

AUGUST, 1968

# Tennessee

M A G A Z I N E

Dedicated to Better Living



# the 1 to watch

## COMPLETE AUGUST SCHEDULE—WLAC-TV, NASHVILLE

### WLAC-TV SPECIAL FOR AUGUST



**RON FORTNER**  
Channel 5 News  
Mon.-Sat.  
6:00 P.M.

#### NFL Pre-Season Schedule

DATE:	DAY	TIME	TEAMS
8/11/68	Sun.	2:00 PM	Phila. vs. Detroit
8/19/68	Mon.	8:30 PM	Green Bay vs. Chicago
8/24/68	Sat.	8:30 PM	Green Bay vs. Dallas
9/1/68	Sun.	8:00 PM	Minn. vs. St. Louis
9/7/68	Sat.	8:30 PM	Balt. vs. Dallas

**STAN HITCHCOCK**  
SHOW  
Tuesdays  
7:00 P.M.



### DAYTIME

5:45- 6:00 AM	Farm News — Mon. thru Fri. (c)
6:00- 7:00 AM	Summer Semester — Sunday (c)
6:00- 7:45 AM	Country Junction — Mon. thru Fri. (c)
6:00- 6:30 AM	Summer Semester — Saturday (c)
6:30- 7:00 AM	Carl Tipton — Saturday (c)
7:00- 8:00 AM	Eddie Hill Variety Show — Saturday (c)
7:00- 8:00 AM	Tom & Jerry/Underdog — Sunday (c)
7:45- 8:00 AM	Morn. News: Weather — Mon. thru Fri. (c)
8:00- 9:00 AM	Captain Kangaroo — Mon. thru Fri. (c)
8:00- 8:30 AM	Frankenstein — Saturday (c)
8:00- 9:30 AM	Heaven's Jubilee — Sunday (c)
8:30- 9:00 AM	Herculoids — Saturday (c)
9:00-10:00 AM	Mike Douglas Show — Mon. thru Fri. (c)
9:00- 9:30 AM	Shazzan — Saturday (c)
9:30-10:00 AM	Space Ghosts — Saturday (c)
9:30-10:00 AM	Look Up and Live — Sunday (c)
10:00-10:30 AM	Andy of Mayberry—Mon. thru Fri.
10:00-10:30 AM	Moby Dick — Mighty Mightor — Sat. (c)
10:00-10:30 AM	Camera Three — Sunday (c)
10:30-11:00 AM	Dick Van Dyke — Mon. thru Fri.
10:30-11:30 AM	Superman/Aquaman — Saturday (c)
10:30-11:00 AM	Faith for Today — Sunday (c)
11:00-11:25 AM	Love of Life — Mon. thru Fri. (c)
11:25-11:30 AM	Joe Bent! CBS News — Mon. thru Fri. (c)
11:00-11:30 AM	Pattern For Living — Sundays
11:30-11:45 AM	Search for Tomorrow — Mon. thru Fri. (c)
11:45-12:00 N	The Guiding Light — Mon. thru Fri. (c)
11:30-12:00 N	Popeye — Saturday (c)
11:30-12:00 N	Face the Nation — Sunday (c)
12:00-12:05 PM	World at Noon — Mon. thru Fri. (c)
12:00-12:30 PM	Lone Ranger — Saturday (c)
12:00-12:30 PM	Challenge of Space — Sunday (c)
12:30- 2:00 PM	Hollywood Spectacular — Sunday
12:05-12:30 PM	Singing Convention — Mon. thru Fri. (c)
12:30- 1:00 PM	As The World Turns — Mon. thru Fri. (c)
12:30- 1:00 PM	Road Runner — Saturday (c)
1:00- 1:30 PM	Love Is a Many Splendored Thing — Mon. thru Fri. (c)
1:00- 1:30 PM	Janney Quest — Saturday (c)
1:30- 2:00 PM	Opportunity Line — Saturday (c)
1:30- 2:00 PM	House Party — Mon. thru Fri. (c)
2:00- 4:00 PM	National Soccer League — Sunday (c)
2:00- 2:25 PM	To Tell the Truth — Mon. thru Fri. (c)
2:25- 2:30 PM	D. Edwards CBS News — Mon. thru Fri. (c)
2:00- 3:30 PM	Adventure Action Movie — Saturday
3:30- 4:30 PM	Daktari — Saturday (c)
2:30- 3:00 PM	The Edge of Night — Mon. thru Fri. (c)
3:00- 3:30 PM	The Secret Storm — Mon. thru Fri. (c)
3:30- 4:00 PM	Gilligan's Island — Mon. thru Fri.
4:00- 4:30 PM	Tennessee Tuxedo — Sunday (c)
4:00- 5:30 PM	Big Show — Mon. thru Fri.
4:30- 5:00 PM	Amateur Hour — Sunday (c)
4:30- 5:30 PM	The Prisoner — Saturday (c)
5:00- 5:30 PM	21st Century — Sunday (c)

### EVENING

	SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
<b>5:30</b>	Channel 5 News Weather Sports	CBS Evening News (c) W. Cronkite	CBS Evening News (c) W. Cronkite	Roger Mudd News			
<b>6</b>	Lassie (c)	Channel 5 News Weather Sports	Channel 5 News Weather Sports	Channel 5 News Weather Sports			
<b>6:30</b>	Gentle Ben (c)		Death Valley Days (c)				All American College Show (c)
<b>7</b>		Gunsmoke (c)	Stan Hitchcock Show (c)	Lost in Space (c)	Cimarron Strip (c)	The Wild, Wild West (c)	It's Racing Time (c)
<b>7:30</b>	Ed Sullivan Show (c)			Beverly Hillbillies (c)		Gomer Pyle (c)	My 3 Sons (c)
<b>8</b>			International Showtime (c)				Hogan's Heroes (c)
<b>8:30</b>	The Summer Smothers Brothers Hour (c)	Andy Griffith (c)		Green Acres (c)			
<b>9</b>		Family Affair (c)	Good Morning World (c)	He & She (c)	Thursday Night Movie (Most in color)	Movie of the Week (c)	Petticoat Junction (c)
<b>9:30</b>	Mission Impossible (c)	"Premiere" 1 Hr. Dramas (c)	CBS News Broadcasts	Dom DeLuise Show (c)			Marshal Dillon
<b>10</b>							Channel 5 News Weather Sports
<b>10:30</b>	Channel 5 News Weather Sports	Channel 5 News Weather Sports	Channel 5 News Weather Sports	Channel 5 News Weather Sports	Channel 5 News Weather Sports	Channel 5 News Weather Sports	Mannix (c)
<b>11</b>	Perry Mason	Perry Mason	Perry Mason	Perry Mason	MILLION \$ MOVIES	Films of the 50's	Films of the 50's
<b>11:30</b>							
<b>12</b>	Sign Off	MILLION \$ MOVIES	MILLION \$ MOVIES	MILLION \$ MOVIES			

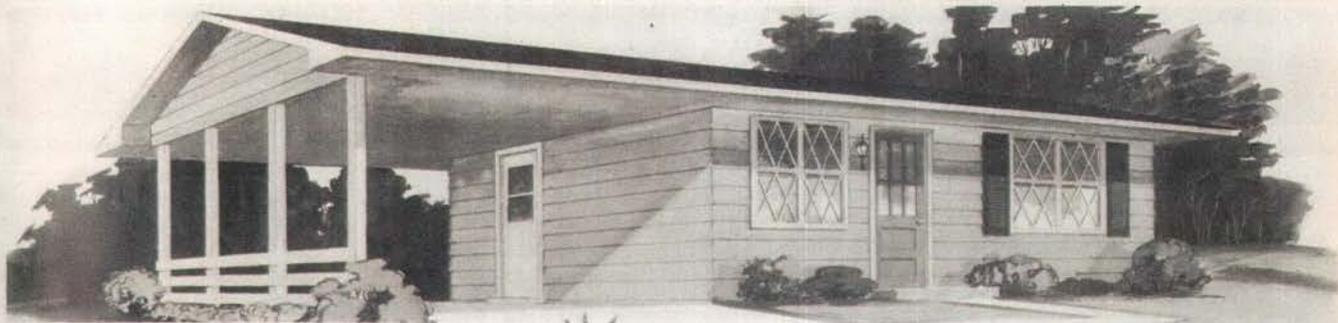
# WLAC-TV Channel 5

NASHVILLE, TENNESSEE

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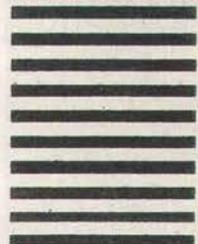
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TM-868

# To The Point

by John E. Stanford

Most of Tennessee's rural electric coopeartives will be holding their Annual Meeting during the months of August, September and October. None will be complete unless YOU, as a member-owner, are present.

There are four principal ways of doing business in our nation and there are, of course, many thousands of businesses, from tiny to gigantic, operating under one or the other of those four ways. None is more democratic, more fair, more practical, more legitimate, more humane, more downright American than is the cooperative way of doing business.

One of the many great things about rural electric co-ops is that every member has one vote. It matters not if a member has one or fifteen meters, whether he uses 30 kilowatt hours or 30,000 kilowatt hours per month, whether he is rich or poor, young or old, influential or un. nown—it's still one member-one vote or poor, young or old, influential or unknown—it's still one member-one vote with electric cooperatives.

However, having privileges, such as vote, and not using them is worse than not having these privileges at all. That's why you, as a co-op member, should attend your Annual Meeting this and every year. When there is co-op business going on, listen and take part as the occasion demands. During the lighter moments—and there are varying types depending on your particular co-op—rear back and have a good time.

Rural electric cooperatives operate entirely for the benefit of their members, and that includes Annual Meetings.

Your electric cooperative is YOUR business. It's your privilege, and obligation, to help tend to it at your Annual Meeting.

★ ★ ★ ★ ★ ★ ★

Do you have any pet peeves? Chances are that you do.

One of mine concerns television, which is one of my favorite pasttimes. I'm all for television, but not for all television.

My pet TV peeve is when all three major networks carry what is, for all practical purposes, the same event for hours on end and for three or four days at a time. Specific examples would be the coverages of the funerals of President John Kennedy, Senator Robert Kennedy, and Dr. Martin Luther King, and the national nominating conventions of the two major political parties every four years.

I do not say that events such as these should not be televised; rather, I think they should—but not by all major networks at the same time. It leaves the watcher without a choice, except not to look at all, and that's not always much of a choice. If people had three sets of eyes and ears and each network was carrying something startlingly different about these same events, it might make a little sense.

Why can't the Federal Communications Commission, which regulates television and radio, decree that no one event shall be covered by all networks at the same time, except for such relatively short programs as State of the Union addresses or emergency announcements. On the long-drawn-out events, the networks could alternate carriage, with equal time for each on a rotating basis. That would be fair to the networks and, at the same time provide the American viewing public a choice.

What do you think?

★ ★ ★ ★ ★ ★ ★

With this issue, the Tennessee Magazine completes ten continuous years at publication.

It was with the September 1958 issue that this publication made its first appearance in unstitched, untrimmed tabloid format printed on newsprint paper. Original circulation was 120,000. Ten years and a lot of much-appreciated cooperation and acceptance later, the magazine goes into almost 200,000 homes in a stitched and trimmed magazine format printed on coated paper with full color covers.

In short, just about everything concerning your Tennessee Magazine has changed during the past ten years, except the editor. There's not much chance, unfortunately, that he ever will!

Vol. 11, No. 8, August, 1968

# Tennessee MAGAZINE

Official Publication of the  
**TENNESSEE ELECTRIC  
COOPERATIVE ASSOCIATION**

Executive, editorial and advertising offices:

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J. C. Hundley, Executive Manager

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## ON THE COVER



Sailing, as these folks are doing on Old Hickory Lake near Nashville, is the second best way to keep cool in August. The best way is to enjoy an air conditioned home.



TENNESSEE MAGAZINE

# Co-op Members!

## Remarkable, New HOSPITAL-SURGICAL Plan

### Pays Money Back for Each Year You Stay Well!

**Guaranteed 8% CASH AWARD**  
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This new plan (Policy HS-500) is available exclusively from Union Bankers Insurance Company. It is Guaranteed Renewable—the insurance company cannot cancel no matter how much you collect or what your future health condition becomes . . . as long as you continue to pay premiums on time.

With this unique Money-Back Plan you get the vital protection you need to help meet today's higher-than-ever medical costs. If you stay well and don't

need to use the valuable benefits provided by the policy, you get a guaranteed 8% REFUND IN CASH at the end of the policy year.

**ENROLLMENT PERIOD OPEN . . .  
SO PLEASE ACT NOW!**

Benefits are payable on existing health conditions after six months. And, you do not have to be in perfect health to qualify for this plan.

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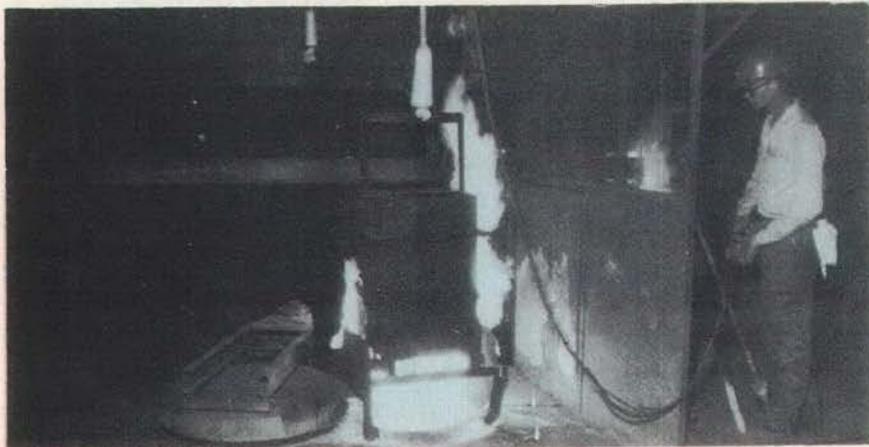
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*A Tennessee Town Didn't Quite Live Up To Its Namers, But Lodge Manufacturing Co. Has More Than Done Its Part In Being . . .*

# The Pittsburg of South Pittsburg

By John Stanford



Employee Wade Young recharges an electric furnace by electrical remote control from behind protective shield. Pig iron is heated to 2,800-degrees before being poured into sand molds.

South Pittsburg, Tennessee (population: just over 4,000 persons) didn't become "The Pittsburg of the South" that its founders, and namers, hoped it might be after rich deposits of iron ore were found nearby and a furnace set up almost a century ago. But that isn't the fault of the local Lodge Manufacturing Company, one of the five or six largest manufacturers of cast iron cooking utensils in the United States. It has been a highly important South Pittsburg fixture for 72 years—and is still going strong.

Although 72 years is an above-average length of time for any one company to engage in the manufacture of a particular line of products in our modern-day world, man's use of iron to serve his needs goes back into history

some four to five thousand years. So important has this versatile and reliable metal been to humanity that one 1,100-year period of history (1,000 B.C. to 100 A.D.) continues to be known as The Iron Age.

In the Middle Ages, kings listed iron pots and pans as treasures. Cast iron stoves were used in Alsace as early as 1490 but it was not until 1800 that cook stoves became popular.

Since the Mayflower days here in America, the American housewife has used and liked cast iron cooking utensils. Among the most precious possessions the first settlers brought with them were the iron pots and "spiders" so vitally important to the health and well-being of the pioneer family. These utensils had stood the test of time in the "old

country." Many were heirlooms handed down from mother to daughter. As the frontiersmen and their families fanned out to the north, west and south of their original landings on the east coast, they took their cast iron cooking utensils with them, thus perpetuating the continuing beliefs of millions of people today that cast iron is the finest cooking metal ever known.

Millions of people in this Wonder Age—which includes metals as well as drugs, electronics and space travel—still prefer this ancient and humble metal above all others for cooking?

As one of a half-dozen or so leading manufacturers of cast iron products, the Lodge Manufacturing Company provides at least part of an emphatic answer of "YES" to this question.

Lodge, a family-owned firm now in its third generation of ownership and management, manufactures in excess of 250 different items made of cast iron. Its volume ranges from a relative handful for some items up to 200,000 units for its best seller, a 10-inch skillet. The company will approach one million units of all kinds each year. Since it is only one of six leading companies manufacturing cast iron products, and allowing for a modest output of smaller manufacturers of similar products, it is more than accurate to state that millions of people still prefer cast iron



Pouring molten iron into skillet molds is Hubert Reynolds. Although company manufactures more than 250 different items, most are varying sizes of skillets, griddles, Dutch ovens, fryers and other cookware.

utensils to any other type of cooking metals available.

The Lodge Manufacturing Company was founded in 1896 by Joseph Lodge, assisted by his brother, William J. Lodge. This business was then known as the Blacklock Foundry and was located on the north end of South Pittsburg near the iron furnace mentioned earlier. This foundry, including its many wooden patterns, burned in 1909. A new plant was built and incorporated on East 6th Street in 1910. This later plant, with additions of space and new equipment, now contains 80,000 square feet, hires 200 employees and has sales in excess of \$2-million annually.

The manufacture of Lodge's quality products revolves largely around heat, sand, know-how and, of course, pig iron.

With the wide range of cast iron products manufactured by Lodge, it would be difficult to detail all of the various processes and procedures used. Basically, however, this overly simplified pattern is followed in making most Lodge products:

1. Molds and/or cores are made of a special grade of sand containing 14-18% clay to which is added proper amounts of water and adhesive materials. This sand is tightly pressured into patterns from which it emerges as molds and/or cores of considerable substance.
2. Into and around these molds and cores is poured molten iron, which has been heated to 2,800-degrees either in cupolas or electric furnaces.
3. After the iron has solidified in

and around the molds and cores, the sand which comprised them is broken loose and removed, leaving the rough cast iron product.

4. First step in the smoothing process is a "wheelabrator" which bombards the cast iron products with steel shots about the size of coarse sand. Some of the product lines, especially the lower-priced ones, are ready for packaging and shipment at this point.
5. Three more steps await the more highly finished lines: grinding of any remaining rough edges, however small; tumble polishing; and a special wax coating.

With the exception of several cupolas used to heat the raw iron to molten status, the Lodge operation is all electric including two electric furnaces. Power is furnished by Sequachee Valley Electric Co-op. Lodge is the co-op's second largest user. But the relationship between the co-op and Lodge goes a bit further than that of supplier-member.

Going back almost three decades, R. L. Lodge, one of the second of the three generations which have owned and managed the Lodge Manufacturing Company, was one of the founders and the first President of Sequachee Valley Electric Co-op.

Today, three of his nephews are the principals of the Lodge organization: President C. R. Kellermann, Vice President and Sales Manager Francis Kellermann, and Vice President for Production W. L. Kellermann. And the leadership of Lodge company con-

tinues to help in the leadership of the co-op as W. L. Kellermann, serves, as he has for a number of years, on the Board of Trustees of Sequachee Valley Electric Co-op.

True, South Pittsburg, Tennessee didn't become the Pittsburg of the South. But it wouldn't be too far wrong to say that the Lodge Manufacturing Company is the Pittsburgh of South Pittsburg, Tennessee, and that's good enough for the local people who enjoy the economic benefits of having Lodge Manufacturing Company in their midst, and for the untold number of good cooks over the nation who enjoy using the fine cast iron cookware made by Lodge Manufacturing Company in Tennessee.



Remainder of sand mold is removed from skillet at this stop on production line. Skillets, and all other products, go from this point of production to a "wheelabrator" where they are bombarded with fine steel shots for further smoothing.



After "wheelabrator" processing, skillets and other products which are to receive additional finishings go through this grinding process, at which Carl Dykes is shown taking off any remaining rough edges. Final steps are tumble polishing and waxing.



Skillet comes off pouring line still encased in its compressed sand mold. Cast iron skillets reach this point every few seconds. Part of sand mold is removed here.

# Restoration of Homes Built in the 19th Century

By Libba Morris  
Home Economist  
Chickasaw Electric Co-op



Mrs. Melvin Acuff stands beside the double mantel in the dining room.



Mrs. Ronald Woods stands beside an antique piece of furniture in her living room.



The Woods' three children, left to right: Everett, Rhonda, and Clyde on the stairs leading out of the entry.

You don't have to travel too far into the Deep South to find beautiful old homes that have been restored. Three homes have been selected for this article. The families who restored these homes certainly had to view what the home could look like. This takes a lot of will power and stamina and after the job gets started, there might have been more headaches, especially in trying to preserve the old. By this we mean mantels, stair casings and rails, hardware, trim on doors, the original columns and on and on. Each home has a history all its own.

The Melvin Acuff home was formerly known as the Wilson Burnette farm. Mr. Burnette served with the Bedford Forest Calvary, 14th Tennessee Regiment in the Civil War. He was rated as a First Lieutenant at only 29 years of age. A family of 9 lived in this home most of the time until the children began to marry. The home was heired to one of the children and one of the most significant facts about the home is it has only been sold three times. This home was built after the Civil War, sometime after 1864. The home is at least 100 years old. The brick was made by hand not far from the home.

Living relatives are scattered from Texas to Tennessee. The nearest doctor was about five or six miles. The family made the trip to Somerville, the county seat, twice a year; once in the Spring and once in the Fall. Mrs. Bessie Ward, a grandchild of Wilson Burnette, related most of this information to this writer. She mentioned visiting an aunt in the New Bethel community, which is now about a 15 minute drive from the home. But long ago, when they made the trip by surrey, the trip seemed like it was "plum off the map."

As far as communications are concerned, messengers on horseback could get the word around rather quickly with a boy headed in one direction and another in the opposite direction.

Mr. and Mrs. Acuff remodeled this home to an all-electric home. Although there are 12 foot ceilings in the home, the heat pump gives efficient heating and cooling. There was no plan for they worked things out as they went along. The original walls were 13 inches thick. Most of the walls, floors and woodwork were torn out and replaced with new material. Windows, doors, and shutters were of such size and shape that they had to be special made. There are 12



The lovely home of Mr. and Mrs. Ronald Woods.



"Lucerne"—Home of Dr. and Mrs. Irvin Mauldin.

huge rooms in the home; plenty of room for their three daughters and their husbands and six grandchildren to visit.

Mr. Acuff is in the sawmilling business and he made all the paneling for the Study, Kitchen, and Family Room. Four different woods are used in the Family Room; catalpa, locust, birch and maple.

Remodeling was done by June Moss, contractor, Buff Electric, and Creak Plumbing.

It would be well worth your while if you are ever in this vicinity, to go by and see this home which has been named the Mel-Lu Farm.

\* \* \*

Three miles East of Stanton, stands a stately, two story, white brick home belonging to Mr. and Mrs. Ronald Woods. This home was originally owned by Mrs. Woods' great grandfather, Robert Caldwell. The home was built either before or right after the Civil War. The owner is not positive when the home was built but she does know their home is well over 100 years old. Only one family has lived here, outside the immediate family. It has always been in the Caldwell name until it was sold to the Fords. The Woods just happen to be another generation of the original owner.

Mr. Caldwell was a farmer and he and his wife raised nine children, not any of their own. The story is told of Mr. Caldwell riding on horseback to Arkansas to get a baby. He returned with a baby in his arms and the baby was his nephew whom they adopted. Its parents were believed to have died during the Civil War. This nephew carried the family name.

Quite differently from cooking electrically today, they used wood for cooking and heating. Telephone came into being in this community before electricity. There was no running water until the Woods took on the job of remodeling. There was one drop fixture, bare bulb, in each room, no receptacles, no wall switches and no 220 service.

As the remodeling began to take place in 1961, everything was in good shape. They preserved the original floors, stair rail, woodwork, doors and mantels. The stair rail and mantel are walnut finished. Storm doors and windows and shutters were special made. The walls were insulated properly and

finished with sheetrock. White brick was added to the clapboard exterior walls. A complete, new electric service with adequate outlets and wall switches provides the family with modern conveniences. Attractive fixtures replaced bare bulbs.

Aluminum columns replaced the wood columns. Mayes-Howard, contractor, Covington; and Williams Brothers in Brownsville are responsible for the remodeling and electric service.

Mrs. Woods remarked if she had to do all over again, she believes she would try it. Mr. and Mrs. Woods have three children: Clyde, Rhonda, and Everett.

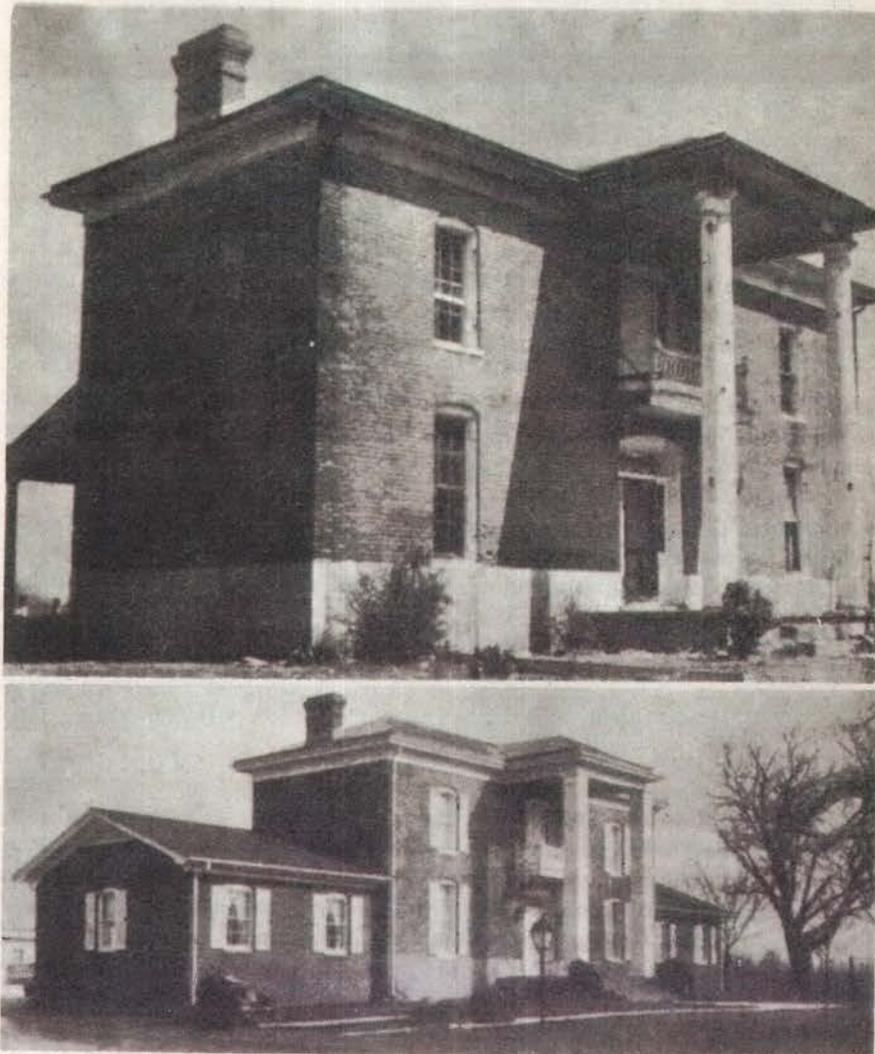
\* \* \*

"Lucerne" was built in the 1850's by Peter Mosby. This home is located approximately four miles north of Somerville, Tennessee. Wooden pegs, square nails, wide board flooring and handmade brick are original with the home. There were two brick kilns on the

estate and the bricks for the home were made in these kilns.

Mr. and Mrs. L. F. Catron moved to "Lucerne" in 1904 to assume the farming responsibilities for his cousin, Peter Mosby. Later, after the death of Mr. Mosby, the Catrons purchased the home and surrounding farm acreage. This was "Home" for the Catrons and the wonderful family of 6 children. At the settlement of the estate following the death of Mrs. Catron, the home and 105 acres were purchased by Mrs. Elise Catron Mauldin, a daughter, and her husband, Dr. Irvin Mauldin. This couple spent about two years in restoring the interior and exterior of the home as close as possible to its original appearance. Restoring and repairing required much more time and is much more expensive than new work. The only modernizing is in the kitchen and bathrooms. Paneling was added to the walls of the all-electric

(Continued on Page 21)



Before restoration and remodeling of the Acuff home, and After.

# INDOOR COMFORT ALL WINTER



Mr. Tilghman discusses the proper location for a register with little Miss Mary Lou Reid, daughter of Mr. and Mrs. Hughes Reid, Route 3, Trenton, Tennessee.

By Floyd Roberts, Electrification Advisor  
Gibson County Electric Membership Corp.

A recent story appearing in one of the leading magazines has created a tremendous response from home owners from all parts of the nation.

This story was brought to our attention by Mr. E. C. (Froggie) Tilghman of Tilghman Electric Company, Trenton, Tennessee, a short time ago.

The story was written by Mr. John W. Norris, president of Lennox Industries, Inc. and deals primarily with central forced air heating systems. However, since most of our central systems today consist of combined forced air heating and cooling, there is no reason why these same facts cannot be associated with cooling as well as heating.

Since the primary interest of everyone having a forced air heating and cooling system is comfort and economy, it is the opinion of those in the heating and cooling industry that this story by Mr. Norris will be beneficial.

## *The Contents of His Story*

"Through howling snowstorms, below-zero cold, or frigid rain and sleet, a warm-air-heated home can be completely comfortable. Floors will be warm and draftless, and all rooms will heat evenly.

However, I would be the first to admit that not all warm-air-heated houses today are comfortable. And since 85 percent of the new homes built last year were heated in this way, we may be speaking for a considerable number of homes. But all houses—new or existing—could be quite comfortable if the air-moving system were adjusted for continuous blower operation. In the trade, we call it C.A.C., or continuous air circulation, a definition your heating contractor will recognize.

Most warm-air-heated homes are now adjusted for intermittent blower operation, and this is simply not right. When the furnace blower stops, all the air-treating functions stop. Cold air builds up on the floor in layers. Warm air rises to the ceiling. One room will cool faster than another, and temperature imbalance develops from room to room. Then, when the blower starts, there is a blast of hot air from the registers, and the layer of cold air across the floor begins to move. People in the room feel drafts first, and then warmth, because a warm-air system responds very quickly.

One naturally asks why it has taken the warm-air industry so long to realize the importance of constant blower operation with

their systems. It is quite surprising that an industry of such size has been so slow to awaken to the principle and the rules governing installations—rules that make it so simple and economical to run the furnace blower constantly.

What's needed is more education. A homeowner tends to think of a forced-warm-air furnace as only a heating system. He is inclined to think that the heating system in operating when air is blowing from the registers. If this discharging air does not feel warm to him, he assumes something is wrong and frequently calls his furnace man and complains that his system is blowing cold air, and there must be something wrong with it.

Discharging air *should* feel cool. In a correctly adjusted warm-air system, the heating source will be on for only very short and frequent cycles—about three minutes at a time; then off; then back on again. But the blower must run constantly.

This means that most of the time the air coming from the supply registers will feel chilly if you hold your hand right over the opening. While this air might be at room temperature, it will feel chilly because the velocity of the air stream evaporates moisture from the surface of your body, producing a cooling effect, exactly like that of an electric fan.

Therefore, the correctly installed and correctly adjusted warm-air system will be discharging air that feels a little chilly most of the time. When a homeowner complains that his heating system is blowing cold air, the installer



With minor wiring and proper type of control, your system can be switched to continuous fan very easily.

should have explained previously the advantages of a C.A.C. system. But this educational job takes time. It takes less time for the furnace installer to readjust the controls so that the blower operates only when there is substantial heat in the furnace. But in the process, he thoroughly spoils the potential indoor comfort possible with C.A.C.

Because air discharging from the supply openings will usually be at room temperature, the openings (registers) should be located so that the air stream will not strike a room occupant directly. This, of course, means care in the location of these registers and in the selection of the type of register used.

Best location for the warm-air register is in the floor around the perimeter of the house, under the largest window areas. Preferably, these floor openings should be seven to nine inches in from the outside wall, so that window drapes can be closed without interfering with the air flow.

By using a diffusing type of floor register, a fan-shape spread of upward-moving air furnishes a curtain of comfort over the outside wall or window surface. This discharging air stream also inducts some recirculation within the inner portions of the room, which keeps floors beautifully warm, ceilings cool, and an even temperature from floor to ceiling. But where houses do not have basements, the usual location for the register is in the ceiling or high on the sidewall. The most experienced and most dedicated warm-air-heating installers select a supply register of a diffusing type that will regulate the velocity of the discharging air so that it will not cause drafts.

In a correctly adjusted warm-air system, the blower will run more slowly and quietly than usual in systems set for the common intermittent type of operation. Your furnace will be quieter and your house infinitely more comfortable.

It is comparatively simple for a contractor to adjust an existing warm-air system so the blower can run constantly. He might even advise the addition of some acoustical insulation inside the return-air system to make the air flow still quieter. These changes are simple and quite inexpensive. But they do require the services of an experienced contractor.

With the blower running all the time, the air is continuously cleaned as it passes through the filter. Rooms on the south, with large glass exposure, tend to overheat because of the solar gain through windows. With the blower running without interruption, this excess temperature is drained out of sunny rooms and used to warm the balance of the house. The blower is like a giant air mixer maintaining even temperatures throughout.

Frequently people worry about the cost of electricity for running a blower all the time. It is true that this type operation adds to your electric-power bill. However, for every dollar of added cost for electricity, you will save between two and three dollars in the fuel you use for heating. The reason is

understandable:

If the blower never stops, heat is carried away from your furnace the instant the heater turns on. Rooms are kept at the right temperature, with shorter heater times. Ceilings are kept much cooler, and there is less heat loss from them. Floors, of course, are kept warmer in the process.

I hear homeowners claim that they reduce their fuel bill from 20 to 30 percent merely by operating the blower continuously, and they get abundant additional benefits.

With a good ducted air system in your home, you are set to add such delightful accessories as central cooling, electronic air cleaning, power humidification, and new devices for air freshening and deo-

*(Continued on Page 20)*

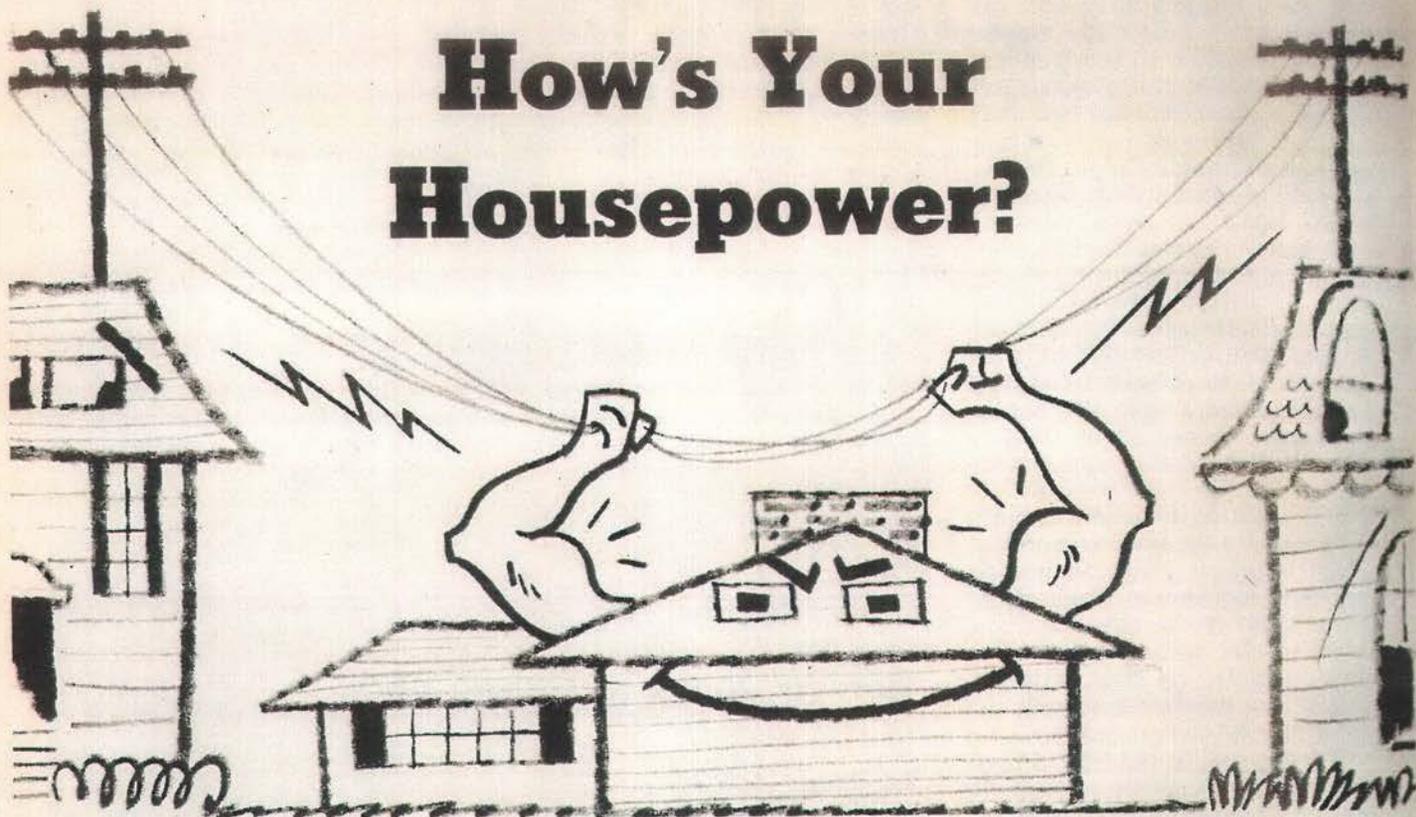


Dr. E. C. Barker, Route 1, Trenton, Tennessee, has faith in the economy of his electric central forced air heating and cooling system as evidenced by the expansion of his residence which will include an additional unit.



Mr. Tilghman points to a self-cleaning electronic filter that can be added to a continuous blower system along with a power humidifier and new devices for air freshening and deodorization.

# How's Your Housepower?



If your lights dim when the furnace kicks on, or if a fuse blows when you plug in the iron, chances are your electrical wiring is overloaded, and your home has inadequate Housepower for today's modern, electric living.

Consult your electrical contractor immediately for outmoded wiring is not only a costly nuisance—it's dangerous.

One thing you shouldn't do is call in a self-styled expert, for improper and inadequate wiring can be expensive.

Before the contractor arrives, there are two things you can do to help him provide the right kind of wiring for both the present and the future.

Make a list of outlets and switches you think are needed. Don't neglect outside outlets and lighting. They can add to the safety, convenience and pleasure of your home.

Decide what appliances you may purchase in the future and where you probably will put them. This will help the electrician determine the size of wires, number and kind of circuits, and whether added capacity is needed. This planning ahead saves money by providing flexibility that reduces the need for frequent and costly changes.

The basic requirements of a well planned wiring system are safety, convenience, adequacy, flexibility and efficiency. Keep these factors in mind if you are revamping your house wiring.

Also be sure to plan enough lighting. It saves time, eyesight and wear and tear on the disposition. The minimum lighting load recommended for the home is three watts to the square foot. More lighting is needed for reading or working.

The location of outlets is vitally important. They should not be more than 12 feet apart and no point

along the floorline should be more than six feet from an outlet. You'll need more outlets in some areas than in others. This is true in any room where a number of electric devices are used. Let's say that the master bedroom has twin beds with electric blankets and that the night table between these accommodates an electric clock, a table lamp and a small radio. There must be receptacles for five appliances. Therefore, there should be three duplex outlets along the headboard wall.

In the kitchen, laundry and workshop, there should be individual 240-volt circuits for each major appliance, such as a range, clothes dryer, water heater and large air conditioner. There also should be 20-ampere 120-volt circuits in each of these areas with outlets for appliances such as a washer, ironer, dishwasher and disposer, refrigerator, freezer and heater.

A further word about switches: To save steps and avoid the hazards of falls in hallways, on steps or over toys in dark rooms, be sure to have three-way and four-way switches to permit the control of lights from two or more locations. If you cannot turn a light on when you enter a dark area, or cannot turn one off when you leave a lighted area, your house is "underswitched." You will find that silent mercury switches last longer and are worth the extra cost.

Each circuit has a protective device located in the panel box. It can have either fuses or circuit breakers. The purpose is to break the circuit in case of an overload and prevent the overheating of wires. Be sure that your electrician labels each circuit on the panel door so that you can identify the circuit if trouble develops.

Finally, replacing fuses with coins or larger fuses most certainly doesn't solve the problem of overloaded wiring.



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An electric water system can help you earn more, too. Research proves that animals and poultry produce more when there is adequate water always available. Running water will also help up-grade your dairy so you'll get more for every hundredweight.

Consider an electric water system as a sound investment. An investment in your family's health and a good investment so you'll earn more.



## Tennessee's Rural Electric Cooperatives

# 1967 - a very good year

Although loan funds available through the Rural Electrification Administration may fall far short of the projected needs of rural electric co-ops in 1968 and, unless considerably increased, the years beyond, the year 1967 was generally considered a good one in terms of over-all progress.

During 1967, 155,000 rural families received first-time electric service as the result of loans made by REA. This brings to 5,843,000 the number of rural families and business establishments in 46 states, Puerto Rico and the Virgin Islands which are now receiving service through REA-financed electric systems. REA loans also provide, in addition to making possible new services, the heavying up of lines to provide better services to existing members.

Rural residential consumers served by these systems used, nationally, an average of 545 kilowatt hours of electricity per month in fiscal year 1967. Residential members served by electric co-ops in Tennessee used 982 kilowatt hours per month.

Nationally, residential consumers paid an average of \$11.23 for their 545 KWH. Members of Tennessee electric co-ops paid an average of \$8.94 for their 982 KWH average monthly use, or 11.5% less for 80% more power.

On January 1, 1968 there was a total of 1,101 REA electric borrowers—988 cooperatives, 55 public power districts, 33 other public bodies and 25 power companies. There are 22 electric co-ops serving Tennesseans.

Nationally, the cost of power to rural electric members was 2.06 cents per kilowatt hour. In Tennessee that figure was barely over nine-tenths of one cent (.91 cents) per kilowatt hour.

Net sales throughout the nation's co-ops reached 52.8-billion kilowatt hours. Sales by TVA to the 50 rural electric co-ops in the Tennessee Valley area was 10-billion KWH.

The 74 electric borrowers generating power in 1967 produced 14.2-billion kilowatt hours, an increase of 22.5% over the previous year. Excluding sales between borrowers, REA-financed systems purchased an estimated 44.7-billion kwh, topping 1966 by 4.4%.

The 74 borrowers generating power had a capacity of 3,701,126 kilowatts at the end of 1967, representing slightly more than 1% of the Nation's installed capacity. They generate 24.1% and purchase 75.9% of the power they distribute.

Electric borrowers achieved an estimated net worth of more than \$1.4-billion by the end of 1967, or 27% of total assets. This represented an increase of almost 1% more ownership over the previous year.

During 1967, REA approved loans in the amount of \$258-million, bringing to slightly more than \$6.4-billion the cumulative total of electric loans approved by REA since 1935. Of this approved amount, some \$5.5-billion had been advanced for investment by borrowers in their local electric facilities by the end of 1967.

About 67.5% of the 1967 loans

were made to finance system improvements and new distribution facilities, 32.4% were made to finance generation and transmission facilities and .1% were made for consumer facilities.

Electric borrowers paid more than \$241-million in principal and interest on their REA loans during 1967, bringing to more than \$2.8-billion the cumulative amount paid by year's end. This amount includes almost \$1.6-billion repaid on principal as due, more than \$300-million as principal paid ahead of schedule, and interest payments in excess of \$900-million.

The loans made by REA in 1967 brought to almost 6.5-million the total number of rural consumers (families and business establishments) being served or scheduled to be served by REA-financed systems. The national average density for these systems is about 3.6 consumers per mile of line. The average of Tennessee is 7 families and businesses, or almost twice the national average.

The year 1967 ended with 98.4% of the nation's farms, rural and small town residences receiving central station electric service. Tennessee's average is almost identically the same. In 1935, the national figure stood at 10.9%. In Tennessee that figure was an even more dismal 4%.

The REA-financed rural electrification program has been a great one, and 1967 was no exception. With adequate loan funds the years ahead can be, and must be if ever-growing rural needs are to be met, even greater ones.



## Volunteer Views

by J. C. Hundley

Executive Manager, TECA

The job of rural electrification may be complete, as some detractors of the program have been trying to tell the American public for years. But until recently it wouldn't have done much good to tell this to the more than half-million persons in rural America who received first-time electric service during the fiscal year which ended June 30. Those half-million people comprise the 155,000 families which received electricity in their homes for the first time during the past year.

And it wouldn't do much good to give this "the rural electrification job is done" misinformation to hundreds of thousands of other rural families in America who, electrically speaking, are still living in the 1890's. Many of these people may never have electric service during their lifetimes.

Why? Because they live in "protected" areas served by private power companies which, in many cases, have power lines only a mile or so away.

And why won't the private power companies serve these people who want electricity? They will—if the unserved people are willing and able to pay through the nose for it . . . a practice which the power interests have long exercised and which did much to force the organization of rural electric co-ops in the first place.

One of many such examples may be gleaned from the state of Wisconsin, where percentage of rural electrification in areas served by rural electric co-ops is among the highest in the nation. But private power companies also serve certain rural areas of Wisconsin, and therein lies the problem.

Before anyone thinks we are talking about another state "behind its back," we should point out the chief spokesman against this outrageous situation is Wisconsin's distinguished U.S. Senator, Gaylord Nelson.

Senator Nelson has pointed out to his Senate colleagues and others, for example, that in

one Wisconsin county there's a group of nine families without electricity. The local power company would gladly serve these nine families, providing they pay anywhere from \$500 to \$5,000 to extend a line from the main line a mile or so away.

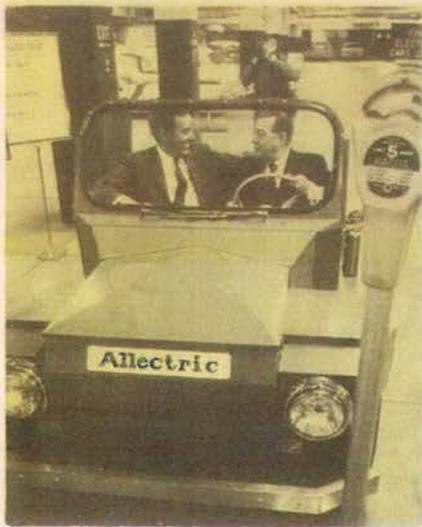
One family wrote the Senator that they have tried to get electric service since 1954. They have mail delivery, school buses, telephones, black-topped roads—but no electricity.

In still another Wisconsin county, Senator Nelson states, a group of 16 families has been trying to get electric service. The private power company wants to charge \$8,000 to run a distribution line to their cluster of homes. Nelson pointed out that if these families were living within an area served by a rural electric cooperative, it would cost them only \$5 (membership) to get electricity.

Continued Nelson, "Like many pioneering programs designed to benefit the public, the rural electrification program faces the risk of becoming the victim of its own success. Many people who fought the program from the outset now say that it has been a very successful program but we do not need it any more since it has done such a great job of bringing electric power to our countryside. I state again that the job is not complete. The rural electrification program must be continued and improved if Wisconsin and other states in our nation are to make maximum use of our existing and potential resources."

Running electric lines to 98% of our rural homes and business establishments, which we have done, is only the beginning of a much larger job—that of making available an ever increasing amount of power on a reliable and economical basis and from a source of supply that is both sound and stable.

To these objectives our electric co-ops are committed. In obtaining these objectives they must succeed.



This all-electric car brought smiles to the faces of Sens. Edmund S. Muskie, left, of Maine, and Warren G. Magnuson of Washington. Both men have been in the forefront of the fight against air pollution.

If you're the kind of person who enjoys a good fight on the side of the underdog, you might want to join the struggle for a practical electric car.

But don't expect fast or easy success. The skeptics and outright opponents far outnumber the small band of inventors, manufacturers, and electric officials who see a bright future for a car powered by batteries.

Even proponents of the electric car shy away from any suggestion that it will replace the internal combustion engine, and the reasons are pretty obvious. The gasoline car is not simply a means of transportation, it is a way of life. The material prosperity of the nation heavily depends on car manufacturing and the industries related to it, principally steel, oil and chemicals. Each year millions of dollars are spent in advertising to make sure things stay the way they are.

Until very recently, almost nobody criticized the automobile. Then along came air pollution and Ralph Nader, and people began to realize that we might be slowly poisoned by the air we breathe—contaminated in large part by the waste products of roughly 100 million gasoline and diesel-powered vehicles—if we weren't among the 50,000 Americans killed more quickly each year in automobile accidents.

Without those realizations, the

# The Fight for the Electric Car

Phil Sawicki

electric car would still be where it was in the 1930's—in the ash-heap of history.

## ONCE MORE PREVALENT

During the first two decades of the 20th Century, the electric car was far more prevalent than its gasoline-powered cousin. It was quiet, it was reliable, and it didn't scare horses.

In the words of one matronly lady in New York City, "My electric is a friend of which I stand in constant need for little morning spins in the park, for calling, for shopping, for matinees, for dinner and theatres. It never fails me."

But then, as now, the electric car had some technical defects that the internal combustion engine would overcome. You couldn't go more than about 20 miles without needing to have the batteries recharged, the weight load was limited, and you slowed down drastically going uphill. A bad omen occurred in 1916, when one manufacturer introduced the Wood Dual Power, with both an internal combustion engine and a battery-powered electric motor.

By the 1920s, thanks chiefly to Henry Ford's cheap and reliable cars and the continuing discovery of oil deposits, the electric car was on the defensive. By the following decade, electric cars were built only to meet special orders.

It took another quarter century for interest to revive in the electric car, a 25-year period during which more and more Americans became concerned about pollution in the air. Much of that pollution was obvious. It could be seen coming from industrial smokestacks, from municipal incinerators, from apartment buildings. But the concerted attack on these evident sources of pollution did not purify the air, particularly in big cities like Los Angeles and New York. Finally, scientists discovered that

the millions of cars and trucks on America's highways were releasing millions of tons of various chemicals into the air. In 1966, for instance, according to the U. S. Department of Health, Education and Welfare, the total air pollution was 142 million tons. Of that, an estimated 86 million tons came from automobiles and other vehicles, in the form of carbon monoxide, nitrogen oxides, and gaseous hydrocarbons.

Naturally enough, Congress, state legislatures, public health officials and others concerned about the problem have directed their chief efforts at solving this pollution at its sources: the gasoline tank, the motor, and the exhaust pipe of the standard car.

But this concern has also made it respectable to talk and dream about the advantages of the battery-powered vehicle.

This talk has become so respectable, in fact, that even Detroit's big automakers have shown some interest in developing electric cars of their own. Realistically, however, it seems likely to be many years before Ford or General Motors or Chrysler will begin to manufacture their version of an electric car for mass consumption. These companies have all their chips—and they are profitable chips—on the gasoline engine. They insist, that, given a "reasonable" amount of time, they can reduce the contaminants from their engines to "acceptable" levels.

The attitude of the industry was summed up in a statement early this year by Edward N. Cole, president of General Motors. Said Cole: "With our current technology we have found no way to satisfy the basic transportation requirement of the average motorist with the electric vehicle."

Further, the automakers contend that no one really knows whether the American public—

conditioned to the present combustion engine and all the hoopla that surrounds it—would buy the electric car on a grand scale.

Two recent reports on the prospects for the electric car would seem to have reinforced the industry in its reluctance to press forward in the invention of a marketable electric car for full-time family use.

One of these is a February, 1967, report prepared by the Bureau of Power of the Federal Power Commission for the Senate Commerce Committee. The other is an October, 1967, report prepared by the "Panel on Electrically Powered Vehicles" for members of the President's Cabinet and the chairman of the Atomic Energy Commission and the FPC.

While the FPC report would appear to have been written by an optimist and the special panel's report by a pessimist, their general conclusions are similar.

The FPC said: "Satisfactory technology for short distance electrically powered vehicles is available today. While electric automobiles are still too limited in capability and would be priced too high for common use, short distance vehicles using the best in new electric storage batteries, motors, controllers and chargers could become practical in the near future. As research on all electric vehicle components continues and the mileage range expands, it may become economically feasible to introduce an ever-increasing variety of short distance electric vehicles. These would include commuter cars, delivery vans, school buses, commuter buses, service trucks and possibly taxicabs."

The panel said: "The state of technology does not permit the current development of an economically feasible electric car except for special-purpose, limited-range use."

Meanwhile, a handful of battery makers and independent manufacturers have been striving to show that these reports are behind the times. One of them is Robert R. Aronson, president of Electric Fuel Propulsion Inc., of Ferndale, Mich.

Aronson claims that his firm, using a 30 kilowatt lead-cobalt battery, has powered a modified Renault (originally designed, of course, for a gasoline engine) at speeds of up to 70 miles an hour

with a range of between 70 and 120 miles between rechargings. Now, Aronson says, his firm is designing an electric car from the ground up that will go as fast as 100 miles an hour and have a range of 300 miles between rechargings.

The nation's two largest manufacturers of electrical appliances and equipment, Westinghouse and General Electric, have both brought forth electric cars, but neither has announced plans for large-scale production.

GE, in introducing an "experimental" vehicle with a top speed of 55 miles an hour and a range of 100 to 120 miles, emphasized that it had "no plans for manufacturing or marketing electric automobiles."

Westinghouse has manufactured for sale a few of its vehicles, called the Marketeer I. It has a top speed of 25 miles an hour and a range of 50 miles. The price is about \$2,500. Recently, however, the company announced it was suspending production of the vehicle until the Federal government issues safety requirements for all electric cars.

#### ELECTRIC CAR ADVOCATES

The electric car has a number of champions on Capitol Hill. They have individually or with several co-sponsors introduced a variety of bills to authorize Federal research programs to be undertaken

by three major government departments—Transportation; Health, Education and Welfare; and Housing and Urban Development.

Two of the leading advocates are Senators Warren G. Magnuson of Washington and Edmund Muskie of Maine. Both are deeply interested in transportation and pollution problems, both are influential, and neither comes from a state known for producing cars, steel, or oil.

Both have introduced legislation that would have the government probe more deeply into methods of transportation that would pollute the atmosphere less than the internal combustion engine. This legislation has not gotten very far, however, and more than one Capitol Hill observer has suggested that the simple reason is that the automotive industry is the roadblock to such legislation.

In the opinion of Ralph Nader, the safety crusader, the industry "has such a vested interest in the existing technology of the internal combustion engine that nothing beyond glacier-like movements can be expected of its management."

And columnist James J. Kilpatrick said that "the last thing they (the automobile, petroleum and chemical industries) want to see right now is a federally sponsored program of research and development in the field of elec-

*(Continued on Page 20)*



Sen. Magnuson tests a battery-powered scooter on a Washington, D.C. street. These three-wheeled items are often used around industrial installations and factories.



Sen. Muskie was obviously pleased by his ride on this battery-powered motorcycle. The battery itself can be seen just below his right knee.

# MARKETPLACE

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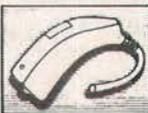
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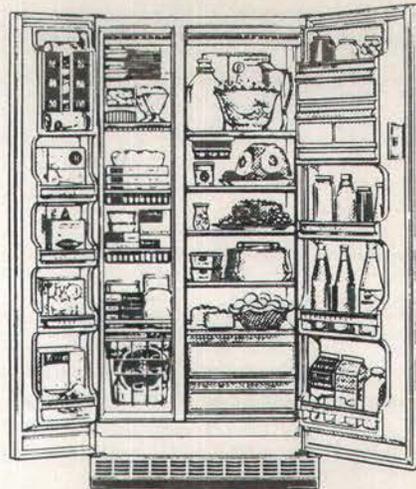
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# Hotpoint

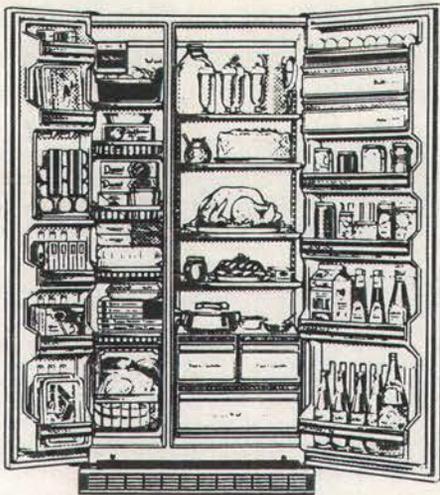
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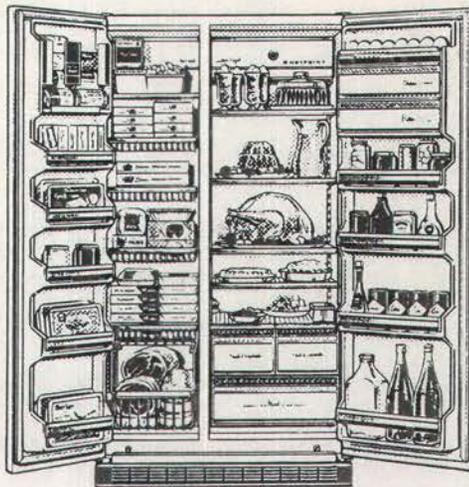


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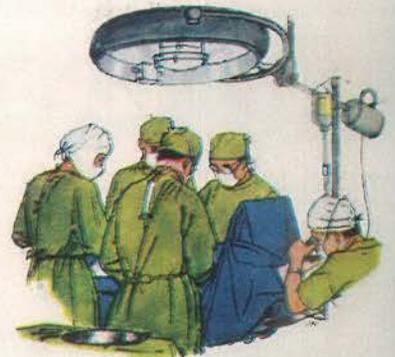
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