



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS INCORPORATED

Editor: W.H.Devenish, The Electrical Research Association, Cleeve Road, Leatherhead, Surrey, England. Tel. Leatherhead 74151 ~ Telex 264045

> No. 22 July 1973

retou Voll

## **INSTITUTE NEWS**

#### Candidates for 1974

The Nominations and Appointments Committee have announced the names of candidates to appear on the 1974 election ballot later this year. The nominee for President is John J. Guarrera, President of SaCOM, Sun Valley, California, and for Vice-President is Dr John D. Ryder, Retired Dean, School of Engineering, Michigan State University, East Lansing. There is, of course, no ballot for Region 8 Director this year.

#### Donations and Bequests to IEEE

The recently approved changes in the IEEE Constitution require a change in IEEE's tax-exempt status. Under this new tax status, gifts, donations and bequests made to IEEE will not be deductible for federal income, gift and estate tax purposes. Accordingly, we must use every means at our disposal to inform potential donors of this fact and to suggest that such gifts, donations or bequests be made to the IEEE FOUNDATION, INCORPORATED, care of the Executive Director, 345 East 47th Street, New York, NY 10017, USA.

The IEEE Foundation, Incorporated, is a new not-for-profit organisation, which will enjoy the type of tax exemption under which IEEE has operated in prior years. Donations and bequests made to it will be deductible for federal income, gift and estate tax purposes. The Foundation will devote its funds exclusively to further the scientific and educational purposes of the IEEE. For example, funds for new Awards, set up by gift or bequest to recognise distinguished achievement or service in our fields of interest, can be received and will be administered by the IEEE Foundation. If you know of any impending donation or bequest, it would be appreciated if you would inform Don Fink at the above address, so that the appropriate procedure can be outlined to the donor.

#### New Mailing Label Costs

New costs were approved at the February Executive Committee meeting and reported to Section Officers in "Electoral Engin-eering" for April 1973. That publication carried a four-page supplement giving full details of what is available, the cost and how to order.

#### New Public Relations Newsletter

Headquarters has announced that, in the near future, a new public relations Newsletter will be sent to all Section Chairmen, Editors and Publicity Chairmen. Its purpose is to assist IEEE members in telling the story of engineering to the general public in your community and area.

We now suggest how you can make use of such a working tool when it arrives-and what you can do now to develop your own public relations endeavour. A preliminary survey has shown at IEEE Headquarters that only a very small number of Sections, Groups, Societies and Branches even have a Public Relations Chairman or Committee. We, therefore, recommend that you appoint a Public Relations Chairman who is profes-

Deadlines-				
News to Editor		-	September	15
Advertisements to Swea	atman	1		
and Fordham		-	September	15
Delivery inserts to Cou	unty			
Secretarial Services		-	October	1

sional and knowledgeable. Where do you find such a man or woman? Perhaps you could ask a local member of the Professional Communication Group, Every utility companyelectricity and gas, telephone, water-usually has a full-time public relations department staffed by competent professionals. Major banks, industrial companies, colleges and universities, financial organisations also have professional public relations personnel.

Regardless of the size of your community or area, there are several of these dedicated people available. If you can induce one of them to serve as your Chairman, and if you follow his or her suggestions as to your programme and method of execution, then you will be handling public relations in an effective, professional manner. It does not matter whether or not the PR man is a member of IEEE, or has a technical background. What is required is expertise in handling the media of mass communications, dealing with editors, and telling your story effectively. He can also have the advantage of continuity and serve from year to year even though Section Chairmen and officers change annually. Once appointed, please send his name to John Kinn at Headquarters in New York.

#### Project "USE"-Undertake Section Education

What is Project USE? It is aimed at providing the Section with an incentive to either initiate an educational programme within the Section or augment one that already exists. The Regional Activities Board will provide an incentive by underwriting on a one-per-Section-per-year basis any loss up to \$300 for a Section-sponsored educational course which is a new activity planned on a break-even basis. To be eligible for Project USE funding, a Section should (a) have uncommitted operating reserves not in excess of \$1,000; (b) submit on an application form a break-even budget for approval by the Regional Director; (c) understand that, if advance funding of up to \$300 is needed, any surplus generated will be used first to repay the RAB contingency grant, and the balance will be deposited with the Section reserves for possible future similar undertakings or services.

### HIGH FREQUENCY DIELECTRIC MEASUREMENT

#### Edited by J. Chamberlain and G. W. Ghantry

This book concentrates on the spectral region lying between 10 and 1000 GHz. Significant progress in developing techniques for dielectric measurement at these frequencies has only been made in the last ten years, and there is still a great need for information in this area. High Frequency Dielectric Measurement contains the proceedings of a tutorial conference held last year at the UK's National Physical Laboratory. It fills an important gap in the literature on dielectrics, and is one book that you should have on your bookshelf.

A4 size (210 mm x 297 mm) cloth ISBN 0 902852 25 6 Price £10.00 per copy from IPC Science and Tech-nology Press Ltd (Ref. AD/DE/31), IPC House, 32 High Street, Guildford, Surrey GU1 3EW, England.

Applications, on the appropriate form, should go to Headquarters. They will then be submitted to the Regional Director for review and approval. Sections are urged to seriously consider an educational programme which will not only benefit the local members, but may be a potential source of Section revenue.

# Government Relations Activities at Regional and Sectional Levels

Regional Directors, Section Chairmen and Editors have received a 25-page document on the above subject, which describes goals and objectives (my American is not good enough to enable me to differentiate between these, Editor) and urges Section Officers to publicise them and establish a local committee as soon as possible. If any member feels that such activity should be activated in his Section, he is invited to get in touch with the Chairman.

#### **Region News in Spectrum**

At the last meeting of the Region 8 Committee it was announced that, for a trial period, some pages of "Spectrum" (rather like the "News from Washington" sheet) are to be made available to Regions for news which they wish to publish. The detailed arrangements for collecting this news were not finalised, but it was considered essential that contributions from each Region should be channeled through one person and Bill Devenish, as

#### Cumulative Indexes

A cumulative index to "Proceedings of the IEEE" for 1960– 1971 and an index to "Transactions" for 1951–1971 are being produced by Nichigai Associates, Inc., a Tokyo-based firm. The costs are \$40 and \$125 respectively. The books will be sold by Nichigai Associates and the IEEE, with the Institute receiving a royalty no matter which group makes the sale. Current plans are for the IEEE to publish its own indexes in the future.

#### **Digital Signal Processing**

The IEEE Press has just published a volume with the above title, edited by Lawrence Rabiner and Charles Rader. This volume of selected reprints will be useful to those involved in fields from radar to the analysis of bio-medical signals and from seismic exploration to speech processing, The IEEE Press has printed a booklet listing their new titles, as well as a complete backlist of published materials (available from Reed Crone at Headquarters in New York).

#### 1972 Index to IEEE Periodicals

This is now available, and lists materials from over 200 publications and contains over 28,000 index entries. For the first time the index has an appendix containing a comprehensive list of technical meetings for which a publication was issued. The Member cost is \$12.50, and copies are available from Elizabeth Braham at Headquarters. Editor of the Newsletter, was agreed to be the most appropriate "volunteer" in Region 8. Let him know what you wish to say.

#### Committee on Social Implications of Technology

In response to these concerns, the Executive Committee of the IEEE has formed an Ad Hoc Committee on Social Implications of Technology (C-SIT). Its areas of concern include—professionalism and social responsibility in engineering; understanding the interaction between technology and society; predicting and evaluating the impact of technology on society; and fostering study, discussion and appropriate action in these areas. C-STI is committed to providing a forum in which all engineers, as well as experts in non-technical fields such as law, economics and the social sciences, may express their thoughts in this area. In the coming months such diverse issues as electronic warfare, environmental pollution, communication and transportation, electronic surveillance and data banks, and bioelectronics will be discussed.

Interested engineers are invited to keep in touch with the activities of the Committee via its bi-monthly Newsletter. The first issue was published in December 1972. Future issues will include notices of meetings, lectures and discussion groups, publication of papers and articles, bibliographical reviews and personal commentary. Sample copies may be obtained from Headquarters in New York.

## PUBLICATIONS AND COURSES

#### New Home Study Courses

Prepared by the Institution of Electrical Engineers (IEE) Great Britain, course titles are—Field-effect transistors; Pulse-code modulation; Digital instrumentation; Modern control theory. The course offerings provide further evidence of a growing relationship between the two Institutions in the field of continuing education. The self-study courses are designed to provide an engineer who graduated between five and 20 years ago with opportunities to bring himself up to date in post-graduate subjects in electrical, electronics and control engineering. Courses run continuously and each student will be associated with an individual instructor who will advise and comment on his progress.

Although the time a student can devote each week to his studies will vary, courses have been designed with the intention that individual lessons and their test questions should occupy, for the average student, about six hours and should be completed within two weeks. In this way the normal duration of each course will be in the order of 30 weeks. Courses commence at a level appropriate to the final year of a modern 4-year degree course in electrical/electronics engineering. Corollary texts are recommended for each course. Certificates are awarded to students who have satisfactorily completed all of the written work. A syllabus of each course may be obtained by writing to the Education Registrar, IEEE, 345 East 47th Street, New York, NY 10017, USA, or to the IEE, Savoy Place, London WC2R OBL, England.

# **REGION 8 COMMITTEE MEETING**

The Region 8 Committee met in London on 6 and 7 April. Among the 25 delegates present were representatives from 12 Sections. Director Reg Russell gave a warm welcome on behalf of all present to President Harold Chestnut and Vice-President Chuck Cambias. Also present were the Region 8 representatives on the Education Activities Board and Member and Transfer Committee, the Chairman of the Region 8 Students Advisory Committee, and Mr. Charles Stewart, Headquarters staff member responsible for Member Services.

Mr. Stewart outlined the Section rebate arrangements, which include basic Section and member allowances, meeting and Chapter allowances, and a new element, an allocation of six dollars for each member recruited.

A delegate suggested that members' dues shold be a fixed proportion of engineers' average income in each Section, but it was pointed out that this would be contrary to IEEE policy of treating all engineers equally. However, Sections wishing to reduce student dues could consider subsidising them from Section funds.

Sections are still slow to provide news for the Newsletter, and finance still presents difficulties, since revenue from advertisements and inserts is taking time to build up. It was agreed to implement the decision reached at the previous Committee meeting, for Sections to contribute 30 cents per member to a Newsletter Fund which could be called on to bridge the gap between net publication and mailing costs and the allocation from the Regional budget. All Sections were asked to do everything possible to stimulate insert and advertisement income from their countries.

Fears that the recent increase in dues would produce a substantial reduction in membership were allayed by a statement from President Chestnut that the decrease amounted to only 2.6 per cent. Referring to other matters, he said that particular attention is being given to energy resources, environment, transportation, and technological assessment. He commended Region 8 on its support of the arrangements for providing advance information on the tours of potential lecturers from the United States and expressed the hope that these arrangements would also operate in the reverse direction by potential lecturers from Region 8 similarly providing details of their subjects and of their tours to other Regions. There is to be a six-month experiment starting in June whereby Spectrum will include a page of Regional news. A major part of the meeting was taken up with a review of the programme of EUROCON 74-the European Conference on Electrotechnics being held in Amsterdam from April 22 to 26 1974-and the arrangements for co-operation with the Convention of National Societies of Electrical Engineers of Western Europe.

Professor André vander Vorst, Chairman of the Region 8 Students Advisory Committee, referred to his visits to the French and UKRI Sections, and to Scandinavia where he had spoken to representatives of the Scandinavian student branches. There are possibilities for starting new or additional student branches in Egypt, Greece, Israel, France and the Netherlands. He pointed out that when students join it is four to six months before they receive any communication from the IEEE and this needs speeding up. He hoped arrangements can be made for student exchanges between Sections.

Director Russell outlined the 1973 Region 8 budget, which made clear that income is only just sufficient to sustain the

#### 1974 European Conference on Electrotechnics

As reported in the last Newsletter, the above is the new title for Eurocon 74. It will be held in Amsterdam from 22–26 April 1974. The Conference will pay special attention to the social relevance of engineering activities; provide a leading international forum for the announcement of important new advances in research, technology, development, design and manufacture; complement existing specialist conferences by providing facilities for discussion on the state-of-the-art, as well as on trends and interactions of technologies; provide an environment conducive to informal discussion between students, engineers, scientists and technical management.

The technical programme will be composed of invited and

#### Journees d'Electronique 73

The fourth Symposium is to be held at Aula d l'Ecole Polytechnique Federale de Lausanne, Switzerland, from 16 to 18 October 1973, under the organisation of Prof. R. Dessoulavy. The feature of this electronic Symposium is to give information of high scientific and technical standing to persons not necessarily specialised in this field. The sponsors are, therefore, looking for speakers on the following topics:—Methods of A/D and D/A conversion (linear, non-linear, PCM, etc.; speed, accuracy, interpolation, etc.); Technology and design of A/D and D/A converters (discrete, hybrid, monolithic, etc.); A/D and D/A conversion in systems design (requirements, trade off, implantation, multiplexing, cost, etc.). Papers presented in French, English or German will be published in "Comptes Rendus des Journees d'Electronique 73". Interested papers were asked to submit their propositions before 15 June 1973.

#### Precision Electromagnetic Measurements

The 1974 Conference on Precision Electromagnetic Measurements will be held from 1 to 5 July 1974 at the IEE, London, England. This will be the ninth Conference in the biennial series which began in 1958, and is the first to take place outside the United States. The change in venue on this occasion is a recognition of the increasingly international character of the Conference, reflected in the theme of the 1974 meeting, which is "the advancement and application of precision electromagnetic measurements against a background of international scientific co-operation". The programme will continue to cover the fields traditional to CPEM of dc and ac electrical measurements, time and frequency, rf and microwave measurements. In the light of the growing diversification in applications of electrical measurement techniques, a number of additional topics have been proposed for the 1974 Conference.

Original papers in the following subjects are invited:—dc and If measurements; rf and microwave measurements; time and frequency; time domain measurements; measurements at millimetre and sub-millimetre wavelengths; laser measurements; automated and computer-controlled measurements. Contributions on the following areas of topical interest are also invited: —the speed of light; electromagnetic measurements of length and position; measurements of dielectric materials; health and safety in radiation conditions; rf interference and the electromagnetic environment; precision industrial measurements; management and economic factors in measurement; international co-operation in the field of precision electromagnetic measurements. present level of Region 8 activities, The Region 8 Committee meets twice a year in different Sections; the next meeting will be in the Autumn.

R. C. WINTON

#### Secretary/Treasurer Region 8.

## **REGION 8 NEWS**

contributed papers, lectures, panel discussions covering a wide area in electrical and electronic engineering. Papers not previously published describing significant contributions in the related areas are invited. A limited number of tutorial or review papers can be accepted after consultation with the Section Chairman. In all Sections, papers covering the needs of the developing countries will be especially appreciated. Full details of the six Sections are given in the separate Call for Papers which was enclosed with the last Newsletter, and further information may be obtained from Eurocon 74 Office, Local Secretary: Ing. G. Gaikhorst, c/o F.M.E., Nassaulaan 13, The Hague, Netherlands, telephone: 070-614811, telex: 32157 fme nl.

### **MEETINGS IN REGION 8**

Papers should be submitted to the 1974 CPEM Secretariat, c/o the Conference Department, the Institution of Electrical Engineers, Savoy Place, London WC2R OBL, England. In the first instance, authors should give details of the paper(s) they wish to offer. Special manuscript paper and guide notes will then be supplied, sufficient for an abstract not exceeding three A4 pages, including illustrations (which allows for approximately 1,500 words, or less if illustrations are included). Abstracts must be submitted by 31 October 1973.

As in previous years it is planned to publish a selection of Conference papers in a special issue of the "IEEE Transactions on Instrumentation and Measurements". For review and possible publication in that issue, three copies of the complete typescript, including original illustrations, must be submitted to the Secretariat not later than the start of the Conference.

Conferences on Precision Elecromagnetic Measurements are sponsored by the National Bureau of Standards Institute for Basic Standards, IEEE Group on Instrumentation and Measurement, International Scientific Radio Union US National Committee. Co-operating sponsor is Union Radio-Scientifique Internationale (URSI). 1974 sponsors are The Royal Society and the IEE, co-operating sponsors are URSI, the Institute of Electronic and Radio Engineers, the National Physical Laboratory and the Scientific Instrument Manufacturers' Association.

#### Frontiers in Education

The 1974 Conference on Frontiers in Education will be held at The City University, London, England, from 15–19 July 1974. It is sponsored by the IEEE Education Group and United Kingdom and Republic of Ireland Section, the Institution of Electrical Engineers Science, Education and Management Division, and the Educational Research and Methods Division of the American Society for Engineering Education, in association with the Department of Education and Science, the Department of Employment, the Department of Trade and Industry, the Industrial Council for Educational and Training Technology, the Institution of Electronic and Radio Engineers, the Ministry of Defence, and the Open University.

The scope of the Conference is distant study systems; systems planning; information systems; self-learning systems; multimedia systems; task analysis; computer-assisted learning; evaluation of system performance; assessment of student performance; resource centres. Synopses of 250 words are required by 5 October 1973. Information may be obtained from the 1974 Frontiers in Education Secretariat, c/o the Conference Department, the IEE, Savoy Place, London WC2R OBL, England.

## **MEETINGS OUTSIDE REGION 8**

Conference on Electrical Insulation and Dielectric Phenomena

The 1973 Annual meeting of the Conference on Electrical Insulation and Dielectric Phenomena will be held at the Research Institute of the Hydro-Quebec Company, Varennes, Quebec, Canada, from 29–31 October 1973.

The Program Committee is Chaired by Dr. E. Forster. Special sessions are planned on modern aspects of insulation technology (including such topics as accelerated ageing and new techniques, inorganic insulation systems, as well as structure and breakdown relationship); insulation problems in ehv transmission; liquid dielectrics and insulators for superconducting; and cryogenic applications (by invitation only). Papers are now being solicited for both special and general sessions (the latter may include any aspects of insulation and dielectrics). Three copies of proposed title and abstract should have been received by 15 May, addressed to Dr. E. Forster, Esso Research and Engineering Company, Corporate Research Laboratorian PO Box 45 Linden New Jorsey, 07036 USA

Laboratories, PO Box 45, Linden, New Jersey 07036, USA. As in the past, authors are reminded that it is the policy of the Conference to limit the subject-matter of the papers to scientific or technical material. Since there is no requirement for a "finished" paper, contributors are encouraged to report significant results of their most recent work. A summary not exceeding 1,500 words and 3 figures must be submitted to the Chairman of the Program Committee by 15 September 1973, and will be published in the Annual Report.

#### 1973 IEEE International Electron Devices Meeting

The Annual Technical Meeting of the Electron Devices Group will be held at the Washington Hilton Hotel in Washington DC, from 3 to 5 December 1973. This meeting will emphasise new and significant aspects of research, development, design and manufacture of electron devices. Specific areas to be covered include—device technology; integrated electronics; solid-state devices; image transducer and optoelectronic devices; lasers and quantum electronic devices; electron tubes.

The deadline for abstracts is 17 August 1973. Prospective authors must submit a comprehensive abstract, approximately 200 words long, appropriate to a 20-minute paper. Late news pepers will be considered if 75-word abstracts for ten-minute papers are received by the Program Chairman before 15 October 1973. Further information can be obtained from Prof. F. A. Lindholm, 1973 IEDM Technical Program Chairman, Electrical Engineering Department, University of Florida, Gainesville, Fla. 32601, USA.

**1974 IEEE International Symposium on Circuits and Systems** The 1974 IEEE International Symposium on Circuits and Systems will be held at the Sir Francis Drake Hotel, San Francisco, California, USA, from 21 to 24 April 1974. This

# NOTE FOR CONTRIBUTING EDITORS OR SECTION SECRETARIES

The next issue of the Newsletter will be in October, and all news must reach the Editor before the 15 September 1973.

#### NORTH ITALY SECTION

New elections and appointments are as follows:----

Chairman: Prof. Franco Reggiani, Direttore Centro Ricerche Elettriche, ENEL, Bastioni di Porta Voltage 10, Milano; Vice-Chairman: Prof. G. Cariolaro, Istituto di Elettrotecnica dell' 'Universita, Via Gradenigo 6/a, Padova; Secretary/Treasurer: Ing. C. Malaguti, Direttore Centro Ricerche Elettriche, ENEL, Bastioni di Porta Volta 20, Milano; Awards Committee Chairman: Prof. G. Zoldan, Istituto di Elettrotecnica, Via Valerio, Trieste; Membership Committee Chairman: Prof. E. Volta, Istituto di Elettrotecnica, Via Cambiaso 6, Genova; Publicity Committee Chairman: Prof. P. P. Civalleri, IENGF, Corso Massimo d'Azeglio 42, Torino; Student Activity Committee Chairman: Prof. G. Cariolaro, Istituto di Elettrotecnica, Via Gradenigo 6/a, Padova; Senior Past Chairman: Prof. E. Gatti, Politecnico di Milano, Piazza Lenorado da Vinci 32, Milano; Junior Past Chairman: Prof. E. de Castro, Istituto di Ellettronica, Viale Risorgimento 2, Bologna; Junior Past Secretary/Treasurer: Prof. V. A. Monaco, Istituto di Elettronica, Viale Risorgimento 2, Bologna.

UNITED KINGDOM AND REPUBLIC OF IRELAND SECTION All UKRI members, as well as countless friends in other countries, were saddened by the news that Geoffrey George Gouriet, recently elected Chairman of the Section and Chief Research

#### ADVERTISING RATES

Display £130 per full page £70 per ½ page £40 per ½ page

Special Section for Appointments/Professional Services/ Publications-£30 per 1/8 page to include setting

Inserts supplied by advertiser-charges based on page rate

For further information contact the Advertising Representatives:

Sweatman & Fordham, Byron House

7 St. James' Street, London SW1, England (Telephone 01-930 3637, Telex 262821) leading international Conference features the presentation of papers on all aspects of the theory and design of circuits and systems. In addition to contributed and invited papers, the Symposium will include tutorial and technical applications oriented papers on topics of current interest. Authors are invited to submit original contributions either in regular or short-paper form. Three copies of all papers should be submitted by 15 October 1973 to the Chairman of the Technical Program Committee: Dr. L. O. Chua, Department of Electrical Engineering and Computer Science, University of California, Berkeley, California 94720, USA.

Further information can be obtained from Dr. S. P. Chan, Department of Electrical Engineering and Computer Science, University of Santa Clara, Santa Clara, California 95053, USA.

# 1974 International Symposium on Subscriber Loops and Services

This Symposium, sponsored jointly by the Communications Society of the IEEE, Canadian Department of Communications and Bell-Northern Research, Ottawa, Canada, will be held from 20–23 May 1974 in Ottawa, Canada, and will study the new transmission parameters imposed on subscriber loop networks by the introduction of future telecommunications services and terminals. It will consider how voice, data and video transmission needs can be met by modifications to the existing paired cable networks or by alternative methods. For further information, please contact the Secretary, Mrs. J. Higgerty, at Bell-Northern Research, PO Box 3511, Station C, Ottawa, Canada K1Y 4H7.

## NEWS OF THE SECTIONS

and Development Engineer of the BBC died suddenly last May at the age of 57.



Geoffrey Gouriet was a telecommunications expert whose work did much to improve the technical quality of broadcasting. He was the author of 31 patents and wrote a considerable number of scientific and engineering papers dealing with a wide range of subjects concerning broadcasting. Last year he made legal history by sitting as scientific adviser with Appeal Court judges hearing a case concerning colour television patents.

The climax of his career was the presentation of the Christmas Lec-

tures at The Royal Institution in 1972. Shortly after this he was awarded the CBE, appointed as Visiting Professor of Electrical Engineering at the Imperial College of Science and Technology and was elected to membership of the Athenaeum.

Until a more permanent replacement is made, the Immediate Past Chairman Charles Sutton has agreed to act as Chairman.

Two other deaths are regrettably recorded in the returns for May, which also include 16 new members, and the transfer of 5 members to other grades. Arrears were paid by 26 members, and one re-instatement was made.

CONFERENCE INSERTS MAILED WITH THE				
NEWSLETTER				
Service available for professional meetings contributing to the IEEE learned society programme.				
For full Region 8 coverage copies required 6,200 Insertion and mailing charge (lower for Section coverage)				
Weight < 21 g ( ᢤoz.) \$185 Weight < 50 g (1ᢤoz.) \$225 Size A5 max or folded to A5 (148 mm x 210 mm)				
Enquiries to County Secretarial Services 8 The Flower Walk, Guildford, Surrey, England GU2 5HH Telephone Guildford (0483) 77777. Cable address Cosec Guildfordsy.				

County Secretarial Services, Guildford, Surrey, GU2 5HH, England

Seven Corners Press Ltd., Woodbridge Meadows, Guildford-76777