**NO. 28 APRIL 1970**

*A management newsletter on IEEE operations . . . to encourage communication among committees, Groups, Sections, and staff*

# ELECTRICAL ENGINEERING®

IN THE MARCH OF PROGRESS over the span of IEEE's first 10 years there will have been a gradual broadening of its base of representational election of Directors—first by Regions, now over the coming 3 years by Technical Divisions. By 1973, of 27 Directors, 4 will have stood for Institute-wide election, 15 as representatives of Regions and Divisions, and 8 by having been selected by the other 19.

If future Boards are to be composed entirely of broad-gauged men of highest caliber, a special obligation does and will fall upon the organizational units, which nominate at least 30 members for the 15 positions, to search out those who can be representative without being parochial. For each person so nominated stands the chance of finding himself in the middle of a $7,000,000-a-year, 27-piece concert orchestra... It's no place for a bugler.

## NEEDLES AND PRODS

NOMINEES FOR OFFICE, 1971. Calendar calls for action:

1) Regional Committees of even-numbered Regions, 2 to 8, are to present nominees (Bylaw 401.8) for 1971 Delegate/Directors, by April 30, 1970.

2) Technical Divisions 3 and 4, by April 30, are to present nominees (new Bylaw 201.2) for Delegate/Director. (See E. E. Feb., pp. 1, 4M, 4N.)

3) Sections, Groups, other IEEE Units, and individual members, before June 1, are to recommend members of 1971 standing committees and boards—not including IEEE Board of Directors (BofD) but including Nominations & Advancement (N&A) Committee for 1971-72. (See E. E. Feb., pp. 1, 2, 4G, 4H.)

MAJOR AWARDS nominations are due June 1. See Spectrum, Nov. '69, pp. 130-131; E. E. Dec., p. 5. (Particulars, forms, Una Lennon) When writing, name the Award, since forms are tailored to each.

## OPPORTUNITIES

RESERVES FOR INVESTMENT. Arrangements have been made to credit directly to individual Groups the interest earned by their reserves in 1970. The Operating Committee of the Technical Activities Board (TAB OpCom) has also approved a reserve guideline for the level of Group reserves, however held, related to the running-average annual operating budget. The guideline permits the accumulation of special reserves to support defined projects.

TAB OpCom will become concerned if a Group has continual reserves above the optimal percentage and with no plans to improve services or provide new ones.

This philosophy is reviewed here for the casual information of Sections and other Units, which also have opportunity to consign their contingency funds into the IEEE investment fund.

U.S. MEMBERS TRAVELING ABROAD, if capable and willing, under auspices of the United States Information Agency's Information Center Service (USIA-ICS), to take part

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in seminars, discussions, or lecture programs involving foreign scholars and professionals, or to address foreign university audiences, may write: Chief, Educational Support Branch, ICS, USIA, 1711 New York Avenue, N.W., Washington, D.C. 20547, or phone Area 202-ME2-6748.

The program is called Volunteer Speakers Service (VSS), seeks to enlist "noted American professionals," and is broader than but includes engineering and scientific disciplines. It presupposes that the traveler is abroad and his expenses have been taken care of. In consideration of his adding a VSS assignment to one or more countries on his itinerary, USIA "posts" abroad undertake (if arrangements are concluded) to assume responsibility for an honorarium or perdiem payment to cover the costs of the required regional or in-country travel.

Advantages held out include the opportunity to broaden acquaintance with leading foreign personalities in the speaker's field, perhaps to extend his initially-contemplated stay, or to visit localities which did not figure in his original plans.

The Washington contact mentioned is principally for putting the IEEE volunteer speaker in touch with the USIA post abroad for the purpose of reaching agreement on consummation, schedule, terms, payments, and so on. Presumably USIA-ICS will do some early screening on an applicant's qualifications, so it would be well to let IEEE know that contact is being made. (Particulars, Jack Kinn)

## PUBLICATION NEWS

MEMBERS' COPIES—FOR PERSONAL USE. IEEE's non-IEEE-member rates are set considerably higher than member rates. TAB Finance Committee recently reviewed cases in which members have been subscribing more on their employers' behalf than their own.

If employers subscribe and either circulate copies or put them in the library, IEEE has exacted its premium and can hardly object to how employers use their property. But when a member puts his copy to similar disposition, he hits IEEE twice: by depriving it of the premium, and by doing for it a job of recruiting-in-reverse. Members don't beget members that way.

Perhaps assuming that the Institute may have been at fault for failure to inform, TAB OpCom urged that all future IEEE offerings pertaining to subscriptions and membership fees carry a clear statement that a member's copies are for his personal use.

That would include his use in securing new members—naturally.

ELECTRONIC METHOD OF PUBLICATION. November '69 BofD was informed that electronic methods of reproduction were proposed for the next NAECON Record and an issue of the Aerospace & Electronic Systems Transactions... The publisher chosen for the new IEEE Electrical and Electronics Dictionary, is composing it electronically... The 1970 IEEE Membership Directory was produced that way... The joint IEE-IEEE publications are phototypeset... Spectrum, Feb. '70, pp. 120-121, ran a summarization article, covering the appointment of an ad hoc committee one of whose first actions was to organize a session at the March Convention on "Electrography—Electronic Hardcopy."

With all this going on, so obviously shaping up a different future for IEEE's "shirtsleeves brigade," E.E. asked Woody Gannett to write about it, tutorially. He consented. See inserted pages 4A, 4B.

ENGINEERING INFORMATION SYSTEMS. As surmised they might, 4 months ago (see E.E. Dec., p. 3) all 3 "Tripartite" parties—United Engineering Trustees (UET, of which IEEE is a member), Engineers Joint Council (EJC), and Engineering Index (EI)—voted "no" on the action plan for a United Engineering Information System.

Economics was one big stumbling block. There is widely recognized need for an active unifying group of appropriate scope. UET has an ad hoc committee, with Harold Chestnut as IEEE's member, trying to chart a sound future course. In a related activity, the informal staff group mentioned in E.E. Dec., '68, p. 5, has been made into a permanent Coordinating Committee on Engineering Information (CCEI). Howard Tompkins is the IEEE staff member on this committee.

IEEE and IEE have broadened their pact (E.E. Oct., '68, pp. 5-6; Aug. '69, p. 3) as joint publishers of 4 computer-controlled, phototypeset periodicals of abstracts and current papers. IEEE will now acquire and integrate into its own data base (transfer being by magnetic tape) the major portion of IEE's computer-produced data base.

The IEEE Annual Index Tapes of its regular publications during 1968-1969 combined will become available in 1970, and annually thereafter.

IEEE has also instituted, from its IEE-derived data base, a new service called REFLECS (Retrieval from the Literature on Electronics and Computer Sciences); it consists of machine-readable magnetic tapes of bibliographic entries and abstracts, to be delivered monthly to subscribers by IEEE Information Services, beginning this month. (Particulars, Tom Hogan).

IEEE cooperating, EI (Engineering Index) will use a recent National Science Foundation (NSF) grant to modernize its indexing vocabulary in electrical and electronics engineering, and bring it closer to the vocabulary used by IEEE and IEE in their joint data base and publishing activities.

## COMMITTEE NEWS

LONG RANGE PLANNING COMMITTEE. The LRPC membership, originally consisting of 4 Directors, was increased by Bylaw 310.8 change in November '69 to "not more than 10 members who shall include the Junior Past President, acting as chairman, the Senior Past President and the Treasurer." So constituted under Dr. F. K. Willenbrock for 1970, Dr. S. W. Herwald and Mr. R. W. Sears will be jointed initially by Messrs. W. E. Cory, H. H. Heffner, G. B. Herzog, C. A. J. Lohmann, J. W. Redmond, R. A. Rohrer, R. O. Thomas. Composition reflects an intent to include men of diverse backgrounds and ages. They held their first 1970 meeting on March 25.

PUBLIC RELATIONS ADVISORY COMMITTEE. (PRAC), consisting of IEEE members and advisers, all active in the Public Relations field, met Mar. 5, '70, for the first time. For background, see E.E. Dec., p. 5.

Under chairmanship of Bruce Strasser, Bell Telephone Laboratories, the following will serve: Harry Gail, Westinghouse; R. Ned Landon, General Electric; Prof. Roger Perry, Worcester Polytechnic Institute; Steve Scrupski, "Electronics"; Ted Sherburne, Science Service; Bruce Shore, RCA; Eugene Kone, American Institute of Physics. Executive Committee Coordinator is Robert H. Tanner.

## REGIONAL AND SECTION NEWS

IEEE'S GEOGRAPHICAL STRUCTURE is being studied by RAB with a view to improvement. Some Regional Directors find themselves with nearly 40 Sections and as many college Branches, all of which under ideal conditions would be visited by the Director annually during his 2-year term.

A practical solution might be found in the creation of Regional interstructures: Councils of Sections or something else. RAB is considering the selection of one Region to probe the possibilities, and upon the results determine the direction to be taken.

REFLEXES FROM THE MARCH CONVENTION. Sections, Chapters, and other Units which hold meetings or technical sessions can turn to local account the benefits of papers and panel discussions at the March Convention: 1) Sign up Convention speakers in person, obtaining leads from the Advance Program mailed in February or from the Convention Digest; 2) Lift interesting panel topics or papers symposiums by title, and have a session organizer use the Convention's treatment of a subject in breadth as a model for making speaking assignments to several

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qualified members of the Section or Unit. A moderator should organize them for a question-and-answer period, and do the summing-up. Follow this, and what you have done is to latch on to a subject of local interest in a manner which commended itself to experts.

In regard to the Alternative 1, ask Audrey van Dort at IEEE for a copy of page 4M of E. E. April 1969.

Gerry McCue, in Spectrum, Feb. '70, p. 39, says: "For a large gathering of engineers, only a broad-interest program can supply cohesion." Separated from its Convention context, the point has applicability in the Sections, especially the larger ones having a spectrum of Chapters serving selected specialties.

SHARP TOOL FOR MEMBERSHIP promotion and relations is a roster of Section members by employers. Now locked to the data base of the 1970 Membership Directory, and perhaps to be continuously computer-updated, this most useful aid, dry-run-tested in March, is now available on Section order at same price as other rosters. (Particulars, Bill Keyes)

PRINTED SECTION ROSTERS of Cleveland members, arranged alphabetically by names and by employers were distributed in early 1970 to all members for reference purposes. The booklet was prepared from 1800 locally-punched cards, and the lists, somewhat reduced from computer readout sheets, gave mailing addresses, zip codes, and members' IEEE numbers and grades.

Herb Heller makes the point that, besides being useful to Cleveland members, the cost was more than offset by revenue from "advertisers who had been reluctant to insert in our monthly Section News but eager to advertise in the roster... This should be a boon to financially-pressed Section treasuries."

On the basis of try-and-see, the General Manager (Statement of Policy #6) did not withhold permission from Cleveland to use the IEEE lists, supplemented by information obtained locally. However, before other such requests are granted, a reasonable time should elapse to watch the effects, in Cleveland, of having rosters of names and street addresses receive barrage distribution. Members may not thank us if it precipitates a flood of unwanted ads and begging letters in their mail. Possible dilution of advertising income and goodwill elsewhere in IEEE or in the Section has also to be watched.

Meanwhile, E. E. is pleased to commend Herb Heller's up-and-go, and to offer the experiment as another example (cf. E. E. Feb., p. 3) of how initiative, accepting the logic of accommodation, can be kept at an all-time high.

SECTION MANUAL, updated, will be mailed to new chairmen as they take office. With it will go a rainbow of other manuals, guides, and handbooks, covering Section matters: Financial Operations, Section & Group Chapter Meetings, Section Publications, Membership & Transfers, Awards, Fellow Grade Nominations, Educational Activities, Section Student Activities, Public Relations & Publicity, Group Chapter Operations, and How to Organize a Conference. (Individual copies, Emily Sirjane)

## TOOLS AND AIDS

BYLAW CHANGES made between March 28, 1969 and March 26, 1970 will be incorporated in a reprint of all Bylaws to be issued this month... These changes have been reported in E. E. as made; those made by BofD March 26, 1970 are referred to on a later page of this issue.

ORGANIZATION ROSTER 1970 will have been distributed by end of April. (Copy, Emily Sirjane)

SECRETARY'S REPORT FOR 1969, in digest, will be printed in June '70 Spectrum. It contains IEEE statistics and other institutional information. Commended to the more insatiable readers of E. E. Should be tagged for reference.

MEMBERSHIP DIRECTORY 1970 went out on time in January to those who ordered it. (Members, $7; orders, Bill Keyes)



# Technical Activities Board

## IEEE STANDARDS

### Sava I. Sherr Appointed Manager of Standards Operation

The IEEE Headquarters staff to support the IEEE Standards Committee is being expanded, in accordance with the recommendations of the Easton Committee (EE No. 20, page 4, December 1968) that our standards program be reorganized and strengthened. On April 7, General Manager Fink announced the appointment of Mr. Sava I. Sherr as Manager of Standards Operation. Mr. Sherr comes to IEEE from the General Instrument Corporation. He holds degrees from Cooper Union and the University of Pennsylvania. In addition to his industry experience, he has been active in EIA, NSIA, and AFCEA; he is a member of IEEE and ISA.

### Publication Plans

As part of the reorganization of the IEEE Standards Program, new procedures have been adopted for the publication of new or revised IEEE Standards, including trial-use Standards. When approved by the IEEE Standards Committee all such documents will be published in the appropriate Group Transactions or Journal. The publication expenses will be part of the Standards Committee budget and will not count against the Group's official page and dollar budget for the year. Reprints will be bound and sold separately, as in the past.

## TECHNICAL INTEREST PROFILES

In 1969, through a cooperative effort spearheaded by Dr. W. B. Jones, Jr., representing TAB OpCom, and Dr. Howard E. Tompkins, Director of Information Services, and Mr. Howard Falk, Manager, Information Services Department, efforts were made to define technical profiles for the Groups and their Technical Committees in terms of the Classification System for Electrical and Electronics Abstracts and Computer and Control and Abstracts. In the same connection when the total IEEE membership was asked to reconfirm their addresses for inclusion in the 1970 Directory, they also asked that each individual express his personal technical interest profile in terms of the four character codes used in the classification system. We had an excellent response from the IEEE membership, and thus have a rudimentary capability to select members on the basis of technical interest even though these interests do not correspond exactly to the membership list of a Group. Because we work jointly with the IEE in England, IEEE may not unilaterally revise the classification system. Some changes have been made since the first list was published in the April 1969 issue of Electrical Engineering. Attached is a copy of the Revised 1970 Classification System.

On March 9, all Groups were asked to participate in a belated effort to develop an independent technical subject list that would more adequately serve our needs in defining the technical profiles of Groups, Technical Committees, and individual members. Obviously, the Information Services Department will then be faced with the job of providing a two way transformation between the new IEEE list and the joint IEE/IEEE list. It is hoped that this step will lead to even better capabilities for servicing the special interests of our members.

## 1970 Classification System for Electrical and Electronics Abstracts and Computer and Control Abstracts

**0 GENERAL TOPICS, CIRCUITS AND ELECTRONICS**
00.00 GENERAL
01.00 EDUCATION AND TRAINING
02.00 MATHEMATICAL TECHNIQUES (see 60.00)
03.00 CIRCUIT THEORY
03.10 Network Topology
03.20 General Analysis and Synthesis Methods
03.30 Computer Aided Circuit Design
03.40 Lumped Linear Networks
03.50 Distributed Linear Networks
03.60 Nonlinear Network Analysis and Design
03.70 Time-Varying and Switched Networks
03.80 Filters
04.00 ELECTRONIC CIRCUITS
04.10 Power Supply and Supervisory Circuits
04.20 Amplifiers
04.40 Oscillators
04.50 Modulators, Detectors and Mixers
04.60 Pulse and Digital Circuits
04.80 Special Purpose Electronic Circuits
05.00 INTEGRATED ELECTRONICS
05.10 Monolithic Integrated Circuits
05.20 Hybrid Integrated Circuits
05.30 Other Integrated Circuits
06.00 PROJECT AND PRODUCTION ENGINEERING
06.10 Project Engineering
06.20 Reliability and Quality Control
06.30 Electromagnetic Compatibility
06.50 Product Appearance and Packaging
06.60 General Fabrication Techniques
06.70 Production Facilities and Engineering
08.00 ENGINEERING ADMINISTRATION AND MANAGEMENT

**1 ELECTRON DEVICES AND MATERIALS**
11.00 GENERAL MATERIALS SCIENCE
11.10 General Materials Properties
11.30 Materials Testing
12.00 CONDUCTORS, INDUCTORS AND SWITCHES
12.10 Conductive Materials and Effects
12.20 Resistors
12.30 Inductors, Coils and Signal Transformers
12.40 Wiring, Connectors and Printed Circuits
12.60 Relays and Switches
12.70 Electrical Contact Phenomena
13.00 MAGNETICS AND SUPERCONDUCTORS
13.20 Magnetic Effects in Materials
13.30 Ferromagnetic Metals and Metallic Cores
13.40 Ferrites, Garnets and Their Devices
13.50 Magnetic Thin Films and Devices
13.60 Magnets
13.70 Other Magnetic Materials and Devices
13.80 Magnetic Device Circuits
13.90 Superconductive Effects and Devices
14.00 DIELECTRICS
14.10 Inorganic Insulators
14.20 Organic Insulators and Plastics
14.30 Insulating Coatings
14.40 Capacitors
14.50 Ferroelectric and Piezoelectric Materials, Effects and Devices
14.60 Discharges
14.70 Other Dielectric Materials, Effects and Devices
15.00 ELECTRON TUBES
15.10 Electron Tube Technology
15.20 Emission
15.30 Vacuum Tubes
15.40 Travelling Wave Tubes
15.50 Other Microwave Tubes
15.60 Cathode-Ray Tubes
15.70 Phototubes
15.80 Gas Discharge Tubes
16.00 OPTOELECTRONIC EFFECTS, DEVICES AND SYSTEMS
16.10 Photoelectric Effects
16.20 Photodetectors and Infrared Detectors
16.40 Light emission and Light-emitting Devices
16.50 Other Optoelectronic Devices
16.60 Display Systems
17.00 QUANTUM ELECTRONICS, LASERS
17.20 Laser (and Maser) Theory
17.30 Laser Operation and Interactions
17.40 Semiconductor Lasers
17.50 Solid Lasers
17.60 Gas Lasers
17.70 Other Lasers
17.80 Holography
18.00 SEMICONDUCTORS
18.10 Growth, Preparation and Basic Properties
18.20 Bulk Semiconductor Effects and Devices
18.30 Surfaces, Boundaries and Contacts
18.40 Junction Theory and Classical Junction Diodes
18.50 Junction Breakdown and Tunnelling
18.60 Bipolar Transistors and Thyristors
18.70 Field-Effect Devices
18.80 Other Semiconductor Effects and Devices
18.90 Semiconductor Device Characterization and Modelling

**2 ELECTROMAGNETICS AND COMMUNICATION**
21.00 ELECTROMAGNETICS
21.10 Electric and Magnetic Fields
21.30 Electromagnetic Wave Theory
21.40 Guided Wave and Cavity Theory
21.60 Electromagnetic Waves in Plasma
22.00 ANTENNAS AND PROPAGATION
22.20 Radiowave Propagation Effects
22.30 Optical Propagation Effects
22.50 Antenna Theory
22.60 Antennas
22.61 *Single Antennas*
22.65 *Arrays*
22.80 Antenna Auxiliaries
23.00 MICROWAVE TECHNOLOGY
23.10 Waveguides
23.20 Waveguide Components
23.40 Microwave Measurement Techniques
23.50 Parametric Microwave Devices
23.70 Solid-State Microwave Devices
25.00 INFORMATION AND COMMUNICATION THEORY
25.10 Information Theory
25.30 Modulation Methods
25.40 Codes
25.50 Speech Intelligibility
25.60 Signal Processing and Detection
25.80 Communication Switching Theory
26.00 TELECOMMUNICATION
26.10 Telecommunication Systems
26.11 *Telephone Systems*
26.19 *Other Systems*
26.30 Telecommunication Links
26.31 *Lines and Cables*
26.32 *Radio Links*
26.33 *Satellite Relay Links*
26.34 *Space Communication Links*
26.36 *Optical Links*
26.40 Telecommunication Equipment
26.41 *Switching Equipment*
26.42 *Multiplexing Equipment*
26.49 *Other Telecommunication Equipment*
27.00 RADAR AND RADIONAVIGATION
27.10 Radar Theory
27.20 Radar Systems and Equipment
27.40 Radionavigation and Direction Finding
27.70 Radioastronomy
29.00 RADIO, TELEVISION AND AUDIO
29.10 Radio and Television Broadcasting
29.20 Radio and Television Transmitters
29.30 Radio and Television Receivers
29.40 Television Signals, Equipment and Systems
29.50 Audio and Video Recording
29.60 Audio Signals, Equipment and Systems

**3 INSTRUMENTATION AND SPECIAL APPLICATIONS**
31.00 INSTRUMENTS AND MEASUREMENT SCIENCE
31.10 Measurement Theory
31.20 Measurement Standards
31.30 Measurement and Instrumentation Systems
31.40 Signal Sources and Generators
31.50 Bridge Instruments
31.60 Display and Recording Instruments
31.70 Indicating Instruments
31.90 Other Instruments
33.00 PARTICLE AND RADIATION PRODUCTION AND INSTRUMENTATION
33.10 Particle Sources
33.20 X-Ray and Gamma-Ray Production
33.30 Particle Beams and Optics
33.40 Particle Accelerators
33.50 Radiation and Particle Detectors
33.60 Nuclear Instruments
33.70 Spectroscopy and Spectrometers
35.00 BIOMEDICAL ENGINEERING
35.10 Biomedical Phenomena
35.20 Bioresearch Instrumentation and Methods
35.40 Patient Care and Treatment
35.50 Prosthetics
35.70 Diagnosis Methods
36.00 AEROSPACE FACILITIES AND TECHNIQUES
36.10 Aerospace Test Facilities and Simulation
36.20 Aerospace Instrumentation
36.30 Aerospace Propulsion
36.40 Ground Support Systems
37.00 EARTH SCIENCES
37.10 Atmospheric and Ionospheric Studies
37.20 Geophysical Techniques and Equipment
37.30 Oceanography
38.00 SONICS AND ULTRASONICS
38.10 Sonic and Ultrasonic Devices and Equipment
38.11 *Sonic and Ultrasonic Transducers*
38.19 *Other Devices and Equipment*
38.20 Sonic and Ultrasonic Applications

**4 POWER AND INDUSTRY**
41.00 POWER NETWORKS AND SYSTEMS
41.10 Power Systems
41.20 Transmission Networks
41.21 *D.C. Transmission Networks*
41.30 Distribution Networks
41.40 Cables
41.50 Supports; Insulators; Connectors
41.60 Power System Protection
42.00 POWER STATIONS AND PLANTS
42.10 Energy Resources
42.20 Nuclear Stations
42.40 Fuel-Burning Stations
42.60 Water Power Stations
42.90 Other Stations and Plants
43.00 POWER APPARATUS AND MOTORS
43.20 Electric Machines for Power Systems
43.22 *Generators*
43.24 *Motors*
43.30 Small and Special Electric Machines
43.40 Transformers
43.60 Power Conversion
43.80 Switchgear
44.00 DIRECT ENERGY CONVERSION AND ENERGY STORAGE
44.10 Electrochemical Conversion and Storage
44.12 *Primary Cells*
44.14 *Secondary Cells*
44.16 *Fuel Cells*
44.20 Solar Cells and Arrays
44.30 Magnetohydrodynamics
44.60 Other Direct Energy Conversion
44.90 Other Energy Storage
46.00 POWER UTILIZATION
46.10 Drives
46.20 Traction
46.30 Lamps and Lighting
46.40 Heating
46.50 Air-Conditioning, Refrigeration
46.70 Other Domestic Appliances
46 80 Measurements and Metering
48.00 INDUSTRIAL APPLICATIONS OF POWER
48.10 Metallurgical Industries
48.20 Manufacturing Industries
48.30 Chemical and Oil Refining Industries
48.40 Textile Industries
48.50 Wood Processing, Pulp and Paper Industries
48.60 Printing Industries
48.70 Glass, Ceramic, Brick and Cement Industries
48.80 Food-Processing Industries
48.90 Other Industrial Applications of Power

**6 SYSTEMS AND CONTROL THEORY**
60.00 MATHEMATICAL TECHNIQUES
60.10 Classic Algebra
60.20 Analysis
60.30 Integral Transforms
60.40 Probability and Statistics
60.41 *Queueing Theory*
60.42 *Game Theory*
60.43 *Monte Carlo Methods*
60.50 Combinatorial Methods
60.60 Mathematical Programming
61.00 SYSTEMS AND CYBERNETICS
61.10 General Systems Theory
61.20 Simulation, Modelling and Indentification
61.30 Adaptive System Theory
61.40 Artificial Intelligence
61.50 Pattern Recognition
61.60 Man-Machine Systems
61.70 Information Theory
61.90 Other Aspects of Systems and Cybernetics
62.00 CONTROL THEORY
62.10 Analysis and Synthesis Methods
62.20 Stability
62.30 Optimal Control
62.40 Multivariable Systems
62.50 Sampled-Data Systems
62.60 Self-Adjusting Control Systems
62.70 Distributed Parameters
62.80 Time Varying Parameters
62.90 Specific Nonlinearities

**7 CONTROL TECHNOLOGY**
70.00 GENERAL CONTROL TOPICS
70.10 Philosophical Aspects
70.20 Economic, Social and Political Aspects
73.00 CONTROL AND MEASUREMENT OF SPECIFIC VARIABLES
73.10 Electric and Magnetic Variables
73.11 *Voltage*
73.12 *Current*
73.13 *Power and Energy*
73.14 *Frequency*
73.15 *Phase and Gain*
73.16 *Other Electric Variables*
73.17 *Magnetic Variables*
73.20 Nonelectric Variables
73.21 *Position*
73.22 *Speed and Acceleration*
73.23 *Thermal Variables*
73.24 *Chemical Variables*
73.25 *Pressure and Vacuum*
73.26 *Level, Flow and Volume*
73.29 *Other Nonelectric Variables*
74.00 CONTROL EQUIPMENT
74.10 Controllers
74.20 Sensing and Measuring Devices
74.21 *Electric*
74.22 *Nonelectric*
74.30 Magnitude Converters
74.40 Telecontrol and Telemetering Components
74.50 Indicators and Recorders
74.60 Actuating and Final Control Devices
74.61 *Motors and Actuators*
74.62 *High-Power Electric Amplifiers and Switches*
74.63 *Other Nonelectric Final Control Devices*
75.00 CONTROL APPLICATIONS
75.10 Agriculture, Other Natural Resources
75.20 Mining, Oil and Natural Gas Extraction
75.30 Materials Handling
75.40 Buillding and Civil Engineering
75.50 Power Systems and Devices
75.51 *Heat Systems*
75.52 *Hydraulic Systems*
75.53 *Nuclear Systems*
75.54 *Electrical Systems*
75.59 *Other Power Systems*
75.60 Industrial Production Systems
75.61 *Metallurgical Industries*
75.62 *Manufacturing Processes and Machine Tools*
75.63 *Chemical and Oil Refining Industries*
75.64 *Textile Industries*
75.65 *Wood Processing, Pulp and Paper Industries*
75.66 *Printing and Associated Industries*
75.67 *Glass, Ceramics, Brick and Cement Industries*
75.68 *Food Processing Industries*
75.69 *Other Industries*
75.70 Transportation Systems
75.71 *Road-Traffic Systems*
75.72 *Rail-Traffic Systems*
75.73 *Lift and Aerial Cableway Systems*
75.74 *Marine Systems*
75.75 *Aeronautic Systems*
75.76 *Astronautic Systems*
75.79 *Other Transportation Systems*
75.80 Communication Techniques
75.81 *Telephony*
75.82 *Telegraphy*
75.83 *Radio and Radar*
75.84 *Television*
75.85 *Postal Service*
75.86 *Remote-Signalling, Dispatching and Safety Devices*
75.87 *Photography, Cinematography, Sound Recording and Acoustics*
75.90 Other Control Applications
75.91 *Biological Systems*
75.92 *Medical Systems*
75.93 *Astronomical Instruments*
75.94 *Physical Instruments*
75.99 *Other Special Applications*

**8 COMPUTER PROGRAMMING AND APPLICATIONS**
80.00 GENERAL COMPUTER TOPICS
80.50 Computer Facilities, Administration and Management
80.70 Computer Education and Training
82.00 NUMERICAL ANALYSIS
82.10 Error Analysis in Numerical Methods
82.20 Function Evaluation
82.30 Interpolation and Functional Approximation
82.40 Linear Algebra
82.50 Nonlinear and Functional Equations
82.60 Numerical Integration and Differentiation
82.70 Differential Equations
82.80 Integral Equations
82.90 Other Numerical Methods
83.00 PROGRAMMING SYSTEMS, LANGUAGES AND PROCESSORS
83.10 Programming Languages
83.11 *Machine Oriented Languages*
83.12 *Procedure and Problem Oriented Languages*
83.19 *Other Programming Languages*
83.20 Program Processors
83.40 General Utility Programs
83.50 Diagnostic, Testing and Debugging Systems
83.60 Input-Output Programs
83.70 Supervisory and Executive Programs
83.90 Other Systems Operation Programs
84.00 FILE ORGANIZATION AND DATA HANDLING
84.10 File Organization
84.20 Data Handling
85.00 INFORMATION SCIENCE AND DOCUMENTATION
85.10 Information Centres and Services
85.20 Generation, Dissemination and Use of Information
85.30 Publishing and Reproduction
85.40 Translation
85.50 Information Analysis and Indexing
85.60 Information Retrieval and Storage Systems
86.00 ADMINISTRATIVE DATA PROCESSING
86.10 Financial
86.20 Government
86.30 Military
86.40 Manufacturing and Distribution
86.90 Other Fields
88.00 OTHER COMPUTER APPLICATIONS
88.10 Natural Sciences
88.20 Engineering
88.21 *Electrical and Electronics Engineering*
88.24 *Computer Engineering*
88.25 *Control Engineering*
88.26 *Civil Engineering*
88.29 *Other Engineering Fields*
88.30 Social and Behavioral Sciences
88.40 Humanities
88.90 Other Special Applications

**9 COMPUTER SYSTEMS AND EQUIPMENT**
90.00 COMPUTER METATHEORY AND SWITCHING THEORY
90.10 Formal Logic
90.30 Automata Theory
90.50 Switching Theory
90.51 *Combinatorial Switching Theory*
90.52 *Sequential Switching Theory*
90.90 Other Computer Theory
92.00 LOGIC ELEMENTS AND CIRCUITS
92.10 Semiconductor Logic Elements
92.40 Other Logic Elements
92.50 Logic and Switching Circuits
92.90 Other Circuits for Digital Computers
93.00 LOGIC DESIGN AND DIGITAL TECHNIQUES
93.20 Logic Design Methods
93.30 Computer Aided Logic Design
93.50 Computer Architecture
93.70 Digital Arithmetic Methods
94.00 DIGITAL STORAGE
94.10 Complete Storage Units and Equipments
94.20 Digital Storage System Design
94.40 Storage on Moving Magnetic Media
94.50 Storage on Stationary Magnetic Media
94.60 Semiconductor Storage Devices
94.90 Other Storage Devices and Methods
95.00 COMPUTER PERIPHERALS
95.10 Data Communication Equipment and Techniques
95.20 On-Line Direct Input-Output
95.40 Character Recognition Equipment
95.50 Plotters
95.60 Printers
95.70 Punched Card and Tape Equipment
95.90 Other Computer Peripherals
96.00 DIGITAL COMPUTERS AND SYSTEMS
96.10 General Purpose Computers and Systems
96.50 Special Purpose Computers and Systems
96.90 Other Digital Systems
99.00 ANALOGUE COMPUTERS AND COMPUTATION
99.10 Analogue Circuits
99.20 Analogue Storage
99.30 Analogue and Hybrid Computers and Equipment
99.40 A/D and D/A Conversion
99.50 Analogue and Hybrid Programming



# ELECTRONIC METHODS OF PUBLICATION

by E. K. Gannett
Director of Editorial Services

It seems likely that before this decade is out the process for publishing IEEE papers will include some, and perhaps all, of the following steps:

1. The author's manuscript is received at the IEEE publication office where indexers add index terms and copy editors add special identification codes to various elements of the manuscript (e.g., title, author, abstract, headings, references, etc.) so that these elements can later be selectively retrieved and also to enable the later assignment by computer of proper type sizes and fonts.

2. The coded manuscript is sent to a service bureau equipped with an optical character reader which automatically converts the text into computer-readable form on magnetic tape. In a parallel process, the illustrations are also converted to digital form on tape. The encoded text and illustrations are stored in a master file in a computer, probably off-site.

3. Copy editors at remote on-line cathode-ray-tube display terminals equipped with light pens and keyboards read the text and make any needed corrections or revisions. The changes are instantly displayed to them for verification.

4. The corrected tapes, with typographic and format instructions added, are fed into a computerized cathode-ray-tube photocomposing device which generates the text and illustrations on its face and produces a photographic print of a complete page, all in a matter of seconds.

5. The prints thus produced are sent to the IEEE printer for printing and mailing the finished journal.

While this marks the end of the publication process for today's typical journal, by 1980 we may expect to see the process extended and expanded along lines such as the following:

6. Magnetic tapes containing abstracts and indexing information, derived from the computer master file, are provided monthly to abstracting services, libraries, and other information centers.

7. Annual indexes are automatically generated for inclusion in the year-end issues of all IEEE journals, and a combined annual index to all IEEE publications is also produced.

8. At monthly or yearly intervals journal tapes are fed into a CRT device that records them directly onto microfilm for distribution to libraries.

9. At weekly or monthly intervals the computer automatically selects papers from its master file according to subject matter and repackages them into special subject combinations tailored to the particular technical information profiles of organizations and other groups of individuals, either in printed or microfilm form.

10. At weekly intervals, and in advance of journal publication, an IEEE alerting service provides to subscribing members and organizations a list of papers currently being processed for publication which match their technical interest profiles. The lists are generated from the computer master file on the face of a cathode-ray tube from which they are reproduced at very high speed by an electrophotographic printer. The printer captures the optical image on paper by causing an electrostatically charged photoconducting surface material to be discharged in the exposed areas. Toner is then applied to make the latent electrostatic image visible.

11. In a process similar to (10) above, bibliographies of IEEE papers on any desired subject, or for that matter selected by author or organization, are produced on demand for researchers, IEEE journal editors and reviewers, and others.

12. Direct access to the master file is available to interested parties for information retrieval purposes via remote terminals.

We can't say how much of the foregoing will be fact ten years hence, but we can certainly say that none of it is fancy. All of the electronic devices required for the processes described above are in actual operation today for some kinds of textual material. Some of these techniques are already in use by the IEEE. The Information Services Department, under Howard Tompkins, produced the 1969 annual Transactions indexes by computerized CRT photocomposition, and is commencing to make available tape products derived from these indexes. Similar examples of computerized photocomposition can be found in the IEEE Membership Directory, the recent Region 8 membership directory, and the forthcoming IEEE Dictionary.

However, it has not yet been feasible to apply these new techniques to the production of our journals. The problem centers on the complex nature of the text of most IEEE papers, with their multiplicity of intermixed type faces and sizes, their host of special characters and mathematical symbols, and their complicated multiline equations. Once a solution is found --- and this does not seem very far off --- for inputting this kind of complex material to a computer at a cost that does not greatly outweigh the advantages of a computerized system, the prospects will be bright indeed for automating the entire publication process.

Toward this end, the Board of Directors recently established a Committee on Electronic Methods of Publication, under the aegis of the Publications Board, to explore and encourage the application of new technology to the production of IEEE publications. Out of this effort and the efforts of others working in the field, we shall witness more than the improvement of an existing process. For inherent in the use of the computer to process information is the capability of repackaging that information to provide important new products and services. Thus by 1980 we may expect that the concept of "publication" will have taken on wholly new dimensions.



# COMMUNICATIONS THROUGH SECTION PUBLICATIONS

by J. D. Tebo

Back in the 1880's, when the American Institute of Electrical Engineers was in its infancy, the number of members in the Institute was so small that communication between them was a simple and easy procedure. With only 24 charter members, a letter or telegram (and later, a telephone call) provided all the necessary communication to keep the membership informed.

Now, with more than 162,000 members in IEEE, it becomes necessary to use every facility at our disposal to insure that the membership is fully informed of the organizational aspects of the Institute as well as the technical matters of interest. It is here that the Section Editors have the opportunity to keep their Section members advised not only in Section affairs, but to let them know something of what is going on in the Institute generally.

Perhaps you might wonder why I should be asked to speak to you today. Well, as Chairman of the Internal Communications Committee, it is my job to direct the work of that committee in pursuing a wide variety of communication problems requiring new solutions, coordination and cooperation with other groups, and diplomacy in carrying them to a successful conclusion. As stated in the IEEE Bylaws (310.5):

> "The Internal Communications Committee shall be responsible for review of generic internal communications among the membership, officers, headquarters, and organizational units of the Institute, and for the provision of assistance, advice, and recommendations to appropriate units for improvements in such communications. It shall also advise the Executive Committee and General Manager in public relations matters. The Committee shall consist of not more than six members."

What this means is that our committee is attempting to improve communications both <u>from</u> headquarters <u>to</u> the members of the Institute, and <u>from</u> the members <u>to</u> headquarters and to any associated body. Some examples of problems that the Internal Communications Committee has been concerned with are:

(1) How do you entice a member to pay his delinquent dues without antagonizing him?
(2) What is the best way to tell a Life Member he no longer needs to pay dues, but if he wishes, he can contribute to the Life Member Fund?
(3) Is the present organizational setup too complicated, and if it is, what suggestions might be offered to reduce the complication?
(4) What is the best way to recognize the long years of faithful service rendered by a member?
(5) What indication of appreciation can be given to a speaker for his efforts in a Section or Group Program?
(6) In what way can we urge members to be on the lookout for prospective new members?
(7) What can we do to guide qualified students into the profession?

Even the present bill for annual dues which was revised in 1966 by ICC for the 1967 dues needs further attention to explain the many services now available to a member, and how he could modify the existing group of publications he is already receiving.

You will note from the questions I have raised that some of them might arise in connection with the work of other committees, such as the Public Relations Committee and the Membership and Transfers Committee. If the Internal Communications Committee can help these committees, or any other committee, Group, or Section, we shall be glad to do what we can when called upon.

ELECTRICAL ENGINEERING, the Management Newsletter on IEEE operations, which was established to encourage communications among committees, Groups, Sections, and staff, is under the control of the ICC — as E.E.'s Editor, Dr. Ivan S. Coggeshall is an ex-officio member of this committee, he thus becomes well informed of the matters discussed at our meetings. He is also in a position to know what is happening in the various areas at Institute headquaters, and keeps <u>us</u> informed of these matters.

At the 1968 Convention, Dr. Coggeshall gave a talk to the Section Editors, describing in detail how ELECTRICAL ENGINEERING is prepared and published. No doubt some of you heard his talk, or have copies of it. If any of you would like to have one, I am sure that it can be obtained from Miss Audrey van Dort at Institute headquarters.

Dr. Coggeshall mentioned in his talk that editors of <u>all</u> IEEE periodicals - and that includes Section publications - are "granted blanket permission to lift, digest, paraphrase, or expand any item in ELECTRICAL ENGINEERING." Here's where you have an opportunity to obtain and pass on information on what is happening at the Board of Directors' meetings; Regional news, news of Groups, Chapters, Branches, Committee activities - all in capsule form. Approximately 4,200 copies of ELECTRICAL ENGINEERING are sent to committee members, Groups, Sections, and staff - and to certain others on request.

ELECTRICAL ENGINEERING is not a one-way street, either. My committee is very much interested in having E. E. 's Editor get any news items or suggestions that Section Editors, or any other Section officials, would care to offer.

An old cliche used quite often to establish employee loyalty to a company states that "In the eyes of the public, you are the company." Paraphrasing this for IEEE, we must remember that "In the eyes of the public (and the potential new member of the Institute) you are the Institute."

How often does a member of the Institute question the value of his membership - particularly when the bill for annual dues arrives. As Mr. C. W. Sall pointedly raised the questions in his article "Professional Societies and the Engineer." which accompanied the February 1970 issue of ELECTRICAL ENGINEERING, "Is he (the member) getting his money's worth? Are the benefits sufficiently good to warrant his continued support of the organization? Do the journals or proceedings, or other documentary materials carry articles of enough interest and value to be worthy of his few hours of reading time? Do the various conferences contribute enough to make his attendance worthwhile, even if the company does pick up the tab? Does the rubbing of professional shoulders, or just the prospect of being seen at a conference, add anything to his career or his status? If he presents a paper published in the society's journal, is he any better off?"

Within the Section the individual engineer has opportunity to begin his professional growth by taking part in the technical and organizational activities of the Institute. Those who have been active can set an example to the younger members - and those who have gone through the Section or other Institute offices, can keep on the look-out for promising talents shown by the newer members.

It is here that the Section editors can perform a valuable function. Granted that the readers of the Section publications are particularly interested in what goes on within the Section, the editor should not limit his publication to providing news only of local interest. The Section must keep in mind that it is a part of the whole organization, and the Section editor should endeavor to keep his Section well informed regarding the activities of the Institute as a whole.

When I receive my copy of the SPECTRUM, the first thing I look for is the news items of what is going on, as reported in "News of the IEEE" and the "People" Departments. I suppose as one grows older, he begins to think more about his friends and what they are doing, than about the newer advances in technology, although one's natural curiosity about his profession demands that he keep abreast of the times. Therefore, the Section editor must try to make his publication interesting to both the younger and the older engineer - including news of Section and Group Chapter technical meetings, but not forgetting that the older members are probably more interested in what their old friends are doing, and would welcome news pertaining to their honors and recognition of their work. Thus a balance in the news of interest to all age groups in the Section should be your goal. Remember too, that committee chairmanships and other offices are changing every year or two, and there is bound to be a need for the members of your Section to learn about those changes of particular interest to him.

I was quite impressed with the quotation of Professor Charles F. Scott's statement which was published as the leading item in the February 1970 issue of ELECTRICAL ENGINEERING. I won't quote it all now, because I want you to read it for yourselves. Let me just say that I can agree heartily with Professor Scott (who was President of AIEE the year I was born) when he said, "Association has brought me friends and activities that have enriched my life." For almost 50 years since I first became a student member of AIEE, I have enjoyed the friendship and help from so many electrical engineers that I, too, feel that my life has been enriched by membership in our Institute. I am sure that there are many of my colleagues who feel the same way.

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One copy gratis was furnished each Director; Section chairman and Section office (not officer); one to each Group, Council, Committee chairman, and TAB OpCom Member-at-Large. Additional copies are available to Sections, Groups, Councils, at $7, with the understanding that such copies are to be used for official business.

Use and abuse of the Directory is defined on the inside of the front cover. If included information is extracted by anyone for the preparation of mailing lists, such lists fall under Statement of Policy #6, para. 1; 6A, 2, 6; 6B, 2.

YOUR IEEE MEMBERSHIP CARD was enclosed with your annual bill for dues, to be carried in your wallet. It shows you are "paid up." Also:

1. Being machine-produced and carrying your IEEE serial number and grade as well as your name, it establishes your right to attend any IEEE meeting, anywhere, at the appropriate member's fee, if any.
2. Likewise, it identifies you at conferences held by sister societies; and wherever reciprocal rights obtain, entitles you to low registration fees.
3. In cases where a questionnaire asks for your IEEE number, as on an order form, you have it handy instead of "home."
4. On the back are listed the advantages of membership—check occasionally to see you are getting full value.

## "FOR YOUR INFORMATION"

"PORTABLE PENSIONS." They're being talked about in IEEE; be prepared to hear more. Described by title, they are retirement rights a member takes with him when he changes employers. Equities in the eventual annuities paid would not be held by employers but by outside carriers. Firms too small to have pension plans could agree to contribute to portable pensions and thus negate an employment advantage hitherto held by larger companies. Because interest earned and capital gains are not taxed until the annuity matures, accruals from these sources would be compounded over the years. The engineering society's function in the picture is that of providing the large stable base essential to assumption of collective risks by the carrier.

That description is definitely on the broad-brush side. Everything would depend on the fine print, and how the portable pension movement gains acceptance of engineers and employers. In any event, the staff is busily gathering information for "top-side," so to that extent it's a live subject.

YOUNG ENGINEERS. A feature of Convention-week for many years has been IEEE collaboration with the honor society Eta Kappa Nu (HKN) in its annual "Outstanding Young Engineer Award." Recipients, chosen by an HKN-appointed jury from among nominations made by industrial and academic sources, must be holders of BSEE or equivalent degrees from U.S. universities, who, at less than 35 years of age, have demonstrated outstanding achievement in the electrical engineering profession as well as local-community social service. IEEE people have often been asked to serve on the Juries of Award. Just this year, IEEE Groups have been invited to strengthen IEEE's bonds with HKN by making nominations.

Close ties have been justified by the way Award winners and runners-up have served IEEE during their careers. Examples that come to mind include President Granger, General Manager Fink, former Editor Pierce; Fellows having well-known names like Wiesner, Suits, Kock, Brunetti, Farnsworth, Cameras, Sommerman, Veinott, McRae, Bauer, Meacham, Hobson, Hall, Hough, Salina, Morton, Zarem, David; and others who have added their services and/or luster to IEEE.

THIRD-CLASS MAIL. Experience indicates that delays up to 5 weeks were becoming common even before the U.S. mail strike began Mar. 18. Three weeks' headway used to be ample. When accumulations due to the strike are cleared, Units using 3rd-Class should make tests, so publication dates may be re-established if need be.

PROFESSIONAL SOCIETIES LISTING, printed on pp. 4E-4F of E. E. Feb., has been

found to contain outdated details—perhaps inevitable in a burgeoning area. New men head the staffs of American Institute of Physics and American Physical Society, for example, and APS has moved to 335 East 45 Street. On p. 4F, facts about Groups should be checked against September '69 IEEE Organization Roster if they are to be used for other than cursory information. As printed, the list is of sufficient accuracy to make contacts leading to up-to-date particulars at source.

Engineers Joint Council (address same as IEEE) publishes a comprehensive (252-page) list annually. (Latest, Jan. 1970, $8.)

"ELECTRICAL ENGINEERING" from 1931 through 1962 was to AIEE what "Spectrum" is to IEEE. Merger found the name a potentially valuable property without a publication. E.E., as an administrative newsletter, put it to work.

Some think that the name unhappily describes its task; others, that the name is worthy of better employment.

Grant both. In the deliberately evolutionary processes of IEEE, is the time approaching when some Group or Division could appropriate the title to better Institute advantage? Or should the name be kept on ice for another n years.

If we don't use it, we don't keep it.

DISTRIBUTION OF E.E. Within the Sections, E.E. goes automatically to the incumbent chairman (4 copies), vice chairman, secretary, treasurer, editor; to Subsection chairman, secretary, secretary-treasurer; Chapter chairman; Branch counselor.

Large and small Sections, not counting their satellites, thus get the same number of copies (8). One who presumes to know how thinly 8 copies blanket the working contingent of a large Section cries: "'Tain't fair! 'Tain't smart!"

'Tain't?.. Write editor. Let's see what happens.

## WELCOME ABOARD!

New Sections:

Greece—joining other Sections to close an electronic loop around the Cradle of Civilization in the eastern Mediterranean. (Region 8)

Iran—from the west pushing this active Institute eastward, deep into the Asian Continent. (Region 8)

Calumet—A Chicago Subsection, now blossoming out as a full-fledged Section. (Region 4)

New Group Chapters:

| Section | Chapter |
|---|---|
| Boston | Sonics & Ultrasonics |
| Tokyo | Engg. in Medicine & Biology |
| Tucson | Electromagnetic Compatibility |
| Vandenberg | Aerospace & Electronic Systems |

Staff:

Thomas H. Hogan, Developmental Marketing Specialist, under Dr. Howard E. Tompkins, staff Director Information Services. Tom comes to us from COMSERV in Philadelphia. His schools were LeMoyne College and University of Pennsylvania.

Miss Esmi Bidstrup, Administrative Assistant to Bill Keyes, will help Bill in his responsibilities as staff secretary of RAB... He is capably assisted in other areas by his secretary, Mrs. Pauline Hamme.

CLOCKWORK. Not counting unnumbered hastily-convened gatherings in guest rooms and bars. 164 IEEE committees met during the March Convention in rooms assigned and posted. With due allowance for "repeaters," certainly more than 1,300 interested and active IEEE members were huddled there in give-and-take, dealing with their peers, reaching decisions, and making recommendations on the basis of which IEEE's immediate future will unfold.

Wheels within wheels to be sure, but how nicely meshed! . . Only the Convention brings so many together to confer, and to share the common problem of how to see and do everything in hours all too few.





CONVENTION ATTENDANCE (unaudited at present time) was 46,200±, compared with 58,588 in '67: 63,898 in '68; 60,544 in '69.

As noted by "Electronic News," due to a "stuttering U. S. economy," brought on by cuts in military and aerospace procurements, "the economic backdrop could have used a few brighter colors." Consequent thinning out of attendance and number of exhibitors, however, was more statistical than apparent at the Hilton/Coliseum.

As usual, events were crowded. As usual the Convention pursued its purposes to extend the education of qualified engineers through eye and ear, and to trigger bombardments of charged ideas which, like free electrons, zigzagged and collided all over the place.

The spirit in which the Convention was conceived and run had been epitomized by technical program chairman W. O. Fleckenstein in Spectrum, Feb. '70, p. 23. Spectrum in May will give a factual report of what happened.

A SIGN ON THE MARQUEE at the Coliseum read "Not Open to the Public," underlining IEEE policy to make its annual exhibition a specific adjunct to its technical sessions hence more or less "beyond" outsiders. Nowhere is this philosophy better expressed than in Spectrum, Feb. '70, p. 39.

A TRANSITIONAL CONVENTION it was—the last one at which a general committee structure composed of headquarters staff and member-appointees determined the technical program and engaged a manager of exhibits.

Beginning with the 1971 Convention, the newly-created IEEE Conference Board (see E.E. Feb., pp. 5-6) will determine the voltages to be applied to technical program and exhibits by the new year-round specialized staff. Even now the switchyard is showing telltale corona.

WILL COPP, who has managed exhibits for IEEE conventions for 26 years and had been advertising manager for 27, was given a ceremonial plaque by BofD Mar. 24. Praised was the push he put behind the rapid and successful growth of the annual convention and "the unique contribution he thus made to industry and the profession in furthering the communication of needed technical information."

In there, pitching for Will all those years, was Lillian Petranek, assistant exhibits manager, upon whom the editor of E.E. hereby bestows his Imperturbability Award—a resounding buss on both cheeks.

CONVENTION REFERENCE MATERIAL. All members were mailed the Advance Program which outlined all events and as to papers gave titles and authors by sessions, indexed by subject matter. Shown was the list of seminars-for-fee—three early-bird 4-mornings tutorials and two 2-day-all-day seminars. (Extra copies, Jack Kinn)

Spectrum, Feb. '70, pp. 21-37, repeated essentially the contents of the Advance Program.

The Convention Guide was handed all registrants. It repeated the Advance Program and added an index of authors; contents and schedule of 26 color, 2 B&W, films at the Coliseum; alphabetic list and location guide to exhibitors; their products and a products index; award citations of medalists, prize winners, and elected Fellows. (Extra copies in short supply: Audrey van Dort)

The Convention Digest, now costing members $5 from IEEE Order Dept., is a book. Digests are mostly on two facing pages, with graphs, drawings, half-tones, and references.

CONVENTION AIDS FOR SECTIONS AND CHAPTERS. Two aids were mentioned under subtitle "Reflexes, etc.," p. ; here are 3 more: 3) Nearly all technical films described in Convention Guide, pp. 37-41, are available to Sections, Subsections, Chapters, and Branches. Address Public Relations Director of the issuing firm or agency. (Help, Marion Herrick). 4) Ron Jurgen wrote press releases (by session-and-paper): 1A-3, 1B-4, 1F-3, 2B-2, 3D-2, 4A-1, 5F-2, 6D-1, 6D-6, 7B-4. (For key see Spectrum, Feb. '70, pp. 27-36.) Written in layman's language, they may help Sections/Chapters in re-scheduling or publicity. (Copies, Lee Nicol. 5) If treatment in Convention Digest is missing or inadequate, there's always a chance the author may be able to furnish a copy. Ask him. See Membership Directory for address. (Help, Howard Schumacher)

## TOP-SIDE DEVELOPMENTS

Meeting of BofD, Mar. 26, was preceded by that of its Executive Committee (ExecCom) on Mar. 21.

BYLAWS CHANGES included: 306. Conference Board to plan, manage, operate, evaluate, the March Convention & Exhibition; to recommend policies and procedures governing coordination of all conferences; when prepared to do so and upon request of the responsible unit, to provide guidance, assistance, and support in behalf of any conference. By Nov. 1 each year, RAB and TAB each to submit 2 nominees for membership in Nominations & Appointments Committee (N&A); N&A to amke nominations for members and secretary of Conference Board. . . 309.2. Within TAB, method to be followed for nominating Divisional Directors. . . 310.10. Changes in composition of N&A to make appointments to N&A more flexible. RAB to canvass Sections and TAB to canvass Groups for nominations for elective and appointive offices, and from them to submit selections to N&A—in order to secure more nominations from "grass roots;" then screened by RAB and TAB. . . 402.1. Student members to enjoy right to affiliate with any contiguous Section or Subsection. . . 406.3. Group chairman added to those informed by General Manager of formation of a Chapter, to be acceptable to Group chairman as well as Regional Director. . . 406.5. Changes in mechanism for the dissolution of Chapters. . . 406.9. Simplification of changes of status of Joint Chapters.

Also, editorial changes: in 304.2 to be consistent with Bylaws on Conference Board; in 309.2 & 312.6 to advance deadline for receipt of nominations-by-petition; in 406.7 to conform to 406.3 on Chapter approvals; in 406.8 to refine procedures for Chapters spanning contiguous Sections or established in Regions outside U. S. and Canada.

AWARDS BOARD received BofD approval of its decennial review of the awards structure—a study with recommendations running to 27 Ms. pages plus exhibits. Too many changes are involved to report in text of E.E.; facts will be reported in due course. (Inquiries, Una Lennon)

IEEE CONFERENCE BOARD. BofD made following appointments: Meetings Director in 1971 will be Dr. Harper Q. North; Exposition Director will be Theodore F. Smith; they were appointed to the Board for 2-year terms. Chairman of the Conference Board in 1971 will be Emmet G. Cameron; Chairman of the Conference Executive Committee, Dr. Donald B. Sinclair; both appointed for 1-year terms. Appointed for 3-year terms were Dr. Seymour W. Herwald and Walter E. Peterson.

Bill Hilty, staff Director of Convention & Exposition Services (E.E. Dec., pp. 5,8) is rounding out his year-round professional organization.

DENSHI-TSŪSHIN-GAKKAI, the Institute of Electronics & Communication Engineers of Japan (IECEJ), has reached agreement with IEEE for reciprocal waiver of entrance fees for member-applicants.

INTERNAL COMMUNICATIONS. Julian Tebo's remarks to Section publications editors at the Convention are of general interest and are printed at centerfold pp. 4E-4F.

EDUCATIONAL TV. Scheduling and financing obstacles caused the cancellation of plans (Dec. E.E., pp. 4-5) to televise the Highlight and Keynote Sessions for ETV networks.

LIFE MEMBERS gathered for coffee-and-Danish, and from their elevation looked back over the long valley with its well-loved landmarks. Ye Ed. found himself at a chummy table with four stalwarts from POWER. Aha! said he, here's where I find out all about Redi Kilowatt from men

"Whose hair fell out in patches"
"When they shook him by the hand!"

Instead, they all were or had been radio hams—and we spent 45 happy minutes' overlapping talk about rigs, antennas, Dx, QSLs, OMs, and YLs.

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Centerfold Pages:


| | | Pages |
|---|---|---|
| Green - | TAB News | 4A-4B |
| Ivory - | Gannett - Electrography | 4C-4D |
| Blue - | Tebo - Communicating | 4E-4F |