

# BUSH TELEGRAPH



FEB 1984

# BUSH

vol.26 no. 1

# TELEGRAPH

the magazine of **R&EL** wood lane



## Cover

Memento given to all members of staff to commemorate the official opening of the Wood Lane Laboratories in 1934

## Editorial Board

Mike Denton  
David Green  
Geoff Holder  
Peter Walters  
Ted Morrison



# Editorial

It would ill-behave us to start the new year with a note of complaint, so we will not . We originally intended that this editorial should comment somewhat critically on the state of communications within Wood Lane , only to be surprised by noticeable improvements ( as far as we are concerned ) of late .

Two events which have caused some comment recently are the annual prize-giving and the pensioner's Christmas lunch .It seems a pity that there were relatively fewer than usual of the prizewinners at this year's ceremony . We acknowledge that that there are many difficulties involved in organising such an event , however,notice was rather short this year . Furthermore , this year the event coincided with the last week of term for a number of students such that they could not attend because of examinations .

With regard to the pensioner's lunch , a number of pensioners and many longer - serving members of staff have mentioned to us their not meeting on the occasion of the lunch . It appears that only a few of the longer - serving members of staff are invited to the lunch , such that pensioners have little or no opportunity to meet their former colleagues . Whilst we would not presume to arrange the guest list for the lunch , one way of avoiding much disappointment would be to hold an informal pre-lunch meeting of pensioners and longer - serving members of staff .

# Personnel News

## STARTERS , Welcome to :-

Mrs V. Lloyd - who joins Polymer Processes .  
Mr A.C.D. Hayes - who joins Polymer Materials .  
Mr T.W. Yu - who joins C.A.C.M..  
Mr G. Kanink - who joins C.A.C.M..  
Mr R.G. Walker - who joins Communications Systems .  
Mr M. Wingrave - who joins Communications Systems .  
Miss A.E. Buchanan - who joins Administration .  
Mrs E.J. McAllister - who joins Patents and Licensing .  
Mr M. Irvine - who joins Optical Cable Research .  
Mr S. Frost - who joins Polymer Processes .

## DR. HARRY SINGER

Dr. Singer will be joining BR&EL from Balfour Beatty Engineering Limited on Monday, 13th February, as Technical Liaison Officer responsible for the time being to Dr. Moore.

## LEAVERS , Farewell to :-

Mrs M.K. Simposa , of Patents and Licensing , who has returned to Australia after 17 months service .  
Mrs A. Carvalho , of Patents and Licensing , who has found alternative employment after 2 years service .  
Mr D. Keogh , of Mathematics , who has found alternative employment after 3 years service .  
Mr J.E. Graves , of Works Engineering , who has found alternative employment after 5½ years service .

## RETIREMENTS , Best wishes for long and happy retirements go to :-

R.J.Carter , of Works Services , who retires after  
26 years service .  
L. Pinchcombe , of Works Services , who retires after  
7 years service .

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# Obituary

It is our sad duty to report the death of Doug Latimer . Doug , who was associated with Wood Lane for many years , will be remembered and greatly missed by many of us . Our heartfelt condolences are extended to his family and friends .



# Pension Increases from 1 January 1984

The Trustees of the BICC Group Pension Fund and the BICC Group Works Pension Fund are pleased to announce that the following increases from 1 January 1984 have been agreed with the company.

The actuaries advise that the BICC Group Pension Fund can finance the increases from its own resources. The company meets the whole cost of the BICC Group Works Pension Fund and will meet the extra contributions required.

## FOR PRESENT PENSIONERS

### General increase

Pensions from the BICC Group Pension Fund in excess of guaranteed minimum pensions will be increased by 4% instead of the 3% laid down in the rules except that pensions which began during 1983 will receive proportionately lower increases.

*Guaranteed minimum pensions* are the minimum amounts which the Fund must pay from age 65 (men) 60 (women) to members who have been contracted-out of the earnings-related State pension scheme. The fund does not provide increases on this part of the total pension because cost-of-living adjustments on guaranteed minimum pensions are paid by the State scheme.

Pensions from the BICC Group Works Pension Fund will be increased by 4%.

### Special increase

Pensions from both funds which began in 1974 or earlier will be increased by a further 8% (in addition to the general increase) with scaled-down amounts for pensions which began in 1975, 1976 and 1977.

This special increase and the one given three years earlier are not intended to form part of an ongoing pattern. They are meant to help those whose pensions (even after substantial regular increases) have suffered particularly from the loss of purchasing power caused by a number of years of high inflation.

## FOR EMPLOYEES ENTITLED TO FUTURE PENSIONS FROM THE BICC GROUP WORKS PENSION FUND

The Works Fund was closed in April 1978 but continues to provide pensions for previous periods of membership. The basic rates of pension for each year of pensionable service will be increased from £6.36 p.a. to £6.62 p.a. for men and from £4.66 p.a. to £4.85 p.a. for women.

Rates of pension for supervisory grade service will be correspondingly increased.

Transfer bonuses for those who transferred to the BICC Group Pension Fund by 1 April 1978 are linked to the basic rate of Works Fund pension and so will be automatically increased in the same proportion.

November 1983

J. B. Dennis  
Group Pensions Manager

# Letters to the Editor

Dear Friends and Colleagues ,

I thank very much indeed all those who contributed to my money gift , retirement card and much appreciated good wishes .

I take this opportunity to wish you all a very prosperous and healthy New Year .

With kindest regards ,

Ron Carter

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To the Editor,  
'Bush Telegraph'.

Sir (or Madam),

WHAT IS IT ?????      TOO ELEGANT ELEPHANT ????

We all know there are often things taking place at Wood Lane which never seem to bring forth an explanation. Weird goings-on, some folks would say....

For instance - it would appear that they have an elephant on the floor above the General Office! Its trunk has been stuck out of a window for the last several weeks and, during the high winds the other Friday, it must have got very agitated because it was waving its trunk about in a very wild and animated manner.

Rumours have it that a supply of special silver-plated buns have been seen surreptitiously entering the canteen on the 4th floor of MacFadzean. Strangely enough, this unknown animal has never been heard to utter even the most muted trumpeting and, whenever one visits the General Office, there is a singular lack of heavy stamping on the floor above (although there certainly was in the General Office itself of late!).

There have been no news bulletins or newspaper accounts of a silver-plated elephant missing from London Zoo; one surmises that, had such a beast gone missing (perhaps by being kidnapped), rewards covering the price of the silver alone would have been astronomical - at least the level of the cost of a subscription to 'Bush Telegraph'.

Never mind, communication being what it is on the Wood Lane site, we shall probably find out sooner or later, even if only over the 'grape-vine'. What worries me most is what sort of experiments they are carrying out on the poor thing - this also could be quite sinister! Perhaps there is a gold-plated female waiting patiently somewhere for the ill-fated beast to return.

Signed: Animal Lover.  
(Name and address supplied).

# LETTER FROM AUSTRALIA

It is now November and we have been here 9 months, it is the beginning of summer. The diurnal variation is at the moment 14°C to 28°C (57°F to 82°F); during the winter it was down to 5°C to 15°C (41°F to 58°F), you would be surprised how cold it seemed to be!

We have taken part in a number of activities, a goodly proportion of which are derived from Patricia's work, but more of that anon.

The flowers and the trees are mostly unfamiliar even to a frequenter of Kew Gardens so I will try and describe some of them. The first thing to note is that due largely to human selection that they are very colourful and of interesting texture/shape. The plant that made an impression first of all was the Morton Bay Fig, which is a very big tree indeed. Saunders says of it that 'it is highly buttressed', I am not sure whether this means that it strikes subsidiary trunks from branches and from part way up the trunk or to the fact that the roots on the older trees wander on the surface outwards from the tree on the surface of the ground; these roots can be 2 ft high and 18 in wide and as much as 40 ft from the tree, commonly about 15 ft. The tree grows to the height of 160 ft.

One of the more colourful trees is the flame tree. This is so called because at the end of winter, when it has lost its leaves, the tree is covered in scarlet blossom. A street with a whole avenue of these is a fantastically beautiful sight.

Another exceptionally beautiful tree, which is found as an avenue in some streets is the Jacaranda, which some of you may have seen as an individual specimen, but a whole avenue...! It has blue flowers which appear at the same time as the leaves and in the middle of November. When it rains the blossom deepens in colour and looks almost violet. We have two about 60 ft tall, only one of which is yet out.

The bottle brush is a small bush or tree up to 30 ft tall and in September/October comes into flower. The plant is so called because the orange/red or crimson flowers are in the shape of a bottle brush with the twig as the axis, about 1 inch diameter and up to 6 inch long. Some species have a longer flowering season. A version which is a different genus is the half round bottle brush which as you would expect from the name is a half of a bottle brush, about the same length as the other bottle brushes but larger in diameter.

Now December, officially summer, from the first. We have had 38.1°C on the 15th (that is 100.6°F) which is the hottest December day for 3 years!

The other significant plants are all small shrubs. The most important is the state flower -- the kangaroos paw *Anigosanthos* genus. This comes in 8 species. The colours are manglesi-red-and-green (state emblem), pulcherrima - yellow,

rufa - red, humilis (cats paw) yellow to orange-red, bicolor - red and yellow, preissi - greenish yellow and red, viridis - green. The black kangaroo paw is a different genus *Macropidia fulginosa*.

A plant just finishing at the moment is the *Agapanthus*, or African lily, which comes in blue or white varieties. They make a very attractive display.

The other plants noticable at the moment are the *hibiscus*, the exotics *bourganvillia* and *lantana*. The latter comes in a number of variegated colours as well as the more normal single colours.

This description of the flora would not be complete without mention of one of the most interesting and spectacular natives. This is a single specie genus - *Nuytsia floribunda*. This is a semi-parasite! It grows as a parasite on the roots of an existing plant's roots for the first 7-10 years of its life after which it behaves like a conventional tree. This plant is the "WA Christmas Tree" and is unique to WA. It eventually grows to 40 ft tall and at this time of year has spectacular deep orange numerous large flowers. We went 50 miles to the south a fortnight ago and saw large numbers of the trees, very spectacular.

You of course read and saw film of the performance of Australia II, you have no idea how much we Australians (!) are still thrilled by that result. Alan Bond is definitely one the local heros, as are the remainder of the team. We had a celebration of the win when they each got presented with an award. Afterwards there was a firework display for which the whole of Perth turned out to watch (because everyone is terrified of fire the only fireworks allowed are official displays by firms specially licenced).

We have been on a number of trips into the foothills of the Darling range, and on a couple of trips up and down the coast to see the scenery which is very interesting. I went on a trip organised by the Forestry Dept. in conjunction with ALCOA. Firstly the foresters showed us the work they had been doing with jarrah (pronounced jarrah[!] die-back. The cause is now known to be a root fungus which has been imported accidentally (hence quarantine) from south-east Asia. It does not survive the normal Australian dry summer except where the bed-rock has deep fissures which allow the fungus to survive due to the retained moisture. The other thing that has been found out is that the wattle, which is a plant with N-fixing nodules, is extremely susceptible, presumably the two are related. So the foresters are planting the areas concerned without any wattles or other similar plants. The other thing that they showed us

was a tree aspirator. This consisted of an enclosure of plastic with giant fans sucking air over the tree, and input and output moisture content was measured thus measuring transpiration directly. They have been visited by foresters from the US and Japan inter alia and they have been told that they have a magnificent set-up. A really spectacular botanical experiment. Then we went on to the ALCOA (part of ALCAN) part of the state forest. They were stripping of the top-soil, saving it, then taking off the underlying bauxite, then putting back the top-soil and planting it together with a LITTLE fertiliser with native plants to get back bush. The end result after a few tens of years is a forest which is better than before ALCOA started. An even more welcome byproduct is that the bed-rock is smooth on the top, which means it is very nearly resistant to die-back. The foresters afterwards admitted that they were initially against the bauxite removal but are now very enthusiastic for it!

Amongst the trips we have done are a couple to see the flowers in the bush in September. A magnificent display which goes on for miles and miles of beautiful flowers. In the city of Perth there is an area called King's Park which contains the local botanical gardens with examples of the plants from the Mediterranean area, from South Africa and the areas of the US with a similar climate. Also there is a large area of primeval bush which is not cultivated, except for the periodic burning of portions, as a large number of the native plants won't seed except after burning, the response to the climate.

We had a change of Government in the Spring of '83 and one of their election pledges was to re-open the Perth-Fremantle railway line. Needless to say we went on the first day. They had a special stamp frank and envelope but they were sold out in an hour! We were unlucky. This was on the Friday and on Saturday and on Sunday Westrail hired a steam engine from one of the local preservation lines and ran 8 return trips each day. We went on the Sunday, and had fish and chips at the most famous fish shop in Fremantle before returning. On the subject of fish the seas around WA are managed well and are not over-fished. The fish is very fresh and tasty. The fish we like the best is Dhufish from Denholm-land (originally called Jewfish), it has a flavour which is very much to our taste. There are a number of very good sea-food restaurants which we patronise from time to time. We do not have lobster, but we do have cray-fish, which is similar but without the giant claws. We also have crab, prawn, octopus, oyster etc. Tuna is also to be found around our coasts and is fished with gaffs or with hook and line by the Japanese, it is not allowed to be fished any other way in our 200 mile limit.

Best wishes to all and I will write again in a little while.

Geoff & Pat Layzell-Ward



# Competition

Being by nature optimists and not at all put out by the apparent ( almost total ) lack of interest in our Christmas competitions, apart from the Leadergram, we hope that some of you might like to attempt the following examination paper .

( Paper donated by Yvonne Ferrier ).

## NOT THE U201 EXAM PAPER (PROBABLY)

Candidates must attempt *all* questions:

- 1 *History*: Describe the history of the Papacy from its origins to the present day, concentrating especially, but not exclusively, on its social, political, economic, religious and philosophical impact on Europe, Asia, America and Africa. Be brief, concise and specific.
- 2 *Medicine*: You are provided with a razor blade, a piece of gauze and a bottle of Scotch. Remove your appendix. Do not suture your work until your work has been inspected. You have 15 minutes.
- 3 *Public Speaking*: 2,500 riot-crazed immigrants are storming the local Citizens Advice Bureau. Calm them. You may use any ancient language except Greek or Latin.
- 4 *Biology*: Create life. Estimate the differences in subsequent human culture if this form of life had developed 500m years earlier, with special attention to its probable effect on the British parliamentary party system. Prove your thesis.
- 5 *Music*: Write a piano concerto. Orchestrate and perform it with flute and drum. You will find a piano under your seat.
- 6 *Sociology*: Estimate the sociological problems which might accompany the end of the world. Construct an experiment to test your theory.
- 7 *Engineering*: The disassembled parts of a high-powered rifle have been placed in a box on your desk. You will also find an instruction manual, printed in Swahili.  
In 10 minutes a hungry Bengal tiger will be admitted to the room. Take whatever action you feel appropriate. Be prepared to justify your decision.
- 8 *Political science*: There is a red telephone on the desk behind you. Start World War III. Report at length on its socio-political effects – if any.
- 9 *Philosophy*: Sketch the development of human thought; estimate its significance. Compare with the development of any other kind of thought.
- 10 *General knowledge*: Define the Universe. Describe in detail. Give three examples.

(K. N. O'Wall, 1988)

# Holiday Savings

The Company uses Hogg Robinson Travel for arranging its travel requirements . As a result of this , a concessionary facility has been arranged for all BICC R & EL Staff on their personal holiday arrangements . Full details are given below .

BICC Research and Engineering Limited's employees will get a 5% saving on their personal holiday travel when booked through the Company's appointed travel agent, Hogg Robinson Travel, and this will operate as follows:-

1. Who Qualifies?

All BICC Research and Engineering Limited's employees plus their immediate families providing they travel on the same holiday. That is, spouse and children in the case of married employees: parents and brothers and sisters in the case of unmarried employees.

2. What Type of Travel Qualifies?

All overseas package holidays but NOT scheduled or chartered air fares or car ferries, and the saving is only available on the basic cost of the holiday and cannot be applied to travel insurance premiums, taxes, room or flight supplements, etc.

3. How to Obtain the Saving

- (a) Book your holiday through any Hogg Robinson Travel branch in the normal way and pay the deposit in full. When you receive your holiday confirmation send a copy to John Heggie in the Personnel Department with a short note asking for the saving.
- (b) They will return the holiday confirmation to you together with sufficient £10, £5 or £1 "Holiday Savercheks" to make up the 5% saved.
- (c) You then pay Hogg Robinson Travel the balance yourselves using these "Savercheks" as part payment. For example, if your holiday costs £300 you enclose your personal cheque for £285 and "Savercheks" for £15.
- (d) It is important that you send the booking confirmation to the Personnel Department as soon as possible in order that you will receive the "Savercheks" in time to meet the payment date which is normally 8 weeks before departure. If you are booking a holiday through Hogg Robinson Travel at very short notice then explain to the Hogg Robinson clerk that you work for BICC Research and Engineering Limited and then contact the Personnel Department requesting the appropriate amount of "Savercheks" to be sent direct to the Hogg Robinson Travel office on your behalf.

The Company accepts no responsibility for any holiday arrangements, which are matters strictly between Hogg Robinson and the employees.

# Prize Giving

## STUDENT'S PRIZE GIVING 1983

The 1983 Prize Giving was held on December 13th in the presence of 56 members of staff and special guest Mr. H.G.de Ville.

John Heggie, BREL Personnel Manager, opened the proceedings. He emphasised the importance of the annual ceremony which served to reward and encourage young people in their Quest for qualifications. He emphasised the need for BICC to be competitive in its activities; to this end it was important that young people should be encouraged to undergo training and obtain qualifications. 1983 was a good year with regard to students' examination and course results, it reflected the hard work put in by all those involved. Mr. Heggie concluded by hoping that both the students and BICC would continue to get the most out of the training they received.

Mr. H.G. de Ville presented prizes to the successful students who were present (see accompanying list). It was unfortunate that a number of students were absent from the ceremony, which clashed with end of term examinations and other college commitments.

After the presentation, Mr. de Ville addressed the gathering and gave two quite separate reasons for his pleasure at being present at the ceremony. Firstly, that Wood Lane is the heart of engineering within BICC; secondly, that the ceremony was concerned with young people and their future. He noted that BICC looks to Wood Lane as a main source of engineering, innovative skills and products. He emphasised that youngsters should not underestimate what they can achieve while still young. Remarkable achievements can be forthcoming from a combination of youth and vision if not distracted by bureaucracy (committees and the like).

Mr. de Ville also commented on the BICC group's fortunes; with 50,000 people employed throughout the world the group had come through a tough year in 1983 with profits generally increased. However, with such a large and widespread group it was inevitable that at any one time some parts would be more successful than others and that mutual support within the group was important.

EDUCATION AWARDS 1983

<u>NAME</u>	<u>DEPARTMENT</u>	<u>COURSE PASSED</u>
Adams Paul	Administration	3rd Year B.Sc Electrical Engineering Imperial College
Aujla Paramjit	Works Services	Final Year City & Guilds Mechanical Craft Studies Acton Technical College
Barker Paul	Administration	3rd Year City & Guilds Mechanical Craft Studies Acton Technical College
Bishopp Steven	Polymer Materials	Final Year (3rd) TEC Polymer Technology North London Polytechnic
Borer Tony	Polymer Materials	1st Year GRAD P & R Institute North London Polytechnic
Chapman Ian	Administration	3rd Year City & Guilds Cert. Mech & Maint. Craft Studies Croydon
Harrison Steven	Engineering Development	Final Year III TEC Electronics Uxbridge
Hawkes Gregory	Polymer Processes	Final Year (3rd) TEC Polymer Technology North London Polytechnic
Jones Simon	Optical Transmission	1st Year H TEC Electronics Acton Technical College
Kavanagh Chris	Engineering Development	Final Year H TEC Electronics
Littleboy Martin	Engineering Applications	Final Year (3rd) TERC Mechanical & Production Engineering Hounslow
McAllister James	Administration	3rd Year City & Guilds Electrical Craft Studies Hounslow

<u>NAME</u>	<u>DEPARTMENT</u>	<u>COURSE PASSED</u>
McGillivray John	Engineering Development	1st Year H TEC Electronics Acton Technical College
McHale Michael	Physics	Final Year H TEC Electrical & Electronic Engineering Richmond
Miles Leslie	Polymer Processes	Final Year Graduateship P & R Institute North London Polytechnic
Milton Julie (Miss)	Engineering Development	Secretarial Studies Certificate Acton
Panchal Pravin	Physics	Final Year H TEC Electronics South Bank Polytechnic
Prendergast Chris	Administration	2nd Year B.Sc Mechanical Engineering Imperial College
Raj Paul	Works Services	Final Year City & Guilds Mechanical Craft Studies Acton Technical College
Sen Debasish	Engineering Development	Final Year B.Sc Mechanical Engineering Upper 2nd Class Imperial College
Smithers Steven	Administration	2nd Year City & Guilds Mechanical Engineering Craft Studies Hounslow
Townshend Martin	Polymer Processes	Final Year (3rd) TEC Polymer Technology North London Polytechnic
Wardrop Bobbie (Mrs)	Optical Transmission	Certificate of Advanced Study in Semi-Conductor Physics and Technology Brunel University

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# Congratulations

At the Acton Technical College annual prize-giving on Friday February 3rd, Paul Barker, an apprentice in our Machine Shop, received the award for the best student on the City and Guilds Craft Practice, Part II, course.



Some scenes from the 1984 Awards Ceremony

# HISTORY OF WOOD LANE

## CHAPTER SIX - THE OFFICIAL OPENING, 22ND JUNE 1934

### Lord Rutherford's Speech

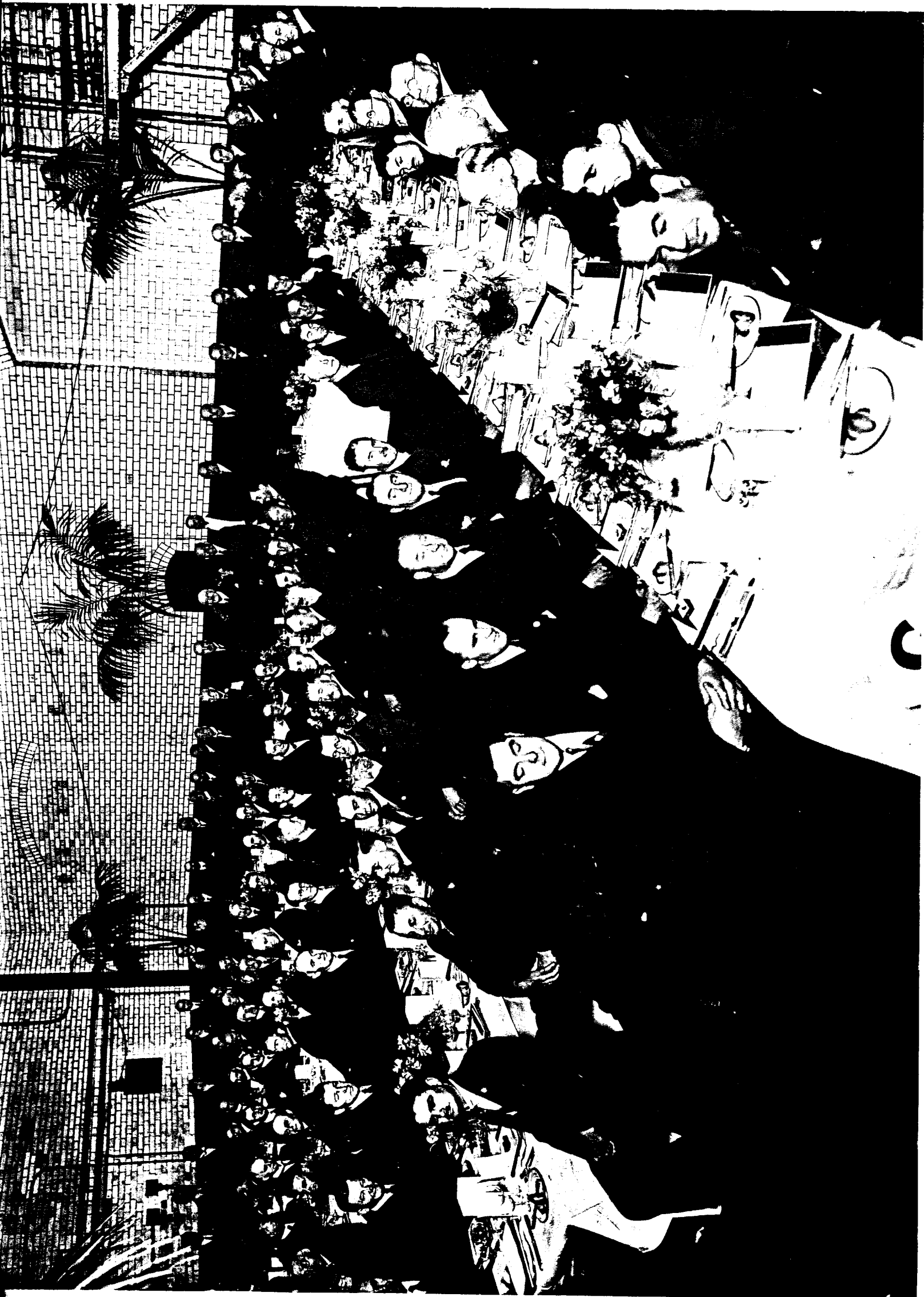
By 1934, the Research Department at Wood Lane had become fully operational, as witnessed by the major research projects described in the foregoing. The official opening ceremony was performed by Lord Rutherford of Nelson on 22nd June of that year.

The occasion took the form of a luncheon, at which were present many eminent people in the electrical industry, and also representatives of the trade and national press. The laboratory known as HV2 was decorated for the occasion with a fitted carpet and potted plants. Catering was by J. Lyons and Company, who used sub-station No. 2 for the preparation of the meal. At the tables guests found a programme for the afternoon tour, a memento which consisted of a measuring tape in the form of a miniature cable drum, and a souvenir booklet entitled "Research Laboratories". The latter described in detail the lay-out of the laboratories and the potentialities of the newly-installed equipment. Some copies of this souvenir booklet are available in the Wood Lane Library for those who may wish to look at them. A photograph taken at the luncheon shows at the top table Lord Rutherford, who performed the opening ceremony, flanked on his right hand by Sir Tom Callender, and on his left by Sir Fortescue Flannery (Chairman of the Company) and Mr. P.V. Hunter. Also in the photograph can be seen Mr. J. Urmston, Dr. L.G. Brazier, Mr. K.S. Brazier, Mr. F.S. Smith, Mr. A.S. Butler, Mr. G.M. Hamilton, Mr. H.C. Hall and other members of the staff at Wood Lane at that time.

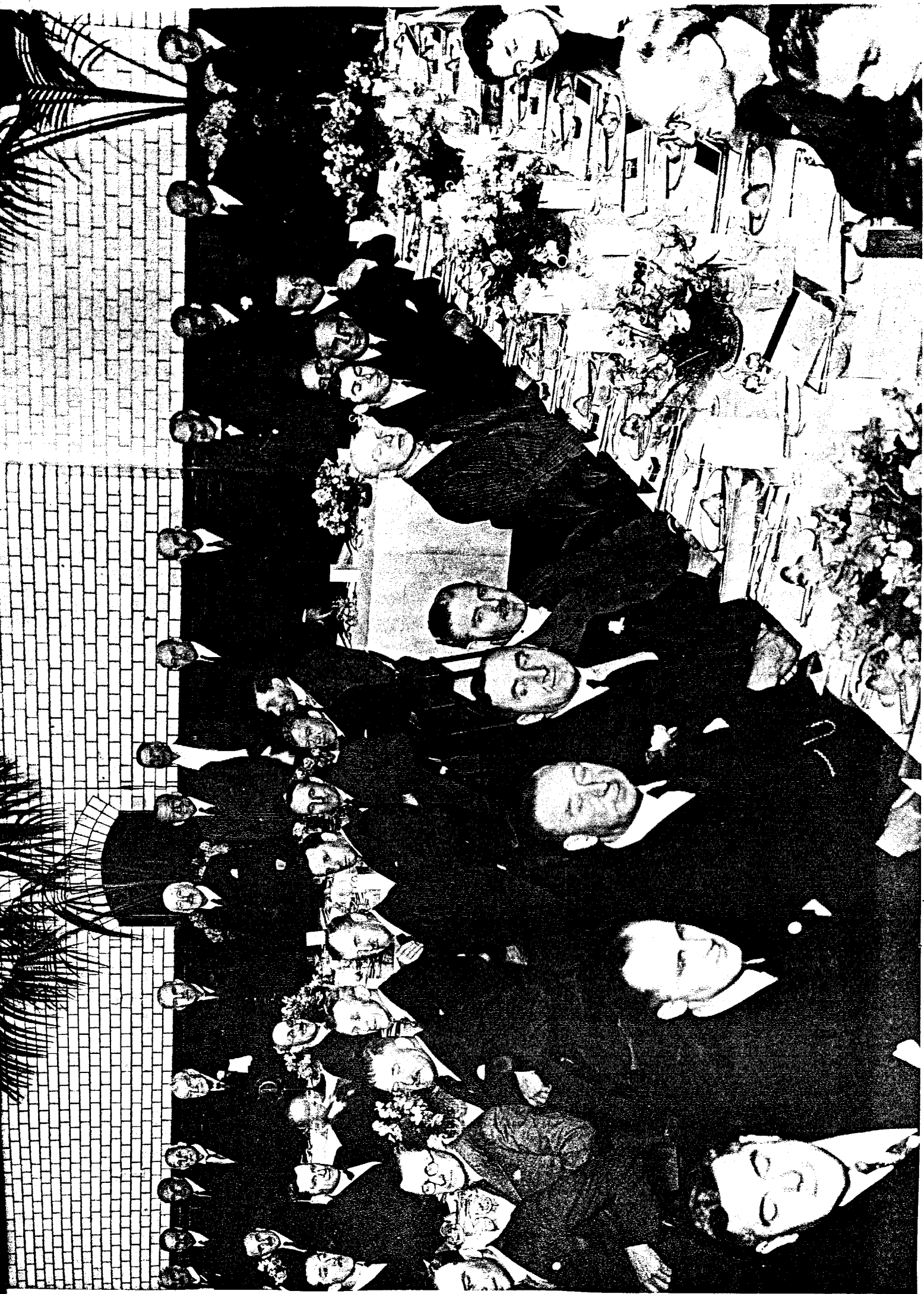
Lord Rutherford's speech at the opening ceremony has since proved to be quite prophetic, and so interesting that no apologies are made for reproducing it here in full.

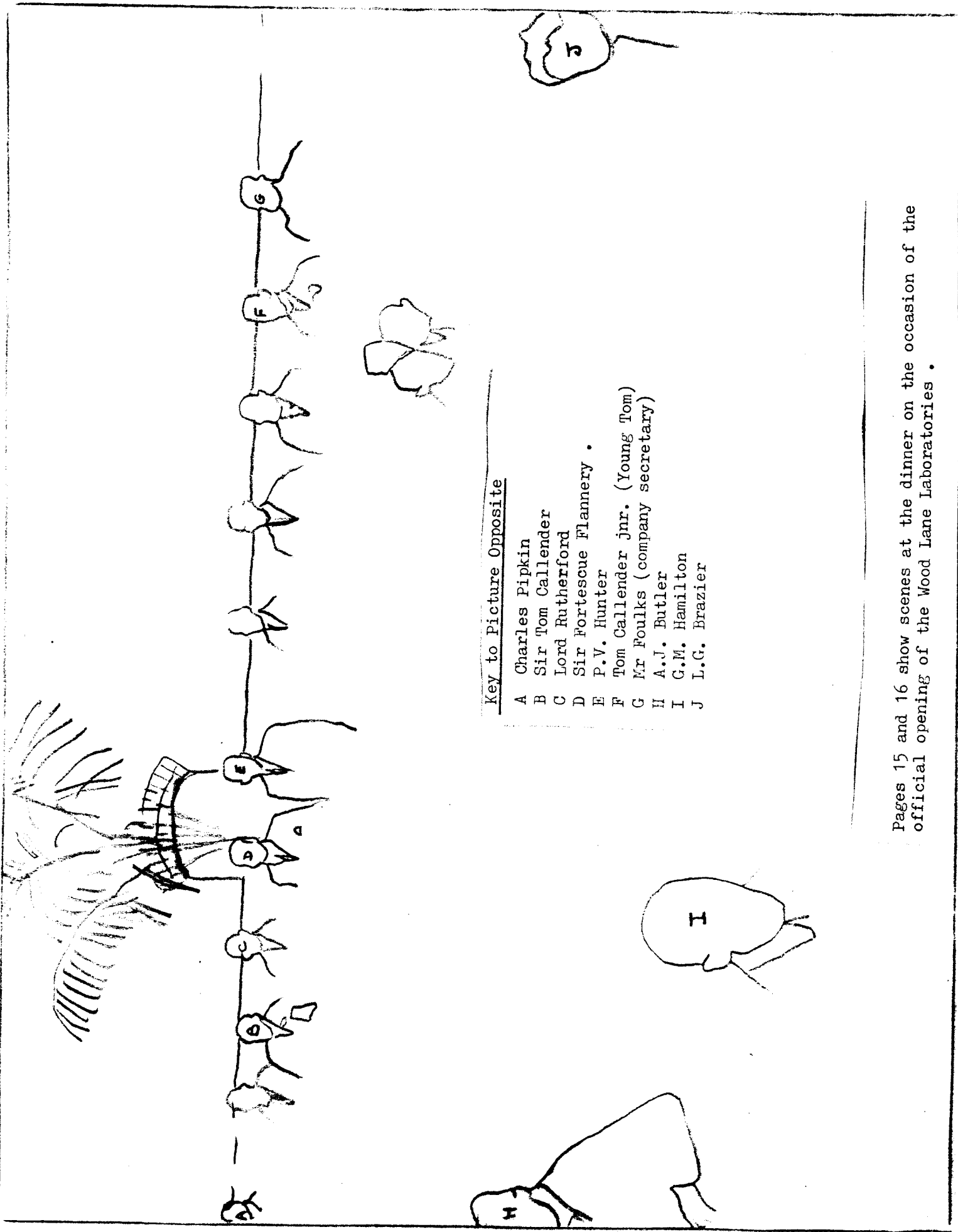
"It is a great pleasure for me to be here today to inspect and open these new Research Laboratories. Of all industries the electrical industry is most firmly based on scientific theory, and it has always shown its faith in the value of research, not only to improve existing methods, but to search for new industrial applications. This is well shown not only by the support of a vigorous Electrical Research Association for the industry as a whole, but by the provision of research laboratories, often on a large scale, by individual firms in order to deal with their special problems.

"Today we have another example of this far-sighted policy in the fine Research Laboratories to be opened today for special investigations of high tension phenomena, particularly in connection with transmission of power by insulated cables, where overhead lines are either dangerous or impossible. The insulation of cables for high voltages is a most intricate and formidable problem which has worried the physicist and the









Pages 15 and 16 show scenes at the dinner on the occasion of the official opening of the Wood Lane Laboratories .

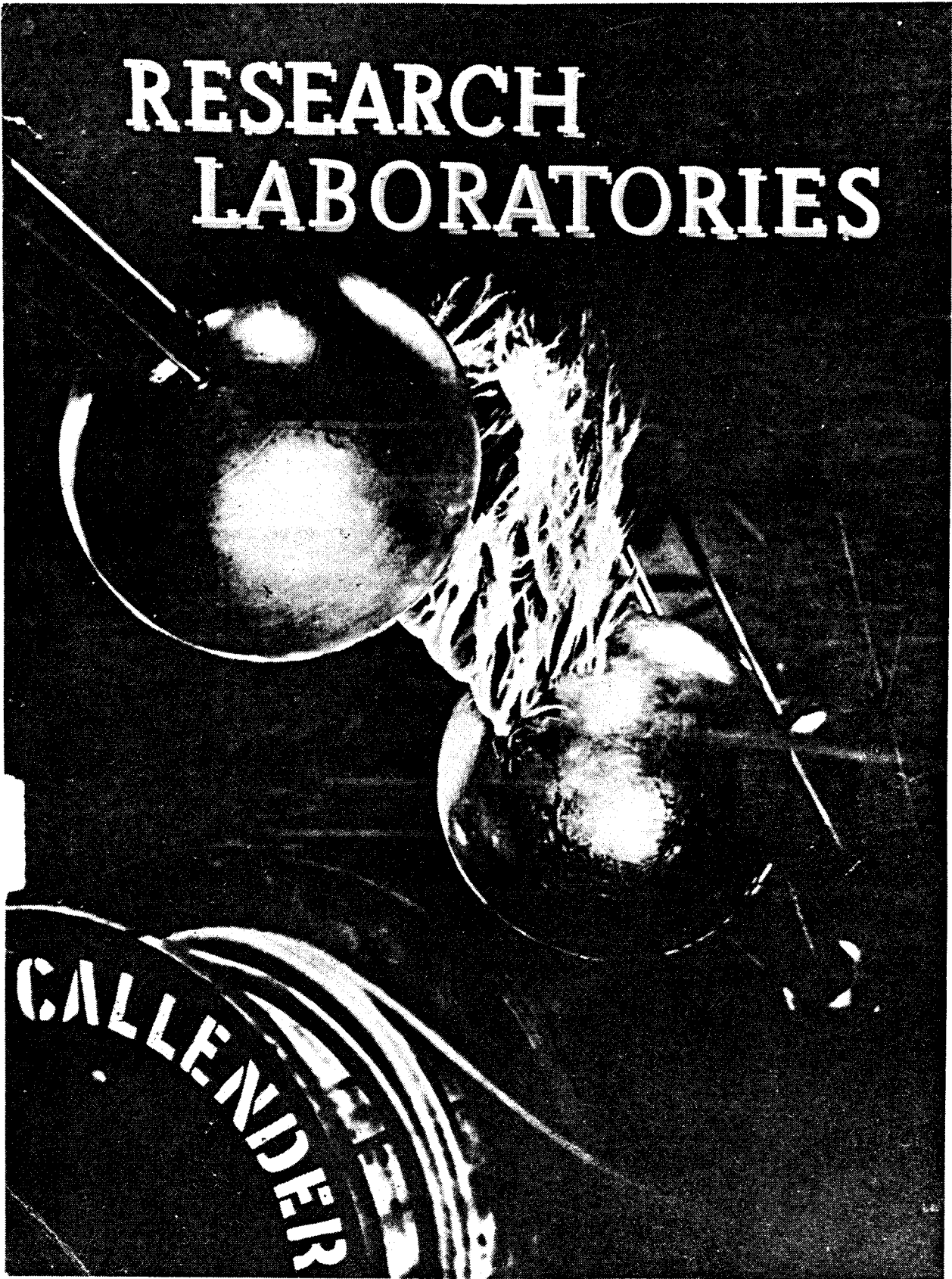
electrical engineer since the time of Faraday. Here scientific theory is of little help, for insulators do not behave in practice like the ideal dielectric theory. The insulating material used for a cable today seems almost human in its capacity to break down from a variety of causes when subjected to prolonged electrical stresses, particularly of an alternating character. Progress depends on an understanding of these different types of weakness, so that we may hope if not to devise a perfect insulator, at any rate to improve greatly the efficiency of the methods in use today. Nature has dealt with this problem on a vast scale in order to insulate us from electrical disturbances in our atmosphere. She employs the whole atmosphere for the purpose, and even then fails under abnormal conditions as witnessed by the lightning flash".

"The breakdown is, however, only momentary and in this respect nature has devised a more satisfactory method than the cable engineer. Notwithstanding elaborate investigations, we are still far from understanding all the complex causes which ultimately lead to the breakdown of a cable under the existing conditions of industrial use. We can be certain that the new laboratories will play their part in adding to our knowledge and to help to devise the more perfect cable of the future. The problem is a pressing one today for there is an inevitable tendency to use ever higher voltages for the transmission of power and this necessitates the production of cables to withstand still higher voltages. We are inclined to forget how recent is the use of high potentials for the transmission of power".

"The transformer was invented in 1888 and used in 1892 to provide two kilovolts. The use of high voltages steadily increased and by 1920 the power voltage had risen to 160,000 volts, while a million volts was obtained in the laboratory. Since the war, voltages have steadily risen and the Boulder Dam installation provides 287,000 while the laboratory voltages have risen to 10,000,000. Over this period of about 40 years there has been an average rise of voltage of about 6,000 volts per annum.

"In recent years, I have personally been much interested in the problem of the production and use of high voltages for experiments on the transmutation of matter. A stream of charged particles generated in a discharge tube are accelerated to high speeds by a high voltage applied to a well-exhausted tube. This is a difficult technical problem when a voltage of the order of one million is employed. Cockcroft and Walton arranged an installation to give a steady voltage of 700,000 volts dc and made the first successful experiments in the Cavendish Laboratory to show that constant elements would be transformed by very fast protons generated artificially by the passage of an electrical discharge through hydrogen. This has opened up a new and powerful method of attack on the

# RESEARCH LABORATORIES



Commemorative Brochure - published to coincide with the 1934 opening

transmutation of matter by simple projectiles of different kinds. This is a type of investigation that might possibly be considered in this new laboratory, so well equipped for such a purpose, if not now, then in the days to come; for a satisfactory solution may prove of much importance in many directions".

"As Chairman of the Council of the Department of Scientific and Industrial Research, I am naturally very much interested in the application of science and the scientific method to promote an efficient industry and I have been impressed by the importance of a close liaison between Research Institutions engaged in what may appear to be entirely different types of investigations. As an illustration of the value of such a liaison, I may refer to the work done by the National Physical Laboratory in connection with the Electrical Research Association in the heating of buried cables which, I believe, proved of much value to industry. The production of a new lead alloy by the Non-Ferrous Research Association has been instrumental in overcoming serious defects in submarine cables and may even affect us individually in the future in saving us from those impressive orgies of burst lead pipes that are a common form of dissipation in this country during cold spells. It may be that a solution of some of the difficulties of a cable manufacturer may issue from an entirely unsuspected direction, possibly from the fundamental investigations in a physical or chemical laboratory. It may be that the most perfect insulation will not be found in a naturally occurring substance but may prove to be a synthetic substance say produced from coal by the action of high pressures and temperatures. No doubt your efficient Director of these laboratories is well aware of the importance of these scientific liaisons between different types of pure and applied research. Such liaisons may not result only in direct value to the industry but indirectly will undoubtedly prove of much value in helping to broaden the outlook of the investigator - an important need in these days of extreme specialisations of researches".

"For these reasons, I hope that this Company will not only see the new laboratory will be kept in a state of highest efficiency to perform the valuable functions that fall to it, but will take a broad view of its responsibilities by keeping in touch and even supporting allied lines of work in other research associations or institutions. I am looking forward to the day when industry in this country will consider itself as a unit, and where results obtained in any branch will be available for industry as a whole".

"I would like to say in conclusion that I am delighted to be present here today on this important occasion, the origin of which I believe owes much to the energy and enthusiasm of my old friend Hunter. May this laboratory prosper, and fulfil the most roseate dreams of its founders".

A vote of thanks to Lord Rutherford was proposed by Sir Fortescue Flannery, and then followed short speeches by Sir Tom Callender and Mr. P.V. Hunter. The guests were then divided into a number of parties for a conducted tour of the laboratories. A highlight of the tour was a special demonstration of high voltage testing techniques, including an impressive test to demonstrate the advantages to be gained from the use of metallised stress-cones at the cable ends, a development which has been previously mentioned. During the high voltage demonstration, Lord Rutherford, on being warned that some large sparks were likely to be generated, was heard to remark "They'll have to be bloody big to impress me!" During the afternoon the visitors were also shown a film illustrating the manufacture of cables and overhead lines.

The occasion of the official opening of Callender's new research laboratories received wide press coverage. Articles appeared during subsequent weeks in "The Times", the "Manchester Guardian", the "Observer" and the "Illustrated London News". Reviews of a more technical nature appeared in the trade press, in such journals as "Electrical Industries", "Electrical Review", "The Electrical Times", "The Electrician", and the "Engineer". The occasion also received mention in "Engineering", "The Railway Gazette", "The Shipbuilder", "Syren and Shipping", and "World Power". Press cuttings from these journals are available in the Library to those who wish to read them.

Later on the day of the official opening the laboratories were opened to friends and relatives of the staff for a social evening. The social atmosphere was continued the following day when certain anonymous members of the staff recall that they finished the remainder of the drinks at a "get-together" in Mr. Urmston's office. It is not known who collected the money on the empties!

Geoff Holder

Ted Morrison

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## Holiday Accommodation

A terraced cottage close to the harbour at BRANCASTER STAITHE, NORTH NORFOLK, available for holiday lets, from April to October. Local amenities include good beach, Scolt Head bird sanctuary, sailing and a golf course.

Details Mike Kendle (341)  
Polymers Dept.

# BDN

Yet another set of initials to note! They stand for BICC Data Networks Limited, an embryonic organisation which is about to be hatched by Roy Farmer, Don Roworth and Communication Systems Department.

The BDN fledgling is to be part of the Communications Group under Dr Swarbrick and will become an entity on or about April 1st. Located at Hemel Hempstead, the new unit will manufacture the data transmission products developed by Don and his team here at Wood Lane. It is a key part of the BDN strategy that Communication Systems Department should become the technical nucleus of the new company. This means that the Department could be transferring en-bloc to Hemel Hempstead in about one month's time, but that is not the end of Wood Lane's involvement - Roy Farmer has been appointed General Manager of BDN during the start-up phase and will consequently be spending considerably less time here at Wood Lane during the spring and summer months.

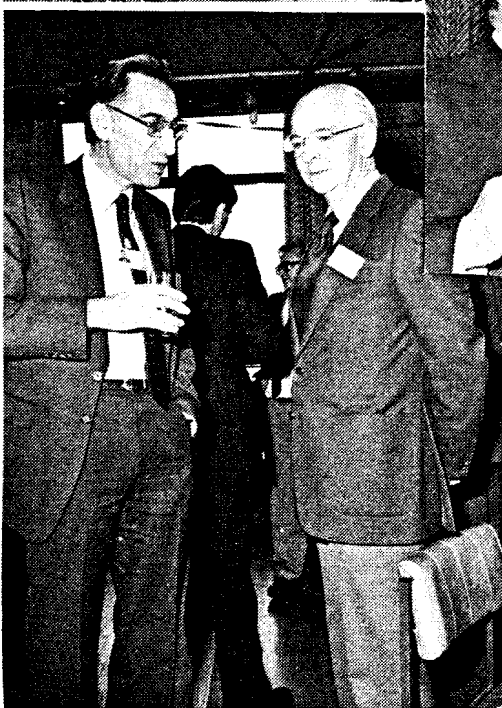


So this, once the paint has dried, is due to become the work place of a number of our colleagues. 1 Frogmore Road, Hemel Hempstead, comprises about 12,000 sq. ft. gross of floor-space (the equivalent of two floors of the McFadzean building); the top floor is already laid out as office accommodation and the ground floor for light assembly work. BDN will use the premises in a very similar way.

During 1984 the building will also be occupied by Roger Marshall's CATV Unit, who will leave Bloomsbury Street and Rutherford 2. Their prospects for winning a number of contracts to supply CATV cable networks appear to be good and it is anticipated that Roger will soon need to look for separate, more spacious, accommodation.

A.R. Farmer

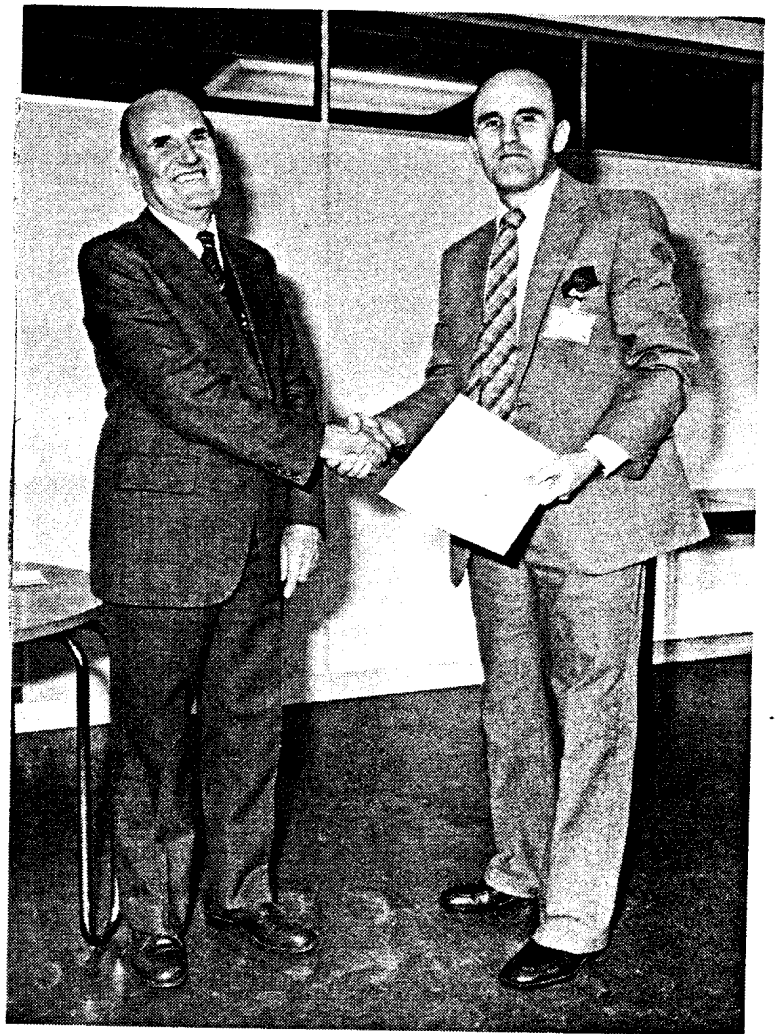
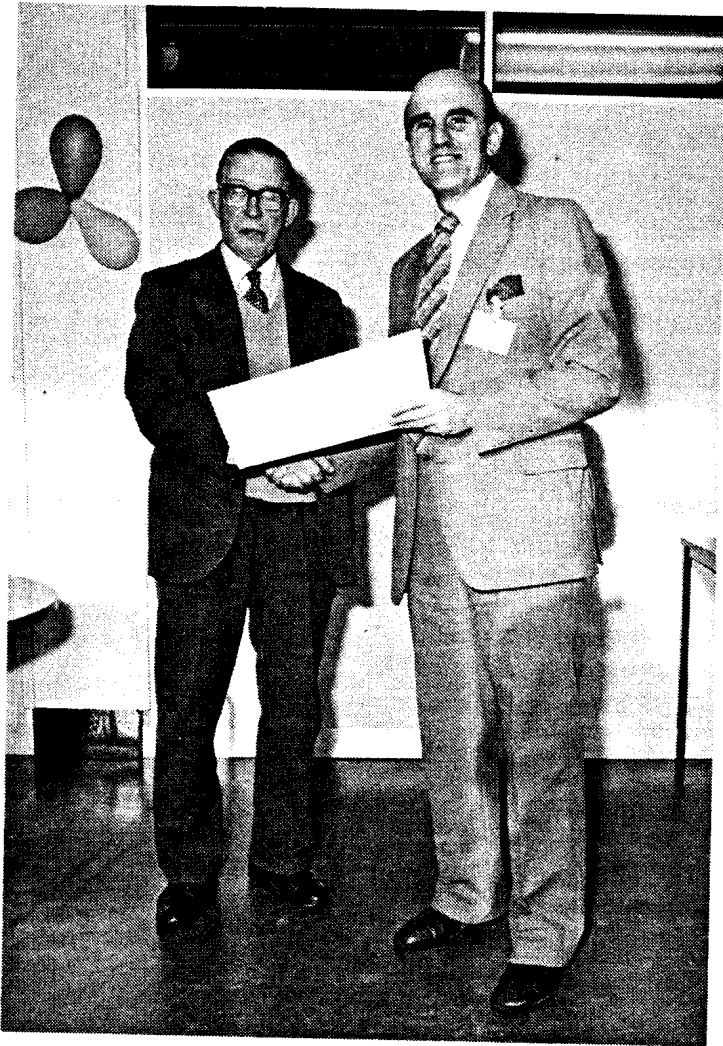
# Pensioners Christmas Lunch



photographed by  
Bob Maidlow



# Retirement



Just before the 1983 Christmas lunch Dr Moore made retirement presentations to Ron Carter ( popularly known as Rembrandt, for obvious reasons ) and Lou Pinchcombe , who retired after 26 and 7 years service respectively . It goes without saying that we wish these two fine craftsmen long and happy retirements .

# BREL TECHNICAL SOCIETY

The third meeting of the Society , on Jan.26<sup>th</sup> , was very well supported . The talk , by Mr Salkeld of the BBC , was entitled " The BBC Microcomputer Project" . The talk was not about the BBC Computer or programming , rather about the ideas behind the BBC Project , how it was conceived , how it is run and what the future holds . Short video extracts from BBC programmes were used to illustrate the talk , which was well received and gave rise to a well-ordered discussion .

The next meeting of the Society will be held on :-  
March 8<sup>th</sup>  
when Don Roworth will give a talk entitled :-

"Why Local Area Networks"

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## Computers

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### HOME COMPUTING

I have a small number of C12 cassettes for sale at 40p each .  
In addition , a copy of Advanced Users Guide for the BBC microcomputer is available for reference purposes .  
Anyone interested in the above two items , please contact Denis Groombridge on ext. 212 .

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## CHEEK !

Our title has been usurped !

# Bush Telegraph

Lea Storey & Co Ltd

NEWSLETTER

JANUARY 1984

# Competition Results

## CHRISTMAS COMPETITIONS

Apart from the Leadergram , the only one of the Christmas competitions for which entries were received was the Genealogy Puzzle .

Winners of the Leadergram competition are :-

- 1 . Betty Lisi
- 2 . John Taylor
- 3 . John Willis ( Biccotest , Cheshunt ) .

In all , there were 12 correct entries , many thanks to all those who entered and commiserations to those whose correct entries were not picked ( by Keith Elder with a pin , rather than from one of the editor's hats ) .

Winners of the Genealogy Puzzle are :-

Joe Lou  
Denis Groombridge  
Paul Merckx

These were the only entries for this competition , since they were all correct it seemed invidious to chose between them , so the prize will be split equally .

In order for more of you to attempt the competitions ( for the sake of doing so, this time , rather than in the hope of winning a prize ) publication of the answers will be delayed until the next edition of the BT .

Peter Walters /Geoff Holder

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## Poets Corner

### THE CLOUD

The cloud drifts round and round ,  
I feel so helpless .  
My tears mingle in the rain ,  
then slowly he drifts in from the mist.  
He sits and laughs .  
He is laughing at me ,  
his vivid face makes me cry .  
Jumping up and down , he tells me where I've been ,  
where to go ,  
what to play .  
He throws down his gloves at my feet .  
I'm helpless to his merriment ,  
who am I becoming now ?  
Then the cloud blows him away ,  
his laughing has died .  
His face appears in my tears ,  
the coloured facade begins to crack .  
Streams of colour flow down his face ,  
thunder falls from my vision .  
Then we were one ,  
hidden in the clouds .

Peter Jennings

## Performance standards for studs—

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We leave it to your imagination as to the subject of this British Standard ( BS 6366 ) .

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EXPERIENCE OF THE PRESSING OF BOTTOMS FOR NUCLEAR POWER PLANTS.  
(from Czech.)  
L.Jilek (Hutnik (Prague) 1982 (6) 235-238)

We know the Italians like pinching bottoms is this the Czech weakness?

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tHæ instalashun of the We\*k Vs 5o4 word prosesinq sistens throout P,V.c. is pruvn 2 b a grate suxex. te kwalite + fiashensy wiv witch documens r prodewced as bin grateley enhanced.

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### TAFFY WAS A ?

At 93°C and 100% RH the material turned to a taffy-like product that could not support its own weight during the first few weeks of testing .

( From Polymer Engineering and Science , June 1981 ) .

# SECTION REPORTS

## THE FILM COLUMN

The season has now passed the half-way stage with shows in February and March still remaining. Attendances have been in the mid 20's which is a bit disappointing. However our audience seems to have enjoyed our last two shows, judging from their reaction slips. The shows were:

- (1) CAT PEOPLE (December 7th 1983): A supernatural thriller about a leopard/girl whose physical appearance altered each time that a basic emotion was experienced. Although the film was well made I feel that it would have benefitted by being less detailed and leaving more to the imagination.

The converse was true of the support film. LABYRINTH, an allegory on the subjugation of individuals by certain societies (men), on pain of death. The style of animation made the plot hard to follow, made more difficult by the poor quality of print.

- (2) THE MARRIAGE OF MARIA BRAUN (January 18th 1984) set against the background of occupied Germany, post second World War, it follows the fortunes of an apparently widowed woman as she strives to rebuild her life. The strength of marriage bonds, in times of both hardship and prosperity, is examined. As support films: HANGMAN a disturbing short that was based on, and complimented, a ballad written by Maurice Ogden, and GLASS (last minute replacement for SUBSTITUTE), a short film about the manufacture of glass by craftsmen compared with more modern methods.

The Reaction Indices for these two shows were:

FILM	A	B	C	D	E	R.I.
CAT PEOPLE	8	10	1	2	1	75%
LABYRINTH	2	1	11	6	1	46%
MARRIAGE OF M.B.	5	12½	2½	-	-	78%
HANGMAN	5	7	4	2	1	67%
GLASS	5	7	7	-	1	69%

HAVE YOU SEEN (?) COLUMN

(1) VASSA

In Russian (sub-titled). The story of a strong-minded woman, Vassa Berishova, who runs a "minor" shipping line on the Volga in 1913. Slow paced, beautifully shot with attention to detail, it gives one a glimpse of (wealthy) life in Imperialist Russia with Revolution hovering on the door-step. Recommended if you understand Russian!

(2) KRULL

The film has good Art direction and special effects, but that's about all. It seems to be a rip-off from Star Wars, Alicon, Flash Gordon and many more. A series of adventures that finish as soon as you get interested, very disjointed. If one could give it a rating, it would be CA, Children Accompanying. I'd give it a miss and go and see FLASH GORDON for a superior similar type of film.

Sasha Hove

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1983 INTERDEPT. FOOTBALL TOURNAMENT

The 1983 Tournament took place in Nov./Dec. on the QPR all-weather pitches .

The competition was decided on a league basis , each team playing the others once . Results were :-

Patents	2	Works Services	2
Patents	0	Polymers	0
Polymers	0	Works Services	2
Patents	1	Eng . Dev.	0
Polymers	2	Eng. Dev.	2
Eng. Dev.	1	Works Services	2

As usual the matches were played in a friendly manner and , apart from the final game, were highly competitive . In the last game , Works Services had to draw or win to prevent Patents (properly , Patents/Analytical Services) winning the title . In the event they won quite easily but not without a suspicion that Eng. Dev. had not given of their all , which was a pity . Works Services were , nevertheless , worthy winners of the Tournament ; in winning , they broke Polymers 3-year hold on the Title . In all of their games , Works Services played with the skill , commitment , teamwork and sportsmanship that go with being a tournament-winning side . Congratulations .

B I C C   A T H L E T I C   A N D   S O C I A L   C L U B

W O O D   L A N E

F I L M   S E C T I O N

A N N U A L   G E N E R A L   M E E T I N G

Notice is hereby given that the Annual General Meeting of the Film Section will be held on Thursday 5th April 1984 at 1.00 p.m. in the Main Conference Room, Ground Floor, McFadzean.

A G E N D A

1. Minutes of the 1983 AGM
2. Chairman's Report
3. Treasurer's Report
4. Election of Committee
5. Any Other Business