

POWER LINES

PUBLISHED BY THE HAWKE'S BAY ELECTRIC POWER BOARD

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The wind is howling around tightly shut windows. The fire is crackling away, offering cosmetic more than real heat. The panel heaters are cranked up against the cold, wet New Zealand night. The family is gathered around the television waiting for dinner from the oven.

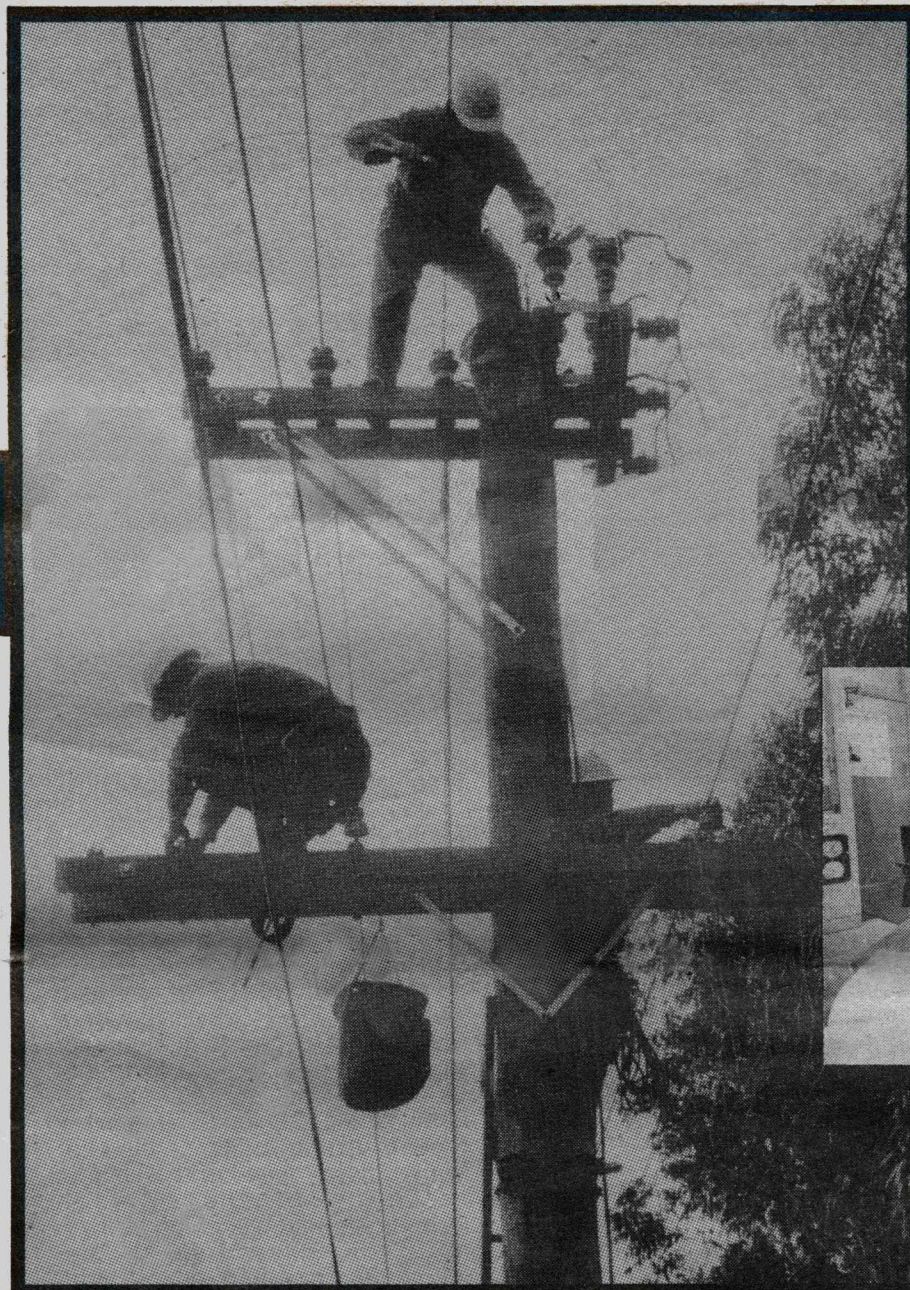
WITHOUT WARNING THE LIGHTS GO DEAD.

Then without warning the lights go dead. Stumbling through the dark to find torch, telephone and the right number, you are connected with the control room of your Power Board. "We depend on people to call. The phone remains our best source of information. When we need to localise a problem, the phone is necessary," said Stan Small, one of the duty engineers. "The questions we ask seem mildly ridiculous to someone fumbling around in the dark," said Pat McGoverin, a control room operator. "The answers are necessary to determine if a faultman should be sent out."

The control room operator will want to know if you have checked the fuse, if the meter is going around. They'll ask you to look at the glass window on your panel heating relays. If the call is an isolated instance it could be a faulty pole fuse, but this is a storm emergency. The "outage" is widespread.

NERVE CENTRE

The control room is the nerve centre of Power Board operations. When the power supply in a substation or



EMERGENCY

feeder is interrupted an alarm sounds in the control room. Normally the alarm comes before the telephone call. It could be that a car has hit a power pole, falling trees have knocked down a line, or an opossum has touched a high voltage line. Until that phone call it is difficult for the control room operator to isolate the problem. That is why the call is critical.

Storm emergency procedures include duty allocation to many people. The response spreads from the control room. As electrical supply becomes more endangered, more and more staff are called in, including people whose jobs are normally quite different. A typist may now be delivering sandwiches and hot soup to feed a line gang. The line gangs are out at

first light and not back until long after dark. An appliance salesman might be in the special telephone room fitted with six receivers to handle the extensive phone work caused by a storm.

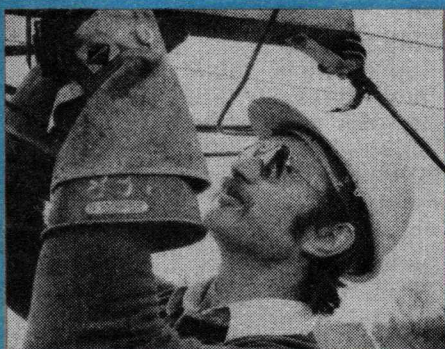
"IT'S NOT FUNNY WHEN YOU HEAR ELECTRICITY ARC OVER YOUR HEAD."



RENAL DIALYSIS MACHINES

Response is made first to areas most critical. For example in Hawke's Bay there are several renal dialysis machines located in homes. Each is charted on the large map in the control room. The Board responds first to those situations, such as hospitals, where life is literally dependent on the power supply. Computer systems and incubators are also examples of critical need for uninterrupted electrical supply. When those needs are met they begin correcting those faults which restore power to the largest number of consumers. Switching can

continued on page 2



Focus on a Faultman

page 2



Free Electric Blanket Testing

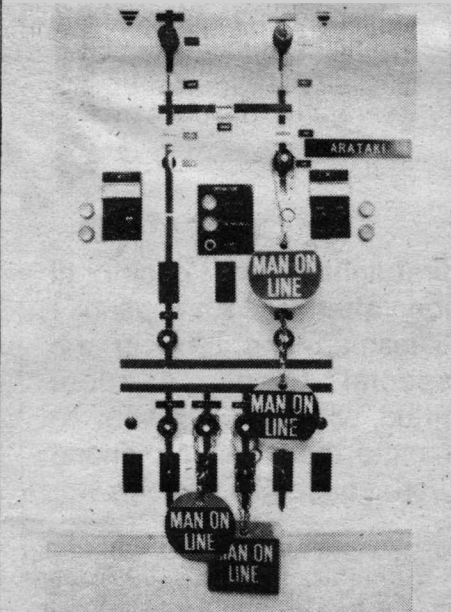
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Consumer Report

page 5

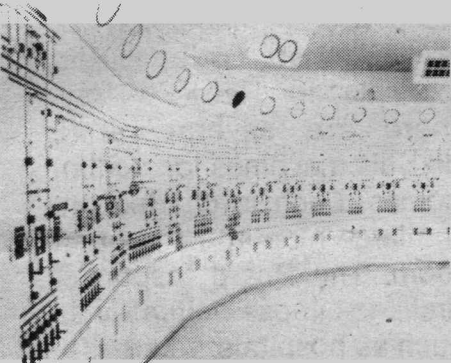
Focus on a Faultman

also be done to change the source of supply to particular areas. Hot water heaters and street lights are among the last to get power restored.



The control room is never without an operator; even at Christmas someone is there to answer the phone. The operator logs every activity. A change of shift does not represent a gap in information. Routine chores include organisation of power shutdowns in areas where gangs are working on the line.

The switches are carefully tagged so that anyone can easily see "man on line," indicating that it is to be left dead. Said one faultman, "It's not funny when you hear electricity arc over your head!"



Sometimes it's quiet and sometimes the phones are red hot. From 5pm until 7.30am normally only one person's on duty in the control room. If there is a major outage that is less than a storm emergency, then that one operator has to handle all of the calls.

"We live day by day here. We don't know where we'll be in the next five minutes," Pat concluded. Power Board consumers, however, are assured of vigilant response to any interruption of electrical supply.



"THINGS GO MOO IN THE NIGHT"

"It is high risk work, we have to be careful and conscientious. If we fall off a pole on a cold wet night, there is no one around to help. "A safety consideration is built into our minds. Electricity is not a thing for a second chance. You can't see, smell or hear it." That is how Lawrie Roberts, senior Hastings faultman for the Power Board, sums up his work.



Faultmen are responsible for maintaining supply of power to consumers, day and night. A faultman is first on the scene of a breakdown, and he either repairs the fault or calls an overseer for a gang to handle the work.

The emergency work keeps one of the eight faultmen on call in a rotating schedule, four each in Napier and Hastings. After a week of second call, they do a week on first call and have two weeks of uninterrupted time. "Of course a violent storm calls everybody out," Lawrie said.

Routine daytime duties include switching electricity lines to isolate faults and organise power shutdowns. They check voltage recordings, do range repairs and act as high load escorts. One of their least pleasant assignments is disconnections. Despite some of the difficulties, Lawrie says he quite enjoys the "people" side of fault work.

Lawrie started with the Power Board in 1963. Now a registered electrician, he began as an apprentice, undertaking a five-year comprehensive training programme.

'BEST APPRENTICESHIP'
"It's the best electrical apprenticeship you could take on," said Lawrie as he described training in electrical engineering, steelwork, welding, electrical fitting, substation work, overhauling transformers,

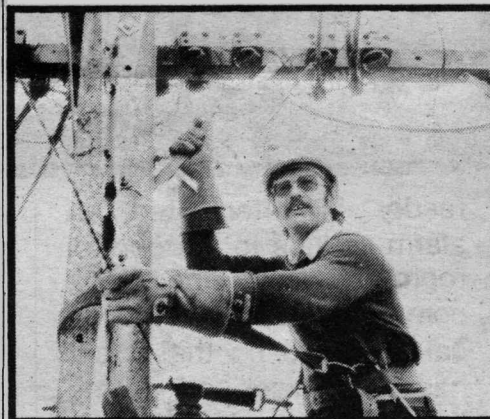
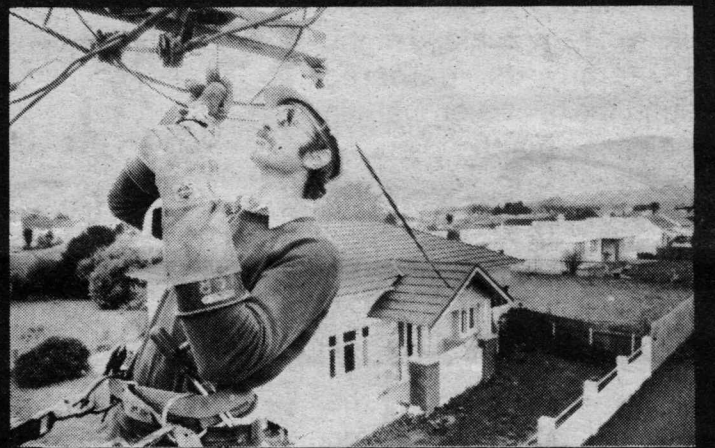
electrical drafting, electrical inspection, industrial wiring, house wiring, metering and appliance service.

After working in other areas he began fault work eight years ago and since has become the Hastings senior faultman.

"Most faults we get relate to a pole fuse corroded or burned away," Lawrie said. "We must repair them because unqualified people are not allowed to touch the fuses and no one else is allowed up the pole. However, there is usually an indication of a faulty pole fuse with severe flickering of the lights." Sometimes that will go on for two or three days before the electricity fails and people call the Power Board.

the faultmen search for the cause if it is not obvious. Sometimes that entails cross country hikes in the darkness to find an opossum or bird that has had an unfortunate run-in with a power line. If they can't trace the cause at the time they return in the daylight. He described the uncertain feelings of climbing over fences and through gullies and into paddocks, with the darkness. "Things go moo in the night and we don't know what we'll come across!"

"We don't get many unnecessary calls," Lawrie said. The control room is good about screening calls and they do what they can to ensure that faultmen don't have to go out unnecessarily.



"I ENJOY THE WORK. IT HAS ITS UPS AND DOWNS."

Lawrie encourages people to call right away when there is a pronounced flicker. "When we can work in daylight it is much easier. We have a spotlight mounted on the truck roof, and at night that is often the only light source we have."

Another routine part of faultman work includes answering accident calls.

"Ambulance drivers contact us as soon as they detect an electrical risk. After isolating electrical problems to ensure safety, we often pitch in and help the ambulance driver. We let the power lines wait. People come first." Lawrie has seen some bad accidents, and is glad to be able to help people in those critical moments.

NIGHT PATROLS
Night patrols can also be difficult. After power is restored

There are lighter moments too. One faultman climbed a pole to rescue a stranded cat. "We all have our scars from scared cats," Lawrie said. He retreated down the pole and placed the cat safely on the ground. Scared by his experience the cat shot out of his hands and sought refuge straight up the next power pole, causing the whole process to begin again. "I enjoy the work," Lawrie said. "It has its ups and downs." Being able to respond to a fault anytime day or night takes its toll on family flexibility. But Lawrie says he feels as if he has something substantial in return for the nearly 20 years he has invested in the Power Board.

"Sometimes we feel like the general dogsbody," Lawrie said of his varied job. Then he smiled and put it another way. "We are very versatile men."

Welcome to 'Power Lines'

In spite of our efforts over the years, there are occasions when a communications gap develops between electricity supplier and consumer.

This situation concerns Board members and officers alike and in an attempt to overcome this problem, this and future issues of "Power Lines" will endeavour to put you, the consumer, in the picture on Board activities.

The free service offered by our advisory officers is not as well known as we would like. If you are building a new home, or making alterations, or additions, heating or lighting requirements or any other electrical installations, information is available for the asking.

An important aspect of our advisory service is advice to the elderly on economic ways to keep warm during these cold winters. The cost of heating concerns the older person particularly, and our officers are there to give you the benefit of their experience — free of charge — on the levels of heating needed.



K.R. Gillon, Chairman.

Letters to the editor

Do you have a viewpoint on any aspect of electricity supply that you would like published in 'Power Lines?' Write to the Editor, 'Power Lines,' P.O. Box 639, Hastings. Non-de-plumes may be used, but the writer's name and address must be given. Any letter may be abridged, and where appropriate will be referred to the appropriate Power Board spokesman for comment.

Come to RANGE CITY for the best selection of electric ranges in town



and see the new **ATLAS** models

Come to the Hastings or Napier showroom of your Power Board and enter a new world of cooking technology.

The new generation of electric ranges look better, cook faster, save power and offer great versatility and control.

The technology is new, but the trade-ins, easy terms and back-up service offered by your Power Board are ongoing.

your SO MUCH MORE THAN ELECTRICITY
POWER BOARD

Heretaunga Street East, Hastings. Marewa Village, Napier. Telephone 87-119.

H600 3A

Join the Decision Makers

If you are an electricity consumer, and you'd like to serve your community in an area that directly touches your life, you might consider standing for election to the Hawke's Bay Electric Power Board.

Eleven members are elected by the public to serve on the Board. The next election will be held in October 1983. During the last election the citizens of Napier City elected Messrs K.R. Gillon, K.L. Duckworth, and D.D. Twigg. Hawke's Bay County elected Messrs D.R. Robertson, J.R. Trotter, V.S. Crisp, and C.W.J. Tucker to the Board. Hastings City elected Messrs J.K. Agnew, C.K. Daniell, and C.R. Apperley. Mr W.C.F. Leicester was elected from Havelock North.

If you were elected you would be responsible with the ten other members for the policy decisions of your Power Board. You would help to determine tariffs for differing classes of consumers, and general distribution policy for electrical supply throughout the region the Board serves. Administrative policy such as staff numbers, capital expenditures and building expansions also fall under the Board's authority. While administrative decisions are left principally to an executive staff the Board often inquires into unusual occurrences and other matters that directly affect the public interest.

Planning could be one of the more critical Board functions. In order to ensure an ongoing electrical supply for all New Zealand consumers, power authorities across the country form part of the Electrical Supply Authorities Association. The HBEPB makes its requests and recommendations to the Government jointly with other power boards.

An equally interesting aspect of the power authority is that it is a commercial enterprise buying and selling a product without the need for rating or government funding.

No member of the Board is entitled to any profit from board activity. They are partially reimbursed for expenses related to Board work at minimum rates set by the Government.

The Board meets regularly once a month, except in January.

This month's quality appliances to make your house a home

from ^{your} **POWER BOARD**

OFF-SEASON PURCHASE

Kelvinator refrigerators and freezers

See the big selection at your local Power Board showroom, and ask about our generous trade-ins and easy terms.

AUTHORISED **Kelvinator** SERVICE CENTRE

BUY OF THE MONTH

Experience the ease and convenience of a Kelvinator automatic clothes drier

from **\$286.00**

Easy payments added to your power bill.

CUT BACK TREES IF THEY ENDANGER POWER LINES

TELEPHONE 87-119 for information and assistance



Service DEPARTMENT

If it's electrical, call on our

to repair or service it.

At your local Power Board or phone 87-119



HB050

Shopping for large and small electrical appliances is easy at your Power Board in the relaxed atmosphere of our Hastings and Napier showrooms. Trained sales staff are at hand to discuss your needs without any selling pressure; and you will find this friendly, helpful attitude continuing through purchase, financing, delivery and after-sales service.

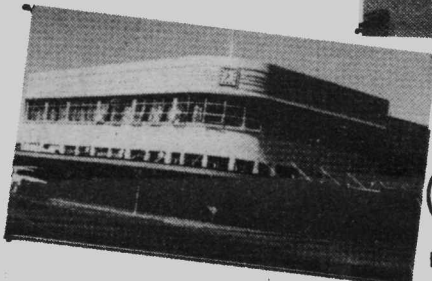


HASTINGS: Heretaunga Street, East

Call in soon to see the large selection of leading brand-name electrical appliances at the Hawkes Bay Electric Power Board.

Kelvinator SALES AND SERVICE

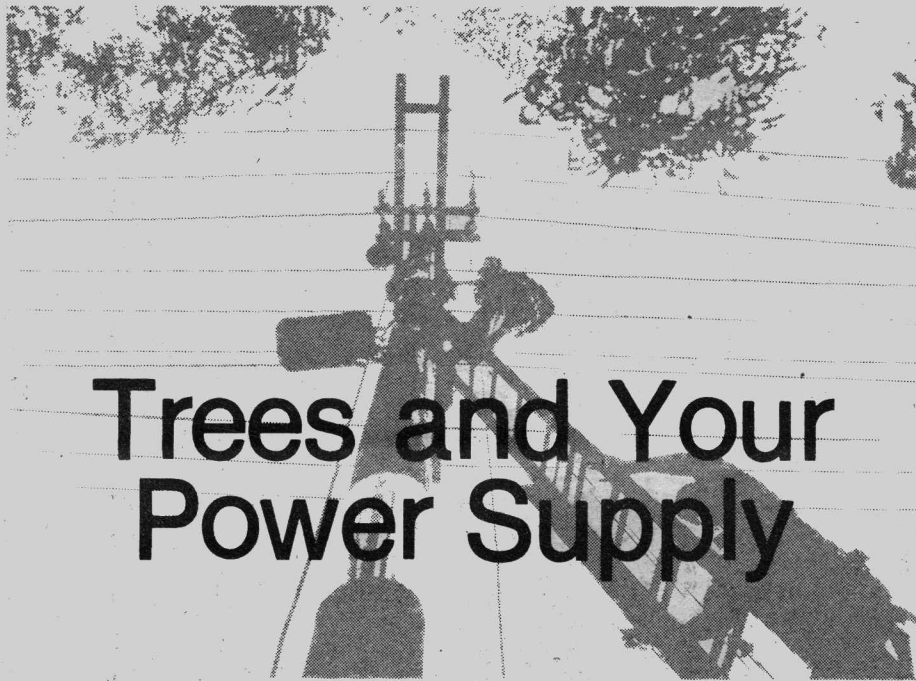
NAPIER: Marewa Village



Take advantage of our four-point purchasing programme:

1. Free valuation on your old appliance for trade-in.
2. Free delivery and connection.
3. Easy terms you can pay with your power bill.
4. Conscientious after-sales service.





Trees and Your Power Supply

Every winter Hawke's Bay is hit with power blackouts. Ninety per cent of this line damage is caused by trees. Just when we most need warmth and light and hot meals, the supply for miles around can be disrupted by one entangled branch.

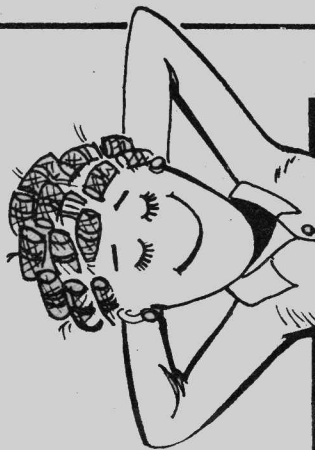
The Power Board works co-operatively to keep this ongoing problem under control. Two aspects of the problem require close co-operation between the Board and the public: planting decisions and subsequent maintenance.

Planting: The problem is best dealt with at the earliest stage; the type of tree and design of the shelter can eliminate many of the problems. The closest a mechanical trimming machine may come to a high voltage line is 3.5 metres, which means the trees must be trimmed to a distance of 4.5 metres from power poles.

Maintenance: Early shaping and control and regular pruning are essential. When this is done the shelter thrives, does its job better and the power supply is uninterrupted.

The Board provides services including free advice on tree pruning and maintains a full-time year round tree-cutting team which will fell or trim trees at a consumer's request and cost.

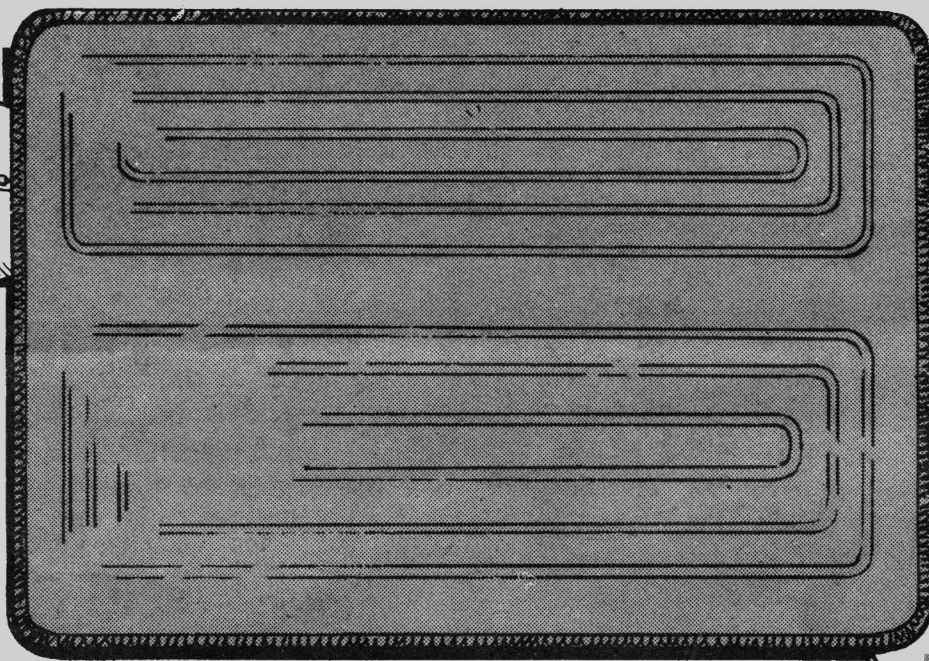
We all want to enjoy the beauty of the trees with an easy mind about the power supply to ourselves and our neighbours. Just call the Board anytime for free advice and help on your trees and their relationship to power lines. The number is 87-119.



Thousands of electric blankets are tested free each season by the Power Board. Blankets can be brought into the Hastings showroom where they will be tested on site or can be left at the Marewa showroom for testing.

"We check for broken wiring, insulation problems, voltage, transformer earthing, and general wear and over-heating signs," said Ray Lambert, the Board's tester.

The process involves a visual check on the overall physical condition of the blanket. Then the blanket is wound into a foil roller on a machine that can put 5000



volts of electricity through the blanket. "It's absolutely guaranteed to pick up any minute insulation failure," Ray said.

Faults in the circuits and switches are also checked by the machine. It measures whether the blanket is drawing normal power and correct wattage in all heating positions of the blanket. If the blanket is faulty, the staff will make a recommendation regarding repair. They do repair many blankets, but find sometimes that it would not be worth the extensive repair required, or that safe repair cannot be carried out.

FREE Electric Blanket Testing



your POWER BOARD

The Hawke's Bay Electric Power Board Report to Consumers 1981-82

RESUME

TOTAL INCOME \$36,551,578.
We paid \$25,947,171 for electricity purchases.
94 distribution transformers were commissioned.
1351 poles were erected.
76 kilometres of lines were run — 42 kilometres rural and 34 kilometres underground.
480 electric ranges and 653 hot water services and 572 new consumers connected.
225,000 visits approximately paid by our meter readers.
400 consumers visited by advisory officers.

SUMMARY OF YEAR'S ACTIVITY

INCOME	%
Electricity Sales	92.7
Trading Department Sales	4.6
Miscellaneous Receipts	2.7
EXPENDITURE	
Purchase of Electricity	70.9
Maintenance and Operation	6.1
Depreciation	4.0
Administration and General	3.8
Trading Expenses	4.3
Loan Interest	1.6
Appropriations	9.3

BALANCE SHEET 31st March 1982

ASSETS	\$
Fixed Assets Reserve	25,735,769
Investments	4,281,199
Current Assets	
Power Fund	
Investments	228,914
Sundry Debtors	4,461,808
Stock	3,016,509
	<u>7,707,231</u>
	37,724,199
LIABILITIES	
Loan Liability	6,281,857
Current Liabilities	5,851,429
	12,133,286
Corporate Ownership	
Capital Reserve	19,479,311
Loan Redemption Reserve	1,575,584
Revenue Reserves	3,135,966
Appropriation	1,400,052
	<u>25,590,913</u>
	37,724,199

STATISTICS

40,236 Consumers in 4,967 square kilometres
34,119 Ranges connected
36,602 Hot water services
53,639 Poles erected
4,403 Kilometres of lines erected
3,968 Overhead and 435 Underground
3,260 Distribution transformers
19 Main substations
8,143 Street lights
317 Staff

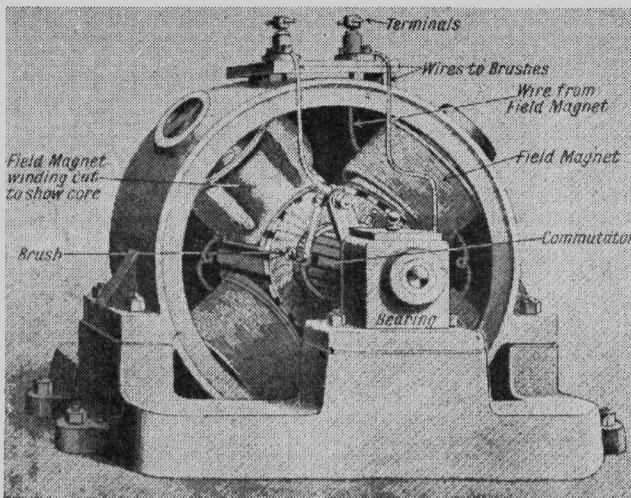
SPOTLIGHT ON HISTORY

The Dynamo-Electric Current and its Applications

The Illustrated London News March 20, 1880 Royal Institution Lectures



Mr C. William Siemens, DCL, FRS, began his discourse at the evening meeting on Friday the 12th inst., by describing Faraday's great discovery of the magneto-electric or induced current, announced in 1831. He explained that, though each current is feeble and instantaneous in its action, it differs materially from the galvanic current in being the outcome of mechanical force instead of chemical action, yet it can by mechanical arrangements be made to produce all the effects of a powerful continuous current at great distances. Mechanical force is thus converted into electric current, which is reconverted into mechanical force. One of the first attempts to utilise magneto-electric currents was by Wheatstone in his step-by-step telegraph; but the currents were insufficient to move the receiving instrument with certainty ...



He then described Dr Werner Siemen's plans for propelling tramway-cars by current, first shown at Berlin and about to be exhibited at the Crystal Palace. By this means from 30 to 40 persons have been conveyed easily at the rate of from 10 to 12 miles an hour. Dr Siemen's then explained how resistance to the current gives rise to heat and light, which are merely the result of transference of electric energy, as shown by Davy, in relation to the electric arc, in 1810. The interest now attaching to the electric light is due to the comparatively cheap rate at which the

current can be produced; and much ingenuity has been displayed in the construction of electric lamps and candles ... The arrangements of the glow-lights are simpler, but in intensity of light they are inferior to the electric arc which can be made to rival the sun in heat and brilliancy ... Finally, he described his recent application of the electric light to vegetation in his greenhouse, by which the development of flowers and the ripening of fruit were greatly accelerated. Remarkable specimens of these were exhibited beneath the electric light.

Watt in the World

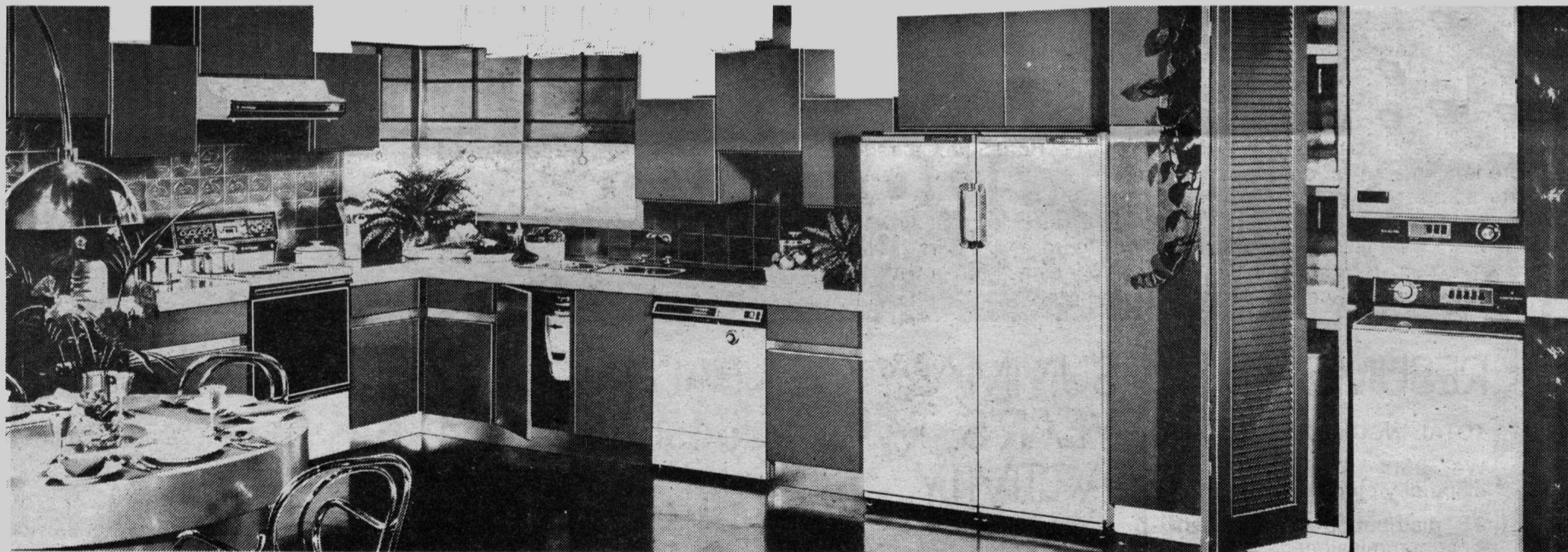
What we're talking about here is electric power. A physicist might describe power as the result of a quantity of energy times a force.

Quantity x Force = Power

When people talk about electricity they talk about volts, amps and watts. The volt is the force, the amp is the quantity and the watt is the resultant power.

- Volt = Force**
- Amp = Quantity**
- Watt = Power**

Electricity can't be seen or heard, unless there is a problem with it. Learning to translate these invisible terms into an understandable system gives one a kind of power ... the power of knowing, which is another bag of watts altogether!

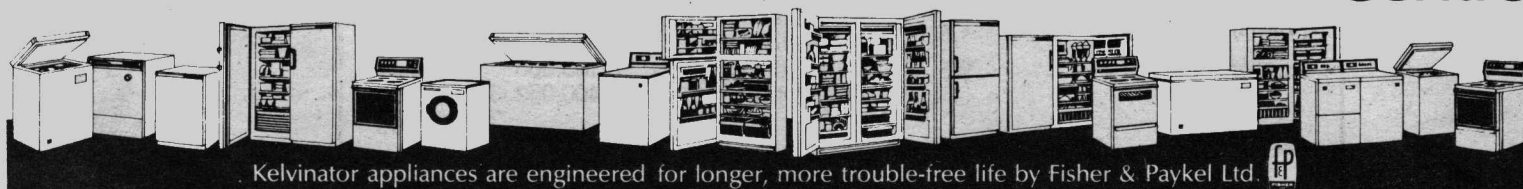


There's more to Dependable Kelvinator than refrigerators and freezers.

Because the same quality and dependability that has made Kelvinator refrigerators and freezers New Zealand's leading brand, is now built into a whole range of Kelvinator home appliances.

See the new Kelvinator washers and dryers, cooking ranges and rangehoods, Kelvinator dishwashers and waste disposal units, as well as Kelvinator refrigerators and freezers, at your Kelvinator specialist:-

your **POWER BOARD**
KELVINATOR
 Centre



Kelvinator appliances are engineered for longer, more trouble-free life by Fisher & Paykel Ltd.

Kelvinator Customer Care Service

When you buy any type of Kelvinator home appliance you have the reassurance of our Kelvinator Customer Care Service.

In your Power Board Showroom

THE KELVINATOR CONNECTION

Service is the by-word of appliance sales at your Power Board.

"Chain stores sell everything, but we specialise in electrical appliances," said Guy Parkinson, manager of the Board's appliance showroom in Hastings.

"Because there are no commission sales, there is no high pressure either. Often sales staff simply give a customer advice and assistance with no need for the conversation to result in a sale. They are pleased to offer that kind of service."

The showroom is designed for customer convenience and comfort.

Staff at the Power Board are thoroughly trained to understand the appliances they sell. Manufacturers come in to give demonstrations and that serves as training for staff and public as well.

Staff also attend sales schools in Auckland, run by Fisher and Paykel Ltd, manufacturer of Kelvinator appliances — the Power Board's major brand. "No other manufacturer trains its sales staff as thoroughly as do Fisher and Paykel," said Mr Parkinson.

"After the second world war, Fisher and Paykel began importing electrical appliances from England, Australia and Canada," he said. "Over the years they shifted to manufacturing for themselves. Now they are one of the biggest manufacturers in the Southern hemisphere. We are lucky to have a franchise. They offer a good product and their Kelvinator advertising helps us too."

About two to three hundred people visit the showroom each day. In addition to appliances there is also a selection of spare parts, accessories for appliances, plugs, elements, dishwashing soaps, etc. One really has to visit the showroom to appreciate the full range of service available there.

ONLY THE FIRST STEP

In-store advice and helpfulness is only the first step of Board service. Major appliances are delivered by people trained to install and demonstrate their use. The delivery man helps the customer understand the use of the appliance before he leaves. Normal practice is to test run the appliance at the time.

Except for any electrical rewiring necessary to install an electrical range, all aspects of delivery are handled free of charge to the customer.

Nor does service end there. The Board has a follow-up service both by letter and telephone. One person works on the phone calling to ensure that those who have purchased major appliances are using and understanding them satisfactorily. Questions can often be cleared up in that phone call, but if necessary a service man will be sent out to remedy any problems.

The Power Board maintains a fully-equipped Service Department, which has an important bearing on home

appliance purchase, because many sales showrooms have no service back-up. The Power Board not only services all of the appliances it sells, but will also service any other appliances as well.

Used appliances are fully reconditioned in the Service Department before they are resold. In fact, the Board offers a three-month warranty on these sales items.

PAYMENT METHODS

A customer buying appliances from the Board has a range of payment methods available. One can pay cash or have any item added to his current power bill. The Board also offers a 90-days "same as cash" plan with a one-third down payment, and a financing plan over one or two

years with 10 per cent down. This variety of options puts quality appliances within the range of every customer.

One final advantage of buying appliances from your Power Board is that its profits benefit all those who consume electricity.

"All profits we make from trading go to finance new buildings," explained the Board's Secretary, Fred Sanders, "reducing our dependence on costly loan money. That has been the way we have used our appliance trading profits over the years."

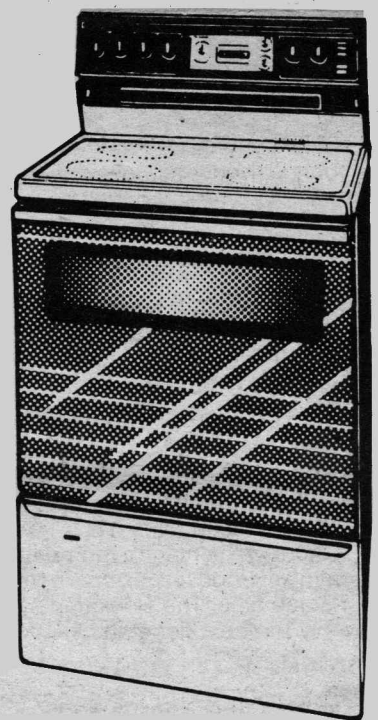
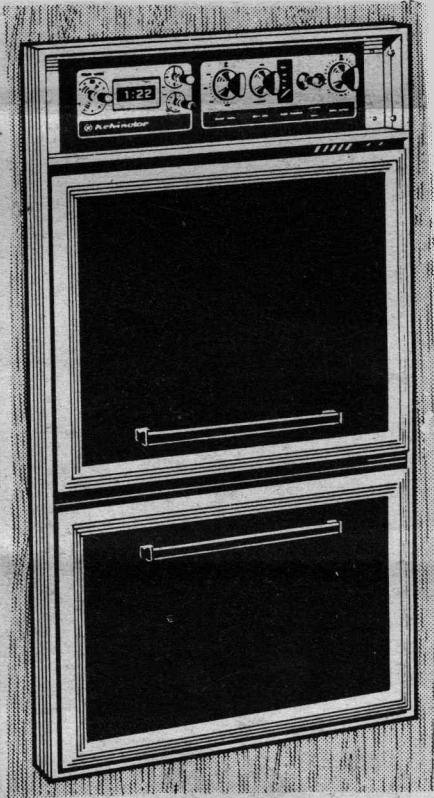


If your tired old
cooker just said
'good night',

then say hello to the

 **Kelvinator** 

'Good Knight'.



Kelvinator refrigerators and freezers have already proved their mettle, so you know you can rely on Kelvinator electric ranges as well. Kelvinator automatics, rangehoods, semi-automatics or wall-ovens are available in fashion colours, as well as cool, clean white.

Dream up a banquet fit for a king, and know it will turn out right, in a dependable Kelvinator 'Good Knight' kitchen.

your WHERE YOU GET YOUR ELECTRICITY
POWER BOARD

HAWKES BAY ELECTRIC POWER BOARD

GENEROUS TRADE-INS
EASY TERMS YOU CAN PAY WITH YOUR POWER BILL
UNMATCHED AFTER-SALES SERVICE

Heretaunga Street East, Hastings
Marewa Shopping Centre Napier
TELEPHONE 87-119

H5687



TWENTY QUESTIONS (AND ANSWERS) about heating your home with electricity

1 Why should I consider electricity anyway?

Because it's efficient, cheap, convenient, versatile and pollution-free.

2 Is electricity really cheap?

In real terms, yes. Other fuels need to be converted to energy, usually by burning with associated losses. Electricity is direct energy, and resistance heating is 100 per cent efficient.

3 What makes it so efficient?

Your alternative heating system may burn the fuel, but use an electric ignitor to start it. It's like starting your car then using a horse to pull it along. Electricity is a single fuel system.

4 Just how convenient is electricity?

You can just set the thermostat, switch it on, and forget it — and if it's a storage system you won't have to do that more than once a year.

5 And electricity is versatile as well?

Amazingly so. You already have it in your home; lighting, heating your water, powering your television set. When it comes to heating, you can have wall heaters, mobile heaters, storage heaters, fan heaters, to name just a few.

6 Why is there no pollution from electricity?

Most of New Zealand's electricity is generated by clean water, which is left clean. When used to heat your home, electricity is non-combustible — it's the pure energy form.

7 I've heard of storage heating — but what is it exactly?

You could call it electricity's answer to the price crisis. A storage heater warms up on low cost off-peak power, maintaining a constant low rate of heat output, which can be boosted whenever necessary in some heaters. The power cost is almost halved, and because it radiates heat constantly, storage heating maintains your home's warmth at a comfortable level.

8 But doesn't it heat one room only?

Some models are designed to do just that, but you can buy others that can be positioned to heat most or all of the house.

9 I've heard a lot about this new "space age Boekamp system". What exactly is it?

It's more efficient infra-red heating — a heating method that's been in New Zealand for some time. The Boekamp system is simply the next generation.

10 Well how does it work?

At a certain wavelength, infra-red heat waves don't heat air — just solid objects like you. That makes infra-red heating instant, economical and amazingly efficient.

11 I already have a heating system, but it's quite slow. What should I do?

In a closed room, without an open fire, you can use electricity as a back up system — perhaps a fan heater or infra-red heater. Your Power Board advisory officer can tell you the best method for your circumstances.

12 Electric heating can't match the charm of an open fireplace, can it?

Check the various models of magic-coal type electric heaters. They look like open fires but the heat is easier to control and none is lost up the chimney.

13 Doesn't electric heating dry the air uncomfortably?

No. This would have been so in the days when it was thought man would never get to the moon, but designs of rockets and electric heating have improved a lot since then.

14 What about electric heating in a moist atmosphere such as my bathroom. Isn't it dangerous?

Certainly not — if you use a heater designed for such a room. Most infra-red heaters will operate with perfect safety in the bathroom. Ask before buying.

15 I'm planning on building a home. Are there any benefits from installing permanent heating?

Many. Your Power Board home heating advisor can tell you about storage heating and in-floor heating, which give you very efficient and economical use of off-peak power.

16 But what about installation costs in my existing home?

For portable heaters there are none — you just plug them in, and for permanently installed heating the installation costs compare very favourably with alternative heating sources.

17 What other ways can I save money with electric heating?

Have your electric heating thermostatically controlled. Many heaters come with thermostats already fitted — or you can buy one, very inexpensively, for use with your portable heaters.

18 Does insulation help much?

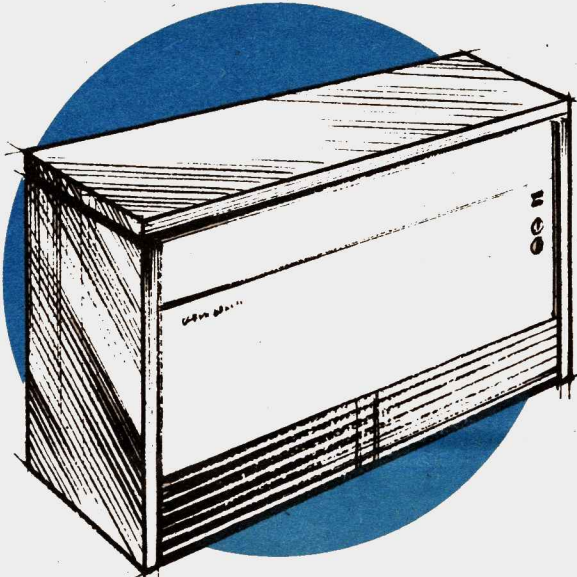
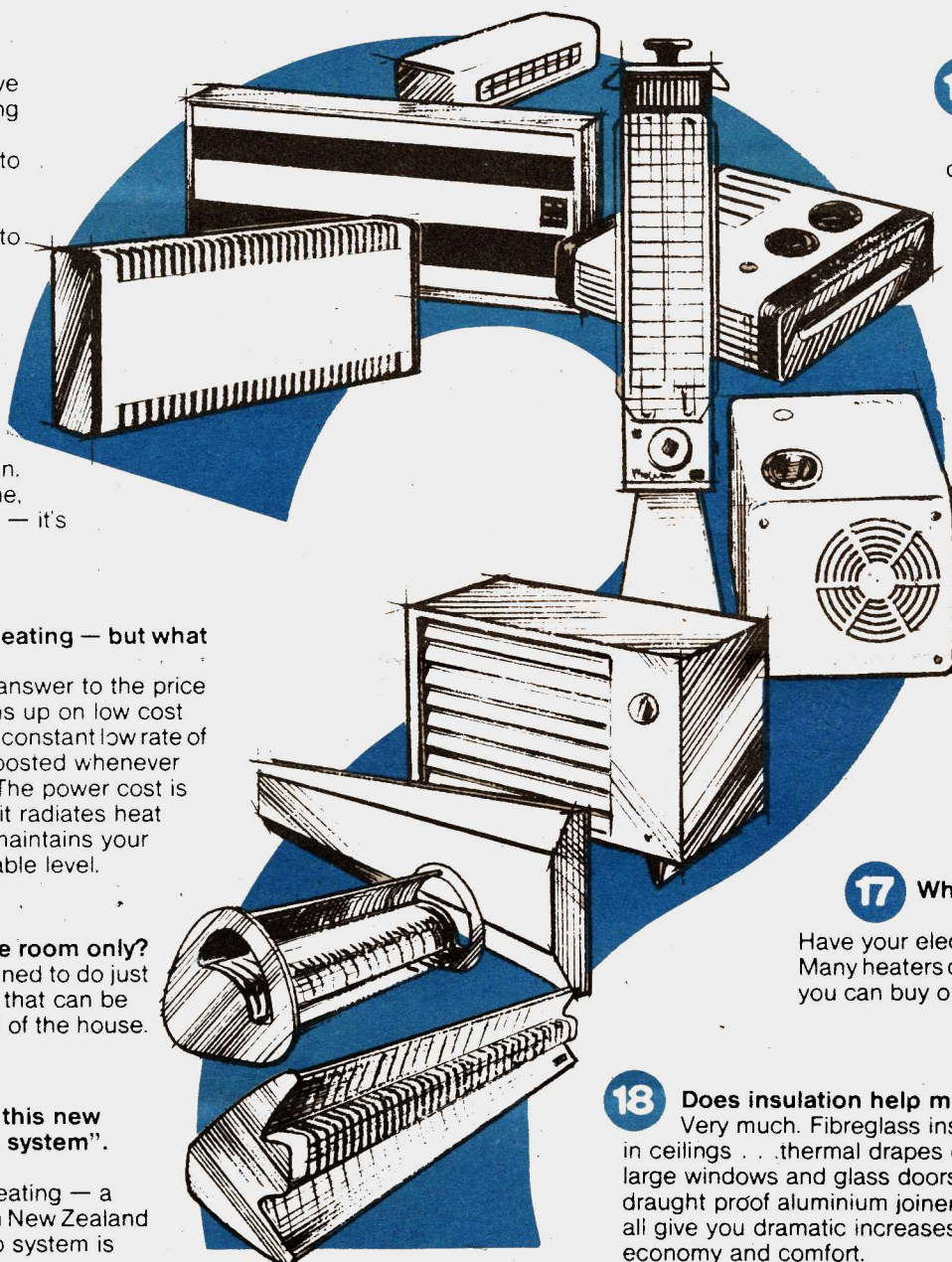
Very much. Fibreglass insulation in ceilings . . . thermal drapes over large windows and glass doors . . . draught proof aluminium joinery - they all give you dramatic increases in economy and comfort.

19 What about the future cost of electricity?

Electricity will always be one of the cheaper forms of power, because most of it comes from a free energy source — our rivers.

20 Whom do I talk to about electric heaters, installation, and all other relevant heating details?

Bill McLean, at the Power Board is the expert. He's available at the Heretaunga Street East showroom between 8 and 9 a.m. every weekday. Or talk to any of our showroom staff.



We have the power to keep you warm at

your POWER BOARD

HASTINGS: Heretaunga Street East.
NAPIER: Corner Kennedy Road and Douglas Maclean Avenue, Marea.

Phone 87-119