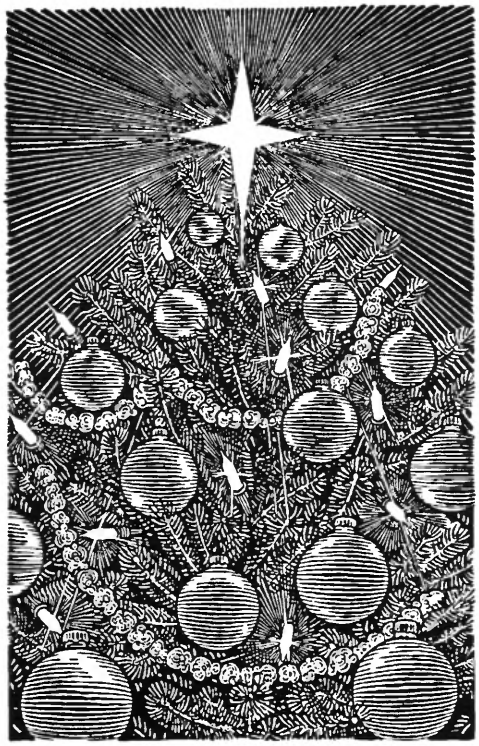

The light fantastic.

It just wouldn't be Christmas without them. Like sugar cookies, rolls of wrapping paper and familiar carols, those strands of colorful lights help make up that mixture that is Christmas. The main ingredients, though, remain faith and hope for mankind. The yuletide celebrates this optimism, renewing our dedication to the principles and goals that brighten our lives and the lives of our neighbors. And, your electric cooperative sends to you our deepest wishes for a peaceful and joyous holiday season.

Electric Cooperatives of Illinois

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customers in Clay and Jasper counties and the city of Louisville will become a bulk customer, serving about 650 customers. Another 20 miles of pipe will extend water to about 140 customers in Lake Jasper.

"By reaching out and helping others, we help ourselves. This is really what spirit of community is all about," said Mundt. "If we have learned anything in the last several years, it is that it is difficult, if not impossible for individuals alone or for government alone to create answers to problems.

"But when these two forces join together with the eager community Ruritan Club, with DCDC (Dieterich Community Development Corporation), with Norris Electric, with AIEC (Association of Illinois Electric Cooperatives) with our banks, with businesses, with our churches, almost nothing is impossible. This is the spirit of community."

That spirit was evident by the inclusion of several students from Dieterich, Newton and North Clay high schools, who led participants in the Pledge of Allegiance and introduced speakers. The Joint Chorus, including students from Dieterich, Jasper County and North Clay, sang the Star Spangled Banner.

Jerry Townsend, program director of community and business programs for the U.S. Department of Agriculture's rural development division also applauded the community's effort. "You saw the need for water, the importance of rural water, and you're doing something about it."

John Romano, deputy administrator of the USDA's Rural Utility Service told the crowd, "What we're more about than just laying pipe and building pumps and treatment plants, is about public health, number one, and especially the health of youth, infants and senior citizens."

Romano said the water project also is about creating economic opportunity. "When I see all the bright young faces here, I know that what we do, what our rural development partners do, and what we do in partnership with groups like EJ Water is all about creating opportunities," he said. "We've seen too many of those bright minds and bright faces leave."

Hartke, who attended the first two informational meetings held in 1989 when EJ Water was just a gleam in Mundt's eye. "Delbert has a problem. The only thing that Delbert doesn't understand is the word no."

"It's great to see that EJ has expanded beyond Effingham-Jasper, now into Clay and Shelby and Cumberland counties, and many more communities are going to be put on line in the future," said Hartke. "It is that spirit of cooperation that brings us all here today."

Student speaker Jake Wendling, an honor student and athlete at DHS, noted that the sure supply of clean water to rural residents would take the risk out of wells that may contain dangerous bacteria. He also noted the benefits for economic development: "The distribution of rural water has created many jobs for local people. EJ Water has given people the security of improved fire protection and will boost the property value of homes that are connected. EJ Water has solved many problems for its rural customers and is a blessing not only for us, but for many generations to come."

Many area residents, including several who have waited decades celebrated EJ Water's expansion and attendees were given a bottle of sparkling EJ Water.

This is important in reporting outages

Office Hours: 8 a.m. to 4:30 p.m. Monday through Friday. Closed Saturdays, Sundays and holidays. **Phone:** (618)783-8765.

Report all outages at once. Check your own breakers or fuses first. If you cannot locate the trouble in your own wiring, call our office first—(618)783-8765. If no answer, dial 783-3221.

Please remember—when reporting an outage, have your line and account number ready. You will find it in the lower left-hand corner of your meter reading card.

Norris Electric News

Newton, Illinois 62448 • 783-8765

Persistence pays off

More loans and grants allow EJ Water to extend service to more rural customers

State Rep. Chuck Hartke and U.S. Rep. Glen Poshard flank EJ Water president Delbert Mundt as they stand behind a $1.5 million check that will help extend water to more rural customers. Also attending were Vicky Middleton, standing next to Poshard, and, in back, John Romano, Bob Clark and Tom Beyers, all of the U.S. Department of Agriculture.

Community involvement was evident Friday, Oct. 25, as EJ Water Corp. in Dieterich celebrated the beginning of another phase that will extend water to still more households in Clay and Jasper Counties.

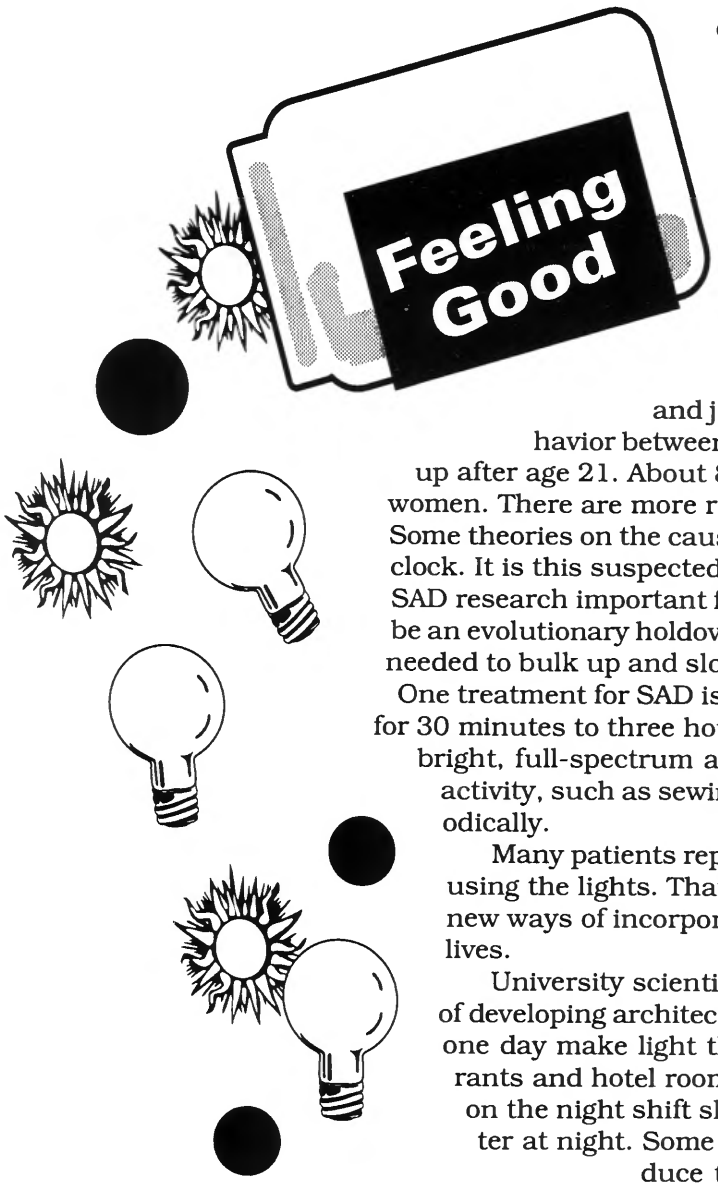
U.S. Rep. Glenn Poshard of Marion brought an additional $750,000 in grants and $750,000 in loans to extend water to 166 customers in the two counties. State Reps. Charles A. "Chuck" Hartke of Teutopolis and R. Duane Noland of Blue Mound, and state Sen. Bill O'Daniel of Mount Vernon were on hand to congratulate the community's efforts, as were John Romano and Jerry Townsend of the U.S. Department of Agriculture, and Barbara Booth of the state Department of Commerce and Community Affairs.

Poshard said working with area residents and EJ Water's president, Delbert Mundt, taught the congressman how to work with the government. Instead of asking it to fix a problem, he said, "the folks here said 'We have a problem. Now, how do we fix it?' . . . That's the basic premise from which EJ started and from which they're operating now. It wasn't 'Come and fix it;' it was 'We'll find a way,' " he said.

"So anyway Delbert, the upshot is, because of the persistence of EJ Water and because you're so stubborn and hard headed, we have brought along today that extra $1.5 million that you said you were going to be hitting us up for," Poshard added.

EJ Water Corporation has been called one of the most successful in Illinois, and perhaps the nation. From 1991 to 1995, EJ Water received $4,666,700 in rural development loans and $3,105,300 in grants to build water-supply wells, a treatment plant, and a storage-and-distribution system to serve Watson, Mason and Edgewood. In 1996, the government backed EJ Water with loan guarantees of $1.1 million for a water transmission main to Louisville to serve 195 users, and the village of Louisville used federal funds to access the system. The government provided $806,000 in a direct loan and a $327,800 guarantee for Shumway and the surrounding area, adding 230 users. A $157,600 loan guarantee financed service to 100 users in the Hidalgo and Yale areas, and a $489,000 guarantee will help extend service to 140 customers in Lake Jasper.

Mundt, who also serves as president of Norris Electric Cooperative and as chairman of the board of directors of the Association of Illinois Electric Cooperatives, said that of 3,400 members and owners of the water cooperative, 1,200 now are receiving water. Soon, 64 miles of pipe will extend water to more than 200



Light cures the winter blues

When all the reds, yellows and oranges of fall come upon us, about 10 percent of the population get the blues. The moodiness and depression that set in with the first signs of winter now have a name seasonal affective disorder, or SAD. And one of the ways people are fighting this malady is by sitting in front of bright light.

SAD research, which has been going on for about a decade, indicates that millions of people may suffer from severe depression, crying spells, feelings of guilt and helplessness, cravings for sweets and junk food, listlessness, and even suicidal behavior between September and March. SAD usually shows up after age 21. About 85 percent of the documented cases involve women. There are more recorded cases in the North than the South. Some theories on the cause of SAD suggest a problem with the body's clock. It is this suspected relation to the body clock that could make SAD research important for everyone, even non-sufferers. SAD could be an evolutionary holdover from prehistoric days when cave dwellers needed to bulk up and slow down in order to survive winter.

One treatment for SAD is light therapy. Patients are instructed to sit for 30 minutes to three hours every morning and evening in front of a bright, full-spectrum artificial light. They engage in some kind of activity, such as sewing or reading, and glance into the light periodically.

Many patients report a vast improvement in their moods after using the lights. That is prompting researchers to come up with new ways of incorporating the energizing power of light into our lives.

University scientists and private industry are in the process of developing architectural lighting and portable lamps that could one day make light therapy available in homes, offices, restaurants and hotel rooms. Some claim that therapy helps workers on the night shift sleep better during the day and perform better at night. Some who travel have used the lights to help reduce the sleepiness induced by jet lag. There is growing evidence that exposure to certain intensities of light at specific times of day and for particular durations can cure some kinds of insomnia and improve health.

Dr. Wayne London, a psychiatrist who researches the effects of artificial living conditions, contends there is evidence of a relationship between light and some cancers, premenstrual syndrome and sick days for school children. He cites circumstantial evidence that light may even affect Alzheimer's disease, alcoholism, multiple sclerosis and possibly even fertility.

One new light therapy light looks like an ordinary lamp but can be programmed by a microprocessor to reproduce the intensity of a midsummer Hawaiian sunrise. That, researchers say, could provide a refreshing awakening for an apartment dweller in Manhattan in February. There are also glasses and hats designed to provide the necessary light to the eyes.

It's *never* open season on power lines!

In their enthusiasm for the hunting season, some hunters cause life-threatening situations by shooting at insulators or power lines. Target practice on insulators or birds sitting on power lines is not sporting and may be fatal. Damaged lines can fall to the ground — a hazard to the hunter and anyone else nearby. Cracked insulators can leave members without service, interrupting emergency communications.

Shooting insulators and other electric equipment is illegal and expensive. It adds to the electric cooperative's operating costs, in which all members share — even the hunter.

Please hunt safely and enjoy the season.

Electric Cooperatives of Illinois

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Use caution with space heaters

Many people will use portable heaters this fall and winter for supplemental heat. These heaters can help make a "chilly" room more comfortable. However, they must be installed and used properly.

In 1987, supplemental heating appliances were associated with more than 105,000 residential fires that killed about 630 people. Each year thousands of contact burn injuries occur, and some 100 deaths result from carbon monoxide poisoning.

The U. S. Consumer Product Safety Commission offers these suggestions for using portable heaters safely:

• Keep children and pets away from heaters.

• Never use a space heater overnight in the room where someone is sleeping. A heater should never be left unattended.

• Maintain proper ventilation when necessary.

• Place heaters at least three feet away from combustible objects such as bedding, furniture and draperies.

• Always follow the manufacturer's instructions for installing, operating and maintaining the heater.

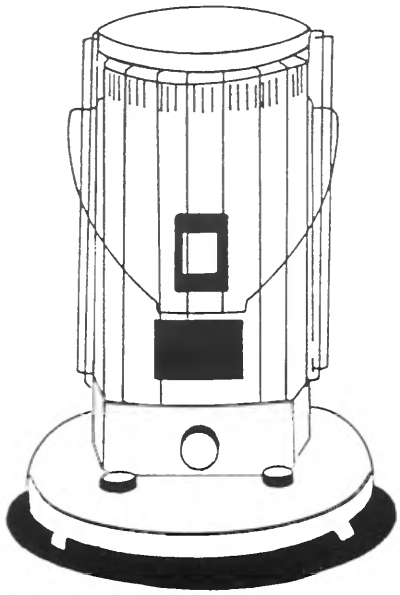
• Keep a properly functioning smoke detector on each level and close to sleeping areas.

Electric heaters.

Portable electric heaters were associated with 2,800 fires and 80 deaths in 1987. These heaters should not be used as a substitute for central heating. They are designed for temporary heating of a limited space only.

Avoid the use of an extension cord with an electric heater if at all possible. If an extension cord must be used, make sure the wattage is at least the same or greater than that of the heater. A higher wattage for the extension cord is preferable.

Electric heaters should never be used near water because of the risk of shock or electrocution.



Is your home wiring safe?

Electricity has become such a part of our lives that people take it for granted.

This can be costly and dangerous thinking.

The wiring in your home requires maintenance and regular inspection. Wiring wears out just like anything else.

Each time any new electrical load is added to your home, you should review the part of your electrical system that will handle the new load.

If your home's electric wiring hasn't been professionally inspected within the past several years, contact a qualified electrician.

Indoor checklist

• Check electrical cords for frays and nicks.

• Make sure plugs and prongs aren't loose or worn.

• Don't place cords where they could be tripped over or receive excessive wear (like under rugs).

• Never use an electric tool or appliance if your hands or feet are wet or if you're standing in water or on damp ground.

• Know the location of your fuse box or circuit breaker panel.

• Equip your home with an approved fire extinguisher for electrical fires and check it periodically.

• Never attempt to do home wiring improvements yourself.

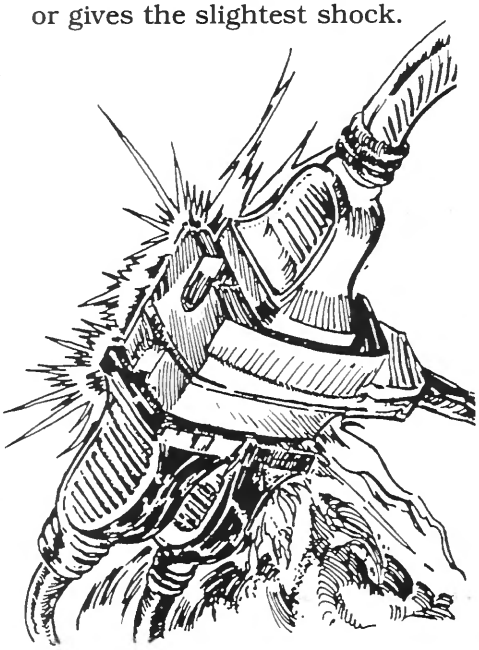
• Insert specially designed plastic caps in low wall outlets when not in use to protect small children.

• Teach your children these safety rules of in-home electrical safety.

• Look for the Underwriter's Laboratory label on every appliance you buy.

• Don't risk overloading wall outlets with adapters.

• Turn off and repair any appliances that sputters, stalls, or gives the slightest shock.



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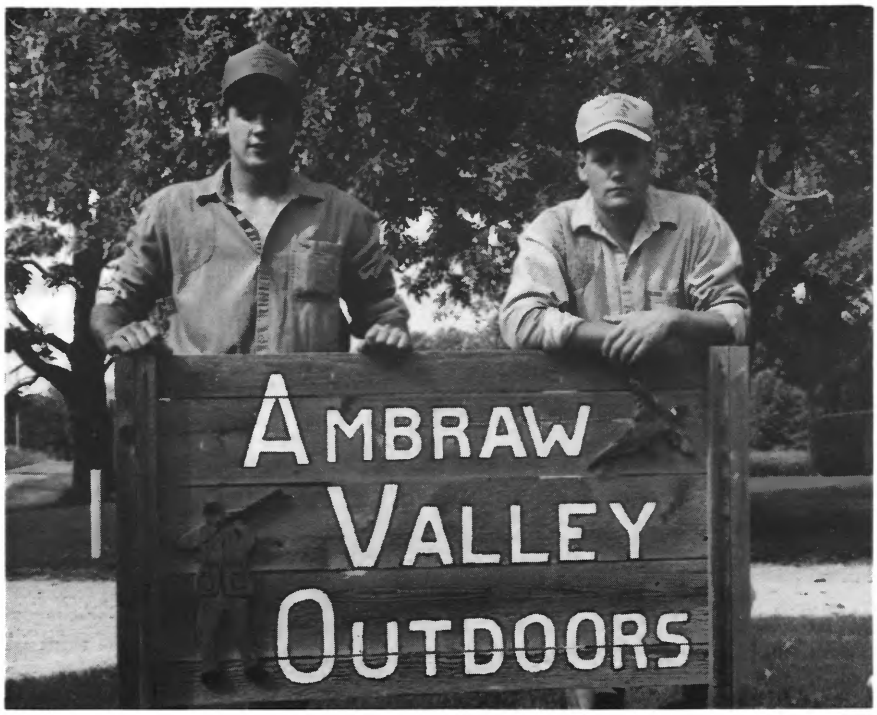


In the photo above, Wade Eaton looks on as one of the dogs at Ambraw Valley Outdoors goes on point. At right, Wade , left, and Doug Hartke at the sign they've posted at the entrance to their shooting preserve, which is located north and west of Newton.

Ambraw Valley Outdoors

Doug Hartke and Wade Eaton have come up with a way for hunters to extend their hunting season by four months: They've opened Ambraw Valley Outdoors, a hunting preserve just north and west of Newton. And their operation has one facet that many do not. They offer guided fishing at Newton Lake and at East Fork Lake.

"We have two of the best bass lakes anywhere within just a few miles of us," Doug says, "and this is one of the few places anywhere where you can have a good hunt in the morning and a guided fishing trip in the afternoon."

The two decided to get into the business because of a shared interest in hunting, fishing, bird raising and training good dogs. Doug notes that he still raises, trains and sells dogs, while Wade raises a lot of the birds on his family's farm, which used to be a turkey operation. They've had their preserve going for four years now.

"We have half a dozen courses," Wade says, "on some 400-plus acres. We have 'the draw', 'the jungle', the Ellis', the Gaines', and 'the west', and we can run quite a few people through the operation. We try to keep everything well organized, so the hunts run smoothly."

Doug adds that the course has a lot of food and cover for the quail, chukar and pheasant they use. "We have sorghum, grain sorghum, corn and Russian olives scattered around the courses," he says, "and there are some wooded areas, too. It's all good hunting country. We also offer a limited amount of deer and rabbit hunting.

"We have rolling hilly country, brush, grasslands, small creek valleys, food plants and cultivated grain fields that provide great cover and habitat."

Wade adds, "We cater to both experienced and inexperienced sportsmen. If you're on your first bird hunt with your first brand-new shotgun, or a seasoned hunter looking for a good day of dog-work and plenty of birds, we can accommodate you. If you're a small group of hunting buddies or a large group of corporate executives looking for a place to hold a family outing or a place to entertain clients, you'll find what you need at our preserve.

"And our trained dogs are guaranteed to make your trip both successful and enjoyable. Of course, if you want to bring your own dog and hunt without a guide, we offer that option."

Anyone interested in contacting Doug or Wade can write to Ambraw Valley Outdoors at R. R. 1, Box 202, Newton, IL 62448.

Head off infiltration before winter hits

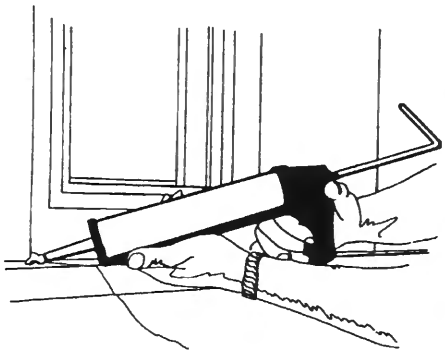
Fall is here, with the turning leaves, shorter days, cooler weather and gentle breezes. For those who enjoy the change of seasons, fall can be a wonderful time. As for the rest of us, we know that winter is nipping at the heels of fall even now, and the cool breezes will be replaced by wintry blasts seemingly straight off the North Pole.

It's true, as we've said here many times, that tightening up your house will save you money all year 'round. But a snug home seems to be more comfortable when the temperature's down in the single digits and the wind's seeking out the little nooks and crannies in the walls of your house. No matter what the time of year, some caulking and weatherstripping will help reduce air infiltration, one of the biggest sources of energy waste.

If your windows leak air around the edges of the window, inside the frame, you can minimize the infiltration by putting in a shrink-fit film on the inside. While it looks difficult, it really isn't. You can buy kits at hardware and home-supply stores, and they usually include double-sided tape and enough film to do one or two windows. They come in different sizes, so you'll need to know how big your windows are. The kits are generic, so you may need to buy a larger film than you actually need and cut it to fit with scissors. One of the hardest parts of this little chore is peeling the backing off the double-sided tape.

After you get the tape up and the plastic cut to size, you apply the film, carefully, and press it against the tape, which you've put around the window frame and peeled the backing off of, naturally! If it's not perfect, you're still okay. You can shrink it to fit with a hair dryer.

No matter how snugly they're built, some homes have problems with infiltration that require somewhat more effort. Weatherstripping may be your next step, and is probably the next simplest up the line of things to do. It involves the use of materials to seal cracks that are supposed to be there,



but that aren't supposed to leak. This includes doors and windows, and weatherstripping should fill those gaps so the window or door can be opened and closed as needed, but air is kept out when it's closed.

There are all kinds of weatherstripping materials on the market, and cost varies considerably. These materials also vary in ease of installation and the quality of the job they do. Look for them in the "insulation" or "weatherization" section of your local home improvement place, and look for good, understandable instructions on the package. And if you're at all unhandy, talk to someone in the store and have them clear up any misunderstandings you have about installing the stuff. They'll be glad to help you. That's what they're there for. Be sure to ask how long you can expect the different materials to last. Usually the ones that cost the most and/or are the most difficult to install tend to last longest.

Caulking is intended to seal cracks that seem to grow between different kinds of construction materials. These cracks are partly due to settling during the aging process, and partly because different materials expand and contract differently as the temperature changes. As a general rule, caulking should be applied wherever two different materials or parts of the house meet.

Caulking materials, for the most part, come in disposable tubes, and are applied with an inexpensive caulking gun. Since it's as easy to apply a high-quality compound, it makes good sense to use the best caulk you can.

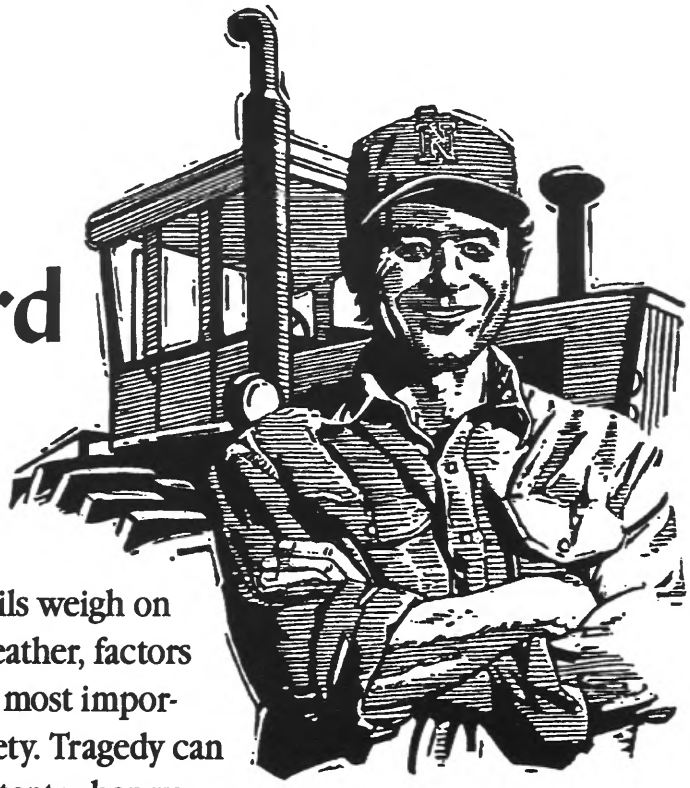
Oil or resin-based caulks are inexpensive, last from one to seven years, and adhere fairly well. They're the least expensive of the caulking materials. Latex, polyvinyl and butyl rubber are better. They adhere better and last two to 10 years, but they're somewhat more expensive. The silicone, polysulfides and polyurethanes are better yet, with excellent adhesion and a 20-year life expectancy. They're more expensive than the other types, too.

You can apply caulking with a few low-cost tools and a little practice. When you load your caulking gun, cut the tube open with a sharp knife at a 45-degree angle near the end of the tapered portion. The ability to lay a nice, uniform bead comes with a little practice. Be sure to scrape away the old materials and clean the surfaces, before you start caulking.

And while you're at it, look for other air leaks through openings where plumbing or electrical wiring go through walls, floors and ceilings.

While there are any number of things you can do, the most important thing is to get started. Get started on some infiltration prevention work soon. Winter will be here before you know it!

Don't let your guard down



This time of year, details weigh on your mind . . . money, weather, factors vital to your livelihood. The most important concern, though, is safety. Tragedy can occur in that flash of an instant when you let your guard down – taking a short cut, overlooking basic safety rules. To ensure future harvests, always work the safe way.

- Watch out for overhead power lines.
- Wear appropriate protective equipment.
- Make sure helpers are familiar with equipment they are using.
- Shut off power before fixing or unclogging machines.
- Keep extended machinery away from power pole guy wires.
- Keep shields in place.

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Is your crop dryer ready?

This is the time of year when the concerns of farming weigh heavily on your mind, and you start getting in the crops you've worked all the last year to produce. Before you actually need your crop dryer to work, check it over to make sure it's going to work properly. Take a few minutes now and check out the following points. You may save hours or even days of precious time, when you have a lot of things on your mind and little time to spend on them.

First, inspect all wiring and panels for worn insulation, loose connections and worn-out circuit breakers. Also, check to be sure grounding wires are properly connected and not broken.

Make sure all guards, shields and overcurrent devices are properly installed and secured, and check for worn bearings, pulleys, gear boxes, belts, and shafts. Pay special attention to excess play in motor bearings. Bad bearings can ruin a motor, fast.

Lubricate all equipment before you start it. If you're not sure of where to lube or what type of oil or grease to use, consult your equipment dealer.

Test the equipment. Run through a complete drying cycle to see that all timers and switches operate properly. Let the motors run for several minutes to heat and distribute the new lubricant. Start the dryer at least twice to be sure the starting capacitors perform perfectly.

If you have added motors, be sure to check with Norris Electric's engineering department to make sure the electrical service is adequate to handle the additional load.

And keep in mind that the harvest season is full of hazards just waiting to nail a tired, unwary farmer. You're bound to be hauling your grain somewhere, and you're very likely to be in a hurry. You may be using "that old truck" that you never use any other time, or the disused tractor that you use only to pull the grain wagons. Give them a looking over, too.

Your combine will need the usual inspection. Aside from lubrication, belts and hoses and so on, make sure it's running lights are going, too. And while you're in your fields, remember that combines are bigger than they used to be. ***Keep an eye out for guy wires and power lines that may pose a threat.*** Remember that most power lines run down property lines, but some don't. You need to be alert at all times, especially if you're using a new combine that may be bigger than the one you're used to. The lines to your grain bins may be a hazard, too.

And then there's the auger. It's amazing how long they've become and how high they'll reach. Be especially careful with them near power lines. They're good conductors, and can be very dangerous. Don't move one without looking at where you'll be moving it to!

October is Co-op Month

Norris Electric Cooperative will be one of the nation's 47,000 cooperative businesses celebrating Cooperative Month during October and the 1996 theme is "Cooperatives—Expanding People's Horizons."

Cooperatives are found in every state of the union and serve approximately 120 million people—nearly half of the population of the United States and 30 million of that number are served by 1,000 electric cooperatives in 46 states. There are 26 distribution co-ops in Illinois, and Norris serves about 17,000 members in all or parts of eight counties.

Providing electric service the cooperative way distinguishes electric co-ops from other kinds of electric utilities. The co-op's consumer-owner has a voice and vote in cooperative matters and can be elected as a co-op director or trustee.

Because the co-op is locally owned and controlled means that it plays a major role in the community. Electric co-ops from coast to coast are involved in community activities and programs such as conducting safety programs at school and the local library, helping elderly citizens repair their homes, sponsoring local fairs, helping to get new businesses or new housing started, and contributing computers or satellite dishes to schools and community hospitals.

Whatever benefits the co-op helps the community and its citizens and the theme, "Expanding People's Horizons," exemplifies what co-ops are all about.

Norris Electric News

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Norris employees stabilize a transformer as it's hoisted into place.

NEC upgrades subs, lines

While growth in your co-op's service territory is good news, it brings problems with it, too. But the problems are the kind people in many rural areas would be tickled to have.

Norris Electric was faced with the problem of growing residential, business and industrial loads that were threatening to overload the system, but the installation of a lot of new equipment — especially bigger transformers — has headed off any potential problems for years to come.

In the Robinson substation, for example, we removed four single-phase 1250 kVa transformers and replaced them with 2-5,000 kVa units, doubling the capacity of the sub. We also changed the old busses, replacing them with heavier copper units. We had three 219-amp regulators in that sub, and replaced them with the same number of 328-amp units, adding 50 percent to their capacity. There were 12 oil circuit reclosers, or OCRs, and we replaced all of them.

The Flat Rock sub needed upgrading to serve growing industrial and residential growth, so we replaced the old single-phase 1250 kVa units there with 2-5000 kVa three-phase units, effectively quadrupling the sub's capacity. We had already changed out the buss work, regulators and OCRs last year as part of our ongoing work plan.

The Lawrenceville sub was in need of work, too, thanks partly to the growth in that area, and we removed four old 833-kVa single-phase transformers and replaced them with four 1250-kVa units, increasing the sub's capacity by 50 percent. We changed the three 150-amp regulators there to 219-amp units, to match the new capacity, and changed all 12 OCRs there, too.

As part of the upgrade, we also built five miles of dual-feed three-phase line, to better enable us to shift power in the event of an outage.

While it appears that we have rushed in to do work to take care of unexpected growth, that's not the case at all. Norris Electric, like all utilities, tries to keep track of projected load growth and we keep a work plan going at all times to stay ahead of problems. This work was partly in response to faster-than-usual growth, and partly just to keep up with our planned work.

Incidentally, each of the big 5000-kVa transformers we installed weighs some 14 tons, and we hired Hughes, Inc., of Allendale, Illinois, to do the lowboy and crane work. We'll be doing some rebuilding in other areas in the future, and you may see their rigs there. When you do, keep in mind that it's a sign of growth and prosperity.

Fuses, breakers and electrical safety

Probably every house built since the advent of electrical service has had some kind of circuit-overload protection built into its wiring system.

Years ago, fuses were used, and there was a separate one for each circuit. Builders who wanted to "cut corners" could do it easily by cutting back on the number of circuits they provided. Unfortunately, many took advantage of that option, and there are thousands of houses all over the country still grossly under-wired.

Fuses such as these are no longer in widespread use, having been replaced by breakers.

Some older homes have just two circuits: one for lights in the ceiling, the other for wall outlets.

Such a house will give its owner endless headaches in the form of blown fuses and frustrations.

Often, a person who wants to plug in a toaster will need to shut off a couple of lamps or unplug a refrigerator or TV set to keep from blowing a fuse. Most of those houses were built years ago, when a radio was the primary form of entertainment, and when a refrigerator was, in all likelihood, the only electric kitchen appliance. Clothes were dried outside on a clothesline. It didn't take many circuits to serve such a house.

Now, we have TV sets—often several in a house—microwave ovens, VCRs, toasters, electric skillets, automatic bread makers, and any number of other gadgets that we enjoy so much.

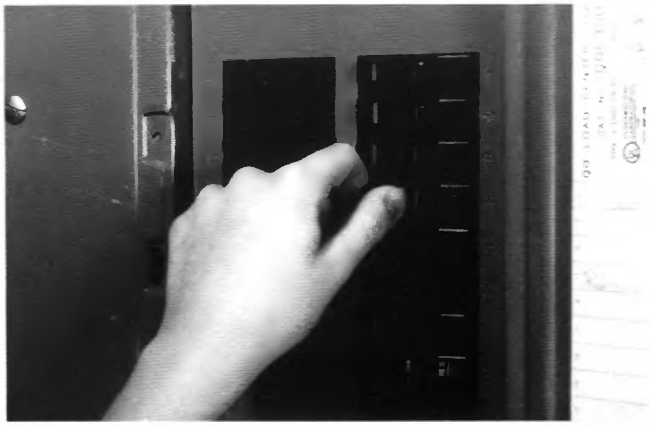
Now that we all tend to enjoy all those things, many of us have problems with our electricity. Fuses and circuit breakers are designed to protect us from the dangers of short circuits and overloads.

You might think of a fuse as a form of safety valve that pops off when something's wrong. A fuse is intended to be the weakest link in your home's wiring system. If you get an overload and something overheats, any damage that's going to be done will take place in the safety of your fusebox, and will be done to the fuse itself, as it is sacrificed to save the house.

When fuses blow frequently, there is always the temptation to "outsmart" them by using a higher-amperage fuse than what the circuit was designed for. Don't try it! That just moves the danger spot out of your fusebox and into your wiring system, where it may cause a fire. Using a coin or piece of foil to bypass the fuse will do the same thing.

A stopgap measure to keep fuses from blowing is to use fewer electrical devices, but that's just treating the symptoms. If you have persistent electrical problems, your best bet in the long run is to call a qualified electrician and have him rewire your home, or at least add some circuits.

Make sure he knows what kind of appliances and lights you have and how many of them you're likely to use at one time. And remember that if you're like most of us, you have far more electrical goodies than you had a decade ago, and you'll probably add a few more in the future. There are a few shortcuts an electrician can take advantage of to make your wiring jobcheaper, but there's one thing you should insist on. Tell him you want the



Breakers such as these are more convenient than fuses: if they trip often, you still have problems.

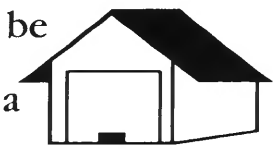
job done "to code." He'll know what you're talking about. The National Electrical Code was developed over the years to set standards for safe electrical wiring, and to prevent the construction of houses with just one or two circuits. A house wired to code will have at least the minimum number of circuits to do the job right.

While we've discussed fuses here, they have been replaced to a large extent by circuit breakers. They operate much like fuses, but they aren't destroyed by an overload problem. If a breaker "trips," you can go to the breaker box, reset the breaker, and you're back in business.

Even so, breakers that trip frequently are a sign of problems that need to be cured. You need to avoid an overload, or have an electrician find the short circuit that's causing your breakers to trip. And don't forget to insist that any work be up to code. It's a definite safety necessity, not a luxury.

The answer: a garage, a bush, and a dog.

The question is, "What kind of things stand between your electric meter and accurate billing?"

Your electric cooperative's meter readers need easy access to your meter so that your billing will be correct. Sometimes, the reader will find that a  garage has been added to a home and the meter is now locked indoors.  Or, a small bush has grown into a big obstacle right in front of the meter.

 Then there's the family dog who's left outside to protect the property.

It not only makes the meter reader's job difficult, but it can make it dangerous, too. Take a moment to check your meter. If you can't get to it, neither can we. If you have questions or need to make arrangements for our access, just call.

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Saving energy on the road

Cars and light trucks burn about 6.5 million barrels of petroleum on U.S. roads every day. Much of that fuel has to be imported. Energy-wise driving and good car maintenance can save the average family about $100 dollars a year in gasoline and diesel costs. They also help reduce auto emissions and the nation's reliance on undependable sources of foreign oil.

Maintaining your car

• Check tires regularly. Under inflated tires not only can run hot, shortening their lives, they also use about 0.4 percent more gasoline for each pound of tire pressure under the recommended psi. Most modern tires are meant to be inflated to 30-36 psi without sacrificing ride comfort or impact resistance. Nearly 4 million gallons of gasoline could be saved each day if all tires were kept inflated to the manufacturer's recommended pressure.

• Buy the gasoline octane and oil grade recommended in your owner's manual. Octane is not a measure of the "power" of the fuel. It is a measure of how resistant a fuel is to premature ignition. Fuel with more octane or "resistance" than your car requires is not more efficient, only more expensive.

• If you change the oil yourself, take the used oil to your service station for recycling or to an oil recycling center.

• Have your car tuned as needed. Regular tune-ups extend engine life and improve performance, paying for themselves in gasoline savings and car reliability. A poorly tuned car uses 3-9 percent more gasoline than a well-tuned one.

• Replace the engine filters as recommended in your new car manual. Clogged filters waste gasoline.

• Remove unnecessary weight from the car. The lighter the car, the less gas it uses. An extra 100 pounds decreases fuel economy about 1 percent for average sized cars, 1 1/4 percent for small cars.

• Don't let the motor idle for more than a minute: instead turn off the engine. It takes less gasoline to restart the car than it does to let it idle. Generally, there is no need to press the accelerator down to restart the engine.

• Don't fill the gas tank to the brim. Stop when the pump automatically shuts off. Spilled gasoline only wastes your money, adds to air pollution and may damage your car's paint.

• Record your gasoline use and try to get more miles per gallon out of your car.

Vacation tips

• Consider vacationing near your home this year and discovering nearby attractions. A campground or hotel close to where you live can often provide as complete and happy a change from routine as one that is hundreds of miles away. Children and pets will enjoy the shorter ride.

• Plan your route to avoid traffic congestion during rush hours. Check local traffic broadcasts for alternative to tie-ups that can stretch out your driving time and waste your gasoline with frequent idling.

• Rediscover the pleasures of walking, hiking and bicycling. They're the most energy-conserving means of transportation and the healthiest for most people.

• Observe the posted speed limits. The average car uses 17 percent less gasoline at 55 mph than at 65 mph. If highway speed limits were observed across the nation, approximately 4 million gallons of gasoline would be saved each day.

• Minimize daily cold starts and limit warm-ups to 30 seconds.

• Avoid stop-and-go traffic. Check the traffic well ahead of you to avoid wasteful accelerations and declarations. Take your foot off the accelerator as soon as you see a red light or slowed traffic ahead.

• Accelerate smoothly and moderately. Reach your desired speed, and then keep just enough pressure on the accelerator to maintain steady speed. On the highway, cruise control can help you do this.

(Source: U.S. DOE)

young crew," Ashley notes.

There have been additions to the building recently. The restaurant overlooks a beautiful 40-acre lake that would be a natural for outside dining, and Ashley has had a deck added to provide for that option. "It didn't get much use last year because it was so hot," he says, "but I have high hopes for it. There's seating out there for about 50 people, and if we really had to, we could get 100 inside."

Times are changing, and very few businesses can just casually operate the way they did 20 years ago and still survive. Ashley is trying several variations to keep the operation working. "We keep pretty busy," he says. "We have various specials, and we have a Friday seafood buffet that's really popular. On Saturdays we have a prime rib-roast pork buffet, and on Sunday we have country cookin' with three meats and all the fixins'. We're closed Mondays, but we'll do private parties then."

Those are the things most restaurants do, but Trace Inn goes a little farther. "We're branching out into parties," he adds, "and we make up trays for people to take out, too. And while it's not necessarily a branch of the restaurant business, we've got the downstairs operation, which is operated partly by Melanie and two of my aunts, Linda Koertge and Mary Roney."

You can contact Trace Inn at (618) 936-2351, for more information.

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Clockwise from above: Ashley and Melanie in front of their restaurant at Red Hills State Park. Melanie and Ashley's aunts, Linda Koertge and Mary Roney, in the gift shop they operate in the building. A good crowd enjoys lunch and a view of the 40-acre lake the restaurant overlooks.

Fine dining at Red Hills

Ashley Hesler has a business going at Red Hills State Park that might well be entitled, "All in the Family," since his wife, Melanie, and several other relatives work there. His operation is a combination of a restaurant, boat rental, gift shop, craft outlet and collectibles place.

"It had operated several years before it closed," Ashley says, "and it had been shut down for quite a while before I got into it. It's part of Red Hills State Park, and the state renovated it before I opened it. Since it had sat empty for so long, they had to rebuild the electrical system and install a new kitchen. They put in more energy-efficient windows at that time, too. We decided to name it "Trace Inn' because it's located on the Cahokia Trace, which ran from east to west just north of U.S. 50, from Vincennes to St. Louis. It's a really historic road that went westward when St. Louis was part of the wild west. We opened the place in October, 1993."

Ashley, who's from Sumner, didn't just jump into the business without any preparation. He studied culinary arts at the University of Vincennes and did an internship before opening his restaurant.

"It's hard to believe how many people advised me against opening the place," he says, "and a lot of people told me I wouldn't last six months. I was really nervous about the idea, but I did it anyway. It's been almost exactly three years, and several of the people who advised me not to open the place have admitted they're surprised that I'm still going, but they're supportive."

The venture started out as a restaurant, but as time went by, he decided to add other sources of revenue, and that's where the other ventures came from. It's working. There are now some 20 people working there, many of them part-time, and there are several students. "We're a pretty

Safety with electrical outlets

We all know that electricity is wonderful stuff. Good things happen when we flip a switch. Lights beat back the darkness, warmth replaces the cold, dishes and clothes get washed and dried, TV sets come on, and water flows in and out of our house in an orderly fashion.

But there's a dark side to electricity, too. It's a lot like controlled lightning, and when it gets out of control, it can add a whole new meaning to the phrase, "Reach out and zap someone."

What follows is a description of a few gadgets that will help you keep the "electric genie" in the bottle until you need it. Installing one or more of them will make your home at least a little safer, and maybe a lot safer.

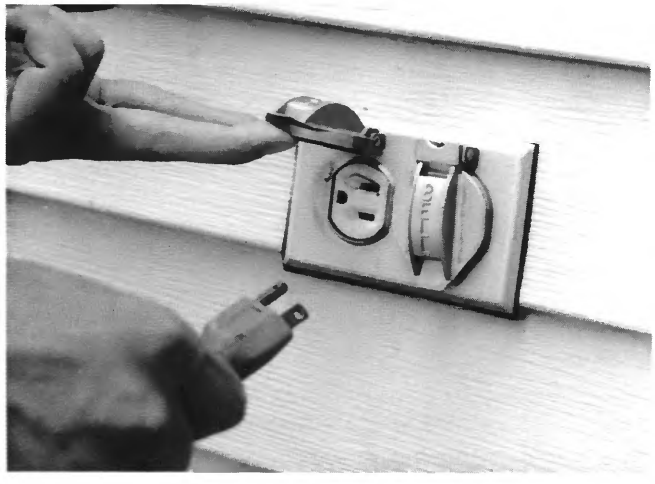
The first gadget costs very little, and you can install it yourself in minutes. It's designed primarily to protect those toddlers who seem determined to plumb the depths of all electrical outlets, using a bobby pin or paper clip. There are plastic outlet covers that simply plug into an unused receptacle. They're easy to remove when you need to plug in an appliance. Look for them in the electrical section of your department store or in a building supply place. A package of a dozen will set you back less than two dollars. Put one in each outlet a toddler is even remotely capable of reaching.

After those little gadgets, things get a bit more expensive, but the simplicity is, for the most part, still there. There are several different kinds of ground fault circuit interrupters (GFCIs), and they're real miracle workers. Essentially, they sense a problem in a circuit and shut it off before enough current gets through to cause injury. While it definitely isn't something you'd want to try at home, a demonstrator of the devices has plugged in a hair dryer and plunged it into a sink. Before GFCIs, such dunkings were almost always fatal.

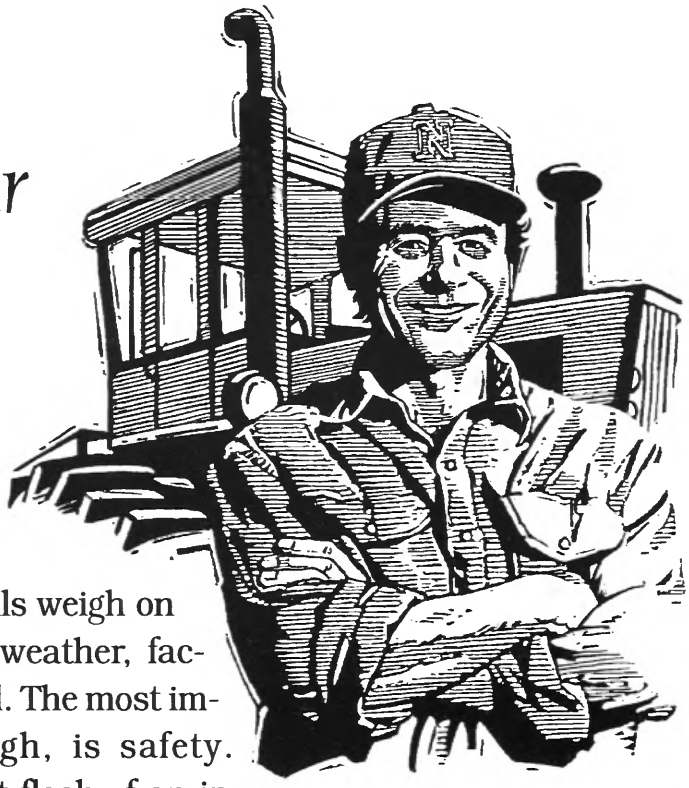
Again, GFCIs are not intended to enable you to do dangerous things. They're intended to provide a big margin of safety when you accidentally do something hazardous. Incidentally, building codes today require the installation of GFCI-protected circuits in kitchens, bathrooms and in outdoor receptacles. The ones we're discussing are useful in homes built without them. There are several different kinds, and you'd be wise to check out the possibility of using one outdoors or anyplace where water and electricity are likely to mix, such as in kitchens and bathrooms. You can buy a portable GFCI, which plugs into an outlet, and into which you then plug lights or appliances. They're simple to use and inexpensive. Once they "trip," and save your bacon, you need to correct the problem, then press the little "reset" button they have, and you're ready to be protected again.

Another GFCI is built into the end of an extension cord, and is useful when using power tools and the like. They're especially handy when you're working outside. Yet another kind of GFCI is built into the receptacles in the walls, and would be a wise addition to any home. They can be wired to protect just one outlet, or an outlet and all the ones further down the circuit. Be sure to have them installed by a qualified electrician.

A circuit breaker GFCI can be installed in your breaker box, and will protect all the outlets on that circuit. Again, you'd be wise to have an electrician do the installation. Outlets in newer homes should be protected, but homes built before the code change are likely to have no protection at all. Be sure to check out one of the above forms of GFCIs. The portable ones should be cheapest and easiest to use, but less convenient in the long run. Whatever you do, try to get some protection on your kitchen and bathroom as soon as possible!



Don't let your guard down



This time of year, details weigh on your mind . . . money, weather, factors vital to your livelihood. The most important concern, though, is safety. Tragedy can occur in that flash of an instant when you let your guard down — taking a short cut, overlooking basic safety rules. To ensure future harvests, always work the safe way.

- ***Watch out for overhead power lines.***
- ***Wear appropriate protective equipment.***
- ***Make sure helpers are familiar with equipment they are using.***
- ***Shut off power before fixing or unclogging machines.***
- ***Keep extended machinery away from power pole guy wires.***
- ***Keep shields in place.***

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to see the cars when they're going down the back stretch. I'm trying to figure out how to take care of that without putting up lights in the infield, because I want to leave it open for demolition derbies and any other activities I can think of."

He hopes to have races, demolition derbies and "bombers," which used to be called jalopies, he notes, and he'll schedule them as needed to make a good, well-rounded series of events. Races are now held Saturdays and Sundays in the afternoons, "When the rain doesn't stop them," he says.

While John sought some engineering help, which he then adapted to his own plans. He went to the University of Illinois to get help on bleacher design, and promptly added four inches of depth to each row of seats, beyond that recommended by the people at the U. of I. "I don't want people to have to squeeze by each other like they have to do in so many places," he says.

The bleacher space dictated a no-coolers rule, too. "I've decided that for now, I won't allow big coolers or alcoholic beverages, "he says, "partly because the big coolers just take up too much space and insurance rates are so much higher if people are permitted to 'bring their own.' I'm going to allow little coolers, but we'll check them."

When he has bleachers down both sides, he notes, he expects to build a beer tent and allow the alcohol in probably half of that bleacher area.

"It's surprising how much more the insurance gets when you let people bring beer in, as opposed to selling it, and that's an important factor," he says.

Since building, maintaining and operating a racetrack is a fairly expensive proposition, John has done what is done at most other racetracks--he's sold advertising space along the walls. "I've got signs as far around the track as you can see from the bleachers," he says with a chuckle, "and I'll put more up when I get bleachers on the other side of the track."

While he took much of the advice offered by the university, John made some decisions of his own. The experts recommended putting the light poles behind the bleachers, so they wouldn't block the view of the track. "I decided against that," he says emphatically. "I'm a race fan from the word go, and I've sat in many a bleacher with the lights behind me. It was like it was raining bugs. I'd rather look through a light pole than have a bunch of bugs fall down the back of my shirt all night. And there are only two poles in front of the bleacher area, anyway."

He adds that there are a few things he decided on after watching operations at other tracks. "I've made the walls of the track out of steel," he says, "because if you use highway-type guardrail material and a car runs into it, it tends to pull the car into the wall, slowing the car and causing more damage. Concrete walls are the same way.

"And I put a fairly big dirt berm up around the inside of the track. You see a lot of tracks where they have tires buried there, and those are rough on cars, too. If a driver plows into the berm, it doesn't hurt his car, but it slows him down something fierce. That's a really good incentive for him to stay out of it in the first place."

John notes that with all the common sense he's applied to the design of the track, and all the expert help he's received, building from scratch has still been a learning experience. "We put up galvanized mesh in front of the bleacher area to catch small pieces if a car starts disintegrating in front of the stands. There are big cables to catch the cars and big pieces."

"Anyway," he continues, "you wouldn't believe how that shiny new mesh lit up when we turned on the lights. You could barely see the cars. We had to paint the mesh black."

While there have been many headaches in building the place, John has been pleased with the popular support he has received from the local people. "This area is a real center of racing activity," he says, "and there were an awful lot of people who were supportive. Of course, I was careful to locate the track far enough from Sumner that the noise wouldn't be a problem for the townspeople. I think that has made some difference, but I'm still really pleased with the support I've received."

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John Schnepper with his new racetrack. He hopes the weather will enable him to hold races soon.

Sumner is home to new racetrack

John Schnepper may well be trying to figure out how to do a rain dance--in reverse! Like many who live in Norris Electric Cooperative's service area, he's had a bit more than his fair share of "liquid sunshine" this year. For him, more than most, the timing has been the worst imaginable.

John, who's just putting the finishing touches on a brand new racetrack a mile south of Sumner, was rained out eight of the first 11 times he tried to get his races off the ground.

A self-described "lifelong auto racing nut," John has been manager of the Olney-Noble Airport for the last eight years, and sees the race track as a sideline and retirement venture. "It may force me into early retirement," he says half in earnest.

As a long-time race fan, John had a pretty good idea of what he wanted when he set out to build, and one thing he wanted was a fast track.

"I patterned it quite a bit like the race track in Volusia County, Florida," he explains, "and that was part of the effort to make it fast. Most racetracks are definite ovals, with two long straightaways and two fairly sharp curves. Cars have to slow down so much for the turns that the only real racing they can do has to be on the straightaways.

"The Volusia County track is kind of a cross between a circle and an oval," he continues, "and so is mine. The drivers can race through the turns here, and that's important."

He built his track of clay, and taking 13 feet off the top of a knoll to get to the clay he wanted. Then he worked in 25 tons each of limestone and gypsum, and 16 bales of hay. All that's designed to enable him to work the clay to make a good racing surface.

"I engineered the track myself," he says, "and I designed it for a 15-degree bank at the steepest part, and three degrees in the middle of the straightaway. It turned out that the 15-degree bank was too steep, and I reduced it to 10. It was so steep that the water would run right off when we were getting the track ready for a race."

He's been doing a lot of fine-tuning since he got the thing going, using experience from the few races the weather has permitted him to run.

"I've learned that I need more light," he says, "because it's hard

Miscellaneous energy-saving tips for summer

While your friends at the local electric co-op want you to use all the electricity you need, they want you to use it wisely, too, so you won't "break the bank."

We've stressed several times here that most energy used in homes, by far, is used for heating and cooling, and wise heating and cooling will save you the most money with the least amount of effort: All you need to do is to raise your thermostat setting in the summertime, or lower it during the heating season.

After heating and cooling—or "comfort conditioning, as it's sometimes known—the next two biggest users of electricity in most homes are water heating (15 percent) and refrigerators and freezers (also 15 percent).

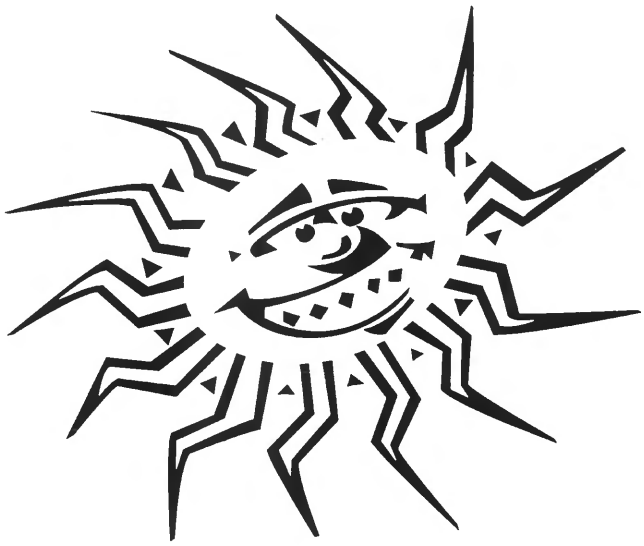
Some 24 percent goes into lighting, cooking and running other appliances. Obviously, you'll find the biggest savings in the higher-use categories. In addition to changing your thermostat, the addition of insulation and/or weatherstripping can help you save a lot on both heating and cooling, and you can often do some of the work yourself, using fairly inexpensive materials.

With summer fully here now after what may well have been the weirdest winter and spring in memory, you may want to think about paying some attention to your air conditioning system. Keep your cooling system well tuned, and see that it gets periodic maintenance by a professional serviceman. This isn't something you need to do every year, but if it's been a while since anyone's had a look at the machine's innards, you may want to call a serviceman.

It helps a unit run cooler if you plant trees or shrubs close by the outside unit, to shade it . Don't plant them so close that they'll shed leaves in the machinery and get in a repairman's way. A few well-placed shrubs will increase efficiency by as much as 10 percent.

But there are many simple no-cost steps you can use to save a little money, and they just involve a change of habits. It's old advice, but we tend to forget: Shut off the lights in an unused room. While that won't make you rich, it'll help a little, and it doesn't cost anything.

Many of us tend to leave TV sets on all the time, in the forlorn hope that something worth



watching is bound to come on eventually. A good-sized color TV draws a fair amount of current. You can save a little money by shutting yours off when you're not specifically watching a program you want to see.

A common energy waster that many people overlook is the bathroom ventilation fan. You need to run that little rascal for a few minutes after bathing or showering, but it's hard to remember to shut it off after it has done its job. If you can get into the habit of flipping that switch off after a 10-minute run time, you can often save on two counts: the energy used by the fan motor, and the energy used to heat or cool the air it exhausts.

Since much of the energy used in doing laundry goes to heat water, you can save a little by changing to cooler washes and rinses, whenever possible. And, of course, you may want to keep after faucet washers, wherever they are. It seems to be a natural law that the first faucet to leak will be the hot water one, and that wastes both water and heat.

If you are one of those fortunate folks who live in the country, you may have more to worry about than your town and suburban cousins, because you're far more likely to have your own well. That may include a pressure tank, which has a tendency to get "waterlogged" as time goes by, causing your pump to run more than necessary. Be sure to keep after that, too.

Tree-mendous advice

Trees mix well with kids and cookouts and summer afternoons.

They DON'T mix with power lines. Trees can interfere with electric service. More dangerously, they pose a threat when youngsters climb in branches near power lines.

Your electric cooperative routinely inspects its miles of line each year to make sure they are clear of brush and branches. Trimming is necessary, but our crews try to keep the trees attractive as they work.

You can help, too. The best time to avoid the problem is when you plant. Make sure your growing tree will stay clear of power lines. Proper pruning of young trees controls their branch growth.

Plant wisely. You'll enjoy the pleasure of trees and the reliable convenience of electricity.

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Often overlooked energy-saving measures

Some ways to protect the environment—recycling, composting, switching to environmentally safe products—have become popular choices for homeowners. The following home energy-saving tips though often overlooked—help protect the environment too, because they help you use your energy more efficiently, according to the National Rural Electric Cooperative Association and the Electric Institute, two national electric utility trade associations.

Insulating doors and windows

Start with your home's biggest energy wasters—the windows and exterior doors. You lose more of your heating and cooling dollars through these—per square inch—than through any other part of your home. For instance, heat passes through a window with a single pane of glass 14 times faster than through a well-insulated wall. So, even with an attic full of insulation, you still can be wasting money and energy through your windows and doors.

Install storm or double-pane windows to cut this energy drain in half. Add storm doors to create the same insulation effect there.

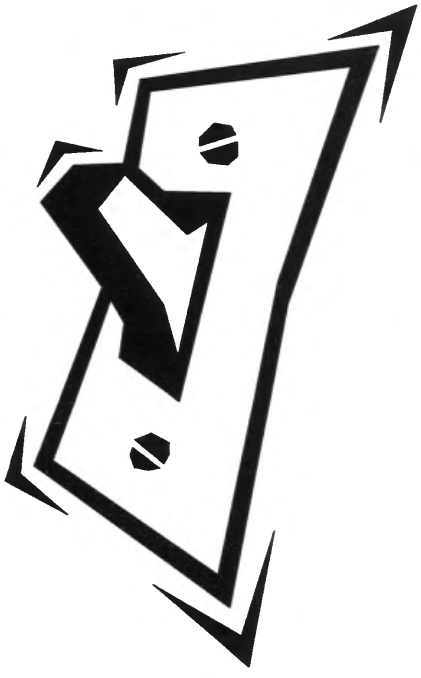
Caulking and weatherstripping

After insulating your windows and doors, don't overlook their caulking and weatherstripping needs. Almost 40 percent of your monthly heating and cooling bill could be going through cracks due to poorly caulked and weatherstripped doors and windows.

Caulking is a rubber-like material that can expand or contract and seals air leaks around each pane of window glass and between the door and window frames and the house. Weatherstripping is a flexible material (foam rubber, felt, or aluminum) that helps to assure a snug fit between the parts of windows and doors that open and close.

Water heating

In the average American house, water heating is the second largest energy user. Save water and the energy needed to keep it hot by maintaining an energy-efficient water heating system and conserving hot water.



Start with the water heating tank itself:

- Get the right size water heater. Keeping more hot water on hand than you need can waste energy.
- For every 10 degrees you can lower the temperature, you can save about 6 percent of your water heating energy.
- If the sides of your water heater feel warm to the touch, you may need more insulation. Wrap a water heater blanket around the water heater, especially if the water heater is located in an unheated area of your home.
- In addition to insulating the water heater, you will also I save money by insulating the hot water pipes leaving the water heater.

Low-flow shower heads and faucet aerators reduce water flow, saving both water and energy. Aerated showerheads and faucets mix air with water to maintain pressure, and low-flow shower heads pulse the water flow. These simple devices are easily installed and can reduce the amount of water and energy used by 50 percent.

Duct sealing

These are the ducts that carry heated or cooled air to the registers in each room of your house. Doing a checkup here can save 10 to 15 percent on your energy bill. All ductwork should be sealed at the joints to prevent leakage. Ducts located in unconditioned areas of your home (attic or crawl spaces) should be insulated.

Thermostat set-back

A set-back thermostat allows you to change the temperature setting or turn off your heating or cooling system at preset times. Each morning when you leave and each evening when you return, the temperature changes to save energy, automatically. Heating or cooling is done only when someone is home.

By using these easy and cost-effective energy-saving guidelines, you can stay comfortable all year-round and still save money.

For more information on how you can save energy all around your house, call your electric cooperative.

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Above, Mary displays many of her works on her basement wall. At right is a hummingbird: note the dimensional effect.

T-Town woman walks unusual artistic path

Mary Walk, who lives near Teutopolis, is a different kind of artist from many. While there are any number of people doing oils, watercolors, pastels and the like, she does papier tole.

"Papier tole is an art form that developed centuries ago in France," Mary says, "and it involves layering several cut-out pieces of paper to make the work look three-dimensional."

But there's more to it than that. To add real depth, she has to fold, crease and perform several other tricks that keeps her works from looking like a simple "cut and paste" piece with no dimension.

"There's an art to the cutting, pasting and snipping that makes all the difference in the world," she says, "and that's where you spend the time, both in learning to do it right, and in just doing the work. This isn't an art form for someone who wants to knock out a piece in a few minutes."

The Sidell native, who lived and taught her art for several years in Chicago, remarks that she spent several years perfecting her technique, and that she has spent considerable time just getting down the process of making realistic-looking feathers.

If you add up all the cutting, folding, creasing and pasting, you may find that Mary will put some 40 hours or so in a piece of work, and that it will look realistic enough that you'll want to touch it.

While there is a lot of busywork in such a pastime, and while learning and practice count for a lot, there's no substitute for creativity. Mary notes that a scene with an old locomotive was giving her fits.

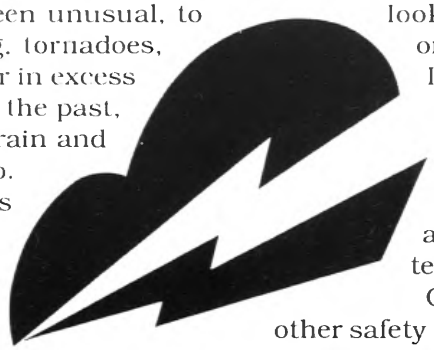
"I just couldn't get the smoke and steam right," she says, "and I tried everything I could think of. I finally used hair from my cat, which I'd taken out of the lint filter in my clothes dryer. It worked perfectly, and many people comment on the realistic look of my smoke and steam."

She has favorite topics, of course, and the bald eagle, symbol of America, is one, even though there are a lot of feathers! "I like flowers and religious topics, too," she adds.

She cuts her own mats for her art, and uses shadow boxes a lot. "They really add to the dimensional effect," she says.

Like most artists, Mary enters competitions, and she has brought home at least her fair share of first place ribbons and "people's choice" awards, too. Of course, she sells in local galleries. Some of her works are likely to be found at Keller's Town and Country in Effingham. If you get the chance, look for them there. They'll be the ones that seem to leap off the canvas at you.

Odd weather may bring danger, outages, spikes



The weather this year has been unusual, to say the least. We've had flooding, tornadoes, hail, and cold and warm spells far in excess of those we normally have had in the past, and we've had an abundance of rain and lightning and thunderstorms, too.

Whatever the case, it is obvious that last fall, this past winter, this spring and whatever the summer will bring involves weather patterns we aren't accustomed to.

We are now in the middle of the tornado season, with all the hazards that it brings, so a few tornado pointers are in order.

Seek shelter — Seek inside shelter if possible. If you're in the open, move away from a tornado's path at a right angle. If there's no time to escape, lie flat in the nearest depression.

In office buildings — The basement or an interior hallway on a lower floor is safest. Upper stories are unsafe. If there's no time to go downstairs, find a closet or small room with stout walls, or an inside hallway. If you can't do better, lie down under a piece of heavy furniture.

In homes with basements — Seek refuge near the basement wall in the most sheltered place.

In homes without basements — Take cover in the smallest room with stout walls, or under heavy furniture, a tipped-over upholstered couch or chair in the center of the house. The first floor is safer than upper floors.

Mobile homes — Mobile homes are especially vulnerable to overturning and destruction during high winds, and should be abandoned in favor of a preselected shelter, or even a ditch in the open. You can minimize the damage of future tornado damage by securing the trailer with cable anchored in concrete footing.

In large buildings — These buildings, with their wide, free-span roofs, should have preselected, marked shelter areas in their basements, smaller rooms, or nearby. Seek shelter there, if possible.

Lightning is dangerous to be out in, and it's bad for electrical appliances and electronic devices. There is always a danger that lightning may hit a line and run through it into a service entrance, perhaps damaging delicate electronics or motors.

There are "surge protection" devices to guard against that possibility, and you may be wise to look into the possibility of buying one. Several electric cooperatives in Illinois sell and install them.

Even with whole-house protection, you're still wise to use separate outlet protectors for especially sensitive equipment, such as computers. Don't forget to protect incoming phone lines, too.

Our unusual weather may bring other safety problems we will have to deal with thoughtfully, too. With tornadoes, high winds, soggy ground and other elements in the mix, there may be more downed power lines around than there have been in the past. Remember: Downed lines are dangerous! If you see one, don't try to do anything with it. Call your local electric cooperative. They have specially trained crews to deal with such things.

And we may be faced with longer-than-average power outages. High winds and tornadoes often tangle trees and limbs in lines, resulting in a cleanup nightmare. Repair entails a lot of painstaking work, and that sometimes means long-term outages. With the weather the way it's been lately, you might be wise to be prepared for a spell without electricity. Fortunately, most summer outages aren't life-threatening, like winter outages might be without a running furnace.

Still, you need to be prepared for at least some inconvenience. You can make the next outage more bearable if you keep the following on hand and easy to get to:

- Something to provide light—flashlights and extra batteries, lanterns or candles.
- Extra fuel for lanterns, or batteries for electric lamps
- Canned meats and juices, powdered milk, cereals
- Jugs of water
- Battery-powered radio
- Windup alarm clock

It's also a good idea to keep your co-op's telephone number handy, as well as your map location number.

If you begin to worry about your frozen foods, you might look for a source of dry ice. They're often listed in the Yellow Pages under "Ice."

If you take a few simple precautions, you may be able to spare yourself some grief during the strange weather we've been having.

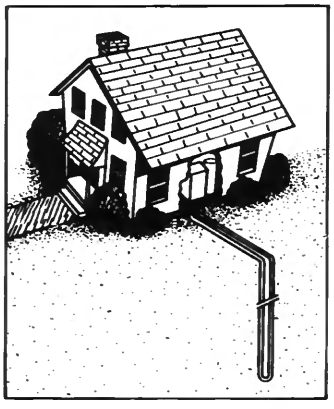
Getting the job done

TOGETHER

Electric Cooperatives of Illinois

Not far from the Mississippi River in western Illinois, there's a new subdivision in which all of the houses are heated and cooled by geothermal systems. The geothermal system's underground liquid-filled loops carry energy from within the soil, a method four times more efficient than fossil-fuel systems. The local electric cooperative played a big role in getting this low-cost heating and cooling system installed throughout the subdivision. All around Illinois, electric cooperatives are encouraging their members to install a geothermal system because it is the leader in safety, comfort and economy.

The geothermal system improves the quality of life for members, something that electric cooperatives have been doing for more than five decades. They are working in all kinds of ways to make life better in rural areas. It's a job that's far from over, and it takes people working together to accomplish it. ***There's a word for this. Cooperation.***



Electric Cooperatives of Illinois

Good for ALL Illinois

Farm electrical safety checklist

Service pole and service entrance

YES	NO	
___	___	Do farm family members and all hired farmhands know where and how to disconnect power in the case of an electrical emergency?
___	___	Are disconnects, especially main breakers, regularly turned off and turned back on to ensure free action and good contact? (Manufacturers of circuit breakers claim that they should be opened and reclosed once per month.)
___	___	In case of fire, can the electricity be shut off to that particular building on fire without shutting off electricity to the water pump?

Animal housing

YES	NO	
___	___	Do animals enter a building or drink at the stock tanks without hesitation?
___	___	Are the water piping (metallic) and service entrances of buildings properly grounded? (NOTE: Check for corrosion of grounding system by animal waste.)
___	___	Is the farmer using an industry-made electric fence which bears the UL label?
___	___	Are heat lamps in farrowing houses hanging by the cord only? In case of drop, are there guards on the fixture?
___	___	Are the lights enclosed in globes and guards (where required)?
___	___	Is the wiring suitable for wet conditions (because of the humidity created by the animals' respiration)?
___	___	Does all wiring appear to be in good condition and free from damage by rodents?

Grain-handling equipment

YES	NO	
___	___	Are overhead lines out of the way of augers and winged-type farm equipment?
___	___	Do all motors have correctly sized overcurrent protection?
___	___	If magnetic starters are used, are heater coils of the proper size?

Machine shed

YES	NO	
___	___	Is the grounding bayonet on drop cords, power tools, etc., intact?
___	___	Is the service entrance roperly grounded?
___	___	Are all receptacles in use properly grounded?
___	___	Are drop cords of adequate size for the appliance or machine it is serving?
___	___	Are drop cords put away after use so machinery can't run over them?
___	___	Are power tools such as circular saws, table saws, drills, jig saws, etc., left unplugged when not in use so that a child couldn't accidentally turn them on?
___	___	Is it adequately lighted?
___	___	Are drop cords in good condition with no sign of insulation damage?

General

YES	NO	
___	___	Do children know whom to call in case of an electrical emergency?
___	___	Do family members know first aid for electrical shock and/or burns?
___	___	Are GFI's installed where required?
___	___	Do appliances function satisfactorily without giving a tingle to user when turned on?
___	___	If lightning protection is installed, are all wires leading to ground?
___	___	Are all electrical fittings on the gas pump of explosion-proof type?
___	___	Before trees are planted, has proper siting been provided to avoid nearby overhead and underground powei lines?
___	___	Are trees free and clear of overhead electrical lines?
___	___	Before new buildings are constructed, have the buildings been cleared of nearby overhead and underground power lines?
___	___	Can tractors equipped with end loaders be raised to the most upper position and clear all overhead electrical lines?

Items checked NO indicate a potential electrical safety hazard. Proper action should be taken immediately to ensure safety.

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Past to Present Days held April 27-28

Past to Present Days, a celebration of Lawrenceville-area history, took place Saturday and Sunday, April 27-28, at the Lawrence County Fairgrounds west of Lawrenceville.

The event was held in conjunction with Old Settler Days, which took place nearby, at Red Hills State Park. Sponsored by the Homemakers Extension Association, the event included a craft show and a variety of events, including felt making, rag rug braiding, quilting, basket making and needlepoint work. The photos here show some of the highlights of the event.

Clockwise from above: Members of the Homemakers Extension Association hosted the event; pictured are, front row from left, Marcia Lewis, Kathy Love, Mary Longnecker and Phyllis Kocher. Back row, Vicki Schrader, Marta Curry, Joni Cordes and Jane Inyart. Norma Longnecker weaves a basket while her daughter Lynette Hose, looks on. Winnie Brown and her granddaughters won the Grandmother-Granddaughter look alike contest. Dyan Lewis is on the left, sister Danna is at right. Left to right: Kathy Balding, Rosa Balding and Earlene Snodgrass work on a rag rug. Gina Arnold and Kristen Boyd make felt out of wool.

Little energy-saving steps add up

There are several steps you can take to save on your electricity bill around your home. Many steps are simple and don't cost much, such as caulking, weatherstripping, and replacing some incandescent light bulbs with fluorescents.

There are some that don't cost anything. Most involve a simple change of habits, a little attention to detail, or spending very little money.

You can save on your overall bill by being careful when you run your appliances. Most Illinois cooperatives are "summer peaking." Their electricity costs more during the hottest times of the day, during the hottest days of the year, than it costs at other times.

With that in mind, you'll know that you shouldn't use heavy appliances such as dishwashers, clothes washers and dryers, and electric ovens in the afternoon hours during hot spells. Try to use such equipment early in the morning or late at night. This will save your co-op money and save you money too.

You can enjoy direct savings on your bills by using appliances wisely. For example, many people keep their refrigerators colder than necessary. The recommended temperatures for the fresh food compartment is 36-38 degrees F., while freezer temperature should be about 5 degrees. If you have a separate freezer for long-term food storage, you should keep it at O-5 degrees F. (Check with thermometer).

If you have manual-defrost refrigerators or freezers, you need to keep after the frost. As frost builds up, it boosts the amount of energy needed to keep your food cold. A quarter of an inch of frost in your freezer is too much.

Be sure your refrigerator door gaskets are airtight. You can check them by closing them gently on a piece of paper and trying to pull it out. If is slides out easily, you need a new seal, or your latch may need adjustment.

There are a few things you can do in the laundry to save energy by using your automatic washer and dryer less often and more efficiently. Wash full loads rather than "just a few things," and if you do wash half a load, set your washer's control for a partial load, if it enables you to.

And you can wash most clothes in warm water, with a cold rinse. Use hot water only when necessary, using only as much detergent as you need. Follow the directions on the box and avoid the urge to add "just a little more." Oversudsing makes your machine work harder and takes more energy.

You can save by using a prewash or soak cycle to wash really dirty clothes. You may avoid having to wash them twice.

Fill clothes dryers, but don't overfill. Keep the lint screen clean, removing lint after each load. A plugged filter will make the dryer work harder, and is also a fire hazard.

Dry consecutive loads. Start-and-stop drying uses more energy because a lot is used to heat the dryer up to working temperature each time you begin.

Separate drying loads into heavy and lightweight items. The lighter ones take less drying time, and the dryer doesn't have to be on as long. Leave small, light items for last: you may be able to dry them after you turn off the heat, using heat retained by the machine from earlier loads.

If your dryer has an automatic dry cycle, use it. It'll stop the dryer as soon as your clothes are ready, without running any more than necessary. And you can save energy twice, if the weather permits, by using a solar-powered clothes dryer, formerly known as a clothesline. Not only will it save you the energy needed to dry the clothes, but it won't add heat to your home, either. Some believe line-dried clothes smell fresher, too.

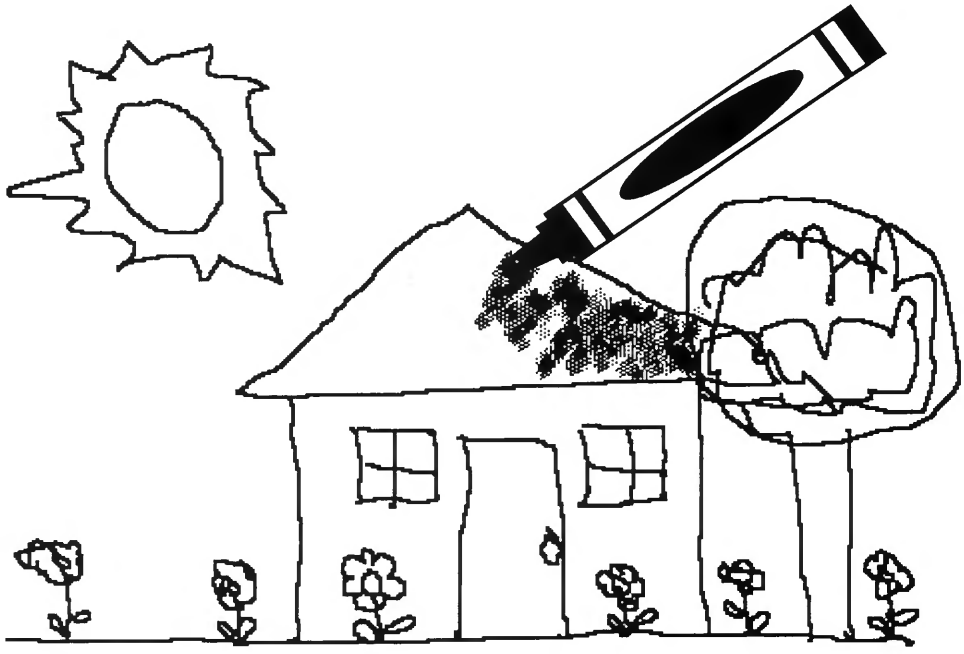
You can save some energy during ironing by hanging clothes in the bathroom while you're bathing or showering. The steam often eases the wrinkles out for you. It's worth a try.

You can save energy in the bathroom by taking showers rather than baths, but you'll need to be careful. It's easy to enjoy a shower enough that you forget yourself and spend enough time under the spray to use more hot water than you'd use in a regular bath.

It takes about 30 gallons to fill the average tub, and a shower with a flow of three gallons a minute uses only 15 gallons in 15 minutes. If you use half cold and half hot water for bathing, you would save about five gallons of hot water every time you substitute a shower for a bath.

If you're interested in saving money on your electricity bill, you can do it if you're careful. While each of the tips mentioned are little things, they'll add up. Call your cooperative's energy advisor today for more tips on saving money and energy.

A different color

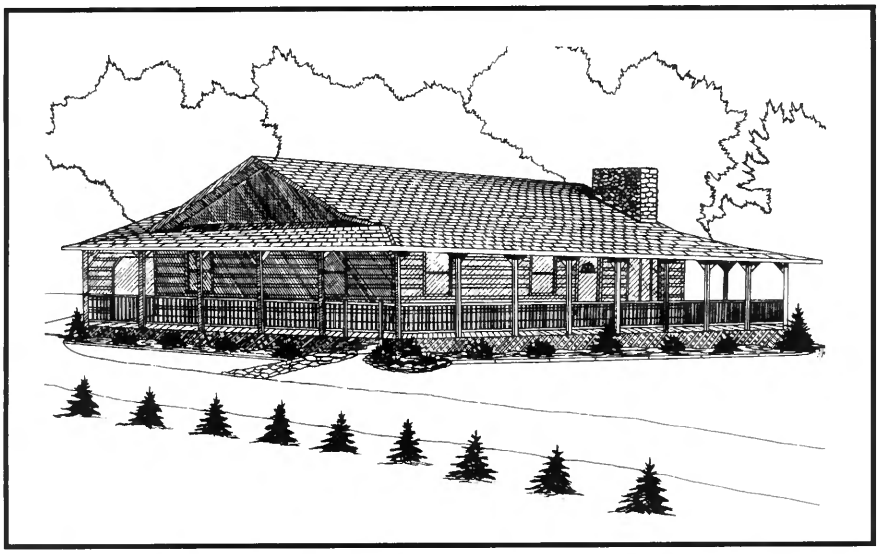


You may think of your electric cooperative in just one way . . . your power provider. If you haven't checked lately, you may find that it is *more* than that now. We can help you find a better electric rate for your life style, or teach electrical safety to your child. We may improve your heating and cooling system, if you ask. We may help you communicate better, and we work with groups to help bring in businesses and jobs.

Look into your power provider. It may be a co-op of a different color now.

Electric Cooperatives of Illinois

An Affirmative Action Equal Opportunity Employer



At left above is one of Elizabeth's drawings; she makes some of these into greeting cards. In the lower photo, she's working at a drawing board.

first class that graduated from the four-year program.

"It was at Purdue that they really started sorting out art from Illustration," she adds, "and while there are a lof of differences and a lot of similarities, there are two main differences to me. First, most artists don't measure to get the correct scale. While they try to make things look 'right,' they tend to do that by eye. We measure.

"Secondly," she continues, "we draw things as they actually are, while artists try to put in an emotional content—they paint or draw a scene the way they'd like it to be."

Even so, she says, there is a very real blurring of the disciplines, since illustrators will "clean up" a scene at the client's request. "We'll take out trash cans and things like that," she says.

Some of the differences are visible on the walls of her office. While an artist's wall might be lined with portraits or landscapes or still lifes, Elizabeth's are different. In fact, part of a tractor drive train is on prominent display.

While just anybody could probably set up a computer and hang out a shingle, Elizabeth prepared herself well to get into business.

After graduating from Purdue, she married Kevin and they headed for Illinois. "It was amusing," she says, "because we'd decided that we wanted to rent a nice place in the country. We went into real estate offices in Mattoon, Effingham and other towns in the area, and the people there just laughed. It turned out that nearly everybody's looking for the same thing. We finally got lucky and found this place."

Then Kevin set up his office off the kitchen, while Elizabeth headed into Effingham to get some solid working experience. She worked for a yellow pages firm there, designing ads and cover pages for telephone directories.

Then, she took over an upstairs room that had been used for storage, and moved in a small truckload of computer equipment, the "nuts and bolts" stuff that will make her business viable.

"Technical Expressions is intended to be a small business that will provide services to other small businesses," she says, "and my goal is to serve my clients by providing personalized art and graphics for specific advertising needs."

She uses a Power Macintosh 6100/66 with a DOS compatible drive, a Relisys 4830T color scanner and a Laserwriter 4/600 PS, and uses several Adobe software packages to add zest to her creations.

"I have several small clients I enjoy working with," Elizabeth says, "and Frichtl Steel and Welding in Newton is my biggest client. I'm always looking for more. I hope before long that this will be a full-time business. I know the customers are there, if I can just find them."

Technical Expressions is at 17295 N. 600th St., Wheeler, IL 62479. The phone number there is (217) 683-2289.

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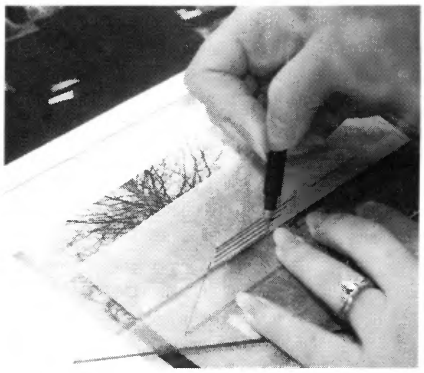


Clockwise from above: Elizabeth at one of her work stations. A technical drawing goes together. Some of the tools of the trade.

Technical Expressions is new Gila business

Elizabeth Harner is in an unusual situation. While there are people all over the world putting images on paper and yearning to be known as artists, she draws images and shies away from that title.

"I'm a technical illustrator," the rural Gila resident says emphatically, "and that's what my business is all about: there's no art to it."

Elizabeth operates her business, Technical Expressions, out of her rural home. Her husband, Kevin, also works out of the home. He's an agronomist for an O'Fallon-based seed company.

"It's nice to be able to work at home," Elizabeth says, "mostly because I can, to a certain extent, set my own schedule. I grew up on a farm in Indiana, and I remember my mother and the independence she had. She helped on the farm, but she didn't have a job off the farm. Most of the time, she could just get in the car and go into town when she needed to."

With that flexibility in mind, Elizabeth set out to build her business, with firm business hours in mind. "I've got my hours set for 8 a.m to 5 p.m.," she says, "but that doesn't always mean I'm here. I believe it's best to talk to clients on a face-to-face basis at least occasionally, and I do a lot of that. And I believe it's important to meet prospective clients personally, too."

She notes that an occasional foray into town might well require her to be at the drawing board after "closing time," if that's what's needed to get a job out on time.

Elizabeth feels that she's just about a natural for her job, since she's been drawing since early childhood.

"When other kids were reading," she says with a smile, "I was drawing. I don't even remember wanting to do anything else."

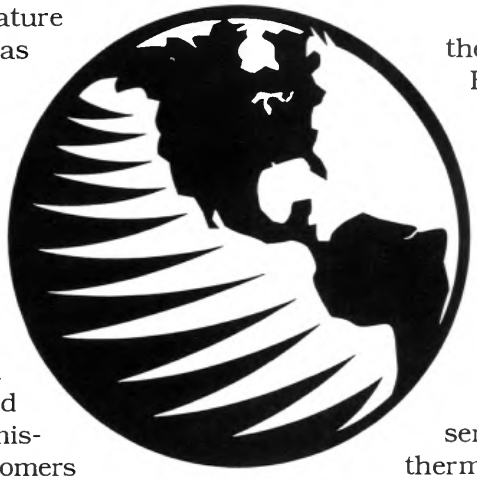
She was fortunate, she says, in that she had a couple of good art teachers. "I had the same art teacher from kindergarten through the eighth grade," she says, "and she handed me over to another good teacher that I worked with all through high school."

It turned out that Purdue University had offered a two-year degree in technical illustration for some time, and started offering a Bachelor of Science degree a few years ago. "I went for both," Elizabeth says, "and I was in the

'Invisible' light is useful stuff

An English astronomer made an interesting observation in the early 19th century, and we benefit from his perceptiveness today. Sir William Herschel noted the difference between heat and light, using a prism to split sunlight into spectral bands, much as a suncatcher will project "rainbows" on the walls during a sunny day.

As Herschel moved a thermometer through the bands, he saw that the temperature increased as he moved the thermometer from the blue end of the spectrum to the red. Surprisingly, the mercury continued to climb after the thermometer had passed through the red—the last of the visible bands. The higher temperature invisible light came to be known as infrared.



For a long time, there was little use for infrared, but times have changed. Now, rural English towns use infrared to track burglars, and firefighters in the West use infrared detectors to locate smoldering "hot spots" that can't be detected by the naked eye. During Operation Desert Storm, pilots used infrared to locate targets during night missions and in heavy smoke. Astronomers hope to use infrared technology to peek inside distant stars.

The infrared video camera, a fairly recent gadget, is what is being used in an effort to make all these things come to pass. The IR camera takes advantage of the fact that a warm object gives off more radiation than a cool one, and the camera "sorts out" those differences, providing a recognizable image.

Since the human eye responds only to visible light, it may miss the glow of hot ashes in the middle of what looks like a dead fire. It also can't see in the dark. An infrared camera can do both.

Scientists predict that there will be many uses for the emerging technology, including assisting commercial aircraft during landings at night and in foul weather, and night surveillance.

Older infrared technologies have been used for years in the construction and petrochemical industries. They have been used to help detect leaks and stress patterns, control oil pollution and conduct land surveys and medical analyses. Those looking for problems in electrical lines use them to find faults in connections, which show up as darker areas, since they're hotter than their surroundings.

Some energy-efficiency experts use them to detect heat loss from homes, enabling homeowners to determine how better to weatherstrip and insulate, to add comfort and save money on their energy bills.

Such cameras have been either expensive, or they were limited in what they could do. Now, new platinum-silicide cameras should offer a low-cost alternative. Scientists have used them to peer through the interstellar dust and look into distant regions of the universe, and NASA has lobbied long and hard for an infrared space telescope, which astronomers believe will be of fundamental importance for almost all aspects of astronomy.

Closer to home, though, the towns of Halmore, Purton and Hinton in Rural England have installed such cameras on power poles at the edges of their towns, to obtain a record of those who enter and leave. The idea is to snag the occasional urban thief who passes through; as in other places, such problems are on the increase.

An infrared image is essentially a composite picture of the thermal images given off by a scene or person, and represents the internal temperature. While faces will look like faces, they will look very different from those viewed by light in the normal spectrum Warmer parts, such as eye sockets, will register dark. Cooler parts, such as ears and the nose, will be lighter. Eye and hair coloring are missing.

While such differences cause problems, police viewing the video tapes have a fairly respectable record of success in recognizing perpetrators.

But one problem is that many objects emit similar amounts of infrared "light," giving off little in the way of visual contrast, even through the best of cameras now in existence. A major goal for infrared researchers is to find a way to boost the difference.

But for now, while astronomers dream of a telescope that will enable them to unlock the mysteries of the universe and police view strange images on TV screens and firefighters look for hot spots, the electric industry uses them for practical purposes.

While sniffing out power line flaws and energy leaks is necessary and even important, there's nothing wrong with dreaming of finding out more about the universe around us. Perhaps someday soon such cameras will enable us to do just that!

Even though the weather was bitterly cold, attendance was fairly high. Some 800 members turned out.

who want to be able to go anywhere in the country to purchase bulk power and have owners of existing utilities required to transport that power to the point of use. Deregulation will lower their cost of doing business."

He added that so far, in industries that have gone through deregulation, benefits have been enjoyed mostly by large businesses, while smaller customers and residential users have seen either increased costs, poorer service, or both.

Ernest C. Weber, manager, noted that 1995 had been another successful year for the co-op, and that kilowatt-hour sales, peak demand and cumulative demand had reached all-time highs.

"Norris Electric Cooperative continues to increase in miles of line and number of members served," he said, "and we're facing increasing demands on our system. We upgraded the Kedron substation by 50 percent and we built three miles of three-phase line to serve an increased load at the Lis elevator.

"We connected 334 new services last year, plus 195 underground services to lots in Country Club Estates, White Oak, Oak Ridge, Holley Acres, Cripple Creek, Emerald Lake and Lester Martin subdivisions. This is just the tip of the iceberg," he added, "and we have more than twice that many underground subdivisions on the drawing board for 1996."

Weber added that Norris had purchased nine new substation transformers to help take care of rapid growth in several parts of the co-op's service territory. Those transformers, which will be delivered in April, will cost $412,468, he added.

Lyman Crumrin of Marshall, treasurer, noted that 1995 had been a very successful year for Norris Electric, with record sales. "Our total operating revenues for 1995 came to $18,565,074, and our power cost was $13,537,522, which amounted to 75.1 percent of our total operating costs. In other words, just over 75 cents of every dollar we spent went for purchased power. We spent just less than 25 cents of each dollar to operate the co-op, and to set aside for margins.

We had an extraordinary retroactive accounting change dictated by the Financial Accounting Standards Board, or FASB, which resulted in a charge of $1,460,959. It deals with how retirement benefits are funded, and does not represent any current expense to the cooperative," he said.

"Operating and non-operating margins," he continued, "came to $897,561. This was an increase of $164,454 over 1994, which had also been a very successful year."

After the meeting, the board met in reorganizational session and reelected Mundt president, Minderman vice president, and Russell Scherer secretary. Dean Dieterich of Dundas was eleced to replace Crumrin as treasurer.

In addition to those mentioned earlier, other members of the Norris board are Norbert Nix of West Liberty and Charles Liston of Flat Rock.

Norris Electric Cooperative serves some 16,800 members on 3,860 miles of energized lines in all or parts of Clark, Crawford, Cumberland, Effingham, Jasper, Lawrence, Richland and Wabash counties.

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The area men who were elected to two-year terms on the board of directors of Norris Electric Cooperative are pictured with Ernest C. Weber, manager. Seated from left are Earl Minderman of Lawrenceville, Weber and Loren Litherland of Mt. Carmel. Standing from left are Wilburn Deters of Teutopolis, Kent Hetzer of Wheeler, Walter Hart of Annapolis and Keith Sherwood of Casey. Minderman, Litherland, Deters and Hart were reelected; while Hetzer and Sherwood will replace Howard Wolf of Wheeler and Lyman Crumrin of Marshall, respectively. The election was held Saturday, Feb. 3 at the co-op's 58th annual meeting at the Newton High School, Newton.

Two board veterans retire at annual meeting

Four area men were reelected to the board of directors of Norris Electric Cooperative at the organization's 58th annual meeting Saturday, Feb. 3, at the Newton High School in Newton, and two others were elected to their first terms.

Reelected were Walter Hart of Annapolis, Loren Litherland of Mt. Carmel, Wilburn Deters of Teutopolis and Earl Minderman of Lawrenceville. The new men are Kent Hetzer of Wheeler and Keith Sherwood of Casey. Hetzer replaced Howard Wolf of Wheeler, who had decided not to seek reelection, after serving on the board for 26 years. Sherwood replaced Lyman Crumrin of Marshall, who stepped down after serving 18 years. Both men were recognized for their service.

Congressman Glenn Poshard addressed the group briefly, and reminisced about the time he was growing up on the family farm without electricity. "It was really wonderful when what was then the Rural Electrification Administration, or REA, came and brought electricity. We finally did away with the old icebox in the smokehouse, and no longer had to put cream in a bucket and lower it down a well to keep it cool when the icebox gave out. My sister and I could study by good light, and Mom got an electric sewing machine.

"It was a real improvement in our lifestyle, and it made working on the farm easier and more productive. And, it improved the rural economy while it was doing all that. The success of the rural electrification program is proof that partnerships between government and private citizens works and works well. The success of E J Water, Lincoln Prairie Water and other water projects in the area are proof that such a partnership will, work, too. I want you to know I'm ready to help you with such projects, and I urge you to remember how well they've worked when people start talking to you about slashing budgets."

State Senator Wm. "Bill" O'Daniel of Mt. Vernon and Representative Chuck Hartke of Teutopolis also attended.

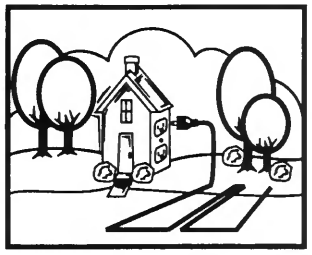
Delbert D. Mundt of Dieterich, president, told some 800 members and guests that the member-owned electric utility had enjoyed a record-breaking year, but that proposed changes in the electric business were causing concern for the future.

"As good as our operations continue to be here at Norris," he said, "we have been troubled by reports we've seen about coming changes in the electric utility industry in the United States and here in Illinois. There are those who are advocating the complete deregulation of our industry, similar to that of the airline and trucking industries.

"Those who advocate complete deregulation" he said, "are generally large industrial users

Spring is time to think geothermal

It has been said—roughly—that in the spring, a young person's fancy turns lightly to other young persons. For those who are older, and who have a house to keep up, a family to provide for and bills to pay, spring tends to bring gratitude.



Not only are we thrilled for the end of winter, but we're grateful that the old furnace has squeaked through another winter without giving up the ghost.

With the heating season on the way out and the cooling season a month or so away, now might be a good time to give some thought to having a geothermal heating and cooling system installed in your home. If you're getting ready to build, you certainly ought to look into geothermal.

A geothermal system uses earth-stored energy in partnership with safe, clean electricity, to offer a hard-to-beat way to heat and cool your home.

The heart of the geothermal system is essentially a heat pump with a difference: but what a difference! The average air-to-air heat pump is essentially a reversible system that removes heat from your home in the summer and expels it to the outside air. It does the opposite in the winter, warming outside air and moving it into your home. You decide what it does simply by flicking a switch on your indoor thermostat.

If the air-to-air heat pump has a disadvantage, it's that it starts losing its efficiency at about 10 degrees F., so you have to rely on another heat source to make up the difference.

A geothermal system doesn't have that problem. It draws its heat or coolness from a liquid-filled grid of plastic piping buried 5-6' underground. Once you get about 5 feet below the surface of the earth, the temperature in Illinois is a fairly consistent 55 degrees F., the year around.

Instead of having to cool 90-degree air in the summer, the unit is dealing with 55-degree air, and it does that very efficiently. When you need heat, the geothermal system is, again, working with a 55-degree medium. That's much better than the subzero weather air-to-air units have to cope with. All in all, about 70 percent of the "fuel" your unit needs comes from the solar energy absorbed by the earth and stored there.

Not surprisingly, the technology for the geothermal system, also known as a "closed-loop earth-coupled groundwater heat pump system," came from northern Europe. It is only natural that the system would develop in that area, with its harsh climate and high fuel costs.

The idea dates back to the 1940s, but offered no advantage to Americans in a time when the cost of heating and cooling a home was almost insignificant. The energy crunch of the early 1970s changed all that, and Americans started getting serious about economical comfort conditioning.

There was another factor, too. The piping and technology hadn't developed to the point that Americans would feel comfortable with them, and it wasn't until the 1980s that they came together. Early experiments with polyvinyl chloride (PVC) piping proved unsatisfactory, and until better piping could be developed, the system had no real future. Today's piping is expected to last 25-75 years in virtually any soil type. Present-day piping has better heat conducting properties than earlier materials had.

Most closed-loop systems are trenched horizontally in the yard around the home, but the stored solar energy can also come from well water or a pond, if it's large enough. If you don't have room for a horizontal loop, you can have a well drilled or use an existing one. If you need to have your yard trenched, it's usually not a big problem. The trenches are usually about 6inches wide, and a simple reseeding will take care of the disturbed lawn. The pipes have no adverse affect on plants above them.

A big plus is that the heart of the unit is installed inside the house, in a garage, storage closet or crawl space, where it's protected from the elements. That prolongs the life of the unit, which is quiet enough that it won't be a bother.

Geothermal systems can save you even more money by providing hot water for your home. Some types of systems can save you up to 50 percent on your annual water heating bill by preheating tank water. These units are standard equipment on some systems and optional on others. Be sure to look into the possibility of having hot water, too.

While geothermal units seem to be too good to be true, they do have one disadvantage: They're expensive to install because of the trenching or well-drilling needed for the loop.

Don't let that deter you. They will save you so much money on your heating, cooling and water-heating costs that they'll pay for themselves much sooner than any other kind of system that's likely to be available to rural electric consumers. Ask the people at your electric cooperative for more information. You'll be glad you did!

Heat and cool your home, naturally.

The energy of nature shows itself in many ways...the strength of a seedling pushing through the soil, waves surging against the shore. The Earth also absorbs and stores heat energy from the sun. This energy within the soil can heat and cool your home inexpensively, cleanly and efficiently through the Geothermal Heating and Cooling System. In the winter, warmth naturally stored within the soil is drawn into your home. In the summer, the action is reversed to cool the house. The system produces four times more energy than it uses, which should leave you good-natured when the electric bill comes.

Electric Cooperatives of Illinois

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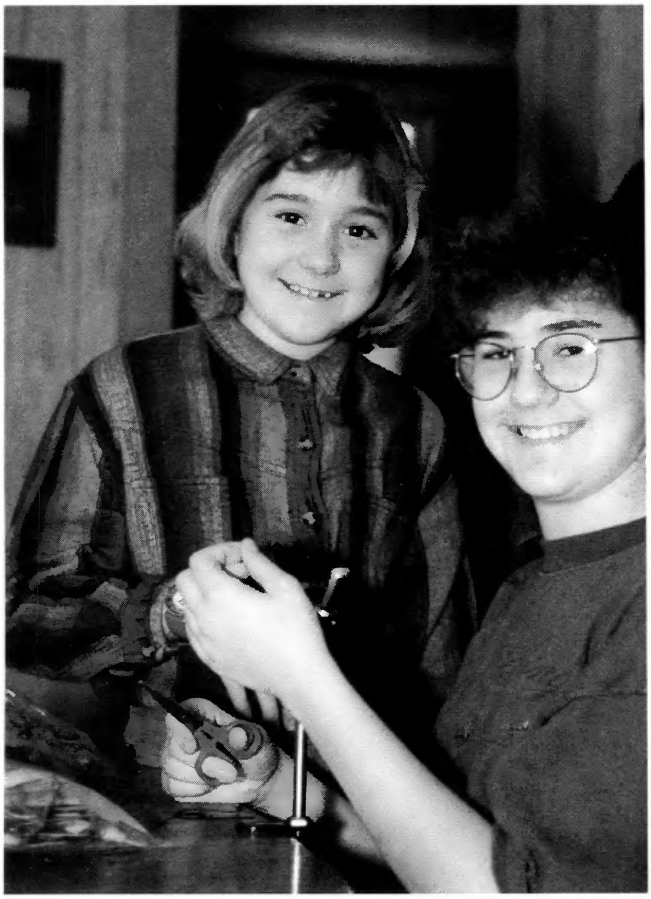

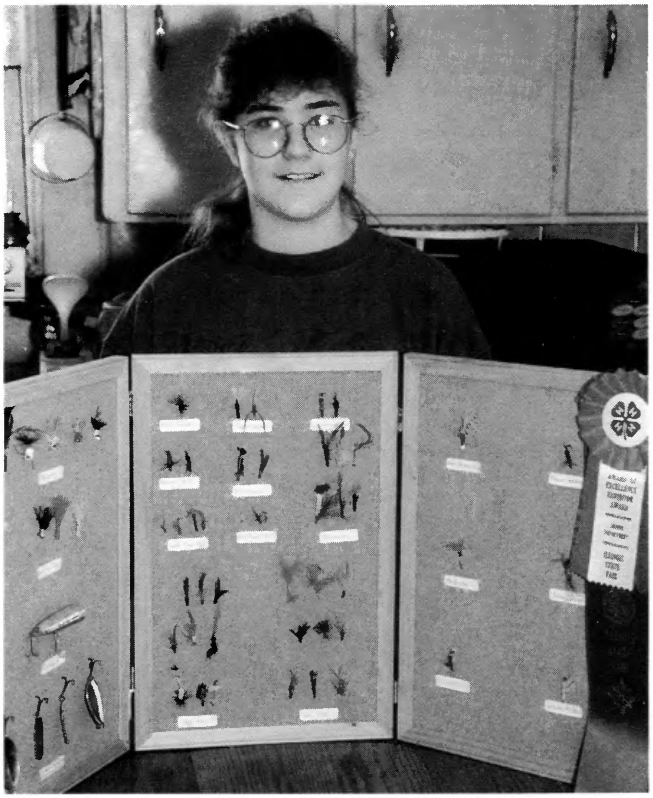

At left, Stephanie works with her sister, Katie. Above, she displays flies and ribbons.

While her parents are supportive, so are other family members. Her great-grandfather built her a cherrywood case to carry some of her equipment in, and it has a plexiglass top which enables it to double as a small display case. "I take it with me when I do demonstrations for friends and at schools," Stephanie says, "and there's room under the display space for some of my tools and supplies."

She uses all different kinds of things to make her flies attractive, ranging from bird feathers to chenille to floss to deer hair, and about anything else she thinks will work. After deciding that, the trick is to put something together that will look good to a fish and still stick together when wet.

"Some of my flies are really simple," she says, "and I can put them together in 10 to 15 minutes, and some of the more complicated ones take an hour or more. I'm thinking about trying a crawdad, and I expect to spend a day on it, because it's so complicated. I'm looking forward to it, though."

She notes that the first step, usually, is to clamp a hook in the vise and wrap it with a winding of thread from the front down the length of the shank. "Then you decide whether or not to tie in a feather or two or three, and you wind back. You try to make it incline from front to back, and you want the front of the fly to look like a head. You put glue on it, tie in several knots so everything will hold together. Then you let the glue dry, and give it another coat of glue."

She notes that there are literally hundreds of existing fly designs that have been proven to work, and that there are books that tell how to make them in a step-by-step process. All the sportsman needs to add is dexterity, patience and practice.

"Dad had several books," Stephanie says, "and I use them quite a bit. Of course, you can try different variations to see what might work best for you. You can use different colors of feathers, thread and so on."

She notes that her dad had collected supplies over the years, and that she has "a ton" of stuff to use for making flies. "Dad had deer hair and feathers, which are good for dry flies, because they're supposed to float," she says, "and he'd bought a lot of different colors of threads and other things."

While Beth and Rick are not particularly interested in fly-tying, Stephanie's 10-year-old sister, Katie, is showing some interest. "I'm working with her," Stephanie says, "but she doesn't seem to have quite as much patience as I have."

Stephanie emphasizes that she's interested in more than just flies. "I make all kinds of lures," she says, "including jigs, poppers, spoons and just about anything that I think will catch fish. I use worms, too. If something will catch a fish for me, I'll use it."

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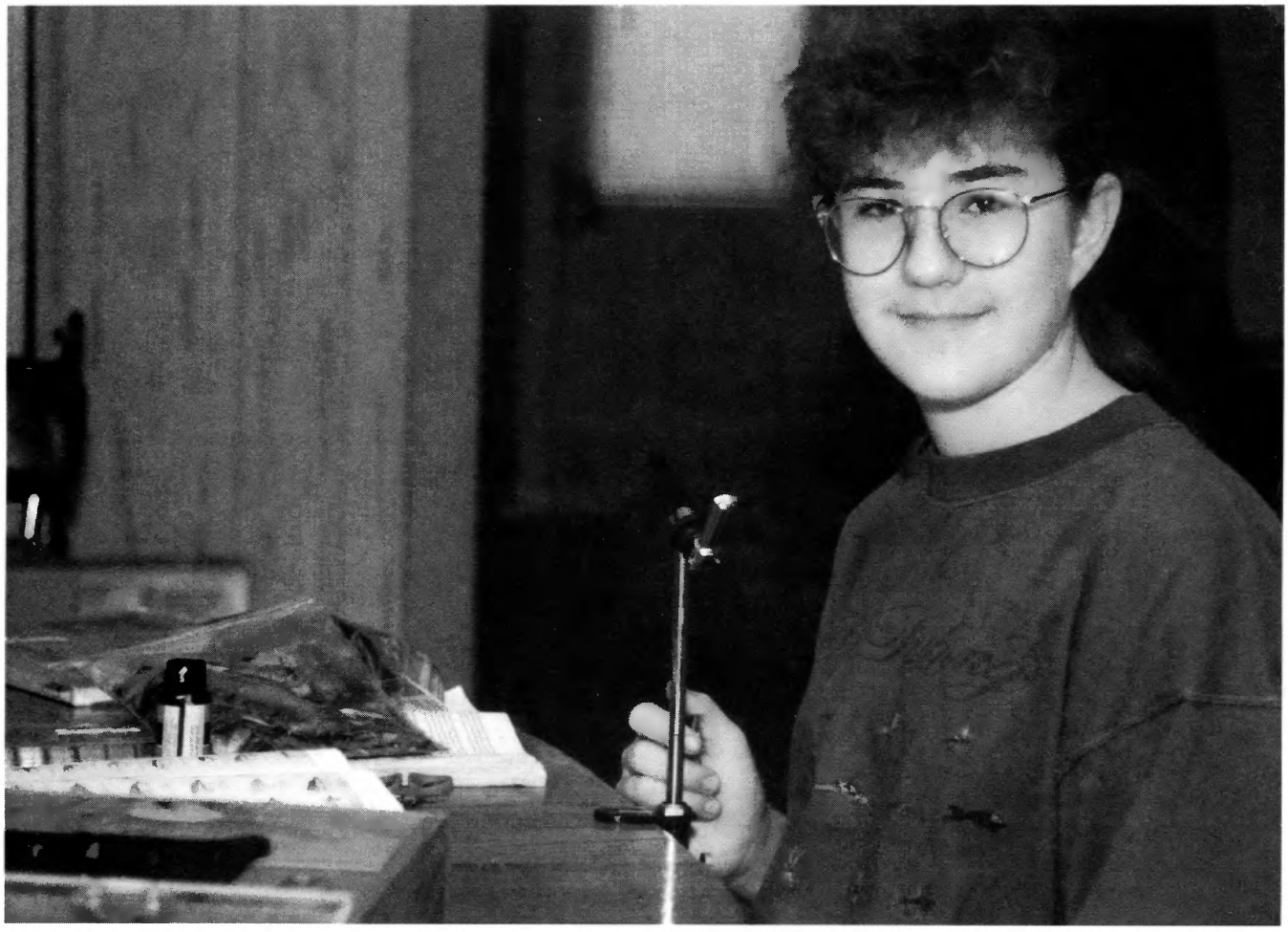


Stephanie, surrounded by supplies and equipment, in the family kitchen.

The lure of fly-tying

Stephanie Turkal is a lot like most 12-year-old girls in that she spends a good deal of time working away in her mother's kitchen. But unlike many girls her age, she's not putting all that time into learning to cook. Instead, she takes advantage of the lighting and space to tie fishing flies.

When she was just a little slip of a thing, her dad started teaching her to tie lures. Not too long after that, he passed away, but he left her with a solid grounding in the basics.

The Willow Hill girl has taken her fly-tying efforts to the Illinois State Fair twice, and has come home with "Superior" ribbons both times. Stephanie, who is a sixth grader at Yale Grade School, is a member of the Hunt City Country Kids 4-H Club, and competed under the auspices of that group. Before going to the state fair, she'd done well in the Jasper County Fair, too.

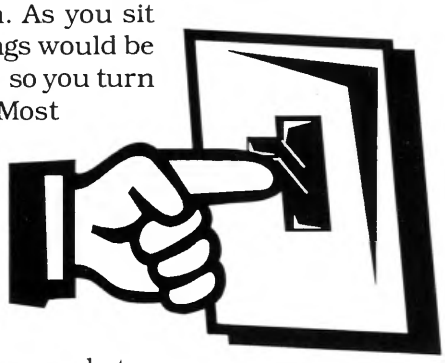
"I was just 7 or 8 years old when Dad started teaching me," she says, "and I really took to it. It was something we enjoyed doing together, and he'd been doing it for a long time. He'd learned from a great-uncle in Michigan."

Her mother, Beth, and step-father, Rick Nethery, both of whom are teachers in Oblong, have encouraged her to continue. Beth bought her a new vise not long ago, in fact. For the uninitiated, a vise is used to hold a hook, while the artisan does various things to it to change it from a plain hook to what, it is hoped, will look like a mouth-watering treat to a hungry fish.

"I've noticed that black, white, brown and yellow are attractive to fish," says Stephanie, who hopes to become a marine biologist someday. She has done much of her testing in ponds near her home. "I do quite a bit of fishing," she says, "and I'd like to do a lot more."

When you flip a switch, you're buying power

As you walk into a room in your house, the first thing you're likely to do when you pass through the door is to hit the light switch. As you sit and begin to read, you realize things would be a little easier if you had more light, so you turn on the lamp next to your chair. Most of us do those little things without thinking about them at all.



As a matter of fact, though, you're making a buying decision each time you turn on an electrical switch. You make a buying decision when you pick something off the shelf at the supermarket, or at the boutique in the mall, or when you put gas in your car. We often fail to realize we also do it just by flipping an innocuous little switch on the wall.

If you keep that realization in mind, you also have a way to exercise a certain amount of control over your electricity bill. There are simple things you can do if you think before you buy. You can purchase electricity wisely, without losing any of the comfort and convenience it provides. Keep these factors in mind as you go about your routine at home.

Water heating

It's hard to believe, but about 15 percent of the energy we use in our homes goes to heat water. Hot water plays a very important role in everyone's lifestyle, and many lifestyles require quite a bit of hot water. Naturally, that results in higher energy use, which means that you're going to buy more electricity.

Ask yourself these questions:

"When I take a bath, do I use water sparingly, or do I fill my tub clear to the top?"

"Do I take short showers, or do I stay in the shower until the last drop of hot water's gone from the water heater?"

"Do I repair leaky faucets, or do I let them drip and waste hot water?"

"Do I operate automatic washers and dishwashers with a full load, or just whenever it's convenient?"

Space heating and cooling

Let's face it: Nobody likes to be too hot or too cold. That fact is reflected in our energy usage. Nearly half the energy used in American homes goes for heating and cooling. If we use dehumidifiers in the summer, or humidifiers in the winter, we're making a fairly substantial energy purchase, because such units tend to run continuously. Portable space heaters, air conditioners, and garage and basement fans also contribute to our energy consumption.

If we take a look at our "comfort" lifestyle in terms of maintaining relative humidity and temperature, we can use energy wisely in many ways. These range from adding insulation where it's needed, to caulking and weatherstripping, to simply turning down the heat and turning off the air conditioning in a room that's not being used. When you do that, of course, you're making a decision to buy a little less electricity.

Family size

There is a direct relationship between the number of people living in a home and the amount of energy used, and that's especially true if some of the residents are teenagers. In addition, if friends and relatives are visiting, you can expect to use more energy for cooking, baking, laundry and hot water. And if you've opened up a spare room, it will cost a little extra to light it and provide heating or cooling.

Appliance use

America is a nation of gadget-lovers, and we're all looking for an appliance that will do something for us. But we need to remember: when we open a can with an electric can opener, we're making the decision to buy just a tiny bit of electricity. And when we roast a turkey in our electric oven, we're also buying energy. The truth is, though, most of us are firmly convinced that the convenience is worth the cost, and we use such appliances cheerfully.

Your appliances work for you around the clock, whenever you choose to use them, and wise use of these helpers can cut your costs.

For example, ask yourself questions like these:

"Do I turn off the lights when a room is not is use, or do I leave them on?" "Does my television set entertain the entire family, or does it play to an empty room?"

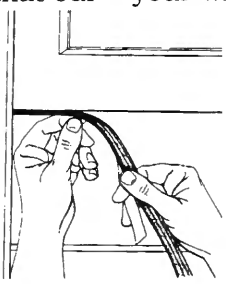
"Do I leave my oven on 'warm' for an extended period of time, or do I cook many dishes at once and then turn the oven off?"

All these considerations affect your lifestyle, and the cost of maintaining it. All Americans are part of the residential sector, and real energy management consciousness is likely to start at home.

A conscientious home and farm energy management program can pay big dividends!

Plugging those little air leaks

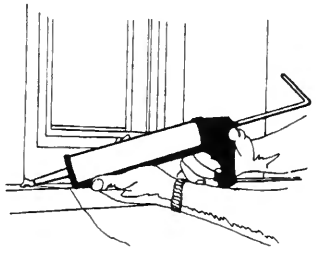
Now that winter is here and we've enjoyed a couple of sieges of howling winds and blowing snow, many of us have learned—again—that our houses aren't as snug as they might be.



While it would have been better to have tackled all those little chores when it's nice, it's a good bet that a lot of homeowners have let the lessons of last winter go by.

Many people have found to their dismay that their house, which seemed to be nice and snug during last year's fairly mild winter, is susceptible to cold and drafts.

Even so, there are some things that can be done, besides just turning up the thermostat and hoping for the best. Even well-built houses can have "problem" walls, usually on the north side, and also on the side facing the prevailing winds. Or both.



If you've found that you have a problem room, or if your entire house is harder to heat than you remembered, you may be able to achieve greater comfort and lower costs with a few simple remedial steps. You can do some of these repairs inside the house, no matter what the weather is like outside. For others, you may be wise to wait for a warm spell.

Even the best of houses will often let an amazing amount of cold air in around the electrical outlets on the outside walls. If you suspect that your outlets are leaky, wait until there's a good stiff breeze blowing outside and put your hand near the outlet. Chances are, you'll be able to feel that draft like the wall wasn't there.

Almost any home-supply store anywhere has little foam rubber backing plates that act as gaskets to minimize that problem. They are inexpensive and simple to install. All you need is a screwdriver and a few minutes. You simply take off the switch or outlet cover, place the gasket behind it, and screw the cover back on. Since this little chore is so simple and inexpensive, it probably should be your first step. If you can't do all the switches and outlets, be sure to take care of the problem ones first.

Windows can present problems, too. Often, all you need to do to check your windows is be in the same room they're in, and that'll be confirmation enough! Since they perform contradictory functions, they're fairly complex structures. They have to seal out the elements during some times, yet they need to be opened at others. Many of the problems windows give you are related to this open/shut nature.

One of the first steps you need to take to cure your window drafts is to add weatherstripping, if there is none already there, or if what's there is no longer doing the job. You can buy little strips of adhesive-backed stripping, and they're also inexpensive. You just cut the strip to length where the window closes, peel off the tape that covers the adhesive, and apply it carefully. You'll probably need to do this at the top of the window, also.

If you feel around the outer edges of the window, inside the frame, you may still find that there's leakage. You can minimize that by putting in a shrink-fit film on the inside. While it looks like a daunting chore, it really isn't. You can buy kits at hardware and home-supply stores, and they usually include double-sided tape and enough film to do one or two windows. They come in different sizes, so you'll need to know how big your windows are. The kits are generic, so you may need to buy a larger film than you actually need and cut it to fit with scissors.

While it looks like a difficult task, the hardest part actually is peeling the backing off the silly double-sided tape!

After you get the tape up and the plastic cut to size, you apply the film, carefully, and press it against the tape, which you've peeled the backing off of, naturally. If it's not perfect, you're still okay. You can shrink it to fit with a hair dryer. Even a mediocre craftsman can do a presentable job.

Once you get that taken care of, your windows may still leak. The area around the outer edge of the window frame is often a source of difficulty, and that's a problem you'll have to go outside to take care of.

Actually, that's caused by a lack of caulking around the outside of the exterior window frame, and can be cured by the judicious application of a bead of caulk around the window. Occasionally people have tried to do a temporary interior fix with masking tape around the window frame. That works, but it's visible, unattractive, and will peel the paint off if it's left on too long. Don't do it unless there's a really horrendous draft, and you expect to be able to remove the tape and do a proper caulking job when the weather improves.

These few simple steps, most of which can be done inside the house, will help you cut your heating costs, and will make your house more comfortable, too.

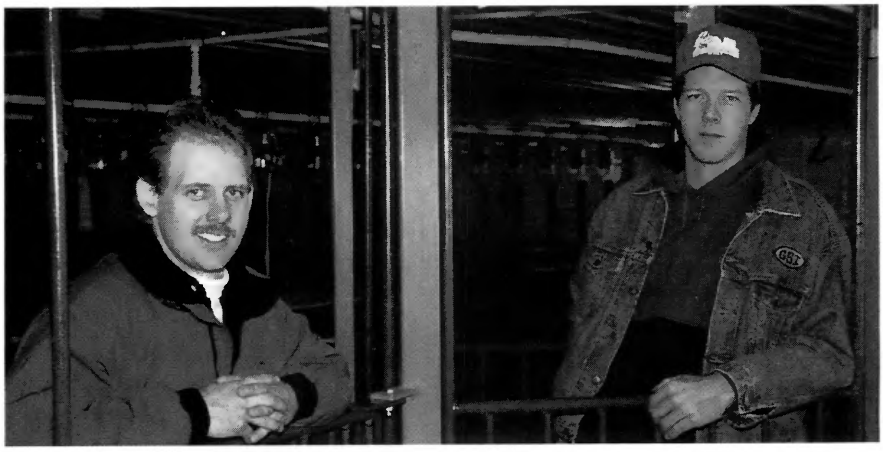
Pitchco building state-of-the-art hog operation in northwest Jasper County

There's a pig farm going up in northwest Jasper County that makes even 10-year-old farms look positively archaic, and it'll soon be producing pigs by the thousands.

The operation, known as Pitchco Farm, is operated by Wes and Tony Pitcher. They, along with contractors and vendors, held an open house December 22 for those interested in the latest hog-production technology.

A row of automatic feeders.

Briefly, the operation is set up in three main buildings: two are 22,320 square feet, while the third is 18,720 square feet. One is a breeding/gestation building, the second is all gestation, and the third has six farrowing rooms with 52 crates per room. In all, there are 2,680 sow spaces. That building also houses the farm's offices, a kitchen, and a shop and garage facility. A 14-million-gallon lagoon will handle animal wastes. These photos show some of the facility as it nears completion.



Top photo: The buildings are just taking shape. Above, Wes Pitcher, left, and Tony Pitcher are the principals in the venture.

cleared, and we're always trying to figure ways to cut down the time we use to clear and spray."

Naturally, Kibler is careful to keep track of the chemicals the crews use, and to see that they're used correctly. "We're all licensed," he emphasizes, "and we're very careful to follow the EPA guidelines exactly. But we have to spray.

"It would cost at least three to four times as much to clear brush manually as it costs to spray it, and that's assuming we had the best of machinery, and the really big machines are very expensive. As for doing the job by hand, two men can spray a fencerow in an afternoon that would take three or four men a week to cut manually. It'd just cost too much to do it that way, and the cost would end up on the members' bills."

Kibler is involved in NEC's "Swap A Tree" program, which was adopted several years ago to reduce clearing costs. "Basically," he says, "we offer members the opportunity to have us cut out a tree they have that is growing into our lines, or that may grow into our lines in the future. Then, we replace it with another tree, either a small one in the same place—if it won't become a problem later—or in a different place. I like to emphasize that the program is for NEC members only, and we swap on a tree-for-tree basis."

In addition to Kibler, the forestry crew is made up of Dave Brooks, Jim Tarr, Gregg Cotten, Chris Hilderbrand, Jerry Zumbahlen, Brian Hemrich, John Bogard, Phil Apple and Mike Ochs.

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Gregg Cotten, line clearance foreman, uses a hydraulic saw to cut a limb out of lines.

Line clearing crew keeps busy

Harold Kibler, right, discusses trimming with Gregg Cotten and Chris Hilderbrand.

Norris Electric Cooperative is one of the biggest of the 26 electric co-ops in the state, no matter how you measure it. In terms of number of members, we're right up at the top, with nearly 17,000 members. Only one other co-op has more. With about 3,500 square miles of service territory, we are the largest in physical size. We have some 4,000 miles of energized lines. Only one other co-op has more.

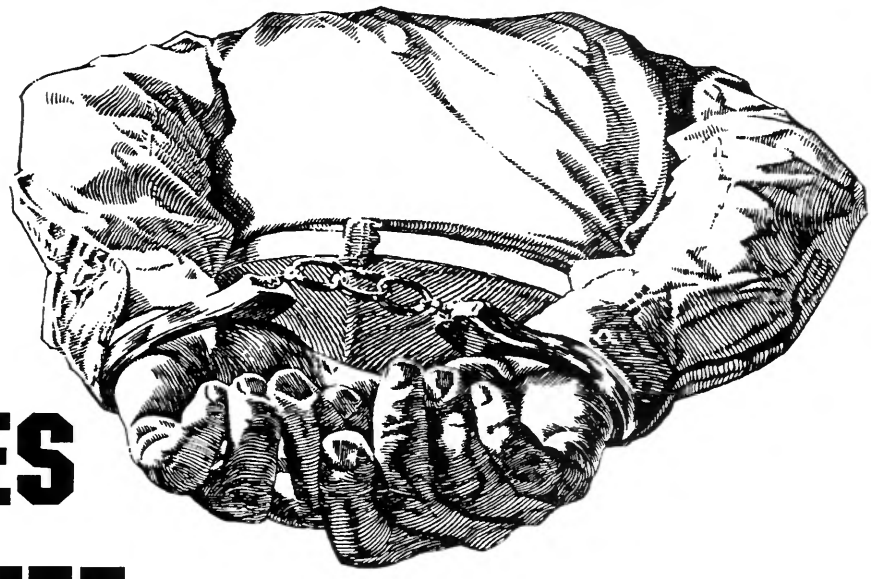
"While our size works for us in some ways, it presents problems, too," says Harold Kibler, forestry superintendent. "It means we have nearly 4,000 miles of line to keep trees out of, and right-of-way that we have to keep as clean as possible."

NEC has nine men in the tree trimming crews, and they work out of three large bucket trucks and one small truck. The crews do line clearance for new construction and work hard to keep existing lines clear, too.

"We have to keep the lines clear," Kibler says, "because there's always the danger of storms. We cut the trees back as far as we can so if limbs get covered with ice and bend down or break off, they won't pull our lines down with them. We also worry about tornadoes blowing trees over. And we try to keep the right-of-way clear so we can get to trouble spots when we have to."

It takes NEC crews about six years to trim their way through the entire system, using a mix of elbow grease, hydraulic saws, chain saws and, in a few places, axes. Spraying the system takes about five years, Kibler notes, and both methods of clearing enable the crews to just keep up with Mother Nature.

"While there are a lot of farms in our service territory," Kibler says, "some 65 to 70 percent of our lines run through the kind of country that needs to be



IT TAKES A THIEF. . .

to tamper with meters!

Tampering with an electric meter is illegal. And, it can be quite dangerous because of the possible exposure to high voltage.

When a person steals electricity, the thief is stealing from neighbors and fellow cooperative members who ultimately pay for the stolen power. Theft of electricity is also a violation of Illinois state law. . .with all the penalties that go with conviction.

Seals on meters are like locks on doors, discouraging unauthorized entry. If your meter needs attention, please contact your cooperative's office.

Electric Cooperatives of Illinois

Saving money by saving hot water

Many people are surprised to learn that their water heater is one of the largest energy users in their home. Typically, that big (usually) cylindrical thing sits quietly in a corner somewhere heating water for dozens of household chores. While it's doing that, it is also using energy. On average, some 15 to 20 percent of the utility bill goes to heat water.

One way to keep costs down is to buy an energy-efficient water heater to start with. All major electricity-using appliances on the market now have an Energy Efficiency label, and there are several different price ranges of water heaters. Generally, the less expensive they are to buy, the more expensive they are to operate.

While you're shopping, be sure to talk to the people at your electric co-op. Some co-ops may have a special price on electric water heaters. Some may offer a special "peak shaving" rate to encourage you to let them place a control on your water heater. Then, the co-op can shut off for brief periods during times of high electricity usage.

Once you've got an energy-efficient water heater, there are some things you can do in your home to keep from using too much hot water in the first place.

First, you need to check your temperature setting. If you're heating your water more than necessary, you're wasting money. Home economists tell us that you need 140-degree water for proper sanitizing, and most detergents for automatic dishwashers won't dissolve properly

at temperatures cooler than that.

So check your water temperature as it comes out of the faucet, after you've let the water run for about five minutes. Then, you'll need to turn it higher or lower to reach the temperature you need.

Of course, if you don't need a new water heater, you're still stuck with a dilemma: Do you replace it anyway, which is expensive, or just go on using it, which is also expensive. The answer is yes and no. Yes, you go on using it. No, you don't use it expensively. If you have a water heater that's in good shape, you can still make it more efficient by adding insulation to the outside. You can buy kits at hardware stores, or just wrap batts of insulation around your heater, assembling everything as neatly as possible with duct tape. Be sure to leave a cutout for your thermostat control panel. That little job should save you about 20 percent on your water heating expense.

While insulation and temperature control can help, there are even more ways to save. First, try to figure out ways to use less water.

For example, it helps to know where the water is used. Once you know that, you can try ways to use less of it. The average family, the experts tell us, uses hot water like this: 41 percent goes for baths and showers, 24 percent goes for laundry, 27 percent is used in the kitchen, and some 8 percent is used for "other" purposes.

Since baths and showers account for the biggest usage, cutting back there will give the most savings. Flow reducers on shower heads will reduce the amount of water going through the shower head, while still giving the feel of a good shower. Shorter showers will help, too.

Much of the water used in the kitchen goes for dishwashing, and cutting back there can help. If you have an electric dishwasher, you can save on water heating expenses by using that appliance wisely. Wait to run it until you have a full load. Don't run it with just the dishes from one meal in it.

The laundry room is a big hot water user, too. You can save by washing only full loads, by using water temperature only as hot as needed, and by using a cold rinse whenever possible.

If there's any chance at all that you may be replacing your water heater soon, contact your co-op first. They may have a bargain for you. Be sure to ask them about any incentive rates they offer. And don't forget to ask them for further energy-saving tips. They may be able to help you save in other ways, too.

At top left, Pete is shown with a fox habitat, which includes not just the animal, but some of the surroundings in which it might be expected to live. The lower photo is of a stillborn fawn that Pete mounted just to show its beauty.

ket.

"Now you can buy many different kinds of forms, depicting animals in many different positions, and they're getting more realistic all the time," he adds. "That makes the taxidermist's job a lot easier."

Another trend over the years has resulted in the creation of "habitats." Instead of simply stuffing an animal, taxidermists today will often put them on a base, sprinkle it with snow, build in some grasses, and maybe add a butterfly or the like.

While by far most of the animals Pete works with are brought in by hunters, he has one particular "habitat" that depicts a beautiful fawn.

"Many people ask me if somebody was heartless enough to kill a fawn that little," he says, "and I tell them that's not the case at all. A friend of mine raises deer, and the fawn was stillborn. He called and asked me if I'd like to have it, and I accepted the offer in a minute. I have a plaque I set up when I display it, and I have a little poem engraved on it that spells out that life isn't always fair, and that Mother Nature occasionally deals out a bad hand."

While roaming the woods, Pete occasionally ran across mushrooms, and decided to try making casts of them for some of his habitats. Others saw his mushroom molds and offered to buy them, so he decided to get into a sideline business. Now, he offers imitation mushrooms to supplement his taxidermy business.

Those interested in contacting Pete can reach him at RR 1, Box 109, Lerna, IL 62440. His phone number is (217) 849-3500.

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Pete is pictured with some mounted deer heads and several of the ribbons he's won at various competitions.

Wildlife artist preserves trophies

Pete Sweitzer is in an ironic situation. An avid hunter and fisherman, he set out to learn taxidermy so he could preserve some of the fish, birds and animals he bagged. Now, his business is booming. So much so that he's constantly busy, but still doesn't have time to do his own work!

"I've been interested in hunting and fishing all my life," he says, "and I'd looked at some pretty sorry taxidermy work over the years. I thought I'd see if I could improve on it, so I sent off for a correspondence course, like most budding taxidermists do."

The course was pretty good, he adds, and taught him the basics. "That was in 1972," he continues, "and I worked on my technique for quite a while. I set up my business, which I called Hunter's Choice Taxidermy, and I work out of my home near Lerna. I joined the Illinois Taxidermy Association several years ago. I'd go to shows and talk to the guys who were really good. It helped to visit with other taxidermists, and I was fortunate.

"Nowadays, we all share information and everybody helps everybody else. It wasn't always like that, and for a long time, the pros had all their little trade secrets. We compete, too. I've gone to a lot of shows over the years, and I've been fortunate to win a lot of ribbons and bring home a few plaques. I won the 1992 State of Illinois 'Best All-Around Taxidermist' award, too.

"And I try to help those who are coming along behind, like the others helped me," he says.

Taxidermy has come a long way in the last couple of decades, he notes, and that makes for better looking, more realistic trophies.

Years ago, taxidermists tanned the hides of the animals they were to mount, and put them over a form—often homemade—of papier mache'. Things are different now. Realistic forms made of urethane foam are readily available, and show blood vessels and the like. There are any number of artificial eyes, teeth, and so on also on the mar-

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