

Electromagnetic Compatibility Society

Newsletter



ISSUE NO. 102 SUMMER 1979

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EDITOR: ROBERT D. GOLDBLUM

PRELIMINARY PLANS COMPLETED FOR 1979 EMC SYMPOSIUM

Preliminary plans for the 1979 EMC International Symposium have been completed for both the technical and social programs.

The Symposium will present on October 9-10-11, 1979 three days of "state-of-the-art" technical papers in three concurrent sessions for a total of some 80 papers. Technical papers are devoted to major areas of EMC in the military, industry and consumer fields.

Highlighting the symposium will be an awards luncheon on Wednesday, October 10, 1979 that will honor leaders in the EMC community, and outstanding authors for the symposium.

Additional social functions will include a three-day ladies program, a reception, and an informal "welcome luncheon."

For additional information, contact Fred J. Nichols, Chairman, 1979 IEEE-EMC Symposium, P. O. Box 17510, San Diego, CA 92117.

GROUP INSURANCE PROGRAM FOR IEEE MEMBERS

The excellent experience credit history for two of the Plans has continued this year:

- On March 1, members insured under the Life Insurance Plan received another dividend credit - this time equal to 50% of their annual premium contributions for the policy year ending August 31, 1978.
- Participants in the In-Hospital Plan received a credit of 55% of their April 1, 1979 semiannual payment if insured prior to October 1, 1978. (This means that their annual premium was reduced by approximately 27.5%.)

Since dividends and credits are determined on an annual basis, they cannot be promised or guaranteed. However, they have been a consistent feature of the Program for many years.

The Institute has approved the Group Insurance Program solely as a service to its membership - it incurs no expense nor does it gain financially or take any responsibility. These plans, offered by several insurance companies with the aid of an Administrator, are supervised by the IEEE Individual Benefits and Services Committee. All insurance matters, including policy interpretation and eligibility for coverage, are the responsibility of the insurance companies.

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EDUCATION COMMITTEE NEWS

Several short courses are scheduled for the late summer and fall season.

The Don White International Training Center has ten EMI related courses being given in various specified locations. That organization also gives in-plant course and seminars which cover a list of 22 EMI related subjects. These may be tailored to your in-plant needs. A new course in their listing is "EMI Transient Analysis and Control." Phone 703-347-0030 for complete information and schedules.

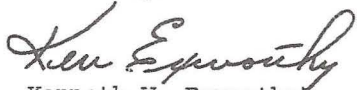
The Center for Professional Advancement will sponsor a course, "Electromagnetic Compatibility Engineering" by Henry Ott. It will be given September 10-12 in New Jersey and September 24-26 in California. Another advance listing may be of interest: their course, "Electronic Enclosures," which includes EMI shielding, among other topics, will be offered Spring/Summer of 1980. Contact 201-249-1400 for further details.

The School of Engineering at George Washington University will sponsor a course, "Electromagnetic Interference and Control," by Bernhard Keiser. Dates are July 30 to August 3 and December 3-7, 1979 in Washington, D.C. Other courses which may be of some interest are about "Federal Telecommunications Policy." One on "Impacts" will be given in Washington, D.C., August 22-24 and November 14-16, 1979. Another on "Trends" is scheduled for October 24-26. Instructor is Asher H. Ende, an internationally recognized authority. Contact 202-676-6106 for complete information.

The EMC/IAP Support Center is presenting a course on the "Intrasystem EMC Analysis Program (IEMCAP)." The course is designed to be an aid to engineers using that computer program to determine models for system interactions. It will run from August 6th through 10th, 1979, in Santa Monica, CA. Contact Mona Smith at 315-339-3830 for further information. We hope this item gets out in time - the course announcement arrived after the deadline for the last newsletter.

If you have further information of an educational nature, contact me at 612-574-4970.

Sincerely,



Kenneth W. Exworthy
Chairman, Education Committee
EMCS

WHAT A BILLION IS

Before you use the term again, consider what an exaggeration "a billion" really is:

1,000,000,000 seconds ago we were in World War II and the atom bomb had not yet been exploded.

1,000,000,000 minutes ago Christ was still on earth.

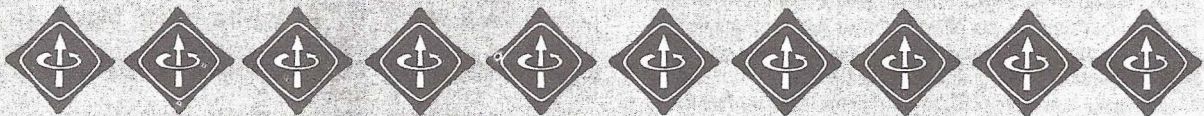
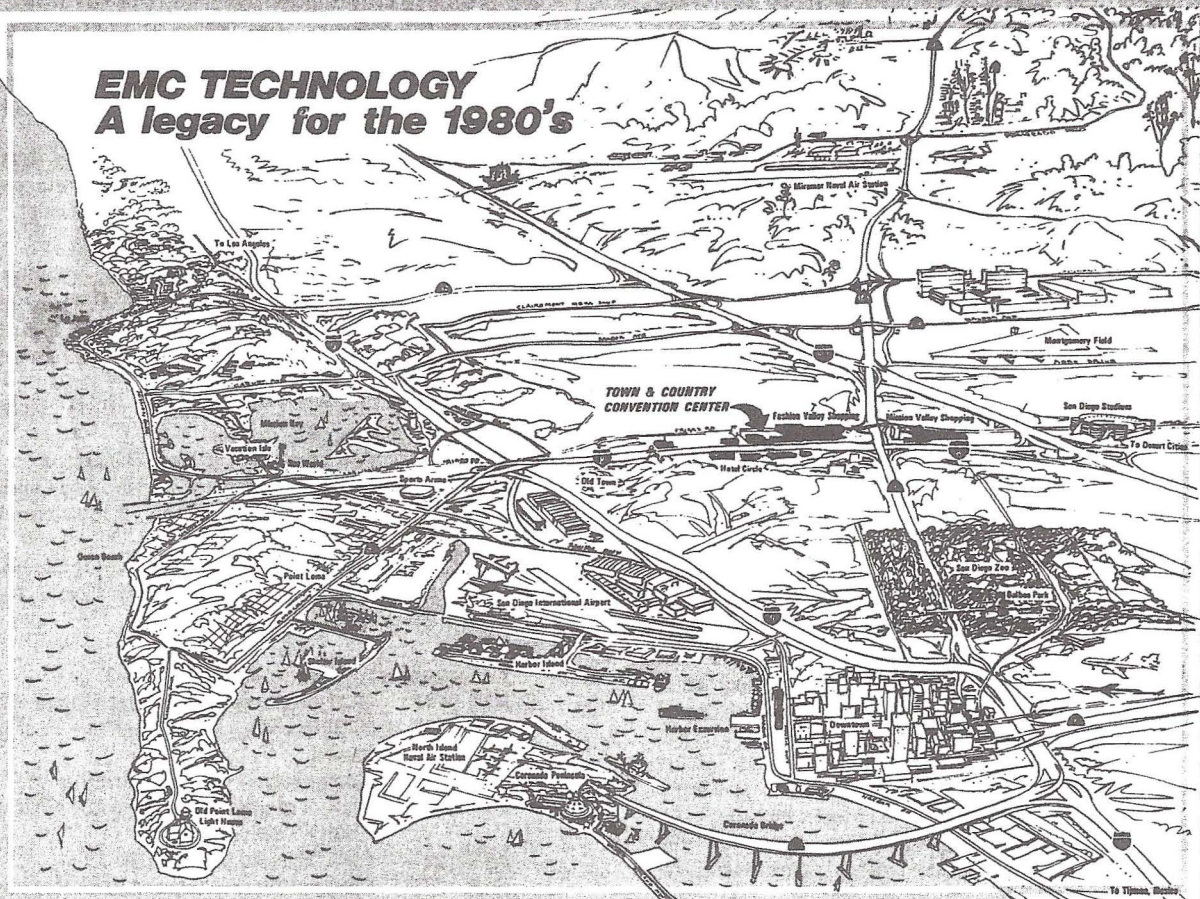
1,000,000,000 hours ago we were still in the caveman era.

However, in terms of government spending, \$1,000,000,000 ago is only yesterday, because the government plans to spend about \$394,000,000,000 this year!

NEWSLETTER STAFF

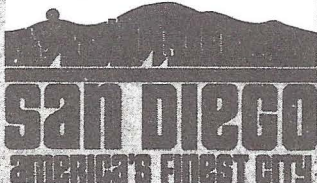
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San Diego '79



OCTOBER 1979

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1979 IEEE INTERNATIONAL SYMPOSIUM
ON

ELECTROMAGNETIC COMPATIBILITY

October 9-11, 1979 • Town & Country Hotel

P.O. Box 17510 • San Diego, CA • 92117

FRED NICHOLS, CHAIRMAN (213) 870-9383

EMS COMMITTEE REPORTS

REPORT OF INTERNATIONAL AFFAIRS COMMITTEE

The committee stopped in London and Warsaw on the way to the Rotterdam Symposium. In London, we met at the IERE Headquarters with Mr. Hayes to discuss S-EMC participation in the IERE EMC Symposium to be held at the University of Southampton, September 16-18, 1981. IEEE Headquarters has given a verbal approval of our participation and written approval should be received shortly. IERE has requested that we furnish a set of address labels for our membership so that they will be prepared to mail the "Call for Papers" from London.

In Warsaw, several meetings were held with representatives of the Polish Electrical Engineers Association, who sponsor the Wroclaw EMC Symposium. The purpose of the discussions was to work out methods of strengthening the support of EMCS in the Polish EMC Symposium.

At the Rotterdam EMC Symposium, the Keynote Address was given by George Hagn. The meeting was well organized by the Dutch Standards Organization with a number of excellent papers. Of the five prizes awarded for the best papers, the first prize went to Dr. D. Middleton, and second prize was received by Dr. J. Whalen. Of the 500 registrants, 60 were from the USA. In addition, there were a number of USA firms that exhibited, with personnel from these firms who were not on the list of registrants. Copies of the Symposium Proceedings are available from the sponsoring organization. Pending an agreement on price, the Proceedings also may be available from IEEE.

At Rotterdam, your committee organized a meeting of what might be called an "International EMC Council," with representatives of organizations sponsoring or participating in EMC symposia. The purpose of this loosely organized council is to coordinate scheduling of these meetings and relieve the conflicts which presently are being experienced. For example, in September 1980, the IERE and the Polish symposia are scheduled for the same week, followed within three weeks by the IEEE EMC Society Symposium in Baltimore. The council might also seek an agreement in designating one symposium each year to bear the description "International." It also will try to coordinate joint sponsorship and consecutive scheduling, as for example, the Rotterdam Symposium and the CISPR meetings. Dr. Dvorak has volunteered to act as clearing-house for information coming from the various participants.

At the Rotterdam Symposium, the Swiss group announced that they are planning to schedule the next EMC Symposium at the Swiss Technical Institute, Zurich, some time during March of 1981. They will be looking for financial support which we might offer in whole or in part. They also are looking for our continued cooperation as in 1975 and 1977. They were very disappointed in our diminished support for the Rotterdam Symposium.

Respectfully submitted,

James S. Hill
James S. Hill, Chairman

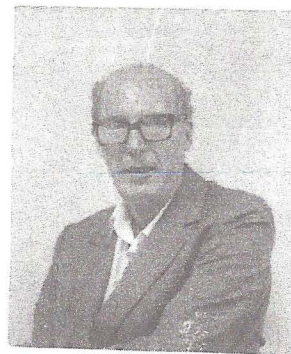
CO-SPONSORSHIP

As it has been defined in the past by Dr. Richard M. Emberson, IEEE (co)sponsorship of a conference constitutes genuine technical involvement. The decision of (co)sponsorship largely rests with the Societies, Groups and Councils which are the IEEE guardians of technical excellence. In addition to technical involvement, there is in many cases financial involvement as well. In all cases, there is some related expense in that all (co)sponsored conferences entail the cost of indexing.

Through the years, IEEE (co)sponsorship has become identified with conferences of the highest technical level that are either national or international in scope. The proceedings of these conferences are distributed to about 200 nonmember customers (usually libraries), who, under IEEE's Open Order Plan (OOP) Option 1, receive one or more copies of all records of (co)sponsored conferences. In addition, there is an increasing number of customers who subscribe to records of specific conferences as categorized in any of the eight available suboptions under OOP Option 1. In either case, the customers (libraries) sign an agreement to receive one or more hard-bound copies of our conference publications without any advance knowledge of its price. Recently, some librarians have begun to question the absence of a provision for returning a conference record, for reasons other than the physical quality of the merchandise.

The purpose of bringing these matters to your attention is to raise your awareness of the importance and implications of IEEE (co)sponsorship, so that we do not burden the librarians with conference records of marginal archival value and to minimize any unessential indexing costs.

CHAPTER CHATTER



by Charles F. W. Anderson



By spending a few hours on the telephone, your Column Editor found out that there are more active Chapters out there than he had thought. Again, I plea for Chapter Chairmen or Secretaries to let me know what your respective groups are doing.

Los Angeles

Fred Nichols reports the Chapter is meeting regularly and having good programs and attendance. He also said that both the San Diego and Los Angeles groups are quite busy completing the planning for the upcoming Symposium.

Bay Area

Wilson Chu indicated that the Chapter was getting ready to enjoy their annual dinner meeting - complete with exotic Mediterranean food and music and (Dare I say it?) - belly dancers!

Seattle

Gene Knowles reported that the Chapter held a meeting jointly with the Electronics in Medicine and Biology and Aerospace and Electronics Chapters at which the topic was Safety Guidelines in Biomedical Electronics which was presented by Will Jensen of the Washington State Department of Social and Health Services. They are planning a full program for the '79-'80 season.

Chicago

Jim Klouda, head of Elite Electronics Engineering, said that he and Jim Krystansky of IITRI have been trying to get things going again in the Chicago area; but, with not too much success so far. However, they are still trying!

Dayton

Herb Bartman reported that Dr. Jack Corbin of the USAF Flight Dynamics Lab had been working on getting the names for the Chapter petition and lacked only a few of the necessary 15. (I suggested that they might try the approach used by the Albuquerque group and others in combining with members of related-interest Societies.)

New Jersey Coast

A special Chapter Chatter "hats-off" to Don Heirman who is relinquishing the editorship of the NJC EMC/VT Chapter Newsletter to become Editor of the Section's Newsletter, The Scanner. Congratulations to you, Don, on a fine job over the past four years and success in your new editing spot.

The Chapter's April meeting had Jim Van Cleve, head of AEL's Colmar, PA Communications Engineering Department presenting "EMI/EMC Considerations in the Design of a Wide-Range Instrumentation Receiver." At the May meeting, Thomas Sullivan, of IITRI's ECAC staff, spoke on the topic, "Technical Aspects of a World Administrative Radio Conference (WARC)." The June meeting (just a day or so too late for our deadline) will feature the U. S. Navy Film, "Receiver Susceptibility," and election of officers. Margaretta Stone, of AEL's Service Division, has been nominated for a second term as Chapter Chairman, as has Gary Kath (Honeywell Signal Analysis Center) for Secretary/Treasurer. As we go to press, there were still no volunteers for the Vice Chairman's job. The Chapter AdCom is hoping for someone from the VT contingent to opt for the spot. Roger Peterson, who has been assisting Don Heirman as Associate Editor, will assume the Editor's "scissors and paste-pot." Good luck! - from the first Editor.

The TEM Seminar to be held 27-28 June was booked solid as of the beginning of the month, with the 60 registrants representing over 35 industry, government and educational organizations!

New York/Long Island

Arnold Albin (Fairchild Space & Defense Systems) informed me that the Chapter had three more meetings since the one reported in the Spring EMCS Newsletter column. On 18 November, D. Engle, H. Burke and A. Zimbalatti of Grumman presented "Lightning Effects on Aircraft and Aircraft Systems." At a meeting on March 14th, Tom Mahoney of Dayton T. Brown spoke on "EMC Vulnerability Testing at 200 V/m." E. H. Swanson and T. Darchangells of IFI discussed "EMC Susceptibility Testing Using High Power Broadband Amplifiers and Crawford Cells" at the May 24th meeting.

Washington

The Washington Chapter held its fifth and final meeting of the 1978/1979 season on May 17, 1979. Dr. Bruce Lusignan presented results of narrowband companded mobile communications systems with and without interference.

New officers elected are as follows:

Chairman - Bernie Keiser
Vice Chairman - Ernie Freeman
Sect'y./Treas. - Art Wall

The vote was unanimous. Attendance at the meeting was 23.

Atlanta

Although Gene Knowles returned to Seattle some months ago, the Atlanta Chapter is still active. Bob Hammack, the Chairman, reported they held a meeting on 29 May to plan for the coming year and to discuss the proposed by-laws of the Chapter.

Central New England

John Clarke (US DOT/TSC) reports that the officers for the '79-'80 period are:

Chairman - Chester L. Smith
Vice Chairman - Arthur W. Murphy
Sect'y./Treas. - John M. Clarke

The Chapter is extending its thanks to Arthur L. Haskins, the out-going Secretary/Treasurer for his efforts during the past two years in that job. John himself received a Certificate of Gratitude for his contributions to the 1977-78 program in the Central New England Region at the Boston Section meeting on May 4th. Congratulations, John!

The Chapter still is exploring the possibility of sponsoring the 1985 EMC Symposium and the officers will be discussing with the AdCom during their Boston meeting.

Plans for the '79-'80 season are progressing and include having speakers to cover intermodulation phenomena, specifications and standards, and railroad electrification signalling and communications problems. Tours of two local companies involved with EMC materials and instrumentation also are being considered.

ANTENNAS AND THE ASSOCIATED TIME DOMAIN RANGE FOR THE MEASUREMENT OF IMPULSIVE FIELDS

by A. R. Lawton and Arthur R. Ondrejka

A number of recent trends, including the increased use of radar for applications such as automobile safety systems, and the development of high data rate digital communications systems have increased the need for efficient broadband antennas. The so-called TEM (transverse electromagnetic) horn is now considered one of the most promising designs.

This report describes the construction and evaluation of a TEM horn antenna designed at NBS to be used as a transfer standard to generate and to measure impulsive electromagnetic fields. The main purpose in the evaluation was to analyze the different electrical field generation and measurement techniques thoroughly enough to determine the major sources of error and to establish a standard of impulsive field strength having a well established statement of accuracy.

The evaluation of this horn was done in two independent ways: by placing the horn in the field of a conical transmission line and by a three-antenna intercomparison. The two methods were found to agree within ± 3 dB over the range 0.6 to 5 GHz. Part of this disagreement is due to the assumption of far field conditions, and an experimental technique is described which determines the frequency range over which this assumption is valid.

The report may be ordered from Supt. of Documents, U.S. Govt. Prtg. Off., Washington, DC 20402: NTIS No. NBS-TN-1008, SD No. 003-003-01998-4, Designation TN-1008, \$2.40 (pre-paid).

INSTITUTE PUSHES NEW LERA BILL

Despite the fact that the IEEE-sponsored pi bill (H.R. 314) on wage busting did not get very far last year, the Institute is pushing a double-pi (H.R. 628) bill this year which covers a different objective. The IEEE (USAB) is trying to effect pension reform in the form of a Limited Employees Retirement Account (LERA). This will allow employees to tax-defer \$1500 or 15% of income annually until they are 100% vested in their company pension plan. Several versions of the plan may be introduced this session. However, the first one put into the hopper was H.R. 628 by James Corman (D-CA).

Book Reviews



by Jim Hill, EMXX Corporation

This issue will conclude the correspondence that has been going on between Dr. Clayton R. Paul and Dr. Sidney Frankel regarding Dr. Paul's review of Dr. Frankel's book, "Multiconductor Transmission Lines," which appeared in this Newsletter, Issue No. 98.

Dr. Sidney Frankel's Letter

Dear Mr. Hill:

I was very pleased to read Dr. Paul's expansion of his review of my book in the Spring Issue of the Newsletter. I appreciate, particularly, the graciousness which prompted the extensive positive discussion of the special features of the book.

From the clarifications in this supplement, it is evident that I have misinterpreted so some of Dr. Paul's previous comments. For this error, I trust that he will accept my sincere apologies.

Yours truly,

Sidney Frankel (sign.)

We recently have received a copy of "EMI Control Methodology and Procedures (Design Synthesis)" by Donald R. J. White. This is a loose-leaf book with an updating service available on a subscription basis. According to the author, nearly all of the material in this book is new and does not appear in published literature. He further states that the important thing is that this handbook provides the user with an organized approach to diagnose and to solve EMI problems. Look for a review of this new handbook in the next issue of the Newsletter.

We stopped in Poland on the way to the recent Rotterdam Symposium. In Warsaw, we were presented with a copy of "Electromagnetic Compatibility in Radiocommunications Systems," edited by Prof. W. Rotkiewicz and with chapters contributed by W. Moron, D. Bem, W. Stawski, R. G. Struzak, and A. Wojnar. The book is in Polish and an English translation is scheduled to be completed this year. We look forward to reviewing the English version; but, until then, we can only look at an English translation of the Table of Contents appearing in the Polish text.

Jim Toler has agreed to review "Electromagnetic Interference Control in Medical Electronics" by Michael F. Gard. This is one of the new volumes in Don White's Multi-Volume EMC Encyclopedia Series. His review is scheduled for the next issue.

There has been a steady flow of new books for this EMC discipline and related technologies. We would like to hear from volunteers who have the time and inclination to do a book review. All the better if you have a book in mind that you feel would be of interest to the EMC community. Write to me at my address on page two of this issue, or call me at 703-451-4619.

EMC PERSONALITY PROFILES

by William G. Duff



T. H. HERRING

Tom Herring studied physics at Cornell University (MS 1948) and at the University of Washington (1949-1950). However, in 1951, he started working in radio interference, his continuous occupation ever since. Twenty five years of large system EMC work at Boeing have been slightly leavened by periods with Hopkins Engineering and Genistron. Much of the Boeing work has been on cabling and grounding and has had to do with B-29, B-50, B-47, B-52 aircraft and with Minuteman, Saturn and smaller spacecraft.

Currently, he is with the Morgantown (West Virginia) Personal Rapid Transit expansion program at Boeing.

A strong pedantic streak has led him to some recent activity with the educational subcommittee of the AdCom; he hopes to see Electromagnetic Compatibility established as an ordinary college subject. IEEE service dates from 1964 when he and Jim Toler started a Group Chapter in Huntsville, Alabama.

He took up photography as a hobby in order to produce the above photo, which was taken in front of a house, the remodeling of which has occupied all of his spare time for the past nine years.

◆◆ MEETINGS & EVENTS ◆◆

A REPORT ON THE ELECTROMAGNETIC COMPATIBILITY SYMPOSIUM ROTTERDAM, MAY 1979

by Dr. F.L.H.M. Stumpers

In 1975 and 1977, an EMC Symposium was held in Montreux. Because of the organization of the CISPR Plenary Assembly in the Hague, it seemed attractive to choose Rotterdam this time. Professor Borgnis remained Chairman of the Organisation Committee; but, Professor de Kroes (Chairman, Netherlands Electrotechnical Committee) became Chairman of the Symposium Council, and Mr. Derkx, Director of the Netherlands Normalization Institute, Vice Chairman of the Symposium Council (with Professor Leuthold). Professor Stumpers was again Chairman of the Program Committee, Dr. Dvorak, Technical Secretary and Editor of the Proceedings, Mr. Gerritsen, Organizing Manager.

On Tuesday, May 1st, Dr. Leenman, Director-General of the Dutch P.T.T., officially opened the Symposium. Mr. Hagn, Chairman of U.R.S.I. Commission E, gave the keynote address stressing the statistical approach and U.R.S.I.'s willingness to cooperate with CCIR and CISPR in matters of spectrum management and measuring methods for radio interference. (U.R.S.I. acted as a cosponsor of this Symposium and was represented at the opening by Dr. Minnis.) Two sessions on Spectrum Management and two sessions on the Nuclear Electromagnetic pulse stressed important subjects. Mr. Kirby, Director of C.C.I.R. and his collaborator, Mr. Rutkowski, treated effects of the World Administrative Conference 1979. (Professor Struzak, Vice Chairman of Study Group I of C.C.I.R. chaired this session.) The NEMP Session, organized by Dr. Tesche and Dr. Baum, gave a good review of the activity in this field in the U.S.A. and in Europe.

C.I.S.P.R. was well represented. Mr. Akerlind, Acting Chairman, spoke at the opening ceremony. Prof. Showers, Incoming President, chaired the session on measuring methods and production testing. Mr. Meyer de Stadelhofen, Retired President, and several subcommittee presidents were active, too (Prof. Egidi, Mr. de Jong, Dr. Jackson). The IEEE EMC Group, a cooperating society, was represented by Mr. Hill. Plans for better international coordination

of symposia were discussed. A round table discussion on CISPR, Regional and National RFI Control and Measurement on Thursday afternoon brought a very lively discussion and a large audience until it finished at 5:30 P.M. on the last day.

The 18 sessions of the Symposium covered the whole field of EMC. A large exhibition, in which 23 firms participated, always had something interesting to show, during the breaks, and when one preferred to look for new instruments oneself, rather than to listen to what others did with them. There was the usual get-together cocktail party on Tuesday evening and the banquet on Wednesday night. One of the most difficult tasks of the program committee is the preparation of the list of citations and prizes for good contributions. It always takes quite a long time to come to an agreement. Citations went to Takagi (Japan) - "Characteristics of Electrical Discharge Noise Sources"; to Kalmakov (USSR) - "Checking Click Sources for Compliance with CISPR Limits"; and to Hadrian (Austria) - "Conductive Facades for Lightning Protection." The second prize was divided ex aequo between Hamelin (France) - "Lightning Discharge Surges Induced on Overhead Power Lines" - Gallon (U.K.) - "EMP Coupling to Long Cables" - Professor Whalen - "Predicting RFI Effects in Integrated Circuits." The first prize was given to Dr. David Middleton - "Implication of Non-Gaussian Noise Models for Measurement and Prediction of Receiver Performance," as a token of an appreciation for his leading theoretical work in this field.

Professor de Kroes gave a spirited dinner speech on international cooperation in general and in EMC in particular. Taking into account the single-day participants, we came for the first time in Europe over the 500 mark. The unusually cold weather may have diminished the attraction of some of the organized trips (bulbs in "De Keukenhof," visits to town and harbours of Rotterdam); but, in general, the level of the discussions and lectures was quite high, so there was some compensation, if you decided to stay indoors after all.

There was an authors' lunch (including session chairmen), during which I had the opportunity to thank them all for their great help, especially those who had sent in papers and abstracts well before the deadline.

Copies of the 600 page Proceedings of this Symposium are still available from the Netherlands Normalisation Institute, Polakweg 5, Postbus 5810, Rijswijk, 2280 HV, The Netherlands.

Mr. Mertel organized three workshops of a tutorial character. Seven ladies organized a tourist program. All meetings took place in the conference complex of "De Doelen" in Rotterdam, including a free recital of Beethoven's Eighth Symphony by the Rotterdam Philharmonic Orchestra at lunchtime on Wednesday.

CALL FOR PAPERS

ISCAS/80 will be held at the Shamrock Hilton Hotel, Houston, Texas, April 28-30, 1980. Workshops will be conducted by the various technical committees of the Circuits and Systems Society immediately preceding the symposium on April 27th.

The symposium sponsored by the IEEE Circuits and Systems Society will be the 13th annual international conference devoted to all aspects of the theory, design, and application of circuits and systems. The technical program through its planned special sessions and colloquia will also host a special colloquium on Large Data Systems in Oil and Gas Exploration.

Proposals for special sessions and colloquia should be directed to Professor Sydney R. Parker, Electrical Engineering Department, U. S. Naval Postgraduate School, Monterey, CA 93940, by July 1, 1979. Contributed paper sessions will be organized about all areas of interest to members of the society. Authors may submit a full paper - by October 1, 1979 - or, a summary of the paper - by November 1, 1979, or, an abstract of the paper - by December 1, 1979. Authors will be notified of acceptances no later than January 1, 1980 and will be requested to supply camera ready copies of their papers no later than February 1, 1980. Authors should submit three copies of their material to:

Professor Glenn M. Glasford
Electrical and Computer
Engineering Department
Link Hall
Syracuse University
Syracuse, NY 13210

CONFERENCE ON PRECISION ELECTROMAGNETIC MEASUREMENTS

The Conference on Precision Electromagnetic Measurements (CPEM) will be held at Stadthalle Braunschweig in the year 1980 from June 23rd to June 27th. It will be organized by the Physikalisch-Technische Bundesanstalt.

Questions of electrical precision measuring techniques will be reviewed at the conference in lectures and discussions, in particular:

Results and Methods of Measurement for
the Realization and Maintenance
of Electrical Units
Direct Current and Low Frequency
High Frequency and Microwaves
Special Standards
Antennas and Fields
Time and Frequency
Time Domain Measurements
Automated Measurements
Computer-Oriented Procedures
Application of Microprocessors
Component and System Metrology
Cryoelectronics
Fiberoptics
Lasers
Technical Calibration Services

The CPEM, which was originally held every two years exclusively in the USA, has over the years gained no little international reputation beyond the borders of that country. For this reason, every second conference is now held outside the USA.

The conference language is English. CPEM '80 requests hitherto unpublished lectures on results of scientific work in the above-named fields. The authors should submit an abstract (35-50 words) and a summary (500-1000 words) in English by 1 January 1980.

The special prize "Helmholtz-Preis 1980," of value DM 5000, will, in that year, be an international award for the best paper on "Precision Electromagnetic Metrology" submitted to CPEM '80. The conditions for this scientific competition will be published soon.

In conjunction with the conference, it is planned to hold an exhibition of precision measuring instruments giving a general survey of the most recent developments in the field of measuring techniques.

For further information, contact: Prof. Dr. H. Capptuller, Technical Program Chairman, Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-3300 Braunschweig.

CALL FOR PAPERS
IERE INTERNATIONAL CONFERENCE ON
ELECTROMAGNETIC COMPATIBILITY

The prevention of potentially interfering signals and the reduction of susceptibility of equipment to interference between and within systems were the main themes of the first IERE Conference on "Electromagnetic Compatibility" held in the Spring of 1978. One result of that first conference was to highlight the growing need for opportunities for engineers to discuss problems (and solutions) of EMC and the Institution decided that there was requirement for a regular series of conferences on this topic. Accordingly, a second conference is to be held, at the University of Southampton from Tuesday, 16 September to Thursday 18 September, 1980.

Since the conference is intended primarily to be a discussion meeting, it is proposed to publish the selected papers in a pre-conference document, and to provide for their presentation only (rather than their reading) with their authors then available for the following discussion.

Systems to be considered include those in civil use in ships, aircraft and other transport vehicles and in control, computing, and communication centres. Subjects in the mainly military field also will be considered, provided that early security clearance can be obtained.

Methods for preventing the generation of potentially interfering signals and for reducing the susceptibility of equipment to interference, both within systems and between systems, will represent the main theme of the conference. All types of man-made interference, including radiated, induced and conducted interference, whether from electronic equipment or from electrical plant, are to be included in the range of subjects covered. Contributions will be considered regarding protection from natural sources of interference and EMP if these are offered. It is intended that, in the main, the conference will be concerned with industrial and professional communications, navigation, computing, control and medical subjects. However, the position relating to domestic equipment, both as to its protection from external interference and its own potential for generating it, will be a welcome topic.

Papers are particularly sought under the following general subject headings; but, this list is not intended to be exclusive and the Organizing Committee is anxious to consider papers from other fields which are related to the general theme of the conference.

- National and International Planning
- Regulations, Standards and Specifications
- Fundamental Studies
- Systems and Equipment Design for Compatibility
- Procedures and Techniques for Tests and Measurements
- Instrumentation
- Project Management
- Operation and Installation

Papers covering economic aspects of design for the avoidance of incompatibility and analytical contributions regarding the necessary balance between "designed in" protection and "post installation" remedies also are invited.

A synopsis, of not more than 500 words, will enable the Committee to assess the scope of the proposed paper, and should be sent to the Secretary, Organizing Committee for the Conference on Electromagnetic Compatibility, Institution of Electronic and Radio Engineers, 99 Gower Street, London, WC1E 6AZ, England, no later than 1 October 1979.

MAJOR ASPECTS OF COMPUTER SECURITY
ANALYZED IN WORKS CATALOGUED BY NBS

Thirty-two studies and reports dealing with computer security are catalogued in Computer Security Publications, a 14-page updated bibliography issued by the National Bureau of Standards (NBS).

Capsule descriptions and ordering information are given, with the listed publications grouped under these headings:

- Audit and Evaluation
- Cryptography
- Database Security
- General Computer Security
- Network Security
- Personal Identification and Access Authorization
- Privacy
- Security Controls and Safeguards

A brief description of the functions and services of the NBS Institute for Computer Sciences and Technology is included in the pamphlet's introductory material, and a glossary of terms related to computer security also appears.

Complimentary copies of NBS Publications List 91, Computer Security Publications, may be obtained from Ann Walker, NBS Institute for Computer Sciences and Technology, Administration A200, Washington, DC 20234.

URSI GENERAL ASSEMBLY TO CONVENE
IN WASHINGTON, DC IN AUGUST, 1981

The Twentieth General Assembly of the International Union of Radio Science (URSI) will be held in Washington, DC on August 10-18, 1981. Over 1000 scientists from all parts of the world are expected to attend.

General Assemblies of the Union are held every three years, traditionally alternating between European and non-European sites. The two previous URSI General Assemblies held in the United States were in Washington, DC in 1927 and in Boulder, CO in 1957. The most recent URSI General Assembly, held in Helsinki, Finland in August 1978, included five open symposia on specialized topics, in addition to the technical sessions of the Commissions. Over 500 papers were presented in about 100 sessions. The technical program in Washington is expected to be of comparable size.

The Union is an international organization devoted to stimulating and coordinating studies in the electromagnetic and telecommunication sciences. It is one of the 18 international unions within the International Council of Scientific Unions (ICSU). URSI's members are 36 National Committees rather than individuals. The United States National Committee for URSI (USNC/URSI) represents the United States National Academy of Sciences within the Union. URSI realizes its aims largely through its nine Commissions which cover the following fields: electromagnetic metrology and biological effects of electromagnetic waves; fields and waves; signals and systems; physical electronics; electromagnetic noise and interference; wave phenomena in nonionizing media; ionospheric radio and propagation; radio waves in plasmas; and radio astronomy. The General Assembly is the outstanding international event in the triennial program cycle of the Union and its Commissions. Other meetings sponsored by one or more Commissions are held between General Assemblies.

The Union's nine international Commissions are responsible for generating the technical program for the General Assembly. This activity is being coordinated by a task group of the URSI Board under Professor William E. Gordon of Rice University in Houston, TX. Professor Gordon is a Vice President of URSI.

USNC/URSI will host the Twentieth General Assembly and is providing guidance for an Organizing Committee charged with arranging this event. USNC/URSI is chaired by Dr. C. Gordon Little of the NOAA Research Laboratories in Boulder, CO. The Organizing Committee is chaired by Dr. Geoffrey Hyde of COMSAT Laboratories in Clarksburg, MD.

The 1981 General Assembly will be held at the Hyatt Regency Hotel in central Washington. Participation in General Assemblies is no longer restricted to the official delegations of the Member Committees and all interested scientists are invited to participate.

For further information, please contact the Executive Secretary of the 1981 URSI General Assembly Organizing Committee by writing to R. Y. Dow, National Academy of Sciences, 2101 Constitution Ave., N.W., Washington, DC 20418 or by calling: 202-389-6478.

LOOKING AHEAD

(Some thoughts and three proposals)

A message from the IEEE Executive V.P.
Dr. Leo Young

People frequently stop me and ask about IEEE. They recognize the role IEEE plays in disseminating technical information, and most of them also support strongly IEEE's role as spokesman for the profession. But many people are confused by what they hear and read, and question the commitment of IEEE's leadership to the members' wishes. They wonder out loud if there is anything they can do about it.

The answer is an emphatic, capital-letter YES.

You can get involved in IEEE technical activities by participating both at the Section/Chapter and at the Group/Society levels. By working with your peers, you help not only all IEEE members, but yourself as well. As in most volunteer activities, you get out what you put in. Don't expect to be elected chairman or president the first year. It's more fun to work your way up the ladder.

You can also get involved in IEEE professional activities by participating in local and national professional activities if you have the time and inclination; in any case whether you participate actively or not, let us know that you care. You can do so by electing leaders you respect as much for their technical contributions as for their dedication to making ours a more rewarding profession. It won't hurt either if you write to your Director or Section Chairman or Group or Society President once in a while.

So much for how you can make the Institute serve you better. Now what can IEEE do better for you? Two issues stand out in my mind as requiring immediate attention.

The first issue for 1979 is to reconcile the technical and professional interests of the Institute. Technical and professional activities are intimately related and one would be diminished without the other.

IEEE has a responsibility to advance Electrical Engineering Technology and to apply it for the good of mankind, but IEEE must also respond to the legitimate concerns of those who generate that Technology, namely our members, and simply cannot ignore such real and sometimes tragic human concerns as broken pension promises, careers terminated by age discrimination, and wage busting of engineers brought about by government procurement practices. In the Technology Policy area, IEEE owes it to our members - and to the public - to satisfy the needs of the U.S. Congress and Government agencies for sound technical inputs. For who can speak for electrical engineers in the U.S. better than IEEE?

The need to speak up for our profession is recognized alike by the working engineer and by enlightened management. Heath Larry, the President of the National Association of Manufacturers has stated: "I recognize science as an unending search for truth and knowledge. Because it is important that it continue in that role, I will put the case that scientists may ignore neither politics nor the market, except at considerable peril to themselves and to the remainder of society." This statement applies even more forcefully to engineers, whose interests go beyond understanding science to developing products in an economy-minded world. Whenever there are signs that the Institute is ready to retrench professional activities, you, the members, must remind IEEE of its commitment to the profession.

The Institute has continued to grow in membership, so clearly it is performing a service. However, the U.S. membership has remained nearly static; the growth has been in non-U.S. members, who frequently cost the Institute more than U.S. members. The higher cost to the Institute of many non-U.S. members, coupled with a flow of technical information which is predominantly from the U.S., is a good deal for non-U.S. members; but it can benefit U.S. members in more subtle ways, such as in the form of all publications conveniently written in English, and in prestige for the Institute. That prestige, backed by funding from the special U.S. membership assessment of \$10, translates directly into political clout. Used wisely, that clout benefits our members in the U.S., strengthens the Institute, advances Technology, creates new opportunities and jobs, and so helps our members everywhere. So everybody wins.

The second (and related) issue is how to make the Institute more responsive to members' wishes; in other words, how to make IEEE more democratic.

To achieve a more responsive Institute requires more responsive leaders with true understanding and practical experience of both technical and professional activities, people who have not only made recognized contributions to technology, but who also are in demonstrated sympathy with our members' professional needs. How do we make the Institute more democratic? I would submit to you three modest proposals for your consideration in 1979.

First, concerning the Institute's "Nominations and Appointments Committee": I propose that at least three out of its twelve members be elected by all voting members. (Some societies elect their entire N&A Committee.)

Second, concerning the "Executive Committee": I propose that the chairman of the Technical Activities Board (TAB) and the chairman of the United States Activities Board (USAB) be elected by their respective constituencies (just as Division & Region directors are now). (Of the two, I rate the election of the USAB chairman the more important.)

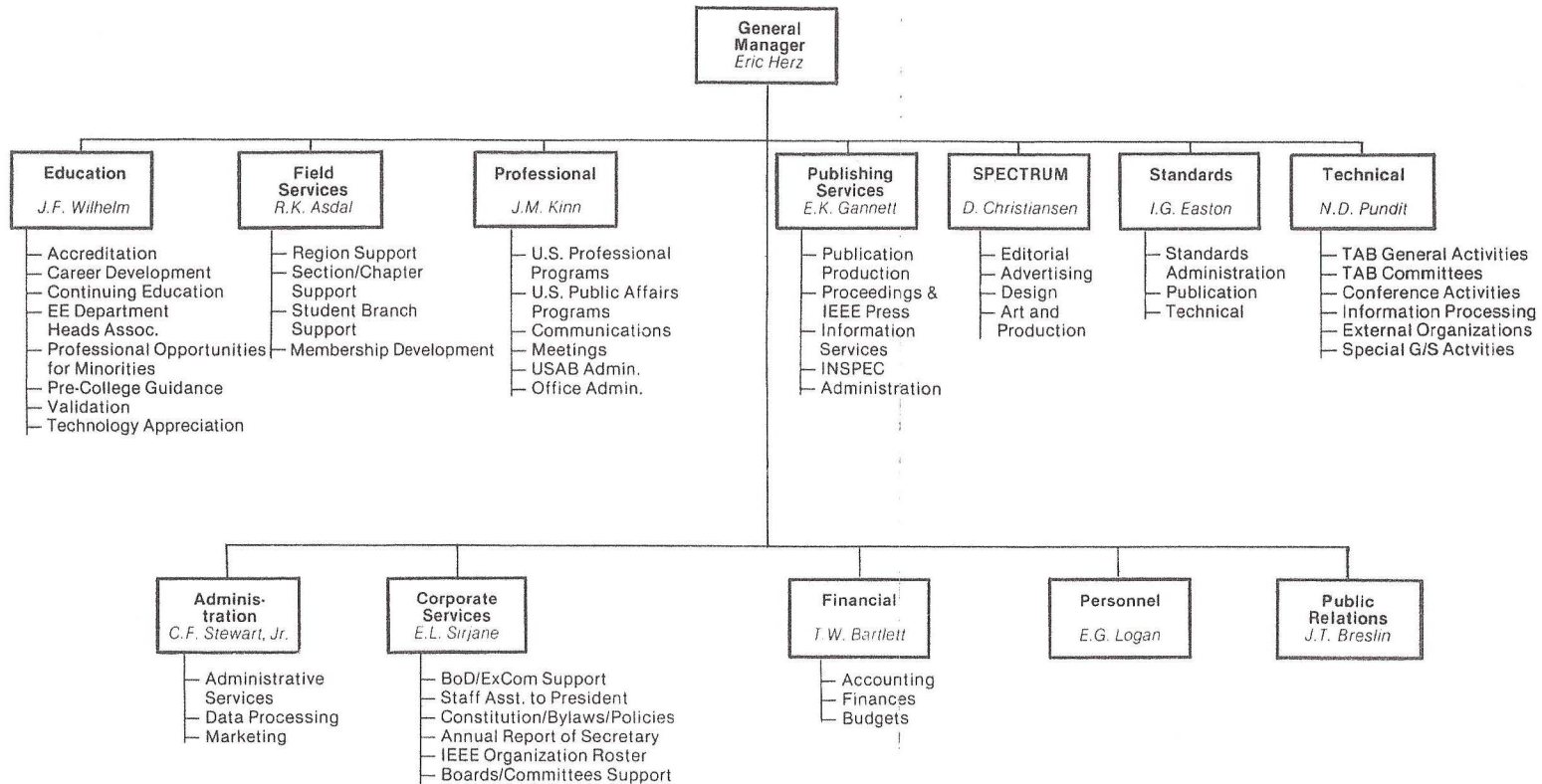
Third, concerning our "Forum Publication" (namely IEEE "Spectrum" and "The Institute"), I suggest that they should neither be a management mouthpiece, nor be relieved of all responsibility to the membership. As a reasonable and simple way to safeguard freedom of expression, I propose that an independent "Forum Committee" be elected by all voting members. The "Forum Committee" would ensure fair and responsible reporting in our forum publications. (The Committee might consist of six members, two elected annually for three-year staggered terms.)

These three proposals taken together seem a reasonable and practical package. For example, they would resolve the standoff result of the 1978 Constitutional amendment to elect the entire Executive Committee, when just 50 percent voted in favor - and just as many were opposed. Electing the two officers (the chairman of TAB and USAB) when combined with the other two proposed democratic improvements (elections to the N&A Committee, and an elected Forum Committee) would be simple to implement, would achieve the democratic purpose, and would retain the best features of present IEEE management.

In summary, technical and professional activities are complementary and not antagonistic. Together they can advance Technology as well as the status of the Engineer. In the last analysis, it is up to all of us to make ours a more rewarding profession.



IEEE Functional Chart



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Publishing Services

TO: People Who Want to Dispose of IEEE Publications

FROM: Patricia H. Penick, Manager, Publication Administrative Services

Since IEEE Headquarters is so often asked for advice on disposing of old AIEE/IRE/IEEE publications, the following is an attempt to bring together in one place the information and suggestions we think may be helpful.

IN THE PAST, many of our publications had a high market value and could fairly easily be sold to back copy bookstores. Libraries and schools were eager for donations.

NOW, HOWEVER, the situation has changed radically and the demand is very small. The main reason for this change is that, for the last several years, IEEE has made available all of its technical periodicals (including those from AIEE and IRE) on microfilm. Another apparent reason is that so many members with extensive publication collections have already saturated the market by selling or donating them.

ON THE NEGATIVE SIDE, and in answer to the questions most frequently asked: 1) Neither IEEE Headquarters nor the Engineering Societies Library is in a position to accept donations of back publications; 2) It isn't feasible for Headquarters to provide a clearing house service; and 3) Because of the extremely difficult-to-know and shifting nature of the market value of back issues and the number of variables involved (completeness of a collection, physical condition, etc.), IEEE cannot assess or verify the value of a collection.

ON THE POSITIVE SIDE, before committing a good collection to the shredder, we certainly recommend exploring the possibility of selling or donating publications locally. (A brief list of occasionally and/or tentatively interested back copy organizations in the New York City area is available on request from my office.) A few phone calls or letters to back copy book stores in your area should reveal what, if any, interest there is locally and whether there is a willingness to offer a quotation. Similar inquiries to libraries, schools, company libraries, etc. may elicit information on where a collection could be donated.

WE STRONGLY URGE that you make such an information-gathering project an IEEE Chapter or Section activity.

IDEALLY, it should be possible to donate publications to a worthy recipient and take a suitable tax deduction. This is certainly possible if a firm quotation has first been obtained from a reputable commercial book dealer or the organization receiving the donation is willing to state formally the value they place on the collection. Unfortunately, several organizations we used to recommend (one, for example, which supplied publications to developing countries) no longer function.

FEEDBACK IS WELCOME from anyone who knows of any organizations which would consistently accept any and all donations or which have at least a reasonable interest in buying back copies. Any such will be added to our list.

INSTITUTIONAL LISTINGS

The IEEE Electromagnetic Compatibility Society is grateful for the assistance given by the firms listed below and invites application for Institutional Listings from other firms interested in the electromagnetic compatibility field.

SERVICE DIVISION, AMERICAN ELECTRONICS LABS., INC., Richardson Rd., Montgomeryville, PA 18936
EMI/EMC, shield, enc. consult. test. & anal.; Scrn. rm. (incl. for large veh.); Comp. instr. for Mil. EMI test.

AILTECH, Los Angeles Operation, 5340 Alla Road, Los Angeles, CA 90066
Computer operated/automatic/manual EMI test system, EMI meters, antennas, and components.

ELECTRO-METRICS, Division of Penril Corp., 100 Church St., Amsterdam, NY 12010
EMI meters and automated systems incl., calculator/computer-based; 20 Hz-40 GHz *MIL-STD/CISPR/VDE/SAE/FCC.

EMERSON & CUMING, INC., Canton, MA—Gardena, CA—Northbrook, IL.
Eccoshield RF shielded chambers—Eccoshield EMI/RFI gaskets and materials—Eccosorb anechoic chambers.

METEX ELECTRONIC SHIELDING GROUP, A Unit of Metex Corporation, 970 New Durham Road, Edison, NJ 08817
EMI/RFI, EMP & EMC Shielding Materials, Custom-Engineered Conductive Components, and Coatings.

CENTRALAB/USCC, 4561 Colorado Blvd., Los Angeles, CA 90039
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TECKNIT, INC., 320 N. Nopal St., Santa Barbara, CA 93103
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Telephone (301) 224-4500
EMI/EMC/TEMPEST, R & D, Test and Analysis, Communication and Digital Design

CHOMERICS, INC., 77 Dragon Ct., Woburn, MA 01801
Telephone (617) 935-4850
EMI/RFI shielding materials: gaskets, adhesives, coatings, shrinkable cable shields

SPECTRUM CONTROL, INC., 8061 Avonia Rd., Fairview, PA 16415
Telephone (814) 474-1571 Telex 510/699-6848

EMC test and consulting VDE, CISPR, MIL-461, FCC. Mfr. RF filters, RFI capacitors, chips, variable caps—in stock at HALLMARK

An Institutional Listing recognizes contributions to support the publication of the IEEE Newsletter and TRANSACTIONS ON ELECTRO-MAGNETIC COMPATIBILITY. Minimum rates are \$75.00 for listing in one issue; \$200.00 for four consecutive issues. Larger contributions will be most welcome. No agency fee is granted for soliciting such contributions. Inquiries, or contributions made payable to the IEEE, plus instructions on how you wish your Institutional Listing to appear, should be sent to M. Bonaviso, The Institute of Electrical and Electronics Engineers, Inc., 345 East 47 Street, New York, NY 10017.