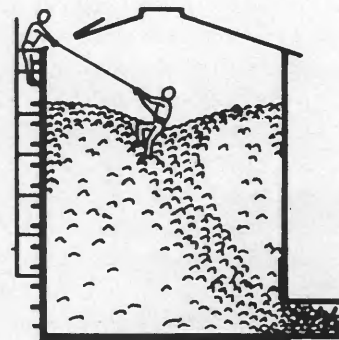
Grain suffocation doesn't have to happen if you follow these rules:

1. Install ladders in all bins.
2. If trapped in a grain bin or silo, stay near the outer wall and keep moving. You can walk the bin down until it is empty and flow stops.
3. If you enter a bin with potential danger, use a rope and safety harness with two men outside to hold you and get help if needed.
4. A rope, chain or pipe ladder hanging from a roof may save you, but these safety devices have drawbacks. They are not proven and you may not have any way to get out of the bin if you use them.

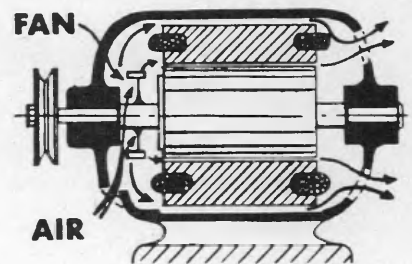
Remember that flowing grain is dangerous. Preach that to your family, helpers and neighbors.



Flowing grain sucks you under suddenly when unloading starts.



If you must go into the bin, use a lifeline and have someone there.



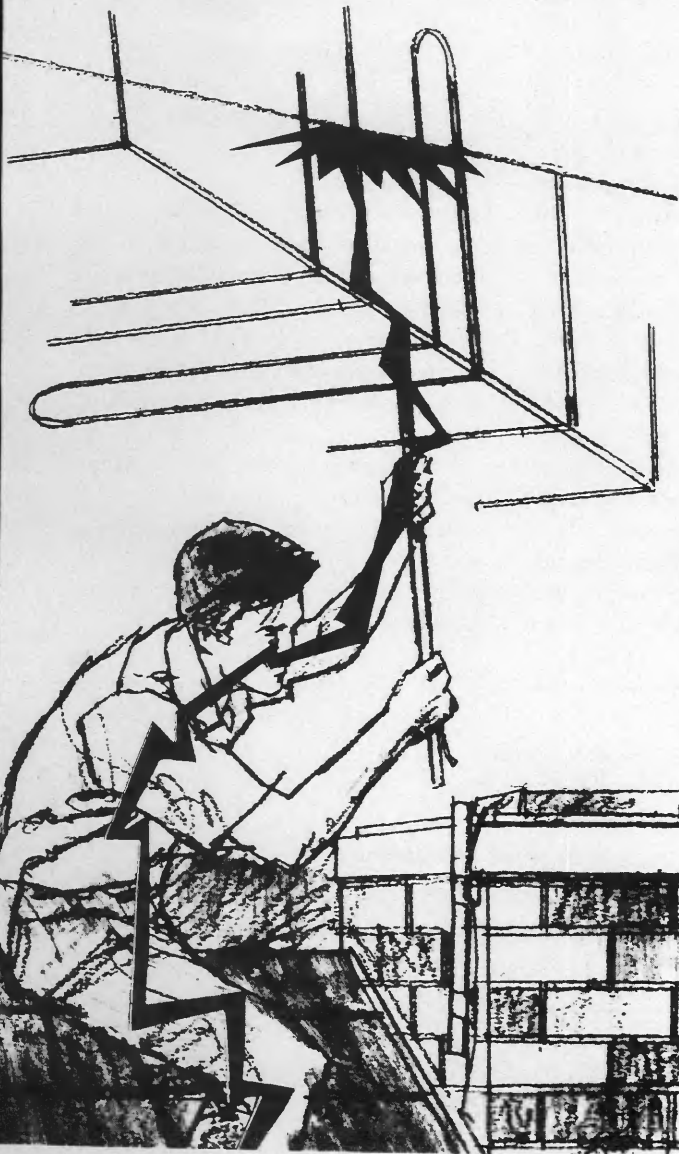
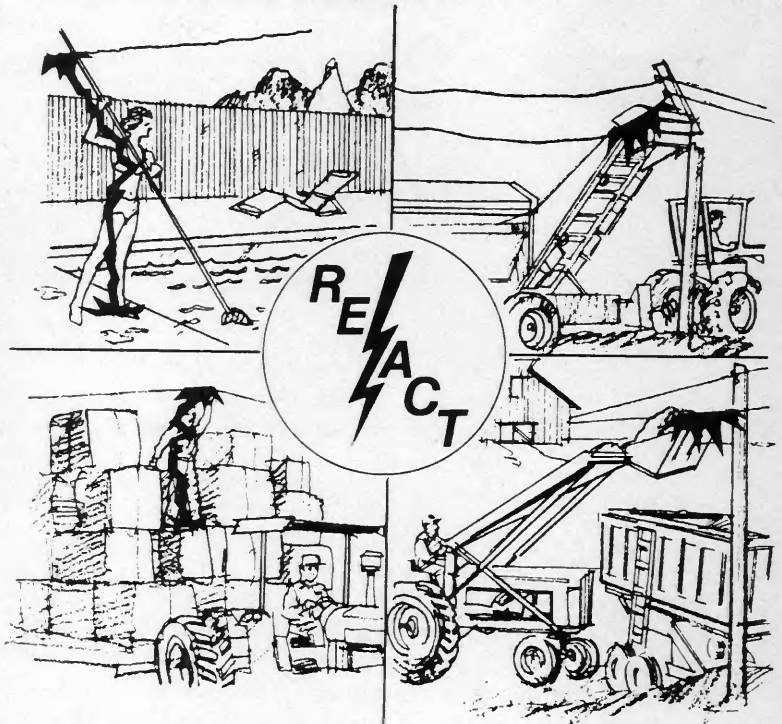
KEEP IT CLEAN

Dust and grease cause electric motors to overheat. This leads to short life, expensive repairs and other troubles. Lubricate sparingly at regular intervals. Periodically remove dust with air hose or vacuum cleaner. Use non-flammable cleaning fluid on metal parts.

RESPECT POWER LINE DANGER

Antennas are cumbersome and hard to control. They can easily fall or be blown against nearby powerlines. Before you erect or repair a radio or television antenna, where a powerline is nearby, consult your electric power supplier for advice and assistance.

You may expose yourself to overhead danger in many ways . . .



REACT AND LIVE

- Consider any overhead line dangerous. Keep objects at least 10 feet away from powerlines.
- In areas where your equipment will be operating, inspect for possible interference with overhead lines.
- Don't attempt to raise or move electric lines . . . call your power supplier.
- If powerlines are buried . . . let your electric service representative locate them before digging.
- Report any potential powerline hazard to your electric Cooperative.

IF AN ACCIDENT HAPPENS . . .

- Never touch a person or equipment in contact with a high voltage.
- Cut off power if you can.
- Use a rope or dry board to pull or push victim away from contact.
- Send for help and give artificial respiration until it comes.



Energy Conservation Now

Save in the kitchen

This is another in a series of articles designed to help you save money through the wise and careful use of electricity.

Most of your utility bills will go for comfort conditioning, and that's where you can effect your greatest savings. If you've weather-stripped your home and insulated it, you'll have taken a big step in keeping your bills down.

Water heating is next, and after that your savings will come in grudging little nibbles, but there are still many ways you can save energy around the house as you cook, wash clothes and do the dishes.

Of course, food preparation takes energy, and you can save by making sure your refrigerator and freezer are in good condition, especially the door gaskets. Close a piece of paper in the door and try to pull it out. If it slips out easily, your gaskets need replacement. You can save a little, too, by opening the doors as few times as possible, and a little more by defrosting regularly. It is wise to vacuum your refrigerator/freezer coils occasionally, making sure to unplug the appliance before poking around with the crevice cleaner. The coils are usually attached to the back of a refrigerator, or in the bottom section.

The kitchen range is another place where small savings can add up to big annual savings. Be sure to cook on elements that are about the same size as the pan, and certainly no larger. Incidentally, glass or ceramic cookware is a little more efficient than metal. Use a tight-fitting lid, unless the

recipe calls for cooking uncovered, and shut the unit off a few minutes before the food is completely cooked. Residual heat will do the rest.

Ovens take a lot of current. For that reason, you'll be wise to use your oven efficiently, and bake an entire oven full of food at a time. You can store the rest for later use, being sure to cool it to room temperature before placing it in a freezer or refrigerator. Or, if you have a small countertop oven, it is more efficient—if you can only bake one item anyway—to bake it in the smaller unit.

Probably one of the biggest mistakes people make in baking is peeking. When you open the oven door, as much as a quarter of the heat is lost, the thermostat signals for more, and the oven's heating element pulls additional current. Cook by time and



temperature! Be sure to preheat only a few minutes, and you can turn the oven off a few minutes before the cooking time is up. With a large roast, you can shut the oven off as much as 30 minutes before cooking time is up, if you can resist the temptation to peek.

These energy conservation measures won't spell the difference between wealth and poverty, but they will save you a few dollars a year, and they'll help conserve valuable natural resources, too.

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*Light
aircraft repair
is his
enjoyable work*

(Continued from page 5)

have anybody who can do recovers on the older fabric-covered planes, and I love the heck out of that kind of work. I kind of got into it as a fun hobby," he says," adding, "I really enjoy doing the very kind of work they don't want to be bothered with."

Max is expanding his operation slowly, working on the hangar or airfield, as his work load permits or requires. "At first I kept all the planes I was working on in the hangar, but there got to be too many, so I put a couple of tiedowns outside. When I get more airplanes than I have space for, I go out and put in another tiedown.

"I've got a set of plans for installing runway lights," he says, "and I hope to do that soon, and I'll have a fuel setup in the very near future, too."

Max notes that interest in aviation seems to be picking up in Brown County. "As far as I can tell, there are about 155 light plane owners in Brown County and the adjoining counties," he says, "and that number's increasing every day. There's an awful lot of interest in aviation around here, and I think my shop has helped spark it because it exposes many local people to aviation. Many of them had never really become interested before because they had never thought about it.

"There are a lot of people who get almost a fever when they get around airplanes," he says "and that seems to be what's happening here. There's even talk about a flying club, where people will be able to go in together to buy an airplane and take flight instruction."

It looks as though grass roots aviation is taking off in Brown County.

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Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Is that standby generator ready to go?

Is your standby generator ready? You have spent the money for the unit and connections, but you could still find yourself in the dark. How do you score on this check list?

1. Is the unit completely assembled? A crated unit is useless during an outage. Is the unit stored in a dry place and not under a moisture-catching canvas?

2. Are the connections and wires strong enough between the unit and your double throw switch? The usual range receptacle has a continuous rating of about 40 amperes, the output of a 12-kilowatt (kw) standby. A 25-kw standby can put out 104 amperes and will require a 100-ampere receptacle and either welder-type connections or heavy lug connectors to bolt to the unit and switch. Too many 25-kw units have burned off the connections after a few hours of steady use.

3. If your generator is located in a shed, can tractor exhaust cause a fire? If located at the yardpole, can you keep blowing snow from plugging the tractor air cleaner? A plugged filter can wreck a diesel engine.

4. Can your tractor engine and PTO system withstand extended hours of standby operations? An oversized

tractor will have a margin of safety.

5. Is your PTO shaft handy? Each power outage finds a frantic man digging in the snowbanks trying to locate a shaft which was used elsewhere and not put back into place. Perhaps the standby PTO shaft should be welded in place so it can't be lost.

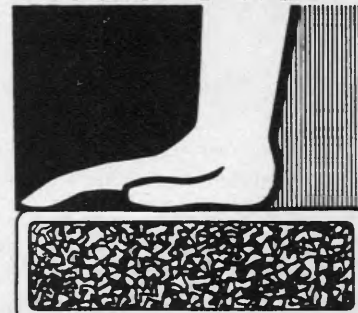
6. Will your tractor start in bad weather? Is it parked behind an electrically operated garage door?

7. Do you have plastic-covered instructions to operate the standby? Do you know how to shut off water heaters and other electrical loads before operating the unit? A 15-kw unit will operate continuously up to 15,000 watts (one horsepower is about 1,000 watts) of load. But, it can start a five-horsepower motor only if everything else is off. Do you understand the overload protection and gauges of the standby?

8. Have you used your standby within the past three months? A five-minute run in mid-afternoon doesn't test the unit or your operating skill.

A 100-percent score on this quiz will help ensure that you will have the protection you need. A lower score means you should review your standby system. Run a standby drill tonight and BE READY.

Insulate now!



HOLD FUEL COSTS DOWN

Illini Electric

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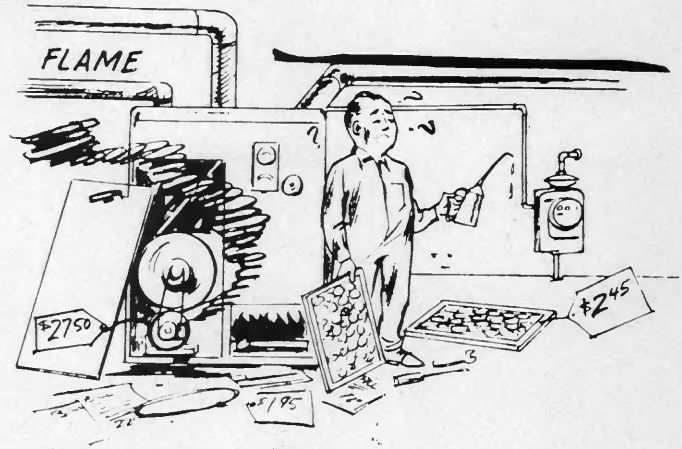
Right Humidity Level Shrinks Home Heating Bills

Homeowners can cut heating bills by as much as 20 percent by maintaining proper humidity levels during the winter months. A house heated at 72 degrees with a relative humidity of 50 percent feels as warm and comfortable as a house heated at 77 degrees with only 18 percent relative humidity. These figures come from home-comfort researchers of the West Bend Company, a major manufacturer of portable humidifiers. They point out that the average heated home without humidification of any kind has a relative humidity of 13 percent.

Relative humidity is the amount of moisture or water vapor in the air compared with the total amount of moisture the air is capable of holding at any given temperature. Warm air is capable of holding more moisture than cool air, so when cold dry air seeps into the house and is heated, its capacity for holding water increases.

If the relative humidity is low, moisture evaporates from the skin more rapidly than when the relative humidity is high. This causes you to feel colder in dry air than in moist air.

"ARE YOU READY FOR WINTER??"



A step in the right direction!

Change your home to electric heat

You've heard a lot of talk about the advantages of flameless electric home heating compared to fuel-burning systems. And now, you think you might want to convert to flameless electric heating.

From every indication, you'll be taking a step in the right direction. Let's look at the average home, its heating needs, and the process of converting to flameless electric heating.

You have a fuel-burning system, perhaps with warm air ducts to carry the heat throughout the house. Or, it might be a hot water or steam pipe system. In the basement, or a utility room, you have a large, cumbersome furnace which burns up the fuel to heat the air or water.

The hot air or water is forced through the ducts or pipes to the various rooms of the house. You're able to close or partially close a vent or radiator, here and there, in an unused area.

Occasionally, the furnace acts up and the repairman comes in. He leaves later, dirtier from rummaging around

the furnace but richer for his efforts.

House cleaning is pretty regular; a film seems to settle over everything during the heating season.

The heat is turned down during the night, but if one of the children has the sniffles, you keep it higher than usual and sweat out the extra heat in your room.

Now you're beginning to picture yourself with flameless electric heating. And it sounds almost too good to be true. Enter a man with some facts on flameless electric heating.

The basic change would be the fuel-burning furnace. It comes out completely and leaves you with a lot of extra living space. With flameless electric heating, wires hidden in the walls or ceiling of your house are all that's needed to bring heating power to the rooms, according to the Edison Electric Institute.

Attractive baseboard radiators and wall panel units, or hidden wires embedded in the ceiling, do the actual heating. It's clean and 100 percent efficient. If you prefer to make use of

your existing warm air ducts or hot water piping, you can install a compact flameless electric furnace or electric boiler. It's so small, it can be mounted inconspicuously on any wall and it eliminates all the problems of a fuel-burning furnace.

The cleanliness of the electric furnace won't impress a repairman too often, because it's unlikely that he'll be called.

Whatever flameless electric system you choose, you won't have any more grime, soot, or smoke, because no fuel is burned.

In addition, with many new flameless electric heating installations, you can have a thermostat in every room to give you precise room-by-room temperature control.

The fact that flameless electric heat is a fast-growing way of heating in the U.S. today is proof that all this talk about flameless electric heat is really true. And, if you're still in doubt, check with any one of the more than three million families who are already enjoying flameless electric heat.

Advantages!!

- No Soot
- No Combustion
- No Smoke
- No Waste
- No Dust Blown From Room to Room
- Controlled Humidity
- Decorating Lasts Longer
- No Fuel Lines
- No Chance of Explosion
- No Dangerous Fumes
- No Waste Material
- No Fuel to Store
- No Danger of Asphyxiation
- No Flues
- No Total System Failures



Old barn

For a long time, Gary and Diane Richards were bothered by the fact that they had no particular use for an old barn on their 100-acre farm near Casey in Clark County. They thought of several possible uses for the structure, but it was a while before they came up with just the right idea.

"There were several old buildings on the place that we had torn down instead of fixing, and it really bothered me to let it go too, but it was a liability, just standing there," he says.

"For a long time we thought of converting it into a house," the former junior high teacher relates, "and it would have made a great house, too, but that wouldn't have made us any money."

Years ago, he says, he had thought of turning it into a teen center, "When I was young and crazy," he laughs, but

is no longer a liability

Above: Old farm equipment lines the walls of the Richards Farm Restaurant, and placemats carry a pictorial minihistory of barns in America. Richards notes that he spent countless hours searching for the artifacts for the walls, and that old siding from four barns went into the interior walls of the restaurant. At right: Gary and Diane go over the morning's receipts.



Joint NRECA-CFC committee

(continued from page 11)

award for its work with foreign participants during visits to the cooperative. Wayne Laning, Mt. Sterling, Adams president, accepted the award on behalf of the cooperative.

Searls also was a panelist during a general session discussion, "Coping with Conservation." The Illinois NRECA Director, Raymond Rusteberg, Valmeyer, presided during the panel discussion. Robert Wagner, Burnside, District 5 CFC Director, presided during the CFC annual meeting. Wagner is a director of Western Illinois Electrical Coop., Carthage.

Stanley Greathouse, Johnsonville, past president of the Association of Illinois Electric Cooperatives and Illinois NRECA Director-elect, was named Region V Executive Committeeman. Greathouse is a director and vice president of Wayne-White Counties Electric Cooperative, Fairfield.

Three Illinois women were active. Mrs. Iona Greathouse, Johnsonville, was introduced as the Region V Chairwoman. Mrs. Adeline Rusteberg, Valmeyer, was a member of the woman's nominating committee. Mrs. Margie Mohrman, Camp Point, was reelected Region V Committeewoman on the NRECA Women's Action Committee.

The need for developing power supply capability to meet the requirements of electric cooperatives was illustrated by David A. Hamil, Administrator of the Rural Electrification Administration (REA). Hamil said a recent survey indicated that kilowatt-hour sales of electricity by electric cooperatives are rising at rates ranging from eight to 12 percent, compared to six to nine percent for commercial power companies.

While urging electric cooperatives to continue their practice of energy conservation, Hamil went on to say, "Intensified conservation efforts alone are not enough to meet our electric energy needs." He said electric cooperatives should use all possible

(continued on page 20)

OCTOBER 1977

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IR 10



Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Suffocation Hazards in Flowing Grain

By Bruce A. McKenzie, Extension Agricultural Engineer
Agricultural Engineering Department, Purdue University

SAFETY HAZARDS AND RECOMMENDATIONS

1. Don't enter a bin of flowing grain.
2. Never enter a bin when unload equipment is running, whether or not grain is flowing.
3. Don't enter a bin that has automatic unload equipment, without locking-out the control circuit.
4. Don't enter a bin that you do not know the nature of previous grain removal, especially if there is any crusting evident.
- 5: *Always* be cautious before walking on any surface crust.
6. When entering a questionable bin/storage circumstance, always have three men involved, two on the outside and one inside. The man in the bin should be lashed to a safety rope with the two men outside capable of lifting him out without entering the bin. One man outside cannot do this, and cannot go for help and maintain preliminary aid.
7. Never work in obviously dusty-moldy grain without a respirator. Never work in such conditions, no matter what the protection, without a second person on safety standby. Use a respirator capable of filtering the fine dust.
8. Be aware that your tolerance to a given material may be limited, and that you should not deliberately and knowingly expose yourself on the idea that "it won't hurt me." Later in life, you may have used up all of your tolerance.
9. Always be cautious when you are working with grain

that has gone out of condition. You can have molds, blocked flow, cavities, cave-offs, crusting—it's a time to be alert.

10. Don't depend on a second person, either on the bin roof, on the ground, or any other remote point to whom you shout instructions on equipment start or stop.
 - a. The equipment noise can block out commands or cries for action or assistance, and
 - b. The second person may fall or over-exert in the panic and haste of getting off the bin or running to the control point.

POSSIBLE CORRECTIVE MEASURES

1. Install ladders inside all bins.
2. Be aware that you can "walk a bin down" if you stay near the outside wall, and keep moving.
3. If you must enter a bin with evident danger, use a rope and safety harness to support and lift you in the event of trouble.
4. A rope with knots or a chain with stirrups, suspended down the center from the top of the bin, may be a useful safety addition to grain bins. However, you should consider how to get off the suspension and out of the bin, having had to use it, and why you ever got there in the first place! Performance and use of such safety units has not been proven, and the drag on them in flowing grain may pull the roof in.

BEFORE IT IS TOO LATE

Talk to your children, your co-workers, your neighbors, the next time you eat or work with them, about the hazards of flowing grain. **THEIR LIFE, YOUR LIFE, AND YOUR HAPPINESS MAY DEPEND ON IT!**



Saturday Mail Delivery

Saturday delivery of mail is being threatened. If the U.S. Postal Service adopts its proposed cut on Saturday delivery, rural residents will be hurt the most—especially those who have no other way of getting their newspapers.

Illini Electric Cooperative proposes that Saturday

service on rural routes be retained, letting the decision on non-rural Saturday service be made on its merits. If you think as we do that rural Saturday delivery be kept, please contact your legislative representatives and the Postal Service to let them know how you feel.

Symptoms of Poor Connections

If there is a loose or open connection in one of the hot lines between your fuse box and transformer, you will get the same reaction as when a meter pole breaker trips off or a main fuse burns out. Here are some of the symptoms:

1. Some of your lights and 120-volt appliances work normally while others don't work at all.
2. None of your 240-volt appliances work.
3. If you have any 240-volt appliances turned on, the voltage can feed back through the appliances making some of your lights dim. Turning off or unplugging the 240-volt appliances causes the lights to go out completely.

If there is a loose or open connection anywhere in the neutral line, the following symptoms become quite evident:

1. Some lights get very dim when a 120-volt motor or other appliances are turned on.
2. Some lights get extremely bright. This is a dangerous voltage as far as light bulbs and television and radio tubes are concerned. The trouble should be found and corrected as soon as possible before excessive damage occurs. For the protection of your 120-volt lights and

appliances, turn them all off until the trouble has been found and corrected.

3. All 240-volt motors and appliances operate normally without any danger of being damaged.

COOPERATIVE MONTH: OCTOBER 1977



Despite ups and downs, he

Tom Marckese has one of those hobbies that has its ups and downs. He goes up in airplanes and jumps out of them, for fun and profit, as they say. He has jumped from as high as 13,500 feet.

Marckese, who is a member of the Trackers, Inc., of Annawan, has been in the sport parachuting game since about 1970, or thereabouts. He and his wife Mary Lynne, are members of Farmers Mutual Electric Company, Geneseo.

Actually, his involvement in the sport came about as a combination of business and pleasure. He was in the Marine Corps, a member of an air and

naval liaison gunfire team; members of such teams are required to be qualified parachutists.

"I found that I liked parachuting," Marckese says with a grin, "so I joined the Camp Pendleton Sport Parachute Club. All told, I've made about 1,100 jumps since then," he says. The Marine Corps required qualified parachutists to make two water landings, and a night jump, too, but Marckese's activities are not quite so lively now, even though they certainly cannot be considered mundane.

Sport parachuting today generally centers around two activities—performing acrobatics after the

'chutist jumps and before he opens his parachute, and attempting to hit—or come very close to—a tiny target.

"The target's four inches in diameter," Marckese says, "or perhaps I should say 9.84 centimeters, since sport parachuting is an international activity. Measurements are metric because of that."

The Trackers operate out of the Harold Thompson farm at Annawan, and they occasionally perform exhibitions for shopping center promotions and such activities. "Actually, we could do more jumping just at the farm," Tom says, "but the exhibitions help pay for the airplane and publicize the club."

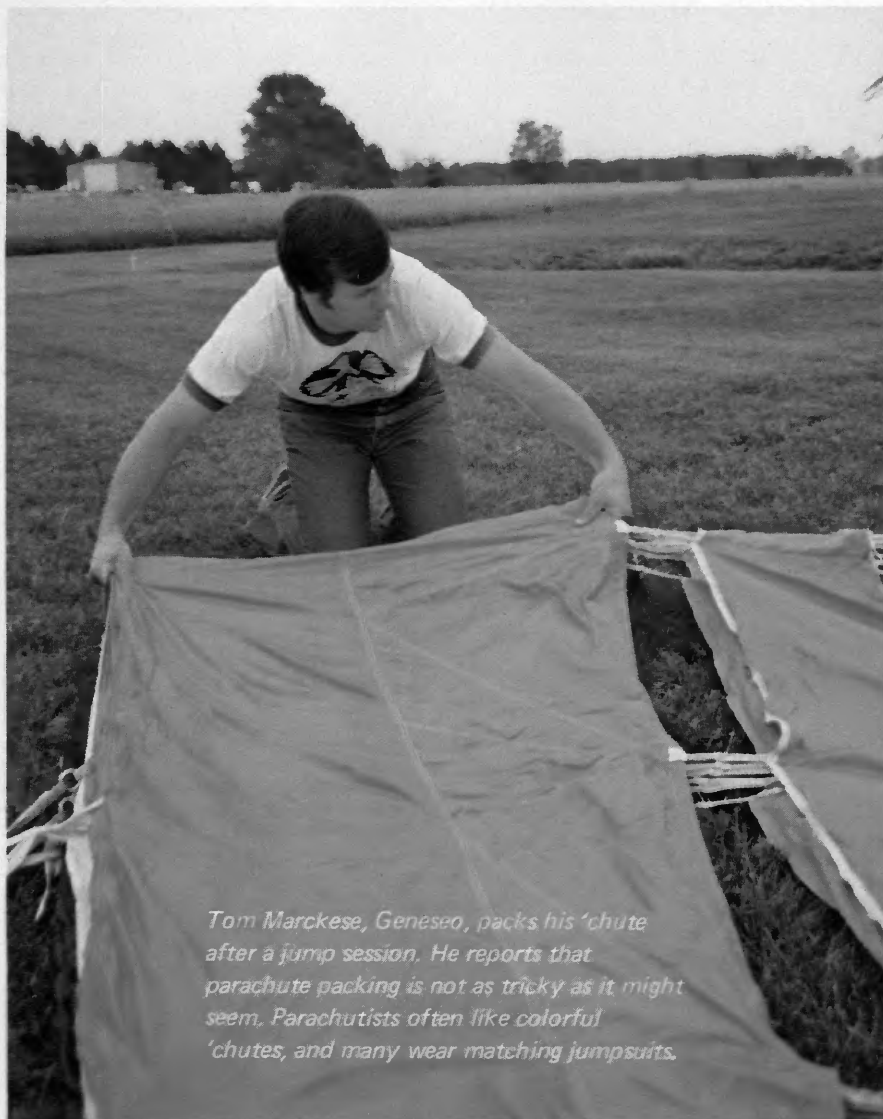
Members, he notes, can join the club by paying a \$1,000 fee and then jump all they want after paying a \$30 monthly fee. Members who choose this plan hold part ownership in the airplane. "I've been a member since September, 1972, and I've gotten my money back several times over," he says.

The club owns a Cessna 205 Skyvan.

Members with less-expensive tastes can pay \$200 a year and pay the \$30 monthly fee and jump all they want, too, he says, but they hold no ownership interest in the airplane, and have no say in how the club is run.

"We keep track of how many jumps we make," he notes, "and we write each jump down in a log book. Each book has enough spaces for 150 jumps, and I'm working on my seventh book now. Another thing we keep track of is the amount of free-fall time we build up. Free-fall is that time after you leave the aircraft and before you open your parachute, and I have almost four hours of free fall time," Marckese says.

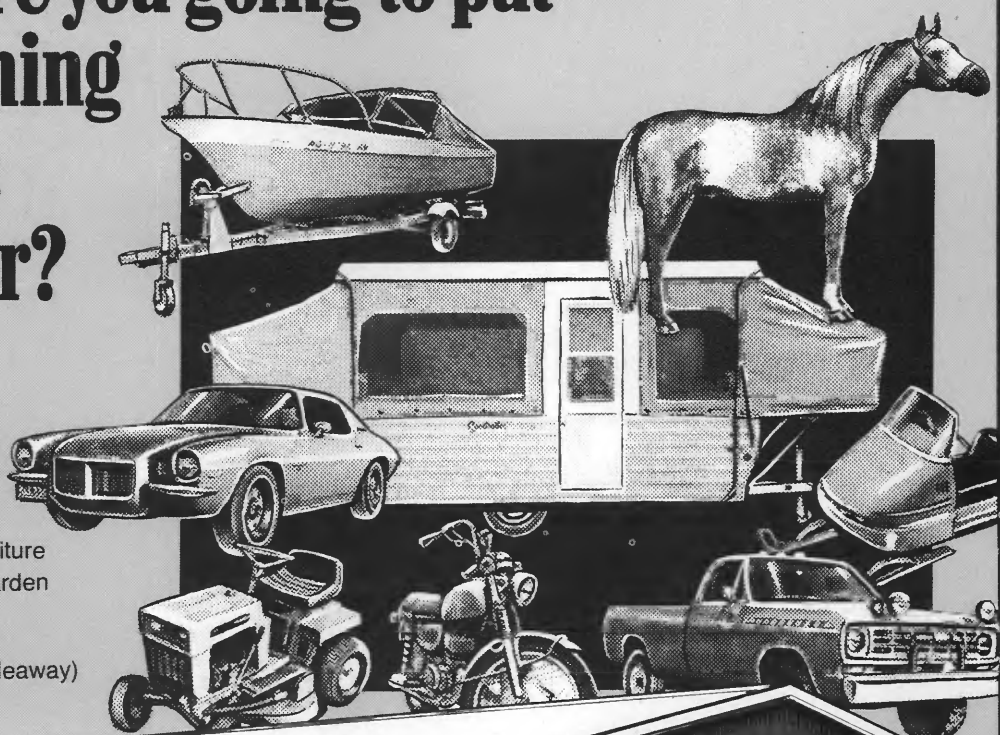
Marckese uses a square parachute as a main chute and has a round reserve chute. "This is my fifth main chute," he says, "and this one and my last one were square. I like them better because you can pack them smaller and



Tom Marckese, Geneseo, packs his 'chute after a jump session. He reports that parachute packing is not as tricky as it might seem. Parachutists often like colorful 'chutes, and many wear matching jumpsuits.

Where are you going to put everything this Winter?

- Trucks
- Cars
- Boats
- Bikes
- Campers
- Trailers
- Outdoor Furniture
- Lawn and Garden Equipment
- Snowmobiles
- (A Handy Hideaway)



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Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

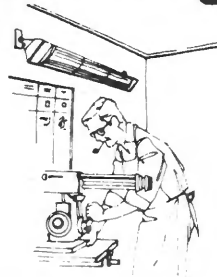
Adding a New Room? Finishing a Basement?

Expanding—or gaining space within your present walls—is easiest with the help of electric heating equipment. It fits most anywhere, needs no chimney connection and can be independent of the rest of the heating system. Also adaptable for supplementary heat in problem areas.



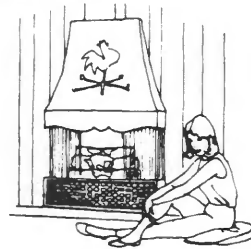
Wall Panel Electric Heaters

Dial the temperature you want—or turn heat off when you don't need it. Electric units fit into the wall or on it. Some have fan circulator. Ideal for baths, utility rooms, basements, entries.



Infrared Heaters

Resemble fluorescent light fixtures or floodlamps, cast rays that warm people and objects. Fixtures are great for drafty places like basements, garages, patio and pool. Floodlamps are ideal for baths.



Ceiling Electric Heaters

Switch on instant warmth in the bathroom with a ceiling unit that can include fan and light, as well as heat. Ideal when attic is above.

Electric Fireplace

Adds decorative charm and comfort—no dirty logs, ashes, smoke, soot, chimney. Mounts on wall—gives fan-forced heat, burning log effect.

Hunters and Highlines

This is the time of the year—hunting season—when insulators become the casualty of many a hunter's careless or malicious aim.

Insulators aren't shot by true sportsmen; insulators are shot by people who are totally unconcerned about the lives and properties of others.

There is no "open season" on insulators; however, the number shot increases about this time of year. There isn't much sport in shooting insulators. They don't fly away, bound off into the brush or hide in a tree. And they don't taste good, regardless of how they are cooked.

Now that hunting season is here, it's time to take a hard look at what

careless or malicious shooting of insulators could result in:

Result Number 1—Electrocution. Energized lines are fastened to insulators. If an insulator is shattered, the line could drop within four or five feet of the ground. Any person crossing the area, whether another hunter or an exploring child, is in danger of walking into a live wire.

Result Number 2—Outages. If his marksmanship is bad (and it certainly must be, or why else would he be practicing on such "slow moving" targets) the insulator will only be cracked. Later the crack will fill with moisture and short out the electric line, inconveniencing many people.

A cracked insulator can't be seen from the ground, so your REC servicemen must drive the line, climb the pole and check for breaks in the insulator. A family without heat or lights during severe weather has little respect for careless hunters.

Shooting insulators is illegal and expensive. It's your money that pays the damages when an insulator is shot; destroyed insulators are part of the cost of doing business and the cost comes out of your pockets. Be alert to hunters who carelessly or maliciously shoot insulators and report them to your county sheriff and to this office immediately.

Weatherize to Conserve Energy... And Save \$\$\$ Heating & Cooling

With the memory of last winter's extremely low temperatures and cold, blowing winds still fresh in our minds, now is a good time to think about trying to reduce our heating costs for the future. With fuel costs continuing to increase, proper home weatherization is an investment that will pay for itself many times over during the life of a home.

Why Insulate at All?

Insulation controls the flow of heat. It keeps heat **INSIDE** your home in winter and **OUTSIDE** your home in summer. This helps to reduce your heating bills in winter and your cooling bills in summer. It saves you money year-round and it helps conserve our nation's dwindling energy reserves.

But, insulation is more than good economics. It also increases the comfort of your home. Uninsulated walls, ceilings and floors are cold. They actually draw heat away from your body. Proper insulation will increase the relative humidity and reduce heat loss from your body resulting in a more comfortable feeling, even with the thermostat at a lower setting.

How Insulation Works

Insulation is any material that provides a high resistance to the flow

of heat from one area to another. Most commonly used in homes are the fibrous insulations (mineral wool, glass wool, or cellulose fiber), which are light and very porous. Containing millions of tiny air pockets, they are highly effective in slowing heat flow. Loose-fill insulation is often used for blowing or pouring over the ceiling and batts are used in the walls and under the floors.

Where the Heat Goes

In a completely uninsulated frame house, the following table gives the typical heat loss through various portions of the building. The table assumes that 15 percent of the outside wall area is made up of windows and doors, and that the infiltration rate is one air-change each hour. (Infiltration is unavoidable air leakage in a normal house, coming through cracks in walls, from around doors and windows, and through open doors and windows.)

	Heat Loss
Ceiling Area	45%
Floor Area	20%
Windows and Doors	12%
Outside Walls	12%
Infiltration	11%
Total	100%

Although these percentages will vary with the amount of window area, floor plan, number of people in the family, age of the home, and other factors, they are average for the typical uninsulated 1,500 square foot house.

Other Ways to Weatherize

While proper insulation results in the most energy savings per dollar invested, consumers can achieve additional savings throughout their homes. Installation of storm doors and windows and caulking around doors and windows will plug up costly "heat leaks." Installation of attic vents or a thermostatically-controlled attic fan will remove high-temperature air from above the living space and reduce the load on your air conditioner. For other ideas on home weatherization or help planning your weatherization program, contact your cooperative member service department.

Remember, now is the time to insulate before the cold winter winds have begun to blow again. The insulation that could have conserved energy and saved you money on the summer's cooling bill can still save you money heating your home this winter. Weatherization will pay you dividends all year long.

CONSTRUCTION	HEAT LOSS IN B.T.U. PER SQ. FT. PER HOUR							
	10	20	30	40	50	60	70	80
SINGLE GLASS	[Bar extending to 80]							
DOUBLE GLASS	[Bar extending to 10]							
8" CEMENT BLOCK	[Bar extending to 30]							
8" BLOCK, INSULATED 2"	[Bar extending to 10]							
4" FRAME WALL, NO INS.	[Bar extending to 30]							
4" FRAME WALL, 3½" INS.	[Bar extending to 10]							
CEILING, NO INS.	[Bar extending to 45]							
CEILING, 6" INS.	[Bar extending to 10]							
WOOD FLOOR, NO INS.	[Bar extending to 20]							
WOOD FLOOR, 2" INS.	[Bar extending to 10]							

This bar graph shows transfer of heat through common types of material. Next to glass, the big losers are concrete and uninsulated frame construction. Adequate insulation and double glass lower heat loss from 17 per cent to 70 per cent depending upon materials and location.



'Born farmers' build family grain business

"We got to talking about putting up some grain storage here, and it seemed to be a little short in this vicinity, so we put up more than we needed ourselves," said Mark Marquis, explaining how his family started in the grain storage, trucking and buying business.

The company, which is located just south of Buda on Illinois Valley Electric Cooperative lines, is owned by Donald and Darrell Marquis. Mark is Darrell's son.

"We're set up to store about half a million bushels," Mark says, "but we'll buy and sell about a million and a half bushels this year, the way it looks now.

"We were doing our own drying," he continues, "and using a portable dryer that we had to move around. We used about four different locations and each move took most of a day, so we decided to build a centrally located setup. It's really handy here. We used to have grain wagons going all over the roads like crazy, and now it's not bad.

"Here we have a good location, a good road, and high ground, so we set up our storage and drying facilities. Of course, we set up a larger grain drying operation than we needed for just our crops, too."

Mark, who is 21, thinks of time in terms of crops. "Let's see," he muses,



Top photo: M. M. "Bud" Jontz, left, manager of the Illinois Valley Electric Cooperative, visits with Darrell Marquis in front of one of the huge grain bins that make up part of the Marquis Brothers' grain operation. Above: Wilbur Nordstrom, a director at Illinois Valley, talks with Mark Marquis. Nordstrom is employed as a truck driver and mechanic, and Mark is the son of one of the owners.

"this is our third crop since I got out of high school. We've had two good ones and this year's a break-even year. It's a good crop year, but prices are bad and it's a bad year for foreign matter, too." He is a graduate of Western High School in Buda.

The Marquis operation is designed to dry 1,500 bushels an hour at ten-points removal, and their three

trucks can take a good-sized crop to the river for shipment. They have two bobtails and a semi, and when they put all three on the road, they can haul 1,665 bushels at a time.

Trucking grain to the terminal is an important part of the business, and it requires a well-maintained set of trucks. That's where Wilbur Nordstrom fits in. Nordstrom, an Illinois Valley director, is employed by the Marquis Brothers as a truck driver and mechanic.

The family has been farming in the area for a long time.

"We were born farmers," Darrell laughs, "our mother was born more than 85 years ago in the house Donald's living in now, and we don't know how long her folks lived here before she was born, so the family's been here quite a while, all right."

They farm 1,500 acres, two-thirds of which was in corn this year. The rest was in soybeans.

Denny Thromburg is the bookkeeper for the operation, and has been working full time since June. A former junior high school math teacher, the sandy-haired Thromburg takes care of the truck scales, does the moisture testing, checks for foreign matter in grains, keeps in radio contact with the trucks, and handles the office side of the operation.



touch nearly everyone's life

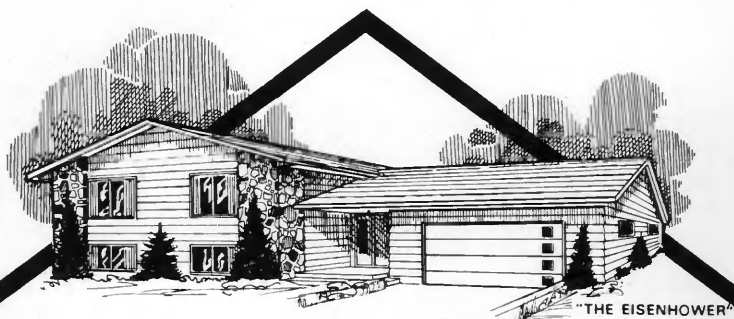
threatened our plant in Savanna. We made a hasty decision to move our valve and thermostat line to Hanover, even though the building was far from being ready, and we moved in the last week in April with two supervisors and six employees."

The plant is but one of several Controls Division plants across northern Illinois. "We have two plants in Havana," Kubicki says, "and a fabrication plant in Rochelle. There's also a molding plant in Batavia, where they make the molded plastic parts. We don't do any actual fabrication here. We receive parts from other plants by truck, assemble them and ship them out.

The products made by the division are used in virtually every kind of motor vehicle, and in appliances manufactured by several companies. We sell to Maytag, Speed Queen, Hobart, D and M, White Consolidated and Whirlpool."

"All the automotive companies buy our products, too," he remarks, adding, "Our products are original equipment in cars produced by Ford, General Motors, Chrysler and American Motors, and we supply parts for their aftermarket sales too, for replacement parts and so on."

In a small way, workers in several small Illinois towns affect the lives of others all over America.



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Illini Electric News

ILLINI ELECTRIC COOPERATIVE 217-352-5241 CHAMPAIGN, ILLINOIS

Another Wholesale Power Rate Increase To Your Cooperative -- January 1, 1978

In June of this year, we received notice from our power supplier, Central Illinois Public Service Company (CIPS), of their intention to again increase the wholesale rates the cooperative pays for power and energy.

Later we received CIPS Co.'s proposal for a 23.3 percent increase, effective on January 1, 1978. At that point a negotiating committee was selected from the 17 Illinois electric cooperatives that purchase all or part of their electricity from CIPS. Negotiations were started immediately and agreement was finally reached on October 12.

The final agreement stipulates a 13.5 percent increase, effective January 1, 1978, subject to approval by the Federal Energy Regulatory Commission.

Every available avenue of resistance to this increase was explored and employed by our negotiating team. Many hard bargaining meetings were held. A detailed cost of service study of CIPS operations and their cost of providing us this service was completed. In summary, a 13.5 percent increase is a sizable increase, but it is easier for us to swallow than the 23.3 percent increase originally proposed by CIPS.

The 13.5 percent increase in wholesale power costs, in all probability, will not encompass our total increase in cost of wholesale power. In addition to the basic increase in costs, a variable cost that is directly proportional to what it costs CIPS for primary fuel to generate your electricity is added to our bill. Since CIPS generates most of its electricity from coal, our wholesale power costs in part are dependent on the price they pay for coal.

In regard to coal, we are all aware that the price of coal has been escalating due to many safety, environmental, ecological and government regulations. Another aspect in the cost of coal for this coming year will be negotiations with the United Mine Workers for a new labor contract. In fact, estimates at this time indicate that coal costs are likely to go up another two to three dollars per ton next year.

All in all, we really can't be specific on what our increase in wholesale power costs will be, other than we know definitely that it will be at least 13.5 percent. If our costs for wholesale power follow previous trends due to increased fuel costs, we could very well experience an increase of as much as 20 percent. It is this "unknown"

that makes it imperative that we utilize a Wholesale Power Cost Adjustment in figuring your assessments.

You are, no doubt, wondering what increase to expect in your electric bill this coming year. At this time we cannot answer that, other than to say we are studying our rates to see what increase is necessary to keep the cooperative enterprise solvent and provide you with continuous high quality service.

We want to assure all members that assessments will be kept as low as possible. However, they must be adequate to meet the physical and financial needs of your electric cooperative. Your assessments are competitive with other electrical suppliers operating in Illinois. We are confident that they will continue to be competitive. We will keep you informed on any anticipated change in your assessments.

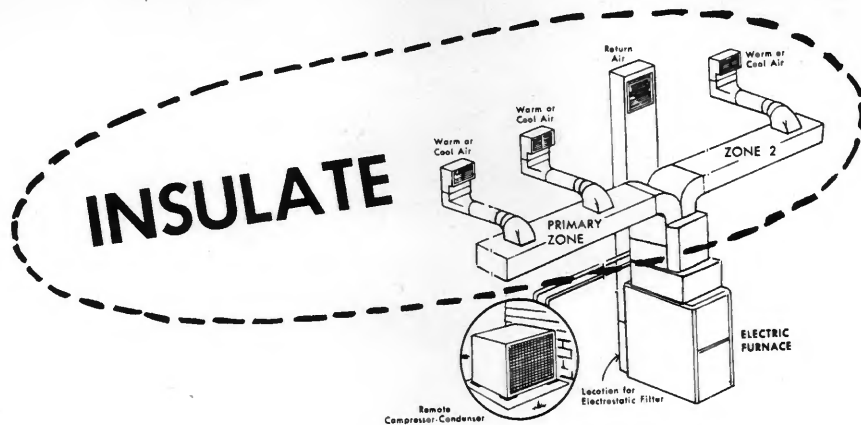
40th Annual Meeting

Place: Ramada Inn Convention Center
1505 S. Neil
Champaign, Illinois

Date: Thursday,
February 16, 1978

Time: Registration—11:00 A.M.
Luncheon served at 12:00 Noon
Meeting starts—1:00 P.M.
Officers' Reports
Speaker—Dayle Deal, Field Supervisor
Illinois Farmers Union

Attendance prizes will be drawn



INSULATE

...including air ducts.

One of the first questions that should be asked of any member who has a ducted electric heating system and is inquiring about a higher than expected bill is: *Are the hot and cold air ducts in your home insulated?*

There now is wide acceptance of electric furnaces and heat pumps which utilize duct systems the same as oil, gas and coal furnaces. However, we have frequently found insufficient follow-through for proper insulation of the ducts. Over the years, masters of the old school of installing heating ducts have little concern to wrapping ducts with insulation. This idea has been carried over into many electric heat installations and we are sure it causes several problems and higher

bills.

We urge that installers insulate all ducts in crawl spaces, unheated basements and other exposed areas with at least two inches of insulating materials designed for such a purpose. When ducts are in the attic they should be insulated to at least the same depth as is installed over the entire attic. Also, it is important to protect the cold air return ducts as well as the hot air ducts.

When a basement is heated fulltime, there are some who believe insulation of the ducts is not important. This has merit if the exposed areas of the basement have insulation equal to that in the upper living areas. If this is the case, the planned cost of heating must

be based on the total area of the home rather than the upper living area only.

But, there are instances where insulating should be done even though the basement is heated. An electric furnace is designed with a lower bonnet temperature than other furnaces, so it is possible to experience enough heat loss in a long duct that a room at the far end will be uncomfortable. Adding duct insulation often solves this problem.

In this day of energy shortages and much higher fuel costs, insulation properly installed will save and save. This is true for other fuels as well as for electricity. If you have questions about duct insulation, give the member services department a call.

Sub-zero mornings leave you cold?

Start fast . . . electrically

Some people cuss a lot on a cold winter morning. Some people bum a ride from a friendly neighbor.

Some just ignore the futile attempts to get a cold motor started and stay inside where it's warm. (This is frowned on by some employers, or wives who need something from downtown.)

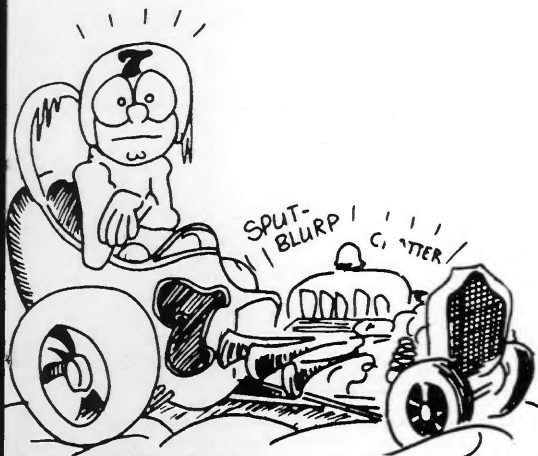
An easy way to overcome headaches and long walks that might result from an engine that won't start is to install

an electric heater.

The small, easy-to-install units are handy to have on a tractor or truck as well.

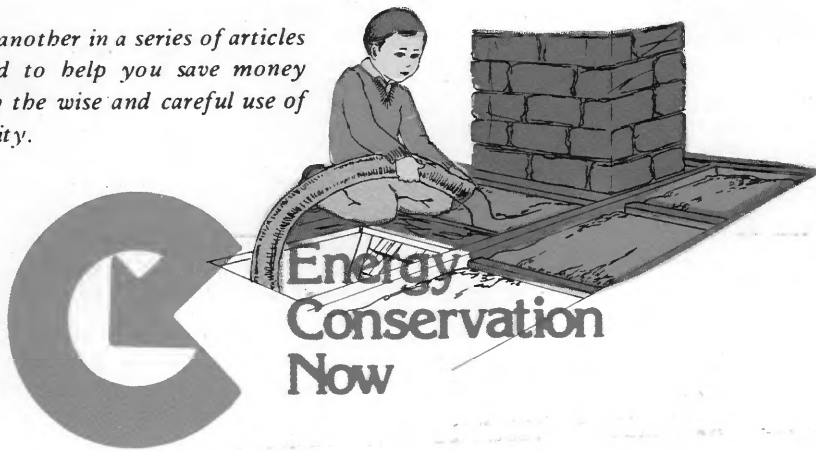
There are many kinds of units available and the first below-zero morning that you can hop in your vehicle, turn the switch and take right off with more than pay the cost of calm tempers.

Check into them today...for an easier winter.



Installing blown-in attic insulation

This is another in a series of articles designed to help you save money through the wise and careful use of electricity.



While batts, blankets and pour-in insulation offer their strong points, one of the main advantages they have is that they seem to be reasonably easy to install. One person, with a little preparation, can climb into an attic and do the necessary work.

Blown-in—or pneumatic—insulation is not like that. First of all, you need a formidable-looking machine; then you need someone to pour insulation into it while you're crawling around in the attic hosing the insulation into place.

But blowing insulation into your attic is not a complicated chore. You need some of the same things you'd need to do the job with the other kinds of insulation: a dust mask, goggles and temporary lighting. You'll need some temporary flooring too, since ceilings are not designed to hold your weight.

When you are deciding what kind of insulation you want, you will need to take into consideration what is available. With insulation in short supply, your choices may be limited.

If you decide to use pneumatic insulation, you can get the mineral-wood or cellulose variety. Mineral wool offers the advantage that it is noncombustible. Cellulose is recycled paper which has been treated to make it fire-resistant and rodent-proof.

Cellulose varies in quality, and today's high demand and even higher prices have given rise to many manufacturers, some of which may cut corners; careful treatment is of utmost importance. Buy from a reputable dealer and look for the insulation industry's label of approval or the Underwriters' Laboratories seal.

Poorly treated material may pose a fire hazard.

Before you can determine how much insulation to buy, you will need to know what R factor you need, and how thick your insulation will need to be to achieve that factor (the R factor is the resistance to thermal passage the insulation give you, and varies from material to material).

Then, you need to know how many square feet of space you need to cover. Federal regulations require that each bag of pneumatic insulation be marked to show how great an area it will cover to various depths, and what R value each depth gives. Your supplier can tell you how many bags you will need to achieve the results you want. Many Illinoisans are insulating their attics to R-38, but if you add any insulation at all you will reduce your heating and cooling bills.

The machine is really fairly simple, and may be supplied by the people who sell insulation, a rental business. There is a big hopper you pour the insulation into, and a mixer that fluffs it up, since it is compressed into a bag when you buy it. Then, there is a

blower, which shoves the material down a hose to the operator and the place he wants to place the insulation. The blower features some kind of regulator so you can adjust the flow, and compensate for longer hoses. Normally, the insulation should come from the hose about like toothpaste from a tube, but if you need to spray it into eaves where you cannot reach, you can increase the flow. Too fast a flow, however, will make for a dusty environment.

To make sure you are getting the depth you need, you may want to divide your attic into sections and find out how many bags you will need for each section, then do one section at a time and see if you are using the right amount.

For example, one cellulose supplier packs insulation in 30-lb. bags. Each bag will cover 16 square feet to a depth of 10 inches, and will give an R-value of 37.5. If your house is 1,000 square feet, you will need 63 bags. Dividing your house into five equal sections will mean that you will need to put about 12½ bags in each section.

You should be sure, before you leave your supplier's place of business, that you know how to work the machine. Many have instructions printed on them, but you can check with the salespeople to be absolutely certain that you know what to do. If you rent the machine, they owe it to you to see that you get the job done right, and if they lend you the machine when you purchase your insulation, there must be a service fee built into the price of the insulation, so ask for the service. It will make for a better job and lower energy bills in the future.

To: **A.I.E.C. Member Services Department**
P.O. Box 3787
Springfield, Illinois 62708

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