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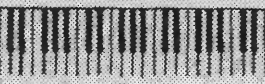
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The choices are ours to make

(Editor's note: The following remarks are from a speech made by Frank W. Griffith, Chairman, Edison Electric Institute, during the 1981 Annual Conference of the National Food and Energy Council this past fall.)

Every year there is one event which transcends all others in importance. It is more important than the new family car, it is more important than presidential elections, it is more important than royal weddings, it is more important than OPEC, it is more important than anything else. I am referring, of course, to the annual harvest of food. Food and water are the sine qua non for the existence of human beings. We who live in this bountiful country perhaps do not have the direct personal appreciation for the importance of food that billions of other human beings on this planet have.

Camping by the shores of Walden's Pond may make a delightful summer weekend, but it is not a viable alternative for millions of citizens of New York, Chicago or San Francisco. They need food and refrigeration, cookstoves, disposal systems, and all the myriad of things run by electricity in today's life, plus the transportation of food to their point of use. Our nation is committed to a revitalization of economic growth. The absolute minimum our people will accept is a static standard of living, and I have trouble even accepting that concept. It means you'll never have anything more than you have today. It means your children can never hope for a more gracious or rewarding lifestyle than their parents. Will your children accept that? Mine won't. Yet, achieving the electrical needs for even a static standard of living for this nation, let alone the rest of world, is a problem of staggering dimensions. It's not a question of nuclear, or coal, or oil, or gas, or conservation. We'll need the maximum of all of these, and probably still

be short at the end of this century.

It is perhaps appropriate to inject one other thought at this time. Although it is not directly related to the use of electrical energy, it is quite closely related to the thinking of those who promote the cottage economy. These are the same people who say that we should return to the smaller farms and a lower standard of mechanization. No evidence exists to show that reverting to smaller farms or less mechanization would in any way improve the energy utilization of agriculture. Indeed, what we would see would be a decline in agricultural production. Considering the rapidity of world population growth and the importance of the United States as a food supplier, it is very apparent that more agricultural production is a desirable goal.

Energy, and particularly electric energy, is useful in the food cycle only if it is available. If and when a shortage comes, the consequences will be tragic beyond comprehension. The American agricultural production and distribution system is the very foundation of our nation's strength. It is the source of our present abundance and our hopes for the future.

What we are really talking about is the survival of our liberties and freedom. We are the only shining star left in the world. Our future, and more importantly, our children's future is at stake. Will we stand before our children on that inevitable judgment day and bow our heads in dejection because we failed?

We will be judged not by what happened to us, but by how we responded. We will be judged not by the strength of commitment, but by the results of that commitment. We will be judged not by the resolutions we passed, but by the solutions we found. We will be judged not by the chances encountered, but by the choices we made.

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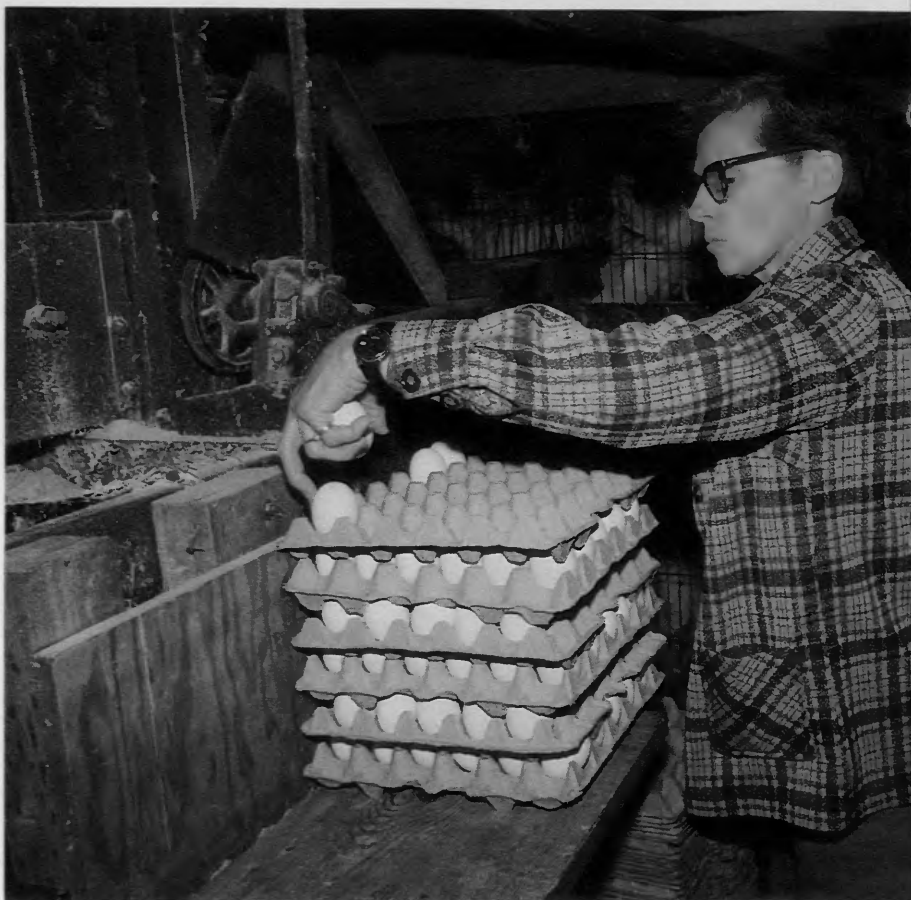
Cover: Egg producer Dean Ward, left, talks with Dave Wolken of Rantoul, who is unloading chicken feed at the Ward farm in Champaign County. Ward's chickens use about 18 tons of ration every 10 days. (See story on pages 4 and 5.)

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At the right Lelia gathers eggs from the conveyor belt that collects eggs along the four rows of layer cages. Below, Dean packages eggs for the on-farm sales part of their operation.



'We chose the chickens'

Dean and Lelia Ward answer the old question of "Which came first, the chicken or the egg?" quickly. "The chickens came first around here," Dean says with a smile.

When he says "chickens" he is talking about 16,000 of the birds, 20-week-old layers ready to start egg production at the Ward farm near the Fisher community north of Champaign. At that age, Lelia explains, the chickens "are just starting to lay."

From there on, it is 14 months of fast-paced egg collection and packing for the Wards, who also operate their 230-acre grain farm.

The particular batch of layers they have now was delivered in July 1981. They had been out of the egg business for about four months, he said, having closed out their last batch in March 1981. The Wards keep a close eye on the calendar, striving for maximum benefit from the 14-month cycle. "We try to have birds when the eggs are needed," Dean explains. The best times for egg demand, he adds, is the start of school and Easter.

During this 14-month production cycle, Dean says, they shoot for a production per bird of about 260 eggs. Optimum production is about 300 eggs over the 420-day period, he says.

Dean Ward has become quite involved in the poultry industry. This past spring he was elected vice president of the Illinois Poultry Industry Council. That is just that much more responsibility for the egg producer. A director of Illini Electric Cooperative, Champaign, Ward also found time over the years to serve in leadership roles with the Champaign County Farm Bureau and Champaign County FS, the Condit Township ASC Committee and as Condit Township Clerk, and is past chairman of the administrative board of the Fisher United Methodist Church.

The Wards' egg business goes back quite a few years, but 1963 was the year they put up the chicken house and started production of eggs for off-farm sale. "We always had chickens," Lelia says with a laugh. "We just had to get in or get out. People were always stopping by the house, and we used to deliver. We got out of that, but we still sell eggs here at the farm," she says.

Dean puts the egg production business in fairly simple terms. "As small farm operators, we had our choice of taking a job in town or finding something to do here on the farm. We chose the chickens."

During peak production times, the Wards estimate, some 13,000 eggs per day must be collected and packed, to be ready for the twice-weekly pick up by the Anchor Egg Company.

On a daily basis, the Wards must

work the house for the 13,000 eggs. It isn't a matter of picking each egg from a nest by hand. The wards collect the eggs from the end of a conveyor belt which brings eggs down each of the four rows of cages.

Dean calls Lelia "the egg lady" because she spends most of her time gathering the eggs from the conveyor and packing them for shipment to Anchor. Dean does a lot of the heavy work, moving the large cases of eggs around the chicken house and into the cooler, which holds about 200 cases. He keeps the conveyor and feeding system running, too.

The fellow who coined the term "chicken feed" had no idea of the huge amounts of ration necessary to keep the birds in top production. About every 10 days Ward receives some 18 tons of chicken feed. It is placed in a large storage bin just outside the house. Electrically operated feeders move the ration — mostly corn and bean meal, with vitamins and minerals added — from the bin to the feed hoppers inside and

They keep close tabs on the feed per bird and compare it to production. It is also necessary that they create lighting conditions which enhance production. Lights in the house are on 17 hours per day. Dean says he has plans for an intermittent lighting scheme. Lights will be on for 30 minutes, off 45 minutes, then on 30, and so on. It's all a matter of determining what the chicken perceives as daylight, Dean explains. He says studies have indicated a chicken does not become aware that it is dark until about 45 minutes has passed, thus the 45-minute interval between the 30-minute lighting periods.

About five to 10 percent of the Wards' production is sold to local customers, and those sales are large eggs only. All other eggs are ungraded. "We're just a producer," Dean emphasizes.

As an officer and active member of the Illinois Poultry Industry Council, Dean Ward keeps a close eye on developments in the industry. What he



The storage bin for chicken feed dominates Dean and Lelia Ward's egg-producing facilities at their farm near Champaign.

then to the chickens. "A chicken will eat about a bushel of corn a year," Dean says.

"We used to grind our own feed," Dean says, adding that the consistency of the purchased ration makes it a better feed when compared to farm ground.

sees is not pleasing. "Illinois has a declining egg production. Chicago is the largest market for Illinois eggs, and out-of-state production is going into the Chicago area at an increasing rate. The downstate producers could see some of their markets lost in the coming years," he adds.

G. E. "Jack" Dempsey, right, discusses some old photos with Roger Mohrman, manager of Adams Electrical Co-operative. Dempsey hired on as a hole digger in November 1939, when the cooperative was headquartered in Quincy. He now lives in Camp Point, where the cooperative is also located.



At Adams:

G. E. 'Jack' Dempsey retires after 42 years

Gerald "Jack" Dempsey is retiring March 1 after more than four decades with Adams Electrical Co-Operative, Camp Point, and many things have changed dramatically during those years, he says.

"I came to work here on Nov. 1, 1939," he says, "and I dug holes for transmission and distribution poles. We dug 'em by hand then, and they paid 50 cents each. That was good money then, and a man was expected to dig eight holes in a day." When he was not digging holes, Jack worked as a groundman, passing needed tools and hardware up to a lineman on a pole.

Wartime service interrupted, and Jack spent some 42 months in the South Pacific, in the Army.

"I came back to work at the Cooperative because I thought electrifying the countryside was an up and coming thing," he says, "and I believed in the cooperative way of doing business. I still do. I liked the people, too — both in the country and at the cooperative. And I liked the manager. Dean Searls was here when I got back from the Army, and you won't find a better manager anywhere. He was innovative, progressive and good with people. All those factors encouraged me to come back after the war ended."

Shortly after his return, Jack became a lineman and worked on some of the major transmission lines that still form the heart of the Adams system, bringing electricity to the area where he was born and raised. He is a native of Fowler, an Adams County town about ten miles west of Camp Point. He and his wife, Judith, now live in Camp Point.

"By the time I became lineman, we were getting better equipment and the work was easier and faster," he relates, adding, "We had a six-by-six winch truck and Dean came up with an idea to make a digger truck out of it. We put an electric generator on the back and an electric motor with a reduction gear out on the boom, and the auger was attached to that. The boom was controlled by a hydraulic drive from the truck's power takeoff.

In 1974, Jack became line superintendent, and has held that job since then. He notes, smilingly, that consumers differ now from those of yesteryear in how they feel about service continuity.

"Years ago," he says, "we'd just go out and shut a line down to work on it. We could have it out of service for three or four hours and nobody'd say anything about it. Now, if the lights blink, you get calls. Back then, most people had a washing machine,

refrigerator and radio, and a bare bulb with a pull-chain in the middle of the ceiling in each room.

"Now there are dishwashers, clothes dryers, heaters and furnace motors, water heaters, hair dryers, ranges and a lot of other things, and that's just in the homes. Farms have all kinds of important uses for electricity, and it's essential to some operations. We've come a long way from the Delco generator and kerosene lamps I knew as a boy."

Both Dempsey and Adams Electric have come a long way, and he does not expect to slow down much after he retires. "I like to travel, and I take a camera with me wherever I go. We've gone to the East Coast, but Colorado's my favorite state to visit. The mountains are really beautiful. But I'll always come back to Adams County. My roots are here and I have a lot of friends, too. I'm a member of the Methodist Church and I'm active in the VFW, the American Legion, 40 and 8 and a lot of other organizations.

"I kind of hate to leave, but it's a little easier because I believe the man taking my place will do an excellent job. Aubrey Bucher's on the job now — while I'm using vacation I never did take — and I know he's a good man, really qualified to handle the job."

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Strung out on a ropy hobby

Give a man enough twine and he will...make a rope? Well, Lawrence Compton, who lives near Nokomis, does just that. Compton and his wife, Lela, are members of Shelby Electric Cooperative, and they have been making rope from twine for several years.

"I got into rope making as a job,"

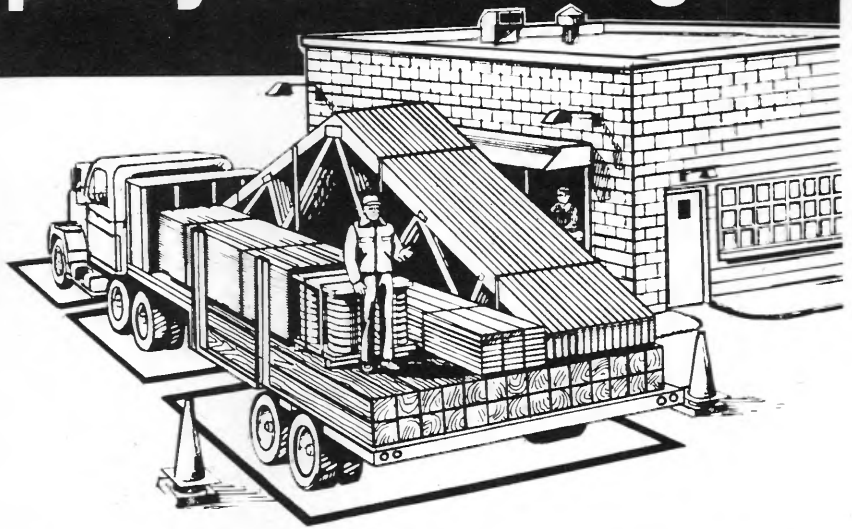
Compton says, "back toward the end of the depression. I'd had a job working on cars, and when I got laid off, I went looking for work again. Well, I went to work for Peoria Cordage, where I spent six months making rope. After that, I went into the service."

Later, Compton and his brother-

in-law went into the garage business in Nokomis, and the operation is still going. He plans to retire later this year. Interestingly, the tow rope the garage uses is one Lawrence built. "We've used it about three times a day for the last year," he says, "and it's not showing any signs of wear, yet."



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the lower left photo, the Comptons prepare to make a short rope. At left, new rope has been twisted and is nearly ready to have the ends finished.

Compton, an incurable tinkerer, had gotten his hands on several turn-of-the-century rope making devices and decided to improve on them. The older machines, which were gear driven and made of cast iron, inspired a lever-driven rope maker made of wood. Compton has applied for a patent on his little gizmo, which he sells at area fairs and get-togethers. He also sells various kinds of ropes.

"Making a rope is a two-person operation," he says, "and you use either binder twine or nylon bale twine. You thread the twine through the machine and run the desired length out to the second person, who holds a board separator. You then twist the twine by turning a crank on the machine. The second person then twists the tightened strands, and you finish the ends of your new rope. You can make any diameter of rope you want by running any number of strands from the machine to the separator and back," he says.

Rope making was once a well-developed skill, Lawrence says, and he would like to keep it alive. "The men who used to make rope were from my great-grandfather's time. I made rope a couple of times as a boy, but, for the most part, the men with the rope-making skills are gone. I hate to see that. I'd like to see the art of rope-making carried on," Lawrence says.

With enthusiasts like the Comptons, and the help of their little machines, rope making may well have a revival in our day.

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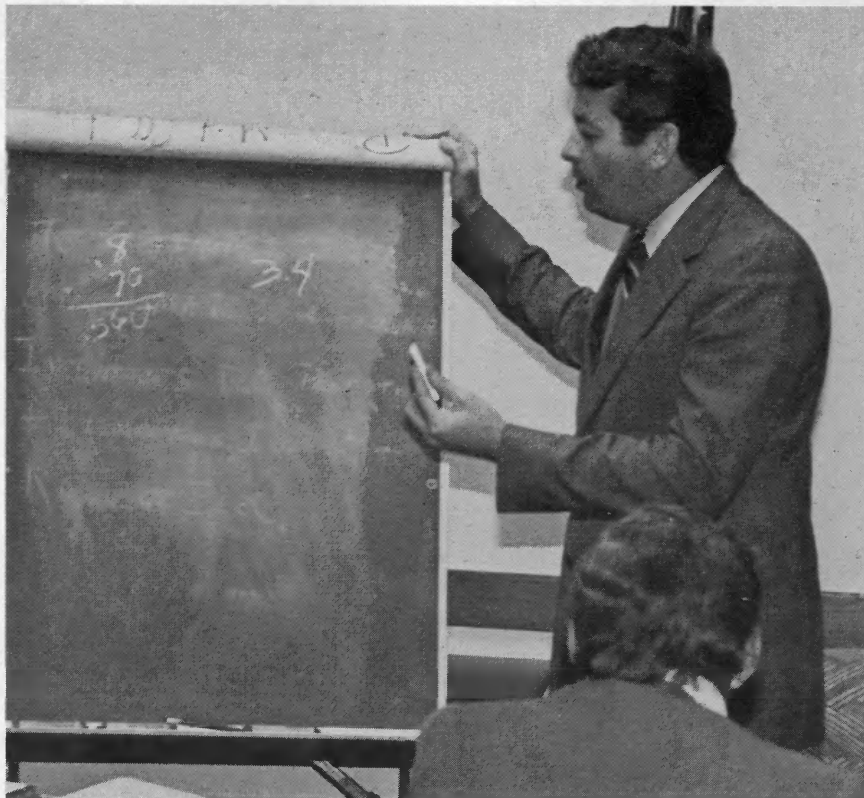
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State Senator Kenneth Buzbee, right, and Secretary of State Jim Edgar, lower right, met recently with Illinois electric cooperative leaders. Edgar discussed a number of rural issues and Buzbee talked of the problems facing Illinois coal.



Government leaders visit with AIEC organizations

Two Illinois government leaders participated in meetings of electric cooperative leaders in recent weeks, discussing, among a variety of topics, rural crime, public attitude toward government, and Illinois coal.

Secretary of State Jim Edgar, who met with the board of directors of the Association of Illinois Electric Cooperatives in Springfield, pointed out that rural crime is growing quickly. "There are a lot of people moving out to the country. There are a lot of people with a trusting nature, and there is a lot of expensive farm machinery sitting out. Some farmers park some of their equipment where it's convenient for them, and unfortunately it's convenient for thieves, too."

Edgar cited the problem of keeping up with farm machinery, adding that there is no standardized method for tracing farm equipment. Adjoining

counties may have different methods of doing this, he said.

"We have several ways of tracking down a 10-year-old car worth maybe \$500, no matter where it goes, but we can't keep track of a new, \$60,000 tractor. We're working with implement manufacturers and county sheriffs on the problem," he said.

Edgar also talked about what he termed a negative attitude about government. Expressing his thoughts on how to improve this attitude, Edgar said, "It'll help if we provide services effectively, efficiently and honestly."

The Secretary singled out the electric cooperatives and their members as important elements in the state's political picture. "It's good that you have a lot of people who are involved in the political process, and who understand it," Edgar said.

State Senator Kenneth Buzbee,



Carbondale, told Illinois electric cooperative managers, "Those of us who know that Illinois is among the richest coal states in the country and who understand the delicate balance in the relationship between international affairs and America's energy needs have been frustrated by the obstacles that have for so long hampered our efforts to increase Illinois coal use."

As a legislator whose district includes major coal-producing areas, Buzbee said, "I'm only too aware of

the benefits that Illinois coal utilization at home — and its export to other states and countries — could provide.” Buzbee said Illinois has some 60-billion tons of recoverable coal and “mining that coal and using it in increasing amounts could result in an economic surge for the state.”

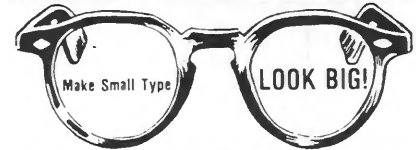
He cited a number of advantages that would result from this increased production and utilization of coal: new jobs for Illinoisans, increase tax revenues, smaller welfare rolls, increased industrial growth, healthier commerce and decreased dependence on imported oil.

Federal regulation, mainly the Clean Air Act, Buzbee said, makes it difficult for Illinois to take advantage of the coal resources. “As a result, we’ve gone shopping for coal in Wyoming, Montana, Colorado, and elsewhere, paying the price for their

low-sulfur, and often low-quality, coal. Because of the Clean Air Act we’ve exported tremendous amounts of our money, further depressing our economy at home and increasing the cost of energy to consumers and industry alike.”

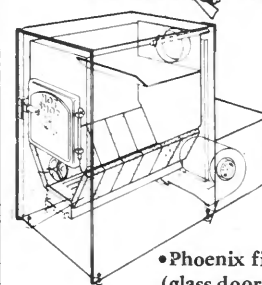
Buzbee, who is chairman of the Illinois Energy Resources Commission, said, “Rational modifications to the Clean Air Act could promote expanded use of Illinois coal without hurting important air pollution efforts,” adding that “there’s no doubt that we have a long struggle ahead of us if Illinois coal is ever to take its rightful place among this country’s significant energy resources. We will continue to work on the Clean Air Act in a hope that the framework which will help clean our air can be preserved while the requirements which hinder our coal use are amended.”

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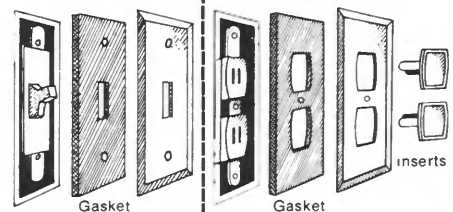
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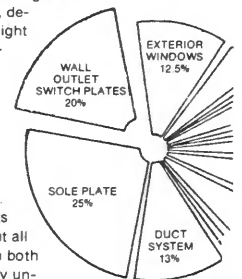
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Use solar to blunt peaks, speaker urges

You should continue to encourage your members to take advantage of alternative energy sources, but you should channel their efforts so they help your cooperatives." That was the advice given by Richard Archer, assistant professor, Design Department, Southern Illinois University-Carbondale, to those attending the Semi-Annual Member Services Conference last month in Springfield.

As one example, Archer noted that if the adviser knew of a family planning to install a solar water heater, he might make a mutually helpful suggestion. "If a family of four has an 80-gallon tank, for example, they all come home at about 5 p.m.

and start washing clothes and doing all those little domestic chores that require hot water. People all over your system are doing the same thing, and when they run out of solar-heated water, the backup heating elements all come on and you've got an evening peak problem on your hands.

"To alleviate the peak problem, you'd be wise to suggest they install a 120-gallon tank in the first place. They'll save money on heating water and you won't have to worry about the peak. And if they go to solar for space heating," he continued, "you could urge them to back that heat source up with wood, since backup electric heat, from your standpoint, is not efficient."

Jack Cunningham, fire prevention inspector, Office of the State Fire Marshall, outlined the good and bad news about alternative energy sources. "Wood is good news," he emphasized, "but it's bad news if the stove is improperly installed or vented. Remind your member-consumers," he asked the member service representatives, "that they shouldn't save money by taking risks with improper installations."

Keith Gibbs, from Springfield Electric Supply Co., told of ways to cut lighting costs by using different kinds of lights for different purposes

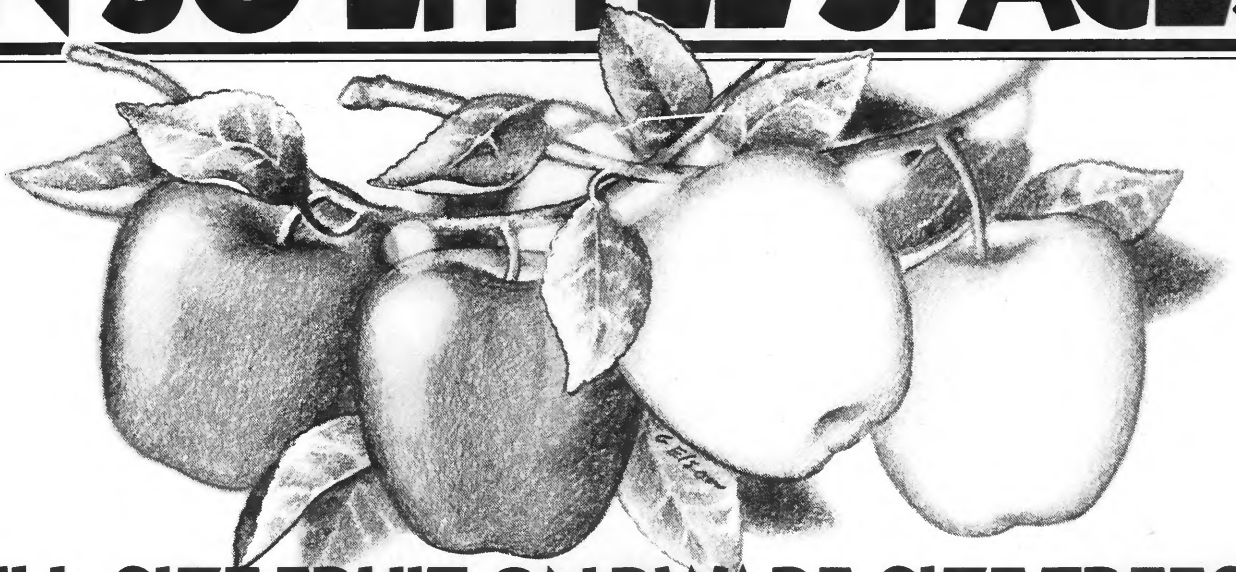
Richard Archer, left, assistant professor, Design Department, SIU-Carbondale, discusses energy conservation with Ray Harbison, director of member services for Southeastern Illinois Electric Cooperative, and Helen Mullins, home economist for Tri-County Electric Cooperative, during the Semi-Annual Member Service Conference last month in Springfield.

and Ken Heim, from Agri-Guard, demonstrated his company's line of sensors and alarms for farms and homes.

Dave McQueen, veterinarian, Cooperative Extension Service, University of Illinois, told of a problem that has plagued dairymen for years, and that vets are just beginning to get a bearing on: stray voltage. "A cow begins to feel pain if one volt is passing through her," he said, "and two volts is very painful. This affects milk let-down and yield, and increases the risk of disease."

Bill Peterson, and Ted Funk, both ag engineers from the Cooperative Extension Service of the University of Illinois, talked about ways of detecting and eliminating the stray voltages in some dairy parlors to solve the problem.

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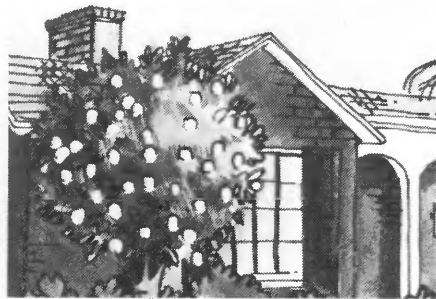
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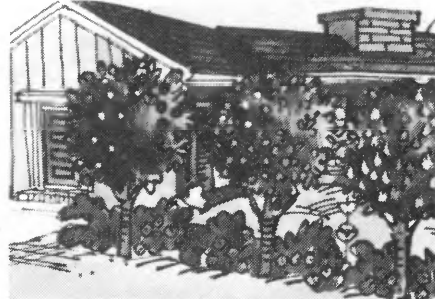
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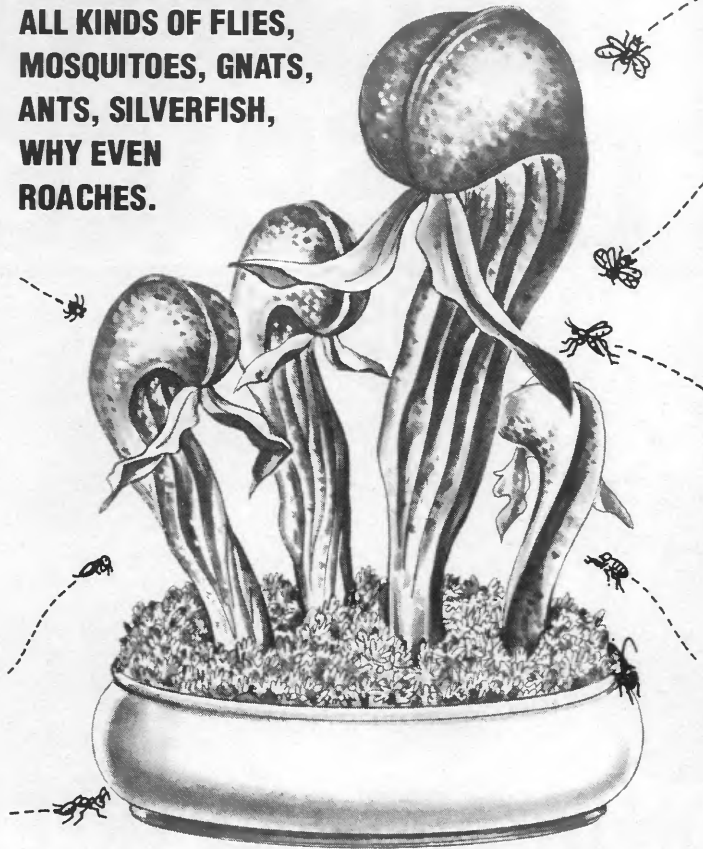
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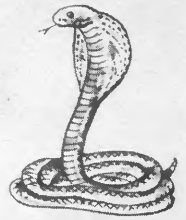
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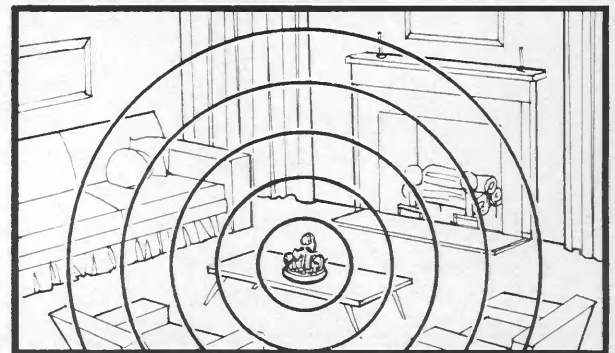
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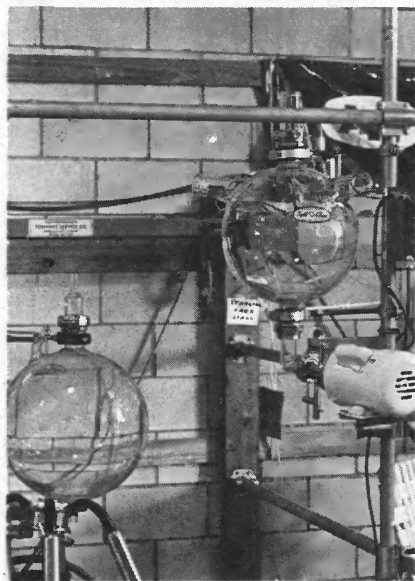
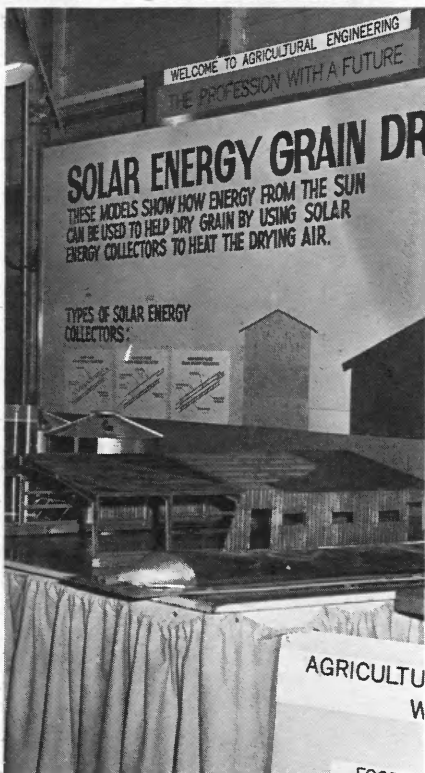
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Farm Materials Handling Show March 2-4



The show features a broad range of displays, including heavy equipment outside, institutional displays and specialized setups such as those for milking parlors.

There will be more indoor exhibit space for the 22nd annual Southern Illinois Farm Materials Handling Show March 2-4 at the Washington County Fairgrounds in Nashville. Arrangements for the additional space were made by the show's planning committee, working with the Washington County Fair Board.

The expansion has added about 15 spaces increasing total exhibit spaces to more than 100, according to show coordinator Richard Patterson, who is an assistant professor agricultural mechanization at the Southern Illinois University-Carbondale School of Agriculture.

The show is open without charge

and there is ample parking adjacent to the exhibit buildings. Food service, including snacks, lunches and dinners, is available on the fairgrounds.

Exhibitor interest continues the trend of the past several years as they plan displays featuring energy-saving methods to move grain, pump water and perform a variety of other farm chores. Included in the exhibits will be feed mixing, grinding, handling and storing equipment; machinery and setups for feeding, watering and managing livestock; electrical equipment and controls; lighting heating and cooling equipment; appliances and shop supplies for home and farmstead; and many other ideas and materials for

saving labor and increasing efficiency.

Show hours on Tuesday and Wednesday, March 2 and 3, are from 9 a.m. until 9 p.m. On Wednesday, March 4, hours are 9 a.m. until 3 p.m.

The show is sponsored and planned by the SIUC School of Agriculture, the University of Illinois Cooperative Extension Service, the Illinois Farm Electrification Council, Illinois Power Company and nine electric cooperatives: Monroe County Electric, Tri-County Electric, Southwestern Electric, Southeastern Electric, Egyptian Electric, Clay County Electric, Clinton County Electric, Wayne-White Counties Electric and Southern Illinois Electric.

Avoid nighttime heat pump thermostat set back



Nighttime set back of thermostats in a home heated by a heat pump may result in considerably more electric usage than if the thermostat was left untouched.

In the operation of a heat pump, the amount of energy provided to the home is greater than the amount of energy needed to operate the heat pump. The extra energy comes from heat in the outside air which the heat pump extracts. There is heat in outside air down to a temperature of 459.67 degrees Fahrenheit below zero. Heat pumps vary in efficiency at different temperatures. Although rules-of-thumb get you in trouble, it is not unreasonable to expect an overall season average of a two-to-one ratio. In other words, two units of heat gained for every one unit expended. During fall and spring weather, some units are capable

of a three-to-one ratio.

When a heat pump cannot maintain the temperature of the house as determined by the house thermostat, the thermostat calls for the auxiliary heat to come on. The auxiliary heat is a one-to-one ratio — or for every one unit out, you have to put one unit in.

The house thermostat has two stages, separated by usually one and one-half degrees Fahrenheit. The first stage calls for the heat pump. The second stage calls for the auxiliary heaters.

When the thermostat is set back at night — say to 60 degrees Fahrenheit — the first stage of the thermostat controls the heat pump to maintain the desired temperature. In the morning, when the thermostat is set up to 68 degrees to 70 degrees, the second stage of the thermostat also closes — thus calling on the auxiliary

heaters which operate at only a one-to-one ratio. The auxiliary heaters will continue to operate until the house temperature is within one and one-half degrees Fahrenheit of the thermostat setting — then will go off — letting the heat pump do the balance of the heating.

It is important to mention the Balance Point Temperature in this discussion. The Balance Point is the outside temperature at which the heating capacity of the particular heat pump equals the heat loss of the house. Above this Balance Point Temperature, the heat pump can supply all of the heating needs — provided the thermostat is not “fiddled” with. Below this Balance Point Temperature, the house temperature will fall to below one and one-half degrees Fahrenheit of the thermostat setting and the second stage of the thermostat will call for the auxiliary heat to come on to supplement the heat output of the heat pump.

As long as the outside temperature is above the Balance Point Temperature, the heat pump can supply the total heating requirements. But if the thermostat is set back and the house cools down and then the thermostat is set back up at a later time, the second stage will cause the lesser efficient auxiliary heaters to operate. If a special control thermostat was installed or if the circuit breaker controlling the auxiliary heater was turned off — and the auxiliary heaters could not operate — the heat pump could bring the temperature up by itself, but would take a longer time. However, the longer time at the efficiency of the heat pump would not use as much energy as the auxiliary heaters at the lower efficiency.

More work and study is being done in many test homes, but the evidence today is that more energy is used for the heat-up period with the one-to-one auxiliary heaters than would be used by the two- or three-to-one heat pump being controlled at the normal thermostat setting.

For the most economical heat pump operation, and for the most uniform temperature, **DO NOT** adjust the thermostat up and down.

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As consumers we have done a lot to slow the growth of energy consumption. Despite this success, costly demand peaks . . . those short periods of maximum electricity use . . . keep right on climbing. That's why it's important for each and every consumer to plan energy use, especially on the coldest winter days from 5:00 to 9:00 p.m. Use only one heavy electrical appliance at a time, set your thermostat at 68° and leave it there . . . and, weatherize your home.

Fortunately, your electricity is not delivered to you on the bed of a truck. You simply flip a switch and the power flows into your home or farm. It's so easy we sometimes forget to take steps to control our energy use. If you need help developing a weatherization plan for your home, call your electric cooperative now. We're here to help.



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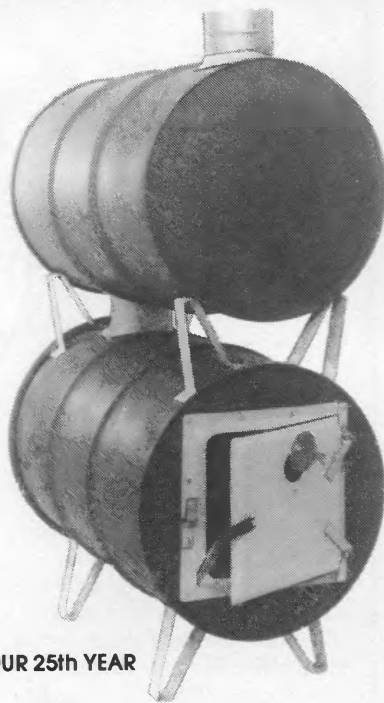
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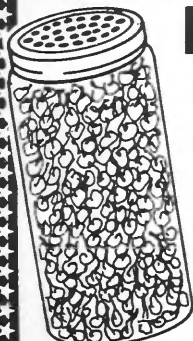
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No. 4622 is cut in sizes 10½, 12½, 14½, 16½, 18½, 20½. Size 14½ (bust 37) takes 3 1/8 yards 60-inch fabric.

No. 9373 is cut in sizes 8, 10, 12, 14, 16, 18, 20. Size 12 (bust 34) jumper 2 1/8 yards. 45-inch; blouse 1 3/4 yards. 60".

No. 9146 is cut in sizes 10½, 12½, 14½, 16½, 18½, 20½. Size 14½ (bust 37) jumper 2 3/8 yards 45"; blouse 1½ yards.

No. 4791 is cut in sizes Small (8-10; Medium (12-14); Large (16-18). Medium requires 1 3/4 yds. 45-inch fabric.

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No. 9180 is cut in Women's Waist sizes 31, 33, 35, 37, 39, 41½, 44, 46½ and 49 inches. See pattern for yardages.

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No. 4870 is cut for infant dolls 10 to 20 inches. Please state size.

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I have enclosed \$_____ (\$2.00 per pattern - cash, check or money order accepted) for the following patterns:

Pattern No.	Size	Pattern No.	Size
_____	_____	_____	_____
_____	_____	_____	_____
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Print Name _____

Address _____

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CHINESE IMPERIAL CHICKEN

1 1/4 lbs. skinned, boned chicken breasts, cut into 1-inch pieces

MARINADE:

2 tablespoons soy sauce
1 1/2 teaspoons dry vermouth
1 teaspoon sesame oil
2 tablespoons cold water
1 tablespoon cornstarch

SPINACH MIXTURE:

2 pkgs. frozen spinach (10 oz. each)
1 teaspoon salt
1 teaspoon sesame oil
1 tablespoon minced garlic

COOKING OIL:

1 1/2 cups roasted cashews (if salted, shake in sieve to remove salt)

VEGETABLE MIXTURE:

2 tablespoons chopped green onion
2 tablespoons minced fresh ginger
2 tablespoons minced garlic
3 cans (8 oz. ea.) water chestnuts, drained and halved.

SAUCE MIXTURE:

2 tablespoons dry vermouth
2 tablespoons soy sauce
1 1/2 tablespoons sugar
1 1/2 teaspoons sesame oil
2 1/2 teaspoons Worcestershire sauce
1/2 teaspoon hot pepper sauce, or to taste
1/3 cup chicken broth
1 tablespoon cornstarch

Combine all ingredients for marinade and pour over chicken, mixing well. Let stand 20 minutes at room temperature. Meanwhile, cook spinach according to package directions. Rinse under cold water to stop cooking; drain. Toss with seasonings. Arrange around border of serving platter. Set aside. Combine vegetable mixture; set aside. Combine sauce mixture; set aside. In wok or deep saucepan, heat about 1 qt. cooking oil for deep frying. Drain chicken pieces; fry a few at a time until golden brown. Drain on paper towels. In a large skillet or wok placed over medium high heat, heat three tablespoons cooking oil. Add vegetable mixture; cook and stir 1 minute. Add sauce mixture; cook and stir until sauce thickens. Add chicken pieces and cashews; cook and stir 1 or 2 minutes or until chicken is heated through. Spoon into center of serving platter. Serve immediately to 4.

ORIENTAL BROCCOLI AND BEAN SPROUT SALAD

2 lbs. fresh broccoli
1/2 lb. fresh mushrooms, cleaned
1 can (16 oz.) bean sprouts, rinsed and drained
1/3 cup cider vinegar

1/3 cup salad oil
2 teaspoons catsup
1 teaspoon salt
Freshly ground black pepper to taste

Cut broccoli florets from stalks. Pare stalks and cut into 1/4-inch slices. Cook broccoli stalks in boiling water 1 minute; rinse under cold water and drain. Cook florets 2 minutes in boiling salted water; rinse with cold water and drain. Combine cooked broccoli with mushrooms and bean sprouts. Blend remaining ingredients, pour over vegetables, mixing well. Marinate 1 hour in refrigerator. Serve on crisp lettuce leaves to 8.

PORK CHOPS AND RICE

1 cup uncooked rice
3 cups hot water
1 teaspoon salt
1/2 cup chopped onion

1/2 cup chopped green pepper
1/2 cup chopped celery
1 can mushroom soup
1 teaspoon pepper

In bottom of pan combine salt to uncooked rice and hot water. Brown pork chops and place over rice. Add remaining ingredients over this and bake at 375 degrees until tender. Chicken and Duck may also be used in place of pork chops.

HAMBURGER WITH BAKED BEANS

2 strips bacon
1 medium onion, chopped
1 lb. ground beef
2 cans pork and beans (1 lb. cans)
1/2 cup molasses

1/2 cup catsup
1/2 teaspoon mustard
salt to taste
Worcestershire sauce to taste

Cut bacon strips in small pieces and add onions. Saute. Brown ground beef with the above. Add remaining ingredients and pour into casserole or baking dish. Bake at 375 degrees for 1/2 hour. Dish will stay hot some time. Before serving, garnish the top with sliced bright red tomatoes; not important but adds "come-on".

NOODLE GOO

2 cups wide noodles
1 lb. ground beef
1 can tomato soup
1 cup water
1 can corn (cream style)
1 can ripe olives (cut off seed)
1 1/2 cups grated cheese

1 large can mushrooms drained or small can of mushrooms and small can of mushroom soup
2 medium onions (chopped)
1 teaspoon Worcestershire sauce
season with black and red pepper

Cook onions and peppers slowly in oil. Do not brown. Take combination out and brown meat. Add onions back along with tomato soup and water. Stir well and add cooked noodles, along with the remaining ingredients. Put in buttered casserole dish and cover with cheese. Bake at 350 degrees for 30 minutes.

BEEF ROAST

3 to 4 lb. chuck roast
1 can (10 1/2 oz.) cream of mushroom soup

bottled steak sauce
1 envelope onion soup mix
flour

Preheat oven to 300 degrees. Place roast in center of large piece of aluminum foil. Brush generously with steak sauce. Bring up sides of foil to hold ingredients. Pour mushroom soup over meat; sprinkle with onion soup mix and wrap tightly in foil. Place in shallow baking pan and bake in oven for 3 hours. Remove meat from foil, drain juices from foil into saucepan. Thicken with flour to desired consistency and serve with roast.

SCALLOPED POTATOES

1 qt. boiled potatoes, diced
1 can mushroom soup

1/2 cup milk
1/2 cup Cheese Whiz

Peel boiled potatoes. Dice potatoes and place in casserole and salt sparingly. Place mushroom soup, milk and Cheese Whiz in saucepan on stove to blend. Stir constantly, until cheese is thoroughly melted. Pour over potatoes. Should be enough liquid to just cover. Place cover on casserole and bake in oven at 340 degrees for 30 to 40 minutes.

BUTTERMILK ROLLS

1 pkg. dry yeast
1/2 cup warm water
1 cup scalded buttermilk
1 cup shortening
2/3 cup sugar

2 teaspoons salt
1/2 teaspoon soda
1 cup mashed white potatoes
2 eggs (well beaten)
6 to 8 cups flour

Dissolve yeast in warm water. Heat buttermilk almost to boiling. Add shortening, sugar, salt, soda and mashed potatoes to scalded buttermilk. Put into large mixing bowl which will cool mixture to lukewarm. Add dissolved yeast and mix well. Add beaten eggs and mix well. Stir in enough flour to make stiff dough. Knead well until smooth and elastic. Put into covered bowl. Let rise in warm place until double, about 1 1/2 hours. Punch down and roll out. Cut into desired shapes, place in greased pans. Let set in warm place, covered for about 1 1/2 hours. Bake at 475 degrees for 12 to 15 minutes. After first rising dough can be kept in refrigerator and used as needed. Oil bowl and top of dough slightly and cover bowl with foil or clean cloth. This recipe makes delicious sticky rolls. Roll out for jelly roll. Spread with generous layer of butter or margarine. Then a layer of brown sugar (dark or light as preferred); a light sprinkling of white sugar over that, and a generous sprinkling of cinnamon. Roll up for jelly roll. Slice. Carefully place on well greased cookie sheet or pan and let rise to double. Bake at same temperature as regular rolls. When done, glaze heavily with powdered sugar, milk, vanilla glaze to taste.

BUTTERMILK CAKE

2 cups sugar
3/4 cup shortening
3 eggs
2 cups flour
1 teaspoon baking powder

1/2 teaspoon soda
1/8 teaspoon salt
1 cup buttermilk
1 tablespoon vanilla
1 tablespoon lemon extract

Cream together sugar and shortening. Beat eggs in one at a time. Sift together flour, baking powder, salt and soda. Blend into creamed mixture alternately with buttermilk (flour in 4 parts, milk 3) and vanilla and lemon extract. Bake in greased and floured tube pan at 350 degrees for 1 hour. This cake is much better, more moist and lasts indefinitely if you keep it covered. When you remove from pan, put on cake plate, wrap immediately in foil while hot.

CHOCOLATE CAKE

2 sticks margarine
1 cup water
3 tablespoons cocoa
2 cups sugar
2 cups flour

1/2 teaspoon salt
1 teaspoon soda
1 teaspoon vanilla
2 eggs
1/2 cup buttermilk

In heavy sauce pan, melt margarine, water and cocoa. Bring to a boil. Turn off heat, but leave on unit and add remaining ingredients. Mix well and turn into 14x10x2 greased and floured pan. Bake at 350 degrees 25 minutes or until done.

ICING

1 stick margarine
3 tablespoons cocoa
6 tablespoons milk

1 lb. box powdered sugar
1 teaspoon vanilla
1/2 cup nuts

In same sauce pan melt margarine, cocoa and milk. Bring to a boil and turn off heat. Add remaining ingredients.

A TREAT OF A TORTE

1 1/4 cups sifted all-purpose flour
3/4 teaspoon soda
1/2 teaspoon salt
1 8-oz. pkg. pitted dates (cut)
3/4 cup brown sugar, firmly packed
1 cup sour cream
1/2 cup butter

1 6-oz. pkg. semi-sweet chocolate pieces
2 eggs
1/2 cup milk
1 cup pecans (chopped)
1 recipe chocolate cream whip

In bowl, sift flour, baking soda, and salt. Line a 15 x 10 x 1 inch jelly-roll pan with foil. In large sauce pan, combine dates, brown sugar, and butter; cook, stirring constantly over low heat until dates soften. Remove from heat and stir in chocolate pieces; stir until chocolate melts. Beat in eggs with a spoon. Then alternately beat in flour mixture and milk. Then stir in nuts. Pour batter into pan. Bake 20 to 25 minutes or until top springs back when lightly touched with finger. Bake at 350 degrees. Turn out on wire rack to cool; remove foil. Meanwhile, make chocolate cream whip. When torte is cooled, cut it crosswise in 3 pieces; spread 1/3 of the cream whip. Stack second torte piece with another 1/3 of the cream whip. Stack last piece of torte; top with cream whip. Garnish with grated orange peel, chocolate curls, nuts, or cherries.

RAISIN CUSTARD

1 cup sugar
1 stick oleo
2 teaspoons vinegar
2 teaspoons vanilla

Pinch of salt
2 eggs, separated
1 cup raisins
Unbaked pie shell

Cream sugar and oleo together. Add vinegar, vanilla, salt and eggs. Beat well. Fold egg mixture in creamed mixture and add 1 cup raisins. Pour in unbaked pie shell and cook 10 minutes at 400 degrees, reduce heat and cook until done. About 25 minutes.

SOUR CREAM APPLE PIE

6 apples (peeled and cut into slices)
3/4 cup sugar
1/3 cup flour
1 teaspoon cinnamon

1/4 teaspoon nutmeg
4 teaspoons butter or margarine
Sour cream

Place apples in 10 in. pie plate. Mix until crumbly sugar, flour, cinnamon, nutmeg and butter. Spoon over apples and cover with sour cream. Bake at 400 degrees for 30 minutes, reduce heat to 350 degrees and bake until crust is brown — about 25 minutes longer. Total baking time — 55 minutes.

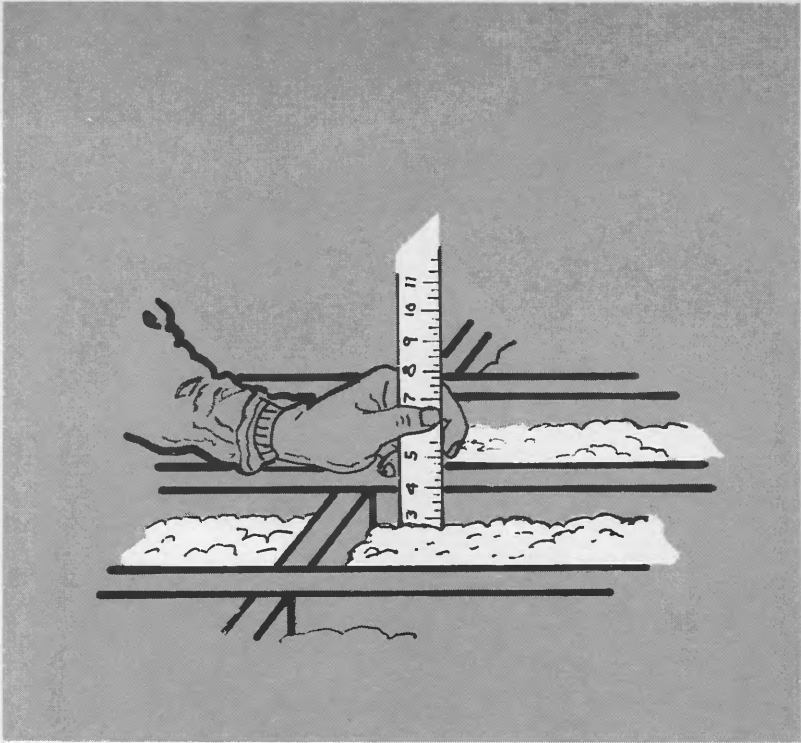
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Weatherization pays dividends



Using more energy than you need is bad for your pocketbook and is a drain on energy resources as well. For most households this double loss can be reduced through improved weatherization.

A little awareness of heat lost through walls, ceilings, floors, windows and doors can help most consumers understand the values of weatherizing your home with insulation, caulking, weather-stripping, storm doors and windows.

Insulation will probably be the biggest part of your weatherization project. To determine if your home is underinsulated, you may want to use minimum insulation standards recommended by Illinois electric cooperatives.

Illinois is divided into two climatic zones. The southern two-thirds of the state falls into one zone, for which the

electric cooperatives recommend R-30 attic insulation, R-19 exterior walls and R-19 floor insulation. If you live in the northern one third of the state, the recommendations are R-38 attic, and R-19 for exterior walls and floors. (Personnel of your electric cooperative can provide you with more specific information.)

The R value measures the resistance to heat flow. It also rates the insulating value of building materials. Each kind of construction material, together with the dead air space between layers, has a heat loss rate listed in terms of an R value. The larger the R value, the lower the heat loss.

Other things also influence the rate of heat loss: temperature differences between the inside and the outside of the house, the kind of exterior surface, and the strength of prevailing

winds. Winds seriously affect the heat loss as they enter through cracks and force warm air out. Wind problems are best corrected with weather-stripping, caulking, new siding, and exterior tree and shrub plantings or fencing to divert prevailing winds.

Exhaust fans, open fireplaces, and furnaces may increase air losses through their vents or flues. Excessive opening of doors and windows also can bring unwanted outside temperatures in and made your home uncomfortable.

In cold weather, open outside doors only when necessary. Close off unused rooms. Set the thermostat at 68 degrees F. Use efficient heating equipment and maintain it properly. Look at the way your home is landscaped. Could plantings protect your home against the weather? Finally, with an eye to the future, find out if any solar energy devices are practical for use in your home.

Unevenly heated rooms that are chilly around doors and windows, and drafty upstairs rooms are sure signs that your home needs to be weatherized to save heat. When your home is uncomfortable you are prompted to set the thermostat higher, and this adds to heat loss and your heating bills.

What you can save in fuels bills over several years may cover the cost

To: **A. I. E. C. Publications**
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Please mail me _____ copies of the publication
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of adding storm doors and windows. Covering doors and windows with plastic sheeting or other materials is inexpensive, although less effective than storm doors and windows. Draperies, especially those with reflective liners that block cold radiated through windows, help too.

If your outside walls have no insulation, the walls will be cool even after caulking, weather-stripping, and adding storm doors and windows. In most parts of the country, it pays to insulate uninsulated or poorly insulated walls.

Check your attic to find out how well it is insulated. Older homes may have little or no attic insulation, and many newer homes do not have enough. Insulating your attic properly can save you as much as one-third on fuel costs. In three to five years you could recover the cost of the insulation. Perhaps you can insulate your attic yourself; if you pay someone to do it, the cost may be three to five times as great.

If you already have some insulation in your attic, measure its depth to determine how much more is needed to reach the recommended R value of our area. If the costs of fuels increase as much as expected in the future, your investment in additional attic insulation will be sound.

Next, check the insulation in your basement or crawl space, around heating ducts and your water heater, the condition of your heating and cooling system, and your landscaping.

If you are going to build a new home, locate the home to reduce heat loss and take advantage of solar heating in the winter and/or natural cooling in the summer.

Compare your fuel use with that of others who use the same fuel and have homes of comparable size, but with extra weather protection. If your fuel-use habits are similar, this cross-check will help you to evaluate your own home weatherization.

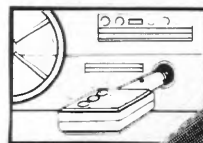
Remember that the R value calculated for the exterior walls, windows, doors, ceilings, and floors of your home is meaningful only as it relates to the average weather heating data for your area.

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Clockwise from above: The 275-horsepower Jacobs, a seven-cylinder radial engine, powers Zumwalt's Ag Cat, getting him in and out of small fields. The Grumman Ag Cat, a sturdily built plane, carries its load in a hopper just in front of the cockpit. Joe Zumwalt in his plane.

Joe Zumwalt's business has its ups and downs, but he wouldn't have it any other way. He is an aerial applicator or, if you prefer the old-fashioned term, "crop duster." His operation is based about a mile north of Shelton, on Eastern Illinois Power Cooperative's lines.

For Joe, ag flying came naturally. Raised on a farm, he started flying when he was 15, and has been at it ever since. He took enough time out from working on the family farm to

get a B. S. degree in aeronautical engineering from Parks College of Technology, worked a couple of years to get capital, and went into business. He is a licensed commercial applicator in Illinois and Indiana. Home based during the early days was a converted chicken coop, and a Piper Pawnee, a small monoplane built from the ground up for ag application, was the workhorse of the operation.

Things have changed since the modest beginnings. Zumwalt's business

Ag application business has its ups and downs

have to wait around for fields to dry out like you have to with a tractor.”

Joe sometimes flies rye onto standing corn and soybeans. “We fly it on in August or September,” he says, “for cattlemen who want to put their cattle in the stalks later on.”

One of the really big advantages of aerial application is that it is possible to fly over fields when farmers cannot get into them with tractors because the crop is up and, of course, soil compaction is no problem. Once in a while, Joe says, corn becomes aphid-infested when the tassels are out, and flying on pesticides is the only way to save the crop.

“In 1977,” he relates, “we had a big infestation of rootworm beetles, and there were thousands of acres in jeopardy. At a time like that, you have only a little while; maybe four or five days, if something goes wrong when the corn is pollinating.”

Aerial application is almost made to order for such crises, because of the speed involved. An airplane flying on chemicals may travel 80 miles an hour or so, and cover a 50-60 foot swath.

“I can cover about 150 acres an hour,” Joe says, “if it’s not too far away from the strip I’m flying out of. On my best day I did 1,200 acres

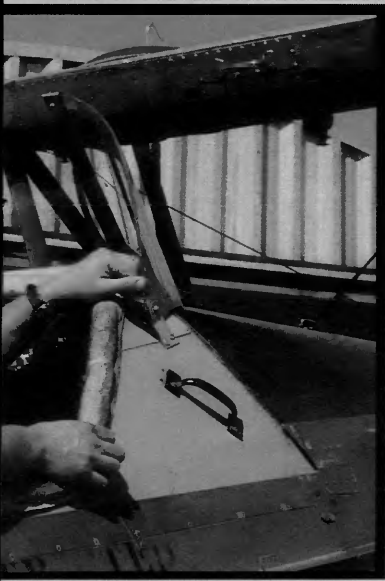
once. Another time I did a whole section in about two hours. It was a big open area with no obstructions and I could fly fast. It really went well.”

The Ag Cat is built to deliver either liquids or powdered chemicals, and the liquid rig is powered by a small propeller-pump that forces the spray out 24 small nozzles spaced under the lower wing. Powder drops from the hopper into a spreader, which is baffled so the prop blast spreads it in an even swath. Zumwalt can spray a 50-60 foot row with liquid in a single path, while dry chemicals go on in a 30-foot swath.

A sturdy rollover structure protects the pilot in the event that the plane flips on its back for some reason, and the plane is robustly built to handle the stress involved in ag flying.

Since crop dusting is not a year ’round business, Joe, who is a licensed airframe and powerplant mechanic, works on aircraft. He rebuilds, repairs and maintains aircraft for FAA certification and relicensing.

Interestingly enough, Joe, who keeps busy around the shop, also helps his dad, Bruce, rebuild old cars and tractors. And, he has a hobby of his own, which he shares with his wife, Urszula. They fly!



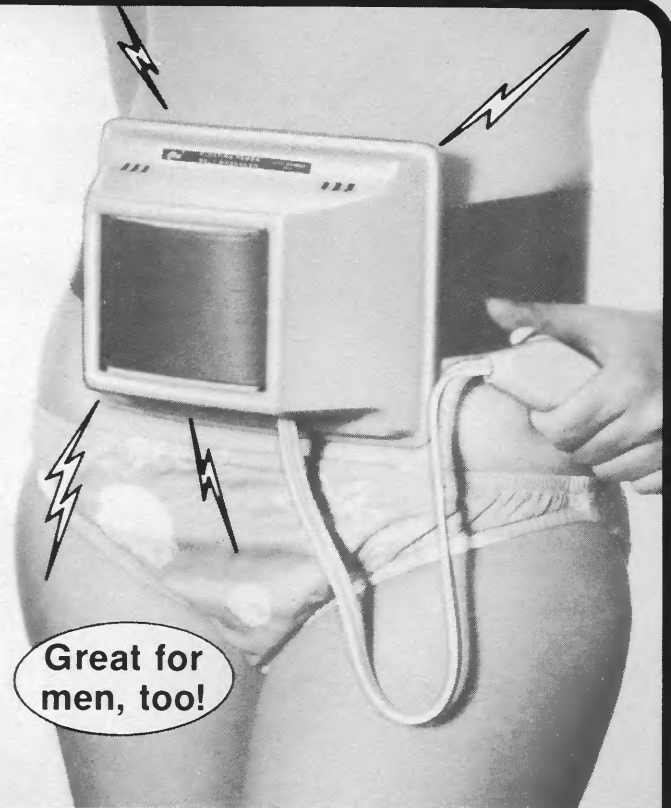
based in a large Quonset-type structure that now houses a Grumman Ag Cat, a large biplane that was also purpose-built to do ag application in a big way. Its 275-horsepower engine, a seven-cylinder Jacobs, pulls two tons of airplane, pilot, fuel and load off the ground in 900 feet.

“We’ll use a lot less fuel seeding spraying than a tractor would,” he says, “and even though the weather, especially high winds, can keep us on the ground, we don’t

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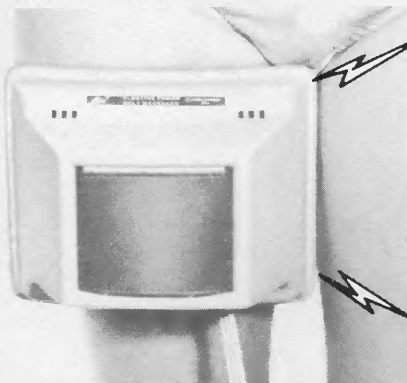
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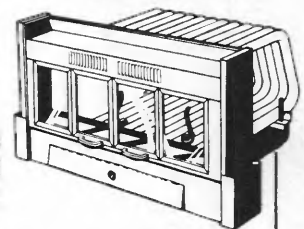
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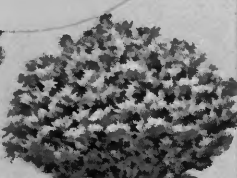
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