CONTACT

November 1968

CALLING SATINEX
(see page 235)

HOME CENTRAL HEATING . . .
. . . on the increase

THE NUMBER of new homes with built-in central heating will increase considerably next year when all local authorities will install at least partial central heating in the homes they build.

Warm air systems, which are especially suited to the large number of industrial system-built homes, are expected to increase by more than 200,000 new installations during the year. More than 150,000 of these are likely to be in local authority homes. Electricity's share of installations in the 'new homes' market last year was 23%. With the increasing adoption of Electricaire—the electric warm air central heating system—the aim is to increase this share.

Half of the new homes to be built by private developers next year will be sold to their first occupiers without any integral heating. Electric storage radiators and storage fan heaters last year went into 33% of existing homes, and was the leading choice for these homes.

Electricaire systems can supply a small house or flat with ducted warm air from a central source. Costing a little more than £100 they require no flue and give architects considerable freedom in planning interior design. Insulated ducting, ending in outlets fitted flush to the walls, delivers filtered warm air to each room being heated. A room thermostat controls the air temperature at the desired level and there is full control over which rooms will be heated.

An Electricaire installation for a small flat with warm air outlets in the hall, lounge and kitchen would be about £125. Running costs over a 32 week heating season would be about £28. A three-bedroom bungalow could be installed with Electricaire for about £180 with running costs of about £45.

Storage radiators cost from between £20 and £30 each and cost about £10 each to run during the heating season. A system may be started with two storage radiators for less than £60.

Storage fan heaters with automatic thermostatic controls cost just over £40 and average out at about £12 a year to run.

WANTED

HANDBELLS

One of our readers from Hoylake wishes to teach a group of children the art of campanology and requires a set of handbells.

If you can help, please ring Miss Williamson, Hoylake 6635.

CARAVAN

Six berth caravan, in good class condition, on a site in North Wales.

If you have such a caravan for sale please let us know at **Box N1, "Contact" Manweb, Head Office, Love Lane, Liverpool, L3 7DE.**

CONGRATULATIONS

During the recent 'Free Food Mixer' Cooker Promotion, 4,805 electric cookers were sold in the Board's Shops in the six weeks of the campaign, giving average weekly sales of over 800 cookers. During the final week of the campaign, 1,350 cookers were sold, a MANWEB record and an achievement on which all Sales Staff are to be complimented.

Mr. & Mrs. McAlinden

WEDDINGS

McALINDEN—NICKSON

Best wishes for the future to Mr. Eric McAlinden, a meter reader at Area 1 and Miss Maureen Nickson, a telephone operator at Derby House who were married recently at St. Francis de Sales Church, Walton, Liverpool.

CUTTS—LIDGETT

Congratulations to Mr. David Cutts, a salesman in our Chester District, on the occasion of his marriage to Miss Beryl Lidgett at Christ Church, Higher Bebington recently. Friends at the office presented the couple with a coffee set as a wedding gift.

WILLIAMS—THORN

Our best wishes for a happy future to Mr. Ronald Ralph Williams, a salesman in our Chester District who married Miss Joyce Thorn of Wrexham. His colleagues at the office presented him with a coffee table as a wedding gift and as a farewell gift for Ronald left the Board's service earlier this month.

ENGAGEMENT

Congratulations to Mr. Gerald Newbrook of the Crewe District Engineering Department who recently announced his engagement to Miss Barbara Hiscock.

DEPARTURE

On leaving Sandiway House after ten years as a shorthand typist, Mrs. Joan Bratt was presented with some farewell gifts from her friends. She is now patiently awaiting "the happy event".

Manweb

THE STAFF MAGAZINE OF THE MERSEYSIDE AND NORTH WALES ELECTRICITY BOARD

CONTACT

Vol. 20 No. 11 NOVEMBER 1968

On other pages . . .

EDITORIAL

Taking Our Chances

EVERY MONTH that passes brings new examples of the application of electricity in the home, in commerce, agriculture and in industry.

Efficiency at work, convenience for living, and comfort for recreation are all improved by the introduction or increased use of electricity, and the energy with which our colleagues in the commercial department are seeing to it that no avenue goes unexplored is deserving of the highest praise.

In every part of the MANWEB area this development and expansion is being carried out, and this number of *Contact* outlines the advance of electricity on a number of fronts.

If the recent voting figures are anything to go by, it will still be some time before the pubs of Caernarvonshire open their doors on Sunday, although the "wet" tide has now reached the east bank of the River Conway. Until then, perhaps those who like their Sunday pint can find comfort in electrically-heated club premises.

On the industrial side, the "Satinex" story outlined in this publication is a credit to those of our workmates who have been involved in it.

Nearer home, the one-day "blitz" on two high-rise blocks of flats at Flint, when 100 electric cookers were installed to replace gas cookers removed after the Council decided to cut off the gas supplies, was an outstanding example of planning and operation by the Clwyd District staff. (We shall report this achievement fully in next month's *Contact*.)

These are outstanding examples of what can be done. We hope to be able to report many more in the future.

HIGH LIGHTS

Nicely balanced and ready for the big lift.

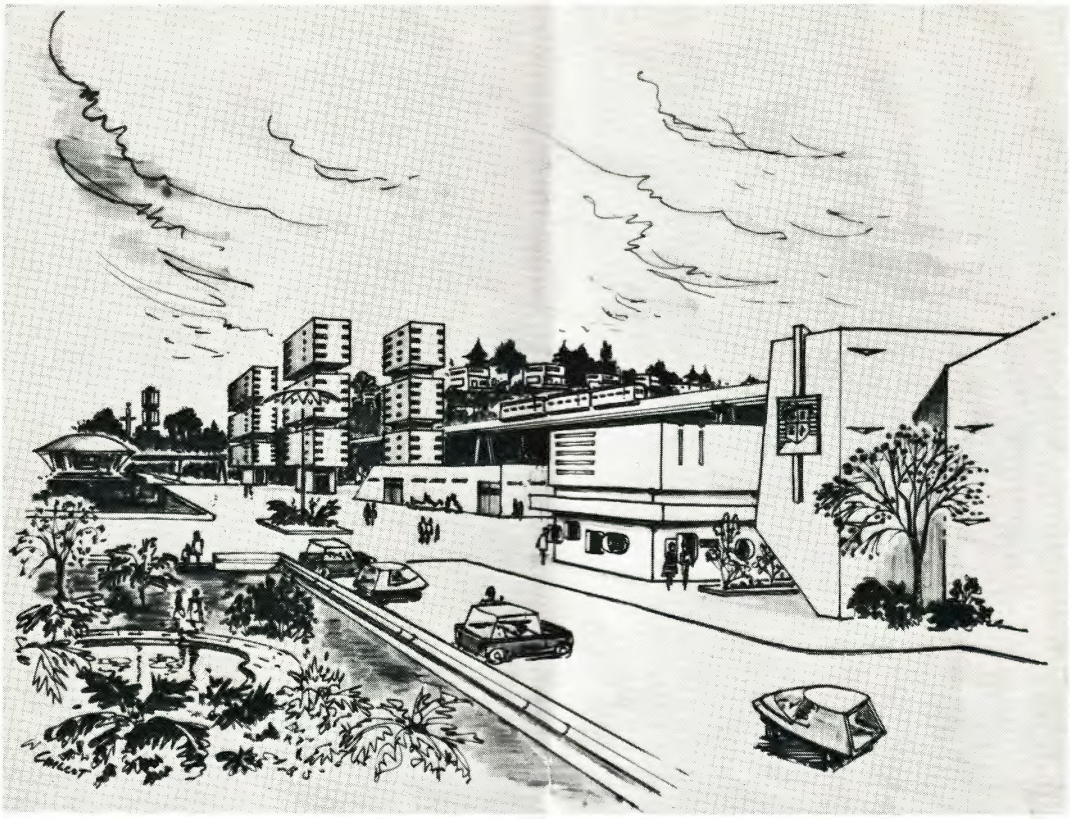
A contract worth about £40,000 was gained by our colleagues in the North Wirral District in respect of the street lighting schemes on the approach roads to the Mersey tunnel on their side of the water.

The contract is for the supply and erection of 28 street lighting columns, each 100 foot high and weighing over two tons. In addition there will be over 50 conventional street lighting columns erected. The General Electric Company are co-operating with the Board in this venture.

Maintenance on the high masts does not present any problems for the banks of four lanterns, each holding 1000 watt lamps, can be lowered to ground level for cleaning or lamp replacement. The winching equipment can also be used to carry men on a maintenance cradle for routine painting and inspections.

Up she goes and moved gently into position.

All fixed and traffic back to normal. Compare the new standard with the old one in in the left fore-ground.



Here we have an artist's impression of part of a residential village of a new town of tomorrow. There are tower blocks and patio houses (*in background*) all well insulated and centrally heated electrically. Overall cost for full, daylong central heating, hot water, electric cooking, lighting and all domestic appliances is within £60 a year. A monorail passes close-by. There is a municipal building (*right*), shops and a school. On the left are ornamental gardens and an area for entertainments. There is a recess in part of the shopping precinct to park the electric cars.

TO-MORROW'S WORLD WILL BE TOTAL-ELECTRIC

"HOW WOULD you like to wake up one morning in a healthy, space conditioned atmosphere? Eat an automatically cooked breakfast, open your facsimile mail which arrived on time, flip through the information newsheet, open the delivery hatch where fresh bread, milk, vegetables have been delivered automatically, take a stroll in the nearby gardens, kept free from ice, covered in, every day like the first day of Spring! Take a few lungfuls of fresh, clean air, climb into your nearest automatic taxi, insert your key card, and relax! No frantic braking, no weaving in and out of lorries . . . just a dignified, relaxed arrival at your office door. Inside, open-plan comfort, no wishing you'd put on that extra pullover, no wishing you'd put on a lightweight suit . . .

"This is no pipe dream, but a reality of the future if only someone would get on with it and establish a total-electric new town," said Mr. R. H. Phillips, Marketing Adviser to The Electricity Council in Blackpool recently when he presented a paper on **'The Total-Electric Town Concept'** to some 2,000 Public Health Inspectors attending the annual conference of their Association.

"When a new town is established it is essential to ensure that the atmosphere is clean, healthy

The office of the future—open plan comfort, no wishing you'd put on that extra pullover, no wishing you'd put on a lightweight suit . . .

and unpolluted by smoke and fumes from factory chimneys and outdated domestic heating appliances," said Mr. Phillips. "But such is our traditional attitude and stubborn opposition to change that this has not been done, even though the solution is simple and easily within our grasp."

"Many opportunities have been lost in the past," said Mr. Phillips. "Admittedly, new towns have been laid out in an attractive and imaginative fashion, but little thought seems to have been given to the avoidance of air pollution at the planning stage. Completely smokeless towns could easily have been introduced at the outset by consigning all combustion to the electric power stations where it can be controlled with the highest possible efficiency and effectiveness. It is only by adopting electricity as the single energy source for both industry and the home that people can benefit from living and working in a really healthy unpolluted environment.

"*Such a total-electric town has long been possible,*" *said Mr. Phillips.* "*Techniques, equipment and brainpower are readily available to enable us to plan a town, which is uninhibited by local tradition, existing street and building layout or prominent natural features. The engineer can offer efficient, economic means for carrying out the multifarious activities of a city and upon this the architects and the planners are free to conceive space, grace and attractive appearance.*

"In other countries which are not so hidebound by tradition, the total-electric development is already finding wide favour, not only in new towns but also in large building complexes in major cities," said Mr. Phillips. "In the United States, for example, there were less than 1,000 total-electric buildings ten years ago. Today there are well over 100,000 and the number is growing rapidly due to the initiative of trendsetting architects.

"One outstanding total-electric development is the John F. Kennedy Centre for the Performing Arts, Washington, D.C. This is a 2,000,000 sq. ft. structure housing three major theatres with a total seating capacity of 60,000. Heating for the centre is by electric-hydronic boilers, while cooling is provided by three 1,300-ton centrifugal chillers.

"The 100-storey John Hancock Centre in Chicago, Illinois, will contain 1,000,000 sq. ft. of office space and 750 apartments. Heat from the high efficiency lighting system is recovered by the space conditioning system to heat the office area. The apartments use resistance heating systems with individual room control. The 60-storey First National Bank of Chicago also has a total-electric space conditioning system. Lake Point Tower in Chicago is a 70-storey skyscraper apartment and has 900 electrically cooled and heated apartments using ceiling cable for heating and through-the-wall units for air conditioning.

"Main Place, Dallas, Texas, is being claimed as the 'world's largest all-electric complex'. When completed it will have over 2,000,000 sq. ft. of office space, a large departmental store, a 400-room motel, 225,000 sq. ft. of retail shops and a 3,500-car garage.

"Finally, the new University of Pittsburgh at

Johnstown campus, Johnston, Pennsylvania, is a ten-building complex in its first phase, and includes academic, administration and dormitory buildings heated and cooled by a total-electric heat recovery air-conditioning system. When completed, this entire new university campus will be total-electric.

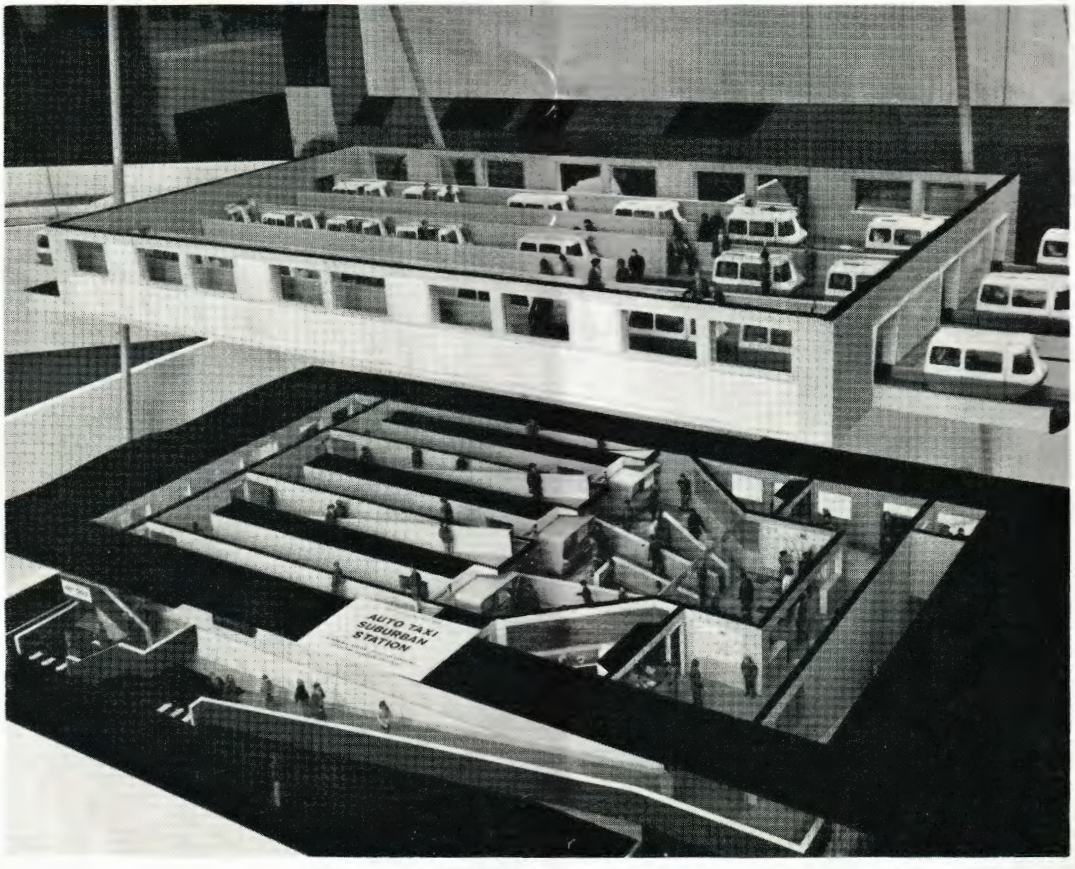
"Why are such radical schemes conceived?" asked Mr. Phillips. "The answer may lie in our own experience in which towns are gradually deserted by all who can afford to do so because of the dirt, noise, smog, fumes, congestion, inadequate transport and facilities of all kinds which are our common lot.

"In every town energy is required by industry, commercial buildings, housing, public service and transport," said Mr. Phillips. "All of these services can be effectively and economically performed by electricity with no loss of amenity or pollution of the atmosphere. In the home the advantages of electric central heating and water heating are well known and taken advantage of. Last year 23% of all new houses were equipped with electrical systems and 68% of all new homes with central heating had electric hot water installations. Because electricity involves no combustion at the point of utilisation it fulfils the requirements of the Clean Air Act in every respect.

Heat from Light

"Far-reaching benefits can be gained by a re-appraisal of conventional methods," said Mr. Phillips. "We can now design buildings which will better modify the impact of the outside climate and which will rely mainly on electric lighting. Because of improved thermal insulation, the building will conserve heat from the lighting which will go a long way towards providing all the energy required to warm the building. There are many other incidental heat gains in all buildings, motive power, machinery, catering, metabolic, etc., all of which have to be taken into account. The space conditioning system uses this heat, taking warm air from the core to the

A model of a computer controlled urban taxi station now under development using small four-seater cabs—battery-operated electric vehicles.



perimeter where the loss is greatest, cooling and warming it in the process as necessary.

"There is now a move to landscaped offices," said Mr. Phillips. "The conventional cell-like layout is replaced by divisions made by potted plants and screens giving visual privacy to individuals or groups while aural privacy is achieved by acoustic ceilings and close carpeted floors. These open areas are easier for the air conditioning engineer to deal with and such offices giving equivalent effective space, but much better working conditions, will cost less than conventional ones.

Heat Recovery Systems

"Better thermal insulation and reliance on the combination of electric lighting, daylight and air conditioning—which are becoming known as heat recovery systems—apply also to the industrial sector. The application of heat recovery to industrial buildings is assisted by the fact that the windows have less importance than in, say, offices and by the substantial additional heat gains arising from motive power and processing. Central heating systems, as such, are rendered unnecessary, thus reducing capital, labour and energy costs and increasing the space available for production.

"*The provision of total-electric homes, shops, offices, hospitals, schools and factories will go a long, long way toward cleaning up the atmosphere, but we are still left with noise and fumes, and transport of all kinds is a great contributor to both.*

"The use of battery operated electric vehicles will make a great reduction in these discomforts. The possibilities and ramifications are enormous. For example, a computer controlled urban taxi system now under development, uses small, four-seater cabs on reserved tracks. Travellers insert pre-purchased 'key-cards' and are thence automatically conveyed to their destination. Alternatively, it would be possible for small 'as you please' battery electric taxis to be operated by a special key in the travellers' possession. They could be driven to their destination and left at fixed points for the next user. The coded key would operate a journey meter and the user subsequently billed by computer. A further refinement would be the control of the cars by signals from cables embedded in the road.

"Battery electric buses have already been developed and are in limited use. These could inter-connect long distance bus or rail terminations at the city perimeter, or perhaps between perimeter car parking facilities and the city centre. Naturally, battery electric private cars would come into widespread use. Finally, a combined escalator/travelator system is under development which enables passengers to board and leave, with complete safety, a conveyor train which is moving continuously at about 20 m.p.h.

"Tomorrow's new town would be based upon an underground system for the automatic, computer-controlled distribution of goods which would also embrace transport, communications, electricity and water services, as well as garbage and sewage disposal. The same computer would also be used, on a time-sharing basis, for a large number of common services required by the private, public and business activities of the city.

"In other words, a clean, quiet and convenient sub-structure could provide economically all the modern conveniences imaginable in every home, public building, office, shop or factory, with a complete transportation, information and communication service. Air conditioning, refrigeration, purified water and sterile conditions could be produced at will. The greatest source of congestion—delivery of goods—would be underground and computer-controlled. The walkways, open spaces and gardens would be lit, kept free from ice, covered in, if desired, and warmed. On this sub-structure the architects and planners would be free to design with a freedom never possible to them before."

DIARY DATES FOR 1969

Friday, **31st January**—Sandiway House Sports and Social Club Annual Dinner Dance.

Tuesday, **25th February**—MANWEB Annual Buffet Dance.

Tuesday, **11th March**—The E. & E.I.B.A. Ball at the Adelphi Hotel, Liverpool.

Wednesday, **18th June**—The E. & E.I.B.A. Area Golf Championships at Prenton.

Monday, **22nd September**—The E. & E.I.B.A. National Golf Finals at Hillside and Southport and Ainsdale Golf Clubs. Dinner at the Prince of Wales Hotel, Southport.

Promotion Course at Hoylake

From medium voltage jointing

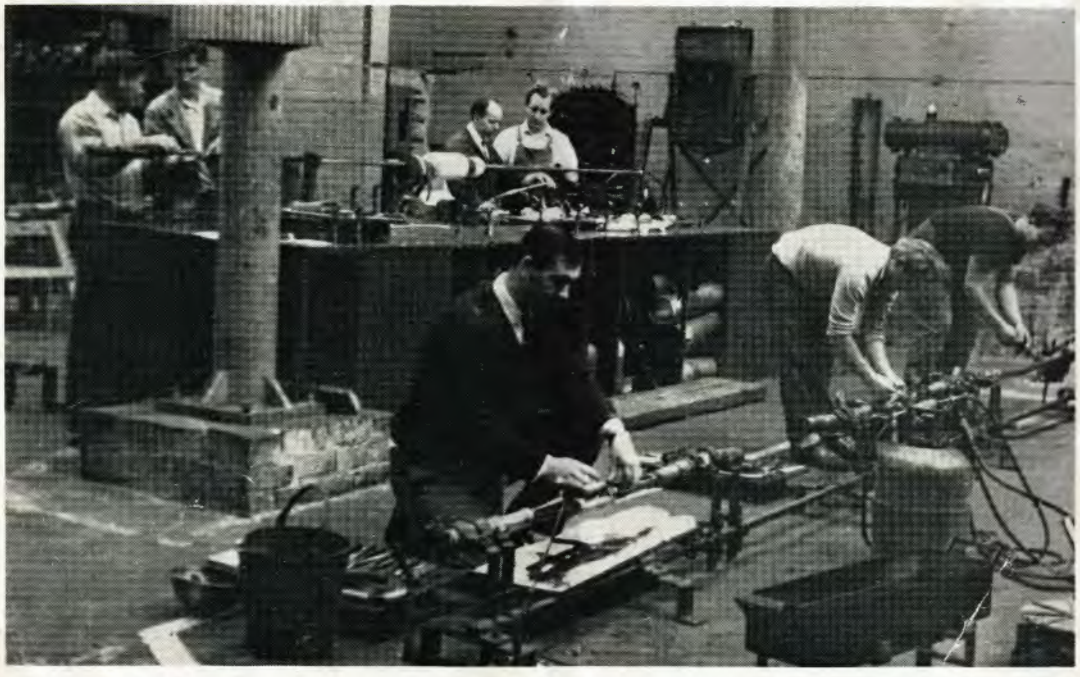
to

high voltage jointing

Mr. T. Cartwright (Runcorn) and Mr. R. Rodaway (Liverpool Central) working on 11,000 volt terminations.

Mr. M. Lavelle (North Wirral) with his mate, Mr. T. Male making off an 11,000 volt pole box.

In the foreground, working on 11,000 volt joints are, *from left to right:* **Messrs. R. Keight (Liverpool South), A. Fitzsimmons (Liverpool South) and L. Burns (Oswestry). Telephone jointing at the bench, are,** *from left to right:* **Messrs. S. Holloway (Oswestry), E. Dewhurst (Bangor), W. Boughy (Warrington) and K. Morris (Southport).**



'Electricaire' Comfort for Caernarvon Social Set

Anyone who has been to Caernarvon knows that, on Sundays, churches and chapels are the only doors open. Of course, even Caernarvon has such places as the Conservative Club, when most citizens become Conservatives for a day, and also a few other clubs.

At the end of last year the new "Gronant" Club opened in Caernarvon. This club has turned out to be a great success, because for the first time people can go somewhere at weekends for entertainment. The club hires cabaret artists, not only from places such as Manchester and Liverpool, but also the local talent from the surrounding areas.

The club itself, is of modern contemporary design and is heated by *Electricaire* warm air central heating. There are two 15kW three-phase H.V.E. Electricaire units installed in cedarwood-clad cupboards. These blend in with the surrounding cedarwood panels on the walls. One unit situated near the door has warm air regulators providing heat for north, south, east, and west. The second has warm air ducts east and west with extended trunking to the club toilets.

The club is run by Mr. V. Cash, who is extremely satisfied with the *Electricaire* units themselves, and the way they were installed.

The Gronant club was a straightforward job, the end product being welcomed by—all not so another club just outside Caernarvon in the village of Penisarwaen.

This club was completed at the beginning of the year but there was great opposition from surrounding villages because it would be open on Sunday.

Early one morning, just after it was finished, there was a bomb explosion in the main room, causing considerable damage. This was done, it is assumed, to try to prevent the club opening, but all it did was to delay the opening, and cause great expense.

The club, which has been built by Mr. J. Nix of Talsarnau, Penisarwaen, is, unlike the Gronant Club, of conventional design with slate roof, and brick cavity walls. The outer wall is pebble-dashed, the inner wall being $4\frac{1}{2}''$ thermalite bricks. The roof is of slate, lagged with one inch thick glass wool.

Electricity supply to the site was somewha limited, and it was therefore decided to instal

A view taken inside the "Gronant" Club showing Mr. Cash at work behind the bar.

A view showing two electricaire ducts positioned near the entrance to the main clubroom in the Penisarwaen Country Club

two 12kW H.V.E. *Electricaire* units fitted with high performance fans.

The tariff selected is the Off-Peak Tariff A, the hours of availability of which coincide with the hours of opening of the club. Thus the heater input is available during the output period.

Attached to the club is a kitchen area, which is occupied during the day by Mr. and Mrs. Nix, who are acting as steward and stewardess. The kitchen is heated by means of a 3kW storage radiator.

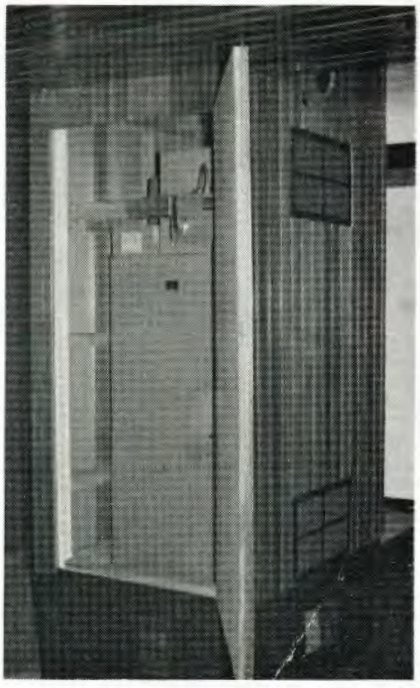
Mr. Nix is very pleased indeed with the installation and its performance and is very happy with the way the work was carried out.

Since all wiring, trunking and electrical installations were done by MANWEB, Caernarvon's first venture into this type of work has been a complete success.

The sources of heat which provide ideal comfort conditions in the Club.

◀ At the Penisarwaen club, one of the heater units tucked neatly away . . .

. . . and at the Gronant Club, one of their units blending nicely with the surrounding decor. ▶



A quartette of our apprentices who attended the Summer School at Worcester College, Oxford, earlier this year. They are, *from left to right:* Messrs. P. Deane (Area 1), T. Hassall (Area 2/3), A. A. Sage (Area 4) and A. Bratt (Head Office).

Bits & Pieces

Road Relay Race

The annual Road Relay Challenge Race between teams from various sections of the electricity supply industry was held at Hams Hall power station, near Birmingham, a few weeks ago.

The MANWEB team of runners, all from Head Office, started in fine style with Pat Byrne, from Plant Supplies covering his three-and-a-half mile lap in 20 minutes 47 seconds. He handed over the baton to Neil Turner, of the Purchasing Section, with the team holding third position at this stage. Neil ran very well against some good opposition before handing over the running to his colleague from Purchasing, Paul Murray.

Paul told us after the race that near the end of the first mile he seemed to be effected by the rarefied atmosphere of the Midlands and this slowed him up a little so that he was only able to complete his lap with the team in fifth place!

The last man to go was David Brayshaw of our Legal Department, who although he made a fine effort, was unable to better our team position.

In the blustery and showery conditions, the Men from MANWEB did well to complete their laps. The fact that their times could have been a minute or two better shows that their pre-event training was not all that it should have been!

Everyone, runners and spectators, enjoyed the refreshments which had been laid on by the hosts, the Midlands Electricity Board's Sports and Social Club, and the toast was to the worthy winners who represented the East Midlands Electricity Board.

Our men are now in strict training for next year's race and have their eyes firmly set on Munich in 1972!

THE MANWEB TEAM *in action*

◀ An exhausted Pat Byrne hands over to Neil Turner.

On the final leg, David Brayshaw collects the baton from Paul Murray. ▶

Electric Cooker Competition Prize Winners

Above: **Mr. J. Scudamore,** *left,* **our Southport District Manager, congratulates Mrs. Ruth Morris on her winning an English Electric cooker in a competition organised by MANWEB and the Southport Visiter Group of newspapers.** *On the right* **is Mr. J. J. Woolley, the Group's Advertising Manager.**

Right: **Mrs. M. Charles receives good wishes from Mr. G. Bowers, our North Wirral District Commercial Engineer after being judged the winner of a new electric cooker. Also in the picture, is Mr. L. L. Dean, a director of West Cheshire Newspapers who with MANWEB sponsored the competition.**

OUTWARD BOUNDERS

Some of the MANWEB Trainees who attended the various Outward Bound Schools and took part in the Brathay Expeditions earlier this year, are seen here outside the Hoylake Training School where they recently held a One Day Meeting to hear talk sabout the different Courses and to pass on opinions. Mr. J. L. W. Ladner, Education and Training Officer chaired the proceedings.

An exterior view of the Satinex factory at Hawarden showing seven of the twelve bays.

THE SATINEX STORY

MANWEB'S PART IN A FIRM'S RAPID PROGRESS

ANOTHER CHAPTER was begun in the Satinex story when Her Highness Princess Margaretha of Sweden recently opened the latest phase of development at the Satinex factory at Hawarden.

There are many stories of firms starting in small back rooms and building up into vast empires and we can now add another name to this list—Satinex.

However, coupled with this famous name should be MANWEB—The Merseyside and North Wales Electricity Board—who over the years have helped in the progress of the firm, bringing up-to-date electrical techniques into the factory production line. The Board has acted in three different yet integral roles in that they are consultants, contractors and the supply authority. The full resources of MANWEB always being available and used to keep pace with the developments taking place, almost daily, in our modern world of commerce and competition.

When the Satinex Company started production in 1948, it was in the little village of Nannerch in Flintshire, North Wales. At that time, their electricity supply came from a small generator which was driven by a water wheel.

Through the years, as the demand for their products increased, the Company moved into larger premises, first at Shotton and then at Hawarden. On each occasion, the Merseyside and North Wales Electricity Board has been there to provide power for the factory, and to act as consultants and contractors for the many and varied electrical installations.

But soon, demand for the Satinex products again outstripped the supply and yet another new site had to be found. It was then that the Directors

embarked on the largest machinery and building expansion project in the history of the firm when they took over, from the Air Ministry, a 40-acre site adjacent to the Hawarden airfield.

Under the new production programme, it was realised that the demand for electricity would be so great that a new high voltage substation would have to be provided. This was soon built and two-500 kVA transformers were moved in together with the high voltage switchgear and the medium voltage distribution panels.

MANWEB engineers and electricians, using the knowledge and experience gained during the years of working with the Company, then got down to the job of planning and designing an electrical installation which had sufficient flexibility to allow for the ever changing patterns and the constant improvements which effect a Company manufacturing products of this type.

As each phase of the Satinex building programme developed, the Men from MANWEB were always on hand. When new machinery arrived, some from countries such as Germany and Sweden, the electricians had the task of assembling them. On one occasion they called on the assistance of the Swedish Consul in Liverpool for a translation of some technical information on one of the machine plans, so that the correct assembly and connections could be made.

OUR COVER PICTURE shows Mr. Albert Roberts, a chargehand electrician in our Wrexham District, checking out the automatic telephone exchange at the Satinex factory.

Earlier this year, Satinex (Great Britain) Limited, came into the international orbit of Mo och Domsjo AB, MoDo for short, one of Scandinavia's largest producers of paper pulp and chemicals. MoDo's four pulp mills are fed by one-and-a-half million acres of Swedish forest and together they produce 1,800 tons of pulp every 24 hours.

The factory at Hawarden is not only the newest of its kind in Europe, but has one of the largest floor areas of almost half-a-million square feet. The electrical installation is quite complex and in addition to the special lighting circuits and all the motive power for the machinery, there is provision for the 'off peak' heating of the office block, catering equipment in the canteen, and telephone systems, personal call systems and an automatic

A battery-operated electric fork-lift truck at work in one of the storage bays at the Satinex factory.

fire alarm system throughout the factory. All installed by the experts from MANWEB.

The lighting of the storage bays is done by means of 400-watt mercury vapour coloured corrected lamps, and in the production bays, this type of lighting is supplemented by 8-foot fluorescent fittings mounted on continuous trunking. Altogether there are twelve bays, each 100 yards long by 25 yards wide. The illumination levels are in the order of 20 lumens per square foot.

Entrances and driveways are lit by 400-watt lamps, and because the factory is sited on an airfield, special cut-off lanterns are used on all outside lighting in order to comply with Air Ministry requirements.

Power to drive the machines totals some 750 horse-power with many of the units having electronic control and protection. One of the largest machines is the Dixon Log Streamer which is capable of producing 10,000 toilet roll logs each working day. The main drive is through a direct current 30 horse-power motor and the speed regulation is by Thyristor control.

There is a process heating load of 80 kilowatts which is mostly used for the heating of glue for the packing processes.

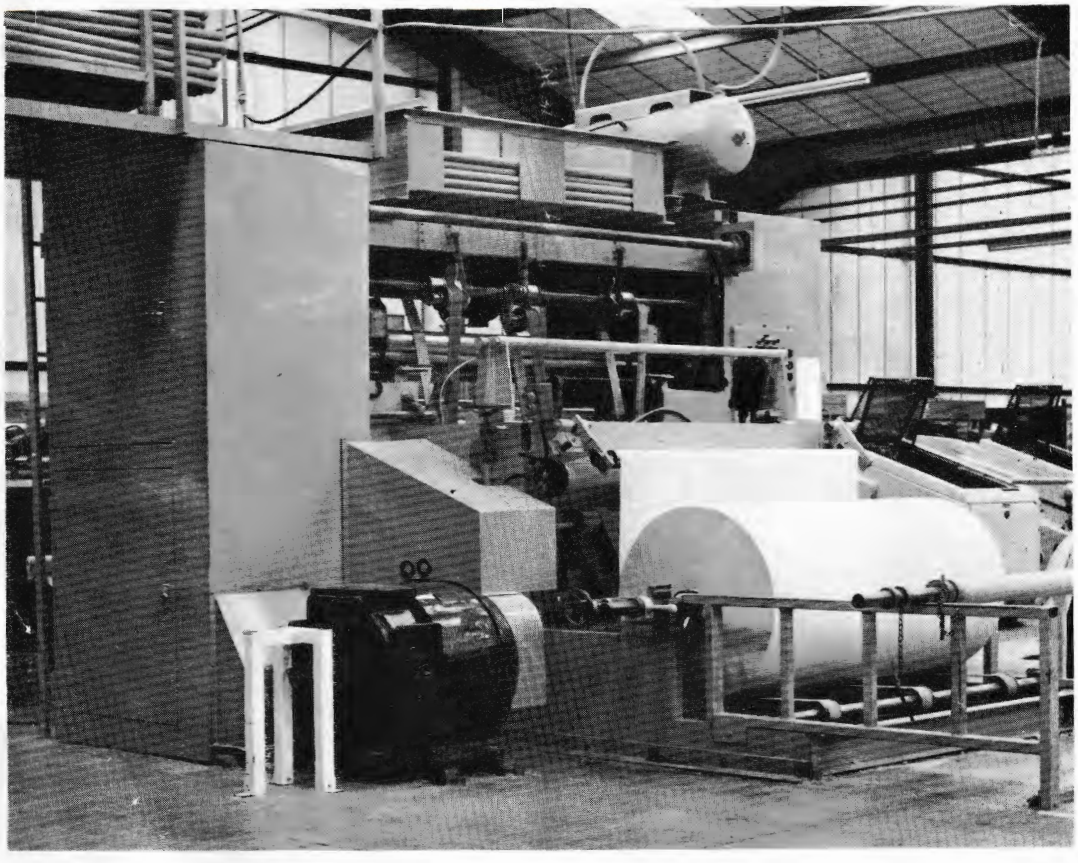
Electric fork lift trucks have taken over from their diesel brothers and are used throughout the factory. The batteries are re-charged during periods when the electrical demand in the factory is at a low point. A load of 80 kilowatts is utilised for this purpose.

Electric Kitchen

The ultra modern kitchen provides meals for over 200 employees and is fully equipped with electric cookers, steamers, deep fryers, hot-cupboards, mixers, slicers and of course refrigeration cabinets. Electric radiant heaters provide comfortable warmth for the diners.

The office block—the original site of the Officers' Mess—and the medical rooms are heated by fan-assisted controlled output thermal storage radiators, and in the locker rooms and

One of the largest machines in the Satinex factory, the Dixon Log Streamer which is capable of producing 10,000 toilet roll logs each working day.



toilets, controlled input storage radiators are installed. The 'off peak' heating load at the present time is in the region of 120 kilowatts.

The communications system is most up-to-date, the factory having an internal telephone system of 35 lines on automatic exchange. The personal calls, broadcast through the public address equipment, can be made by dialling through the telephone system. The fire alarm circuit has automatic location indicators and a direct line to the local fire station. It is also arranged that all the heating systems are shut-off in the event of a fire outbreak.

A number of differing wiring systems are used to meet the specific requirements of the office and factory. Paper-insulated aluminium cored cables and overhead bus-bar systems are used for the main distribution services and considerable use is made of P.V.C. steel-wire armoured cable. For the fire alarm system and certain other sub-circuits, mineral-insulated copper-covered cable is used.

As most of the factory load is inductive, this tends to give a poor power factor. Always on the look-out for ways to help its customers, MANWEB engineers are now designing automatic power factor correction equipment to help reduce the electrical running costs of the factory.

Although these are early days in the new Satinex story, the Company already holds a considerable share of the market. Satinex has the largest growth rate of any company in the U.K. marketing tissue products. Now with the combined experience of their Swedish parent company, they will be able to develop their thrust even further into this thriving market, which last year exceeded £50 million and is expected to top the £100 million by 1973.

Getting together on Paper

MANWEB are indeed proud that they have been able to co-operate and help in the rapid growth of this well-known firm. The liaison can best be described as **"getting together on paper"**. From the drawing boards, plans have been prepared to bring power to the factory and designs for the intricate electrical installations have been produced. All these have been carried out in a most economical and reliable way. The rapidity with which the Men from MANWEB have put new machines into the production lines, almost as soon as they have arrived on site, has helped Satinex to keep up their high output of paper products.

Already the opening lines of the next chapter in the Satinex Story are being written. A new office block is being planned and work has already commenced on a scheme for street lighting throughout the site.

THE CO-ORDINATOR

The Man from MANWEB who has been mainly responsible for the close liaison work between the Board and the Satinex Company is **Mr. Joseph Forrester,** the 1st assistant District Commercial Engineer at Wrexham.

After completing his technical training in Manchester, Mr. Forrester served an

electricial apprenticeship with Messrs. F Smith & Company before taking up an appointment as installation inspector at Stalybridge in 1945. Four years later he returned to Manchester to join the North Western Electricity Board as a senior sales representative.

He moved over to MANWEB as a consumer's engineer in the Wrexham District in 1951. At that time he became a member of the Electricial Power Engineers Association and has served on various National and local sub-committees. This year he was elected as the Vice-President of the Association.

He is a delegate on the No. 9 Area Investigation Committee, Chairman of the Isle of Man Joint Board, and the E.P.E.A. representative on the Board of the National Inspection Council.

In addition to the excellent co-ordination work with Satinex, Mr. Forrester was also responsible for carrying out, on behalf of the Electricity Council, experimental work relating to the utilisation of elctricity in horticulture at the world famous Bees Nurseries at Sealand, Chester.

In his spare time, Mr. Forrester likes gardening and when he can manage it, he enjoys a day's sailing. He is also a keen amateur photographer.

RETIREMENTS

Mr. G. J. BULMER

Staff from Area 1 Office and the Liverpool and Southport Districts were joined by many of their colleagues who had retired—some a short time ago, others many years ago—as they packed into the Lister Drive canteen a few weeks ago to pay their respects and tributes to Mr. George J. Bulmer (District Commercial Engineer) who was bringing to an end a lifetime of service in the electricity supply industry.

Mr. W. Wallwork (Commercial Officer, Area 1), welcomed everyone to the ceremony and had a special welcome for Mrs. Bulmer who had gone along to be at her husband's side. Mr. Wallwork said that this was a very personal occasion, a time when a man's friends gathered to say their affectionate farewells and to offer good wishes for a healthy and happy future. He said that retirement presented everyone with an opportunity to change a way of life and then he made reference to the many pensioners who were present, saying that to judge from their healthy looks, retirement could be quite a good thing.

He went on to say that Mr. Bulmer had started work in 1926 with the Liverpool Corporation as an electrician and ten years later he was appointed as the Domestic Heating Engineer. Along came the war and as a member of the Territorials, George was *in* from the start. His distinguished service record brought him the M.B.E. and he was demobilised as a major. Later he was awarded the Territorial Decoration.

On his return to work, he went to Hatton Garden and was with Mr. H. J. Fraser until 1948 when he took over his present job in the South District.

A very warm and human personality, Mr. Bulmer will be remembered with pleasure by many many people. He always kept the respect and the loyalty of his staff, despite the difficulties which every D.C.E. experiences from time to time.

As Mr. Wallwork brought his tribute to a close, Mr. H. Telfer (Manager, Area 1) rose to add his personal tribute in which he related many happenings of bygone days and spoke of George's friendly personality showing through at all times. He said that his sincerest wish was that Mr. and Mrs. Bulmer should enjoy a happy retirement. Then on behalf of the many people who had subscribed to the parting gifts. Mr. Telfer made the presentation of an electric refrigerator, a silver tray, an electric drill and some of his favourite tobacco. Mrs. Bulmer was also presented with a bouquet of flowers.

Mr. Bulmer then thanked everyone for their kind thoughts and said that he had a great regard for all who had worked with him and he appreciated all that they had done for him. He paid tribute to his wife who had helped him in so many ways.

After inviting all and sundry to join him in some liquid refreshments at the Thingwall Road Clubhouse—*over 100 attended*—Mr. Bulmer brought the ceremony to a close by quoting a piece from the *Galley Slave* by Kipling.

Today I leave the galley,
Shall I curse her service then,
Thank God what 'ere comes after,
I have lived and toiled with men.

Mr. Bulmer, *holding tray*, and Mrs. Bulmer, *holding bouquet*, with just a few of the members of the Board's staff who turned up at Lister Drive to pay their respects and say their farewells.

Miss Worthington, *sixth from left, front row*, **at her farewell party at the Bridge Street shop in St. Helens.**

Miss M. WORTHINGTON

After completing 40 years' service, first with the St. Helens Corporation Electricity Department and later with MANWEB, Miss Margaret Worthington retired from her job as Supervisor of the Board's shop in Bridge Street, a short time ago.

Margaret went to work in the shop when it was first opened in 1932, becoming the supervisor just 25 years ago. During this time she has become very well known and respected in local circles and in the electrical trade.

Many of her friends and colleagues gathered at an informal ceremony held to mark her retirement when she was presented with a set of luggage by Mr. H. R. Johnson (District Commercial Engineer) on their behalf. Another gift for Margaret came from the shop staff at Warrington, showing how popular she was among the staff—even from another District!

Afterwards everyone enjoyed a farewell drink and something to eat at a delightful buffet which had been prepared and tastefully set out by Mrs. Elizabeth Hilton and Mrs. Annie Skeath.

We cannot wish Margaret a happy retirement for it is not her intention to sit back and do nothing. She told us that she was retiring from the Board at this early date in order to take up other employment, possibly part-time, but definitely with less responsibility!

She has had an active social life too, being a well-known member of the St. Helens Soroptomists Club—a past-President and now the Treasurer.

From "*Contact*" we wish Miss Margaret Worthington our ex-Correspondent good luck in the future.

Mr. J. A. WILLIAMS

A very popular District Manager, Mr. John Lewis Williams, who managed our Oswestry District so successfully, retired recently after nearly 50 years of working life.

A Manchester man, he started his career in 1919 with Bartrum Roylance and Co. Ltd., moving to Wrexham a few years later to work for an electrical contractor. Then he joined the North Wales Power Company and among the various jobs he held with the Company was that of assistant sales engineer.

On the nationalisation of the industry in 1948, he was appointed as the District Commercial Officer at Rhyl. Later he became the District Manager at Aberystwyth before taking over at Oswestry in 1961.

Mr. Williams has led an active life and has served on the Rotary Clubs at Mold, Aberystwyth and Oswestry. Mrs. Williams is a past-President of the Oswestry Inner Wheel.

We join with their many friends in wishing them both many years of happy and healthy retirement.

Mr. Williams, *second from left*, **being presented with a portable radio by Mr. Eric Davies (District Engineer). Also in the picture we have Mrs. J. L. Williams and Mr. W. A. Williams,** *left*, **a former District Manager, and Mr. R. N. Pegg,** *right*, **the former Manager of Area 4.**

Quiet Revolution in North Wirral

Seven men, each with over 40 years' service in the electricity supply industry, have retired from the North Wirral District Commercial Department during the last twelve months or so.

First to go was the top man himself, **Mr. G. A. White,** the former District Commercial Engineer, and he was followed by **Vic Collins** (installation inspection engineer). Then **Ron Furlong** and **Ron Davies,** both consumers' engineers, said their farewells, and now, during the last few weeks, **Frank Jeffries** (consumers' engineer), **Fred Bird** and **Ces Male** (assistant consumers' engineers) have all joined the ranks of the retired.

This now leaves '*lone ranger*' **Jack Buckles** (consumers' engineer) who will be working with the new blood in the Department until his own retirement next June.

Mr. C. E. Male. Started as an electrician in 1927. Likes motoring and is a very keen whist player.

Mr. F. Jeffries. Formerly worked on contracting. His hobbies include dancing, swimming photography and "odd jobbing.',

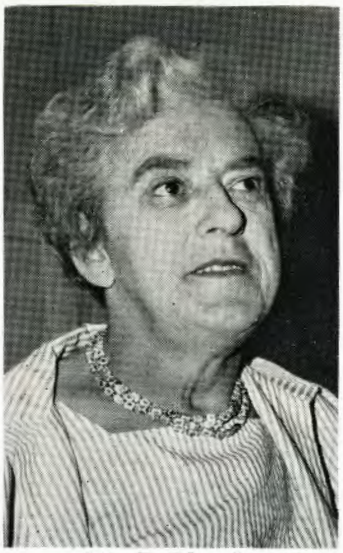
Mr. F. J. Bird. For the past 21 years has been captain of the Charing Cross Methodist Church Badminton Club and Trustee of the Church. Has also been a chorister for 35 years. Keen on youth work.

▲ **A farewell drink.** *From left to right, seated:* **Messrs. F. Bird, F. Jeffries and C. Male.** *Standing, from left to right:* **Messrs. J. Evans (District Senior Clerk), G. Bowers (District Commercial Engineer), G. A. White and J. G. Grady (1st assistant D.C.E.).**

▲**Mr. Male,** *left,* **receives a farewell gift, presented by Mr. Bowers.**

▼**Mr. Bowers again, this time presenting a radio to Mr. Jeffries.**

A parting shot of Mr. Fred Bird, *centre,* **in amongst the girls!**



Miss D. Edwards

Farewells from Blaenau . . .

Recently, we seem to have lost a number of our "*Contact*" Correspondents, the latest one to retire from service with the Board being Miss Dorothy Edwards of Blaenau Ffestiniog.

Miss Edwards was formerly with the Yale Electric Company before MANWEB took over in 1948. In her 28 years in the electricity supply industry, she says that she has enjoyed every minute of it.

At a farewell dinner given by her friends in her honour, Mr. E. Rowlands (consumers' engineer) spoke of the conscientious way in which she had always carried out her work and of the high regard in which she was held by all members of the staff.

Before taking her final bow, her many friends presented her with a handsome electric fire unit as a token of their regard for her friendship and service.

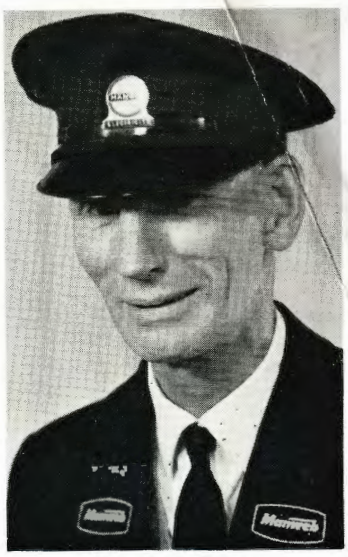
Miss Edwards, who has the letters L.R.A.M. after her name, is well known in many parts of Wales—and over the border—as an accomplished singer and musical personality.

She is looking forward to her retirement in order to devote more time to her music. She conducts the famous "Moelwyn Ladies' Choir", winners at the National Eisteddfod; is Secretary of the Gymanfa Ganu; organist at Bethania Welsh Chapel and Superintendent of the children's Sunday School.

We wish Miss Edwards many years of happy retirement and much success in her musical endeavours.

. . . and from Caernarvon

Shortly before his retirement which took place recently, Mr. Edward Davies Jones, a meter reader at our Caernarvon District Office, received the Special Thanks of the Prior and Chapter of the Priory for Wales of the Most Venerable Order of the Hospital of St. John of Jerusalem.



Mr. E. D. Jones

This was for the valuable assistance he had given over a number of years in the furtherance of the work of First Aid.

Mr. Jones has been a member of the Electricity Supply Ambulance Centre since 1950, receiving the Long Service Award in 1965. For the past eight years he has been the Secretary of the Caernarvon Ambulance Division.

With our sincere congratulations on his recent honour go our best wishes for a happy retirement from the Board, but not, we hear, from First Aid.

LEAVING ST. HELENS

A clerical assistant at our St. Helens District Office, Mr. Raymond Twist recently left the Board's service after some 30 years in the industry.

This was a voluntary resignation for it had become necessary for him to take an active part in running his family business.

Before leaving however, his friends subscribed to present him with a farewell gift.

Mr. Twist, *left*, receives a farewell handshake from Mr. H. R. Johnson (D.C.E.). Also in the picture are, from *left to right:* Messrs. S. L. Hislop, G. E. H. Wheeler, H. C. Barr and J. G. Gerrard.

'Contact' Correspondents

Mr. R. Slack	*(Hoylake Traintng Centre)*
Mr. P Collinson	*(Newgate St.)*

AREA 1

Mr. H. Davies	*(Whitechapel)*
Mr. A. Cassie	*(Hatton Garden)*
Mr. N. B. Kenyon	*(Hatton Garden)*
Mrs. M. Cowle	*(Derby House)*
Mr. D. Patrick	*(Marsh Lane)*
Mr. G. W. Hill	*(Lister Drive)*
Mr. P. Scrimshire	*(Southport)*

AREA 2/3

Mrs. J. Findlow	*(Sealand Road)*
Mrs. E. Burke	*(Sealand Road)*
Mr. H. Hughes	*(Sealand Road)*
Mr. A. Wadcock	*(Sealand Road)*
Mrs. K. B. Knight	*(Sandiway House)*
Mr. G. E. H. Wheeler	*(Carlton St.)*
Mr. F. Kelly	*(Bridge St.)*
Mr. M. J. Caird	*(Warrington)*
Mr. G. W. Wells	*(Runcorn)*
Mr. C. P. Booth	*(Northwich)*
Mr. L. Sewell	*(New Crane St.)*
Mr. K. Jones	*(Wallasey)*
Mr. F. Gordon	*(Birkenhead)*

AREA 4

Mr. E. J. Edwards	*(Crewe)*
Mr. W. B. Walker	*(Nantwich)*
Miss G. Baxendale	*(Sandbach)*
Mr. J. W. Forrester	*(Wrexham)*
Mr. E. Jones	*(Wrexham)*
Mr. D. Jones	*(Shotton)*
Mr. K. Heppinstall	*(Oswestry)*
Mr. W. Ll. Williams	*(Newtown)*
Mr. W. D. Morris	*(Welshpool)*
Mr. A. L. Barker	*(Whitchurch)*
Mr. D. Young	*(Prestatyn)*
Mr. I. W. Griffiths	*(Mold)*
Mr. L. Hughes	*(Llandudno)*
Mr. H. Jones	*(Colwyn Bay)*
Mr. E. Roberts	*(Caernarvon)*
Mrs. E. F. Davies	*(Bangor)*
Mr. E. Jones	*(Bethesda)*
Mr. J. B. Williams	*(Pwllheli)*
Mr. L. C. Jones	*(Llangefni)*
Mr. D. G. Thomas	*(Aberystwyth)*
Mr. D. Hughes	*(Barmouth)*
Mr. E. A. Wharton	*(Dolgellau)*

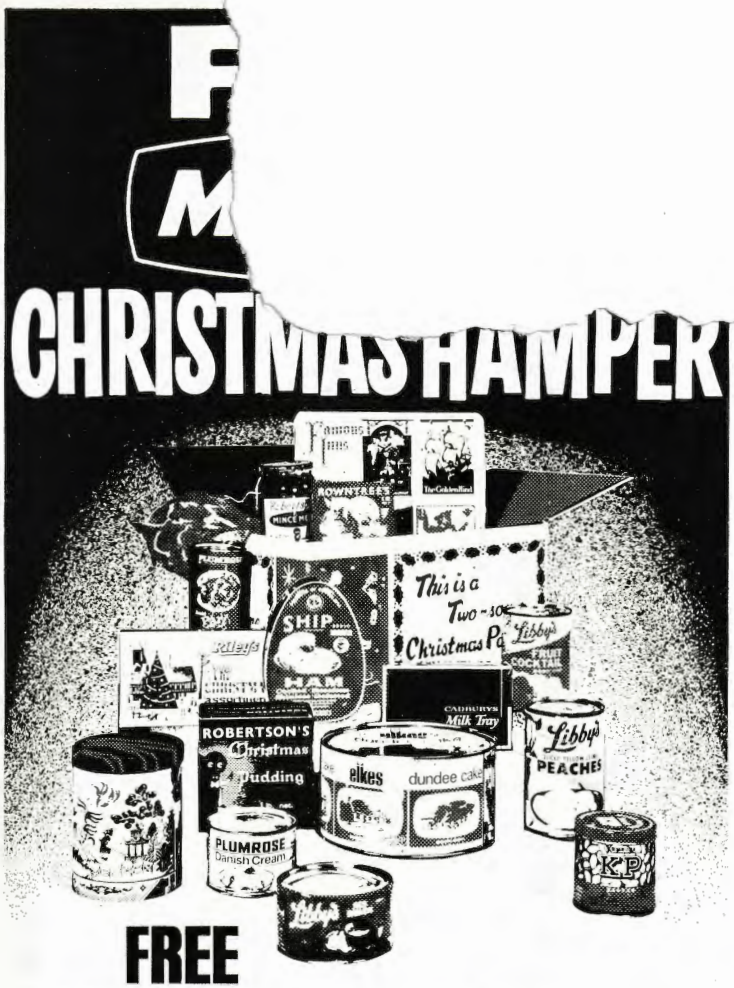
EMPLOYEES SUGGESTION SCHEME

What do *you* do in *your* spare time?

. . . . . A few minutes work on a Suggestion Form could prove worthwhile

FINANCIALLY

Forms available from:
YOUR DISTRICT SENIOR CLERK, OR
FROM YOUR AREA SECRETARY



MANWEB's seasonal advertisement which is now appearing in the local press.

...jointly De... Boards in Great Brit... and seven leading manufacturers. The campaign is similar to a joint promotion held last year. It started early in November and has the theme "Better Gifts Are Electric".

Different television commercials, comprising 45-second feature and 15-second reminder spots, are being screened on all stations throughout the campaign. Full-page advertisements are appearing in national newspapers and there is full point of sale support in the 1,400 Electricity Board shops.

SPECIAL OFFERS

There are special offers for customers buying through Electricity Board shops. These feature products of all the manufacturers co-operating in the joint venture.

Appliances in the promotion include electric shavers, irons, hair dryers, heated hair rollers, electric carving knives, food mixers, automatic teamakers, toasters and electric frypans.

Mr. R. H. Phillips, Marketing Adviser of The Electricity Council, said: **"Electric appliances make first class gifts and this campaign is expected to boost sales through all outlets. It is also a means for Electricity Boards to increase their business in this market. About 40% of the year's business in small appliances is done at Christmas time."**

...machine operator), Miss V. Jackson, Miss J. E. McGovern (clerks), Miss H. Medcalf (copy typist), Miss S. O'Connor (clerk), Miss P. A. Pender (machine operator), Miss P. Robinson, Mrs. M. E. Bourne, Mrs. V. Godbold, Mrs. M. Graham, Mrs. E. Hammond, Mrs. D. Naisby, Mrs. G. A. Quinn and Mrs. A. White (clerks), Messrs. J. Newcombe (clerk), and A. J. Skupski (drawing office assistant). *Central District:* R. Adamson, P. Allen, J. Callaghan, R. P. Campbell, G. P. Flanagan, K. J. Harper, J. H. Parry and R. C. F. Thompson (contracting electricians). *North District:* Miss J. Booth (copy typist), Mrs. J. Brophy (saleswoman—part time), Mrs. D. J. Collinson and Mrs. P. K. Lucy (clerks), Mrs. D. Monks (saleswoman), Messrs. C. Evans and T. Trick (electricians).

Area 2/3 Office: Miss J. Bishop (clerk), Miss P. Carbishley and Miss A. Dodd (typists), Miss S. Duckworth (clerk), Miss E. J. Garner, Miss A. Hughes and Miss M. Hughes (clerks), Miss P. I. Isley (shorthand typist), Miss L. F. Laurence, Miss P. Lavender, Miss E. M. Owen, Miss J. Norwood, Miss S. Phillips, Miss V. Stacey, Miss J. Williams, and Miss L. M. Wright (clerks), Mrs. P. Baker (shorthand typist), Mrs. R. V. Rees (clerk), Messrs. A. L. Bradshaw, R. J. A. Jones and J. L. Prestwich (clerks). *Northwich District:* G. Radcliffe (salesman). *Runcorn District:* Mrs. R. E. Liversage (clerk). *North Wirral District:* Miss M. Jellicoe (shorthand typist), Miss P. Wellings (clerks), Messrs. L. A. Gillman and B. G. Lord (clerks).

Area 4 Office: Miss M. P. Gibson, Miss A. E. Jones and Miss E. Jones (clerks), Miss R. W. Jones (punch card operators), Miss M. J. Roberts (clerk), Miss V. J. Jones (machine operator), Messrs. B. Evans and M. V. Evans (clerks). *Crewe District:* Miss C. A. Stubbs (trainee sales demonstrator). *Oswestry District:* Miss S. A. Morris, (clerk/typist). *Conway Valley District:* Mrs. N. L. Jones part-time saleswoman), Messrs. L. E. N. Dibley (assistant consumers' engineer) and E. V. Williams (junior clerk).

Congratulations to . . . the following employees on their promotions:

Head Office: Miss J. C. Whatling (secretary—shorthand typist).

Area 1 Office: Mrs. B. A. Owens (assistant—establishments), Messrs. P. Byrne (assistant—stationery), J. G. Dolce (records draughtsman), L. Hird (assistant nominal accounts) and D. Percival (senior assistant accounts). *Central District:* Messrs. G. Deakin (jointer), P. Deane (electrician), S. Green (senior assistant—engineering clerical) and J. McNally (jointer's mate). *North District:* Messrs. S. J. Berwick (contracting electrician), P. Fletcher (electrical fitter), A Shaw and D. Thomas (contracting electricians).

...Allen and Miss P. A. ...its), Messrs. A. L. ...rcial), E. T. Hinde ...V. Vernon (assistant— ...: Messrs. J. Christie ...xer) and B. C. Roberts ...*St. Helens District:* ...hargehand electrician), ...J. Millett (chargehand ...craftsman's mate) and ...er—electrical). *Runcorn* ...Hayes (jointer's mate), ..., J. A. Smith (jointer's ...hargehand electrician) and ...K. Vickerstaffe (foreman electrician). *Chester District:* Messrs. J. Bennett and R. Reynolds (jointers) and M. H. Chilton (jointer's mate). *Warrington District:* Mr. W. Boughey (jointer E.H.T.). *North Wirral District:* Messrs. L. Brown and S. Ellis (jointer's mates), R. J. Griffiths (meter reader), J. M. Kelley (assistant consumer's engineer), A. Lindfield and W. J. Williams (jointer's mates).

Area 4 Office: Mrs. G. Jackson (cook). *Crewe District:* Mr. L. G. Shard (jointer's mate). *Conway Valley District:* Mr. J. H. Smith (records draughtsman). *Aberystwyth District:* A. G. England (assistant section engineer).

Farewell to . . . the following employees who have now left the service of the Board:

Head Office: Miss F. A. Jones (clerk) and Mr. J. B. Drucker (trainee accountant).

Area 1: *North District:* Mr. T. Jones (mains foreman). *South District:* Messrs. J. R. Griffiths (transport driver) and T. McCabe (labourer).

Area 2/3 Office: Mrs. M. Harvey (head cook) and Mr. W. L. Topping (revenue superintendent). *St. Helens District:* Miss M. Worthington (shop supervisor). *Chester District:* Mr. J. Toomey (labourer). *Warrington District:* Miss A. J. Wilcock (saleswoman). *North Wirral District:* Messrs. F. J. Bird (assistant consumer's engineer), F. G. Jeffries (contracting engineer), C. E. Male (assistant consumer's engineer), G. McGowan (meter reader/collector) and T. C. Rimmer (control-room operator).

Area 4: *Clwyd District:* Messrs. D. E. Davies and J. E. Warburton (labourers). *Conway Valley District:* Mr. H. J. L. Jones (jointer's mate). *Caernarvon District:* Mr. E. D. Jones (meter reader).

Obituary

It is with deep regret that we report the deaths of several of our former colleagues.

Mr. A. J. Venables, a member of the Head Office Staff.

Mr. R. Tuckington, who worked as a watchman in the Liverpool South District.

Mr. R. Henshaw, a clerk in the Financial Section at Area 2/3 Office.

Mr. E. L. Hughes an assembler in the North Wirral District of Area 2/3.

Mr. W. Langley a transport driver also in the North Wirral District.

Mr. G. S. Morrison a meter reader again from the North Wirral District.

Mrs. J. Russell a mechanical fitter in Chester District.

Mr. A. H. Williams a Chester District labourer.

Mr. E. L. Morland M.B.E., F.I.E.E., the former No. 1 Sub-Area Engineer.

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