

# ELECTRICAL ENGINEERING®

The annual summer round of elections and appointments, as always, brings new readers to "Electrical Engineering" (E.E.). This time it brings a new editor to E.E. as well. So, for the benefit of the new readers and the new editor, let's take a quick tour around E.E. so we'll all know what to expect. (Veterans may skip the tour and get right to work.)

Start at the bottom of page 1. As you can see E.E. comes to you once every two months. You'll find a clue to the contents in the masthead. Please note that the operative words are "management" and "communication." This newsletter provides you, as an IEEE leader, with information to help you do your IEEE job. We set up the format for quick reading. Articles are short and to the point. If you need more detail, we'll tell you where to get it.

Moving to the left side of the page, you'll see holes punched. You may not want to frame E.E. but don't throw it away either. Mark up the issue, take notes and save the last six numbers. Keep them handy along with the Bylaws, Statements of Policy, Organization Rosters and the last 12 issues of SPECTRUM, because we'll refer to these documents from time to time to prove a point or call your attention to important material. Most issues have colorful inserts which we'll key on the back page in case you want to save them separately.

The last stop, bottom of the back page, tells you where to write for additional information unless otherwise stated in the article.

Tour is over. Now, let's join the others and get to work.

## PRODS AND OPPORTUNITIES

GET OUT THE VOTE!!! Ballots will be mailed during the last week in August to



THE INSTITUTE OF  
ELECTRICAL AND  
ELECTRONICS  
ENGINEERS, INC.

meet the September 1 deadline (See Constitution, Article XII, Sec. 4). Remind your members to exercise their voting privilege. Voting information included in E.E., page 4A.

Candidates for 1975 IEEE office have been announced in SPECTRUM, (June, page 76). The August issue (pages 81-87) will include a statement from each candidate.

SPEAKING OF VOTING. . . Associate Members (A.M.) of IEEE do not have voting privileges in Institute-wide elections. Now's a good time to think about upgrading your A.M.s to full membership.

Don't overlook those people eligible for Senior Member (S.M.). S.M.s can hold Institute Directorships and many States look favorably on higher member grades for professional certification. (See Bylaws 101-108.)

OPINIONS PLEASE! Printed on pages 4C to 4F are recommendations for providing scientific and technological information to the Executive branch of government. This proposal was made by the ad hoc Committee on Science and Technology in relation to government of the National Academy of Sciences. President Guarrera is interested in receiving your comments on this proposal to help shape an IEEE position.

## TOP-SIDE DEVELOPMENTS

CONSUMER ELECTRONICS GROUP was approved at the May Executive Committee (ExecCom) meeting as the new name of the Broadcast and Television Receivers Group. The field of interest covers sound and picture reproduction equipment normally used by the consumer for educational, informational and leisure-time purposes. (See TAB News.)

JOINT NAE/IEEE CONSUMER STANDARDS Committee was approved by ExecCom with

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Matthew E. Silverman, Editor

a recommendation that Technical Activities Board (TAB) and the Standards Board develop the joint effort with the National Academy of Engineering (NAE).

#### EAB NEWS

PACKAGED SHORT COURSES are as near as your phone. Educational Services is now in a position to assist in an orderly expansion of your educational offerings without risk or cost to your Section. Programs are designed for one-day meetings, and Sections can share surpluses from running the course. These are the course titles available:

- oComputer Aided Measurement and Control
- oMinicomputers: Hardware, Software and Applications
- oComputer-Aided Filter Design
- oHow to Start and Finance a New Business
- oLaw, Legislation--The Engineer and Society
- oProfessional Growth: Where do I Go From Here?

More information, brochures and details--contact Vincent J. Giardina, Manager, Continuing Education.

SELF-STUDY COMES TO IEEE with a pre-packaged home-study course on Thick Film Microelectronics. The multi-media course which costs \$75.00 for U.S. members and \$80.00 outside (\$100 for non-members, \$105 outside U.S.) is the equivalent of a typical 3-credit (36 hour) college course at an accredited college or University. It includes all the material necessary to take the course at home--textbook, book of selected reprints, a series of 11 lectures and one seminar on audio cassettes and a study guide and workbook. Write or call Emma White, Educational Services for brochure and details.

#### PUBLICATION BOARD NEWS

"TECHNOLOGY AND SOCIAL INSTITUTIONS" has just been published by IEEE

E.E. is sent without cost beyond dues to officers of IEEE Boards, Committees; Divisions, Societies, Groups, Conferences; Regions, Councils, Sections, Subsections, Chapters, and Branches. Second-class postage is paid at New York, N. Y.

Press. The 224-page clothbound book was sponsored by the Systems, Man, and Cybernetics Society and is edited by Kan Chen of the University of Michigan. It contains papers presented at an Engineering Foundation Conference by leaders from industry, government, universities, and labor unions. Price: \$7.45 to members, \$9.95 to general public.

VOLUNTARY PAGE CHARGE rates will be hiked from \$60 to \$70/page in January, 1975. The charge may be paid by the author's Co. as a voluntary means of paying part of publication expenses. For further information: Elwood (Woody) K. Gannett, Director, Publishing Services.

IEEE INDEX for 1973 is new, improved and available. The two-volume author and subject reference now includes Conference Records, and Standards as well as TRANSACTIONS, PROCEEDINGS and SPECTRUM. Price: \$17.50 for members, \$35.00 all others.

INSPEC KEY ABSTRACTS may be a solution to the problem of keeping up with international electronics literature. The monthly abstracts are compiled from 2000 technical sources world-wide. Publication begins in January, 1975 and subscribers may choose one or more of the six titles: Power Transmission and Distribution, Industrial Power and Control Systems, Systems Theory, Communication Technology, Electronic Circuits and Solid State Devices. Sample copies of the latter title as well as order information are available from Donald H. Gieb, Marketing Manager--INSPEC. Member subscription price: \$19.50, others: \$35.00.

TRANSACTIONS EDITORS may look forward to a "how-to" manual now in preparation by the Publications (PUB) Board. The manual will cover these three areas: mechanics of production, review procedures and finance. Suggestions for content should be addressed to E. K. Gannett.

MEMBERSHIP DIRECTORY publication will return to a bi-annual schedule beginning with the next edition in the Fall of 1975.

SPECTRUM READERS represent an important group of decision makers with buying influence, according to the preliminary results of a readership survey by Erdos and Morgan. Results also indicated that the typical subscriber reads the magazine regularly and uses the publication as an important information source. The survey produced a 70% response from a sample of 2,000 randomly-selected IEEE Members. Et tu ELECTRONICS?

#### RAB NEWS

ORGANIZATION ROSTER FALL SUPPLEMENT will be published October 1. Sections, Sub-Sections and Chapters should report their new officers to Emily Sirjane by September 10. (Bylaw 402.5, para. 7)

REGION 8's LEADERSHIP in making Eurocon a success was recognized by the ExecCom in May. The committee noted Region 8's cooperation with other entities and the establishment of close working ties with the Convention of National Societies of Electrical Engineers of Western Europe.

#### STUDENT NEWS

PLANNING AIDS for the 74-75 academic year are on the way. Along with the promotional material and supplies, this year's package contains the new Speakers, Tours and Films Directory. For more material contact Bob Asdal, Manager of Student Services.

SECTION ASSIST--Student Branch Chairpersons: Student Activities Chairpeople (SAC) in your Section are a good source of program planning aid and getting your Branch membership drive airborne. SACs: Your Student Branches need you.

BENDIX AWARD DEADLINE changed to November 15. Check the planning package

when it arrives for a brochure, a new poster, an entry form, and rules. Also, look for abstracts of last year's winners. The award recognizes outstanding technical projects among Student Branches. (See E. E., Feb., page 4.)

STUDENT NEWSLETTER makes its next appearance in October. Send information, inspired articles and photos to Bob Asdal.

HAM NET COMES ALIVE 9/9/74 over North America. W5YM at University of Arkansas will be on the air at 9:00 PM CDT, 0200 Z hours on a network frequency of 3.785 MHz. Plans call for monitoring this frequency on the second and fourth Monday of each month through May. Write Bob Asdal for free copy of 1974 Directory of IEEE Student Hams. "Whiskey 3 Ivy Edward Edward Edward calling CQ..."

#### TAB NEWS

REGIONAL LECTURE TOURS (E. E. June, 1974, page 4E and insert this issue, page 4I) greatly benefits Region 8, according to Regional Director Reg Russell in a letter to Peter Edmonds, Administrator, Technical Services. "This is one of our most important regional activities outside of publications," Russell said.

Prospective speakers planning to tour Region 8 should send trip details even if tentative including abstract 3 months before the trip. It's understood that presentations will fit into prearranged business trips or sabbatical leaves. Limited funds are available for partial diversion or extension of time.

REGIONAL LECTURE TOURS--PART II. The ExecCom voted approval of funding for the lecture tours through 1975. To handle the program, Mary-Jo Vogelsang has joined the staff as a part-time Coordinator of the Regional Lecture Tour Program. Ms. Vogelsang will assume the responsibility previously held by Peter Edmonds. She will work at Headquarters on Tuesdays and Wednesdays (extension 622).

#### CONVENTION NEWS

WESCON, scheduled for Sept. 10-13 at the Los Angeles Convention Center, is less than

a month away (see July SPECTRUM, page 10). The Professional Program Committee has confirmed 27 half-day sessions plus 2 special evening programs. Evening sessions will cover pensions (see below) and "Psychotronics." Convention staff reports that exhibition space is sold out with 300 companies ready to present their wares.

This year's Wescon features extra "goodies" never seen before like carpeted aisles at the show and a daily give-away of four HP 45 Calculators. You have to fill out a convention questionnaire to be eligible for the give-away. Awards will also be made for best technical displays.

"ZOOMING IN ON PENSIONS" during Wescon on Tues. evening Sept. 10, 8-10pm at the Convention Center, John Guarrera will moderate the special session with speakers Leo Young, USAC Chairman, Frank Cummings, IEEE Special Counsel and Mrs. Madeline S. Johnson, Chairman of the IEEE Pension Committee. This will be a great opportunity to ask your questions about what the pension situation means to you.

IEEE INTERCON/75 ISSUES a call for papers for the IEEE International Convention to be held next April 8-10. Program Chairman Peter H. Goebel plans 36 half-day sessions in five major categories: Control and Test Systems; Instruments; Computers; Passive and Active Components; and Communications and Data Transmission. Proposals should be sent to Mr. Goebel, c/o IEEE Intercon, 345 E. 47th St., New York, N. Y. 10017. Deadline: August 12. (See SPECTRUM, Aug., p. 10.)

INTERCON/75 Exhibition will be changed to three full days--April 8, 9, 10--but will be open for one evening on April 9 for the convenience of those who want to attend. Chairman of IEEE Conference Board Fred Van Veen expects 10% increase over 1974 at Intercon/75 in both exhibits and attendance.

#### SOCIO-ECONOMIC

1974 IEEE MANPOWER REPORT, prepared by the Manpower Planning Committee

(MPC) under new Chairman Hans Cherney, is expected for September publication. The title is "Your Job in E/E Engineering" and it will cost \$10.00 to members.

MANPOWER REQUIREMENTS MONOGRAPH is being readied by MPC for Fall publication by IEEE Press. This first-of-its-kind book is written by Roger H. Bezdek and is called "Long Range Forecasting of Manpower Requirements."

IEEE MANPOWER PLANNING COMMITTEE, together with representatives of major engineering societies, convened a workshop in June to discuss the qualitative aspects of the existing engineering manpower data base and to evaluate government efforts to develop the data base. Copies of the report, "Salient Summary of National Socio Economic Data Base Conference," are available for \$5 (\$7.50 for non-members). Write Emma White.

CERTIFICATION AND RECERTIFICATION of IEEE members is the subject of Dr. Roy H. Mattson's ad hoc Certification Committee of Educational Activities Board (EAB). The objective is to seek data in order to establish an IEEE position and to develop a suitable statement for possible action by the IEEE Board of Directors (BofD). The committee, now collecting data, anticipates reporting to Educational Activities Board (EAB) by late Fall. Inputs are invited and should be directed to Dr. Mattson at the Dept. of Electrical Engineering, Univ. of Arizona, Tucson, Ariz. (602) 254-3294.

WHAT SHALL I BE? "Your Career in Electrical/Electronics Engineering," a pre-college guidance brochure, will be ready by the beginning of the Fall academic term. You can get free copies from Educational Services. Write Emma White.

UNEMPLOYMENT RATE for engineers measured by the U.S. Bureau of Labor Statistics was 1.4% for the first quarter of 1974 compared to the 1973 average of 1.0%.

AD HOC POLICY COMMITTEE has been appointed to consider mechanisms for providing support to engineers whose acts in



#### ELECTION INFORMATION

##### Constitution Article XII

Sec. 4. On or before September first, the Board of Directors shall submit to all voting members as of August first a ballot listing all nominees for the offices named in Section 1 of this article, in accordance with the Bylaws.

##### Bylaw 313.9-

Voting members shall vote for the candidates whose names appear on the list of nominees, by written ballots within mailing envelopes marked "Ballot" and bearing the member's written signature. No ballots within unsigned envelopes shall be counted. Only ballots arriving at IEEE Headquarters, or received by a qualified organization delegated by the IEEE Board of Directors, before twelve o'clock noon on the first working day following October 31st shall be counted.

##### Policy #10.4-A-2(c)(d)

Money on hand in the IEEE Sections, Groups and Societies is the property of the IEEE. Funds of any IEEE Section, Group, or Society, wherever held, may not be used for electioneering of any kind for any IEEE Region, Section, Group, or Society office or for any municipal, county, state or federal office.

##### Policy #12.3-

Partisan electioneering under the auspices of any IEEE entity is not permitted. IEEE units are requested to refrain from activities such as the publication of brochures or the holding of meetings for this purpose and no funds of any IEEE organizational units may be used in support of such activities.

The use of funds of any IEEE activity for electioneering purposes for any office, including both IEEE offices and municipal, county, state or federal offices, is strictly prohibited. (See Statement of Policy #13.1.)

Nonpartisan electioneering activities which provide information to members on issues facing the IEEE are permitted. For example, the editor of any IEEE publication is not prohibited from accepting the following, so long as the usual standards of accuracy, space limitation and quality are maintained:

A. Statements by those candidates for IEEE offices whose names will be printed on the ballots in accordance with the Constitution and Bylaws, giving their programs and views on issues facing the IEEE, provided that all such candidates for a given office are given equal opportunity to present their views.

B. Letters to the Editor stating an intention to seek candidacy for a given position with reasons.



Hearings on Federal Policy, Plans, and Organization  
for Science and Technology  
Committee on Science and Astronautics  
U. S. House of Representatives

Recommendations of the ad hoc Committee  
on Science and Technology in relation to government  
of the National Academy of Sciences.

1. We recommend that a Council for Science and Technology be established as a staff agency in the Executive Office of the President.

The council would consist of at least three full-time members, highly qualified by training and experience to serve the needs of the President. Members would be drawn from the sciences, engineering, and related fields. They would be appointed by the President with the advice and consent of the Senate and would serve at the pleasure of the President. One member would be designated by the President to be chairman and would bear the responsibility of reporting to the President. While we have concluded that it would be best to establish the council by legislative action, we recognize that alternative means may be preferable at a given time.

It is essential that members of the council gain the confidence of the President and his Office and that its chairman, possessing this confidence, have access to the President.

Given this confidence and this access, the council can be of great assistance to the President in the difficult decisions he inevitably must make. Wisely and humanely used, technology can serve the highest aspirations of our society. Used in an unenlightened manner, technology can be destructive and wasteful. Our purpose in making this recommendation is to urge that the President have immediately at hand the means to obtain the best scientific and technical judgment of the nation to aid him in reaching decisions where science and technology are involved.

In our judgment, the council we propose will best accomplish this, but we recognize that a given President may choose some other way more in accord with his style. More important than any specific structural suggestions is the recognition that science and technology at this time of worldwide scarcity and insecurity have a benign and fatefully important role in the making of policy at the Presidential level.

2. We recommend that the Council for Science and Technology be empowered and enabled to draw upon the best talents available in the nation's scientific, technological, and engineering communities both from within and outside the government.

To be of value, counsel in all these areas must reflect the most advanced current knowledge over the whole range of science, technology, engineering, and medicine. No council, however large, can cover the entire range. To exercise its own functions, the council will be obliged to seek assistance from individual consultants and from panels of specialists. It would draw heavily on departments and agencies themselves, as well as upon the resources of industry, the universities and nonprofit research centers, the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

3. We recommend that the Chairman of the Council for Science and Technology serve as a member of the Domestic Council.

Among the problems and policies with which the Domestic Council, as well as the departments and agencies that are its constituent members, must deal, a substantial number involve components of science and technology not always well perceived within either the Domestic Council or its agencies. The committee believes it to be in the best interests of the work of the Domestic Council in support of the President that the Council for Science and Technology be assigned a strong presence in it.

4. We recommend that the Council for Science and Technology participate actively in the work of the National Security Council.

The National Security Council must organize its work in a fashion that will best serve the President in accord with his preferred manner of dealing with national security affairs. Consistent with that requirement, there should be provision for systematically introducing into the work of the National Security Council the judgments of qualified scientists and technologists. We trust that the council we propose would be looked to, as was the President's Science Adviser and the President's Science Advisory Committee, for provision of the nation's best scientific and technical knowledge and judgment, particularly in those matters that involve advanced technology or the insights and early warnings that scientists working at the frontiers of their specialties are qualified to transmit. In this fashion, the National Security Council can benefit from highly professional judgments on military technology and arms control, undistorted by jurisdictional lines of thought.

5. We recommend a role for the Council for Science and Technology in those areas of foreign policy strongly affected by scientific and technological considerations.

In a speech to the United Nations on April 14, 1974, the Secretary of the State said, "...In a global economy of physical scarcity, science and technology are becoming our most precious resource. No human activity is less national in character than the field of science. No development effort offers more hope than joint technical and scientific cooperation." Within this context, Dr. Kissinger directed his remarks toward the needs of developing countries. Relationships with the developed countries as well are affected deeply by developments in science and technology as they work upon the international scene and America's position on that scene. International relationships in all their aspects are involved in bilateral and multilateral agreements in science and technology. The Council for Science and Technology, working with the National Security Council and the Secretary of State, can help generate and respond to Presidential initiatives to attack mutual problems through international scientific and technological cooperation.

6. We recommend that the Council for Science and Technology cooperate closely with the Office of Management and Budget on significant budget and management issues involving science and technology.

The Office of Management and Budget must possess a strong scientific and technological competence of its own, but such inhouse competence cannot completely meet the needs for the full range of expert counsel required. The council we recommend should serve as a scientific and technical resource to the Office of Management and Budget and should assist in the allocation of resources for the government's scientific and technological programs. We believe that the council could be of great assistance in participating with the Office of Management and Budget in evaluating the quality and technical feasibility of major proposed programs and in placing them in some order of priority.

7. We recommend that the Council for Science and Technology submit an annual report to the President, and through him to the Congress, on major developments in science and technology of significance for national policy.

These annual reports to the President are not to deal with the overall state of science and technology, but with specific major developments and trends within science and technology that offer significant new opportunities or raise important problems. For the Congress and for the public-at-large, the most important service the report can provide will be to illuminate opportunities and problems that affect society as a whole.

The Committee Offers a Corollary Suggestion  
Concerning Long-Range Policy Research and Analysis

In considering the needs of the federal government for scientific and technological counsel, the committee has been especially struck by the lack of capability for long-range policy research and analysis, which would examine continuously the longer run implications of current budget decisions and other policies and would seek to anticipate problems that will face the President and the Congress in future years. These functions involve careful and imaginative integration of the analytical methods of science, engineering, economics, statistics, public administration, and other social sciences. At present, the federal government, in general, and the Executive Office, in particular, are inadequately equipped to avail themselves of powerful methods that scholarship has developed for policy research of long horizon and wide scope.

Recommendation of a specific organizational design for policy research and analysis is beyond the scope of this committee. We do emphasize the essential importance of this function, however, and while the proposed Council for Science and Technology cannot itself perform this function, we suggest that the usefulness and effectiveness of the council would be greatly increased were there available a mechanism for systematic long-range policy research and analysis.

We propose, therefore, that consideration be given to means by which the Executive Office of the President could benefit from improved and still developing techniques of policy research and analysis. As scientists, we are aware of the close relationship of these new techniques to the method and spirit of the physical, biological, and behavioral sciences, and we believe that a way can be found for making them continuously useful to the Executive Office of the President.

**1974 WESCON PROFESSIONAL PROGRAM**  
Los Angeles Convention Center  
September 10 to 13, 1974

	TUESDAY		WEDNESDAY		THURSDAY		FRIDAY	
	10am - 12:30pm	2pm - 4:30pm	10am - 12:30pm	2pm - 4:30pm	10am - 12:30pm	2pm - 4:30pm	10am - 12:30pm	2pm - 4:30pm
Room 212A	1 Teaching Non-Technical Personnel to Understand and Use Electronic Equipment	5 How to Prepare an Effective Business Plan to Raise Capital	9 Status of Plastic Encapsulated Semiconductor Fact Not Fiction	13 Taking Your Technology to New Markets (Panel)	17 Hybrid Micro-electronics Clinic on Semiconductor Bonding	21 The Status of Additive Printed Circuits Today	25 Automatic Testing of PCBs--Ways and Methods	
Room 212B	2 Introduction to Charged-Coupled Devices	6 Advances in CCD Memories	10 What to Do if the Lights Go Out--The Uninterruptable Power Story	14 The Real World of Digital Communications	18 Selling Your "Better Mousetrap"	22 LSI Testing	26 Emerging Display Technologies	
Room 217A	3 Microwave and Millimeter Solid State Components	7 Modern Radar Technology	11 Microprocessors--Market, Design, Applications	15 Microprocessors--The Second Generation	19 The Micro-processor Revolution - Part I	23 The Micro-processor Revolution - Part II	27 Applications of Digital Logic to High Speed Amplifier and Timing Measurements	
Room 217B	4 Strategy of Crisis	8 New Markets in Agriculture for Electronic Technology	12 Needs and Trends in Medical Electronics--1974	16 Quo Vadis Electronics?	20 Fault Detection in Transmission Lines Using TDR and FDR Techniques (Panel)	24 Design-To-Price		

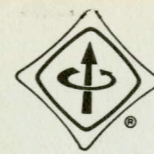
WESCON  
SPECIAL  
SESSIONS:

TUESDAY  
8pm - 10:30pm  
Room 217A

WEDNESDAY  
7pm - 9:30pm  
Room 217

"ZOOMING IN ON PENSIONS"

"PSYCHOTRONICS"

New Coordinator

Effective immediately the Regional Outstanding Lecture Tour program is being coordinated by Mary Jo Vogelsang instead of Peter Edmonds. Miss Vogelsang will work at IEEE Headquarters on Tuesdays and Wednesdays and can be contacted at 212/752-6800 - Ext. 622.

Additions to Speakers List

The speakers whose names appear below should be added to the current list (EE, June '74, blue insert, pp. 4E-4I). Section and Chapter officers are encouraged to request speakers or describe a topic of interest so that a matching speaker can be sought. IEEE general funds pay travel expenses in full and other expenses as necessary within constraints of the guidelines (EE, Feb. '73, pp. 4G-4H).

To request speakers or other information, contact IEEE Headquarters (Mary Jo Vogelsang, 212/752-6800 - Ext. 622). Please include your phone number. Prospective hosts should not contact the chosen speaker directly because he has been advised to expect invitations under this program from Headquarters, where itineraries will be coordinated to ensure best cost/effective use of IEEE funds. As soon as an itinerary has been set, all arrangements are turned over to the host Sections. Sections outside North America receive additional notices advising them when speakers are planning to travel to their Region. After (but only after) receipt of such additional notices, prospective hosts may and should invite speakers directly.

This list may be freely used by Section officers to invite speakers directly if the Section will pay all expenses.

SPEAKER	INSTITUTION	TOPIC
Ralph Bernstein	IBM Corporation	- Digital Image Processing of Earth Observation Sensor Data
Paul H. Carr	Air Force Cambridge Research Labs.	- Microwave Acoustics - Microwave Frequency Surface Acoustic Wave Devices
M. S. Ghausi	New York University	- Network Theory and Electronic Circuits: active circuits, distributed networks and computer-aided circuit design
Vytautas Klemas	University of Delaware	- Satellite and Aircraft Studies of Coastal Environment and Resources - Spacecraft Investigation of Coastal Water Properties and Current Circulation - Mapping Coastal Vegetation and Land Use with Aircraft and Satellites - New Educational Trends in the Marine Sciences
James Morrow	Fischer & Porter Co.	- Instrumentation for Water Pollution Control - Water Treatment
Julien Reitman	United Aircraft Co.	- Interactive Graphics & the Simulation of Transportation Systems
B. A. Sheno	University of Minnesota	- Hybrid/Active Filters
Herbert F. Storm	Consultant	- Solid-State Power Electronics
Arthur S. Westneat	Raytheon Company	- The Use of Acoustics for the Remote Classification of Marine Sediments

Topics to be Added

Updated list of topics for Gabor C. Temes of the University of California follows:

- The theory and design of optimum bandlimited systems
- Computer-aided filter design
- The adjoint network and its applications in computer-aided circuit design
- Efficient calculation of the sensitivities of loss, phase and poles/zeros for active and passive filters
- The approximation problem and its solution in circuit synthesis
- The state-of-art in computer-aided circuit optimization
- Efficient algorithms for the statistical tolerance analysis of linear and nonlinear circuits

Topic to be added to list for James Snodgrass of the Scripps Institute for Oceanography:

- Electronics in the Evolution of Oceanographic Instrumentation

TRANSNATIONAL ASPECTS

THERE IS A CONTINUING NEED FOR ADVANCE INFORMATION ON TRAVEL PLANS OF POTENTIAL SPEAKERS GOING TO OR COMING FROM OTHER COUNTRIES, SO THAT IEEE SECTIONS CAN BE NOTIFIED IN SUFFICIENT TIME TO SCHEDULE A MEETING COMPATIBLE WITH THE SPEAKER'S ITINERARY, ANNOUNCE IT, AND ASSEMBLE AN AUDIENCE. INFORMATION (EVEN IF TENTATIVE) SHOULD BE SENT TO Mary Jo Vogelsang THREE MONTHS IN ADVANCE OF DEPARTURE. A PROVEN MECHANISM EXISTS FOR ARRANGING ENGAGEMENTS IN EUROPE. INTEREST IN RECEIVING SPEAKERS HAS BEEN EXPRESSED BY IEEE SECTIONS IN HONG KONG, INDIA, NEW ZEALAND, AUSTRALIA, JAPAN, MIDDLE EAST AND SOUTH AMERICA.

G/S Speakers Bureaux

Several Groups and Societies have also assembled lists of speakers for the benefit of their Chapters. Information on these lists may be obtained from the following Organizers of G/S Speakers Bureaux:

Acoustics, Speech & Signal Processing

Helmuth Etzold  
Dept. of Electrical Engineering  
University of Rhode Island  
Kingston, R.I. 02881  
(401) 792-2517

Magnetics Society

Bernard F. DeSavage  
U. S. Naval Ordnance Lab.  
Silver Spring, Md. 20910  
(301) 394-2743

Computer Society

Harry Hayman  
P. O. Box 639  
Silver Spring, Md. 20901  
(301) 439-7007

Systems, Man and Cybernetics Society

Edgar H. Bristol  
6 Maple Place  
Foxboro, Mass. 02035  
(617) 543-8750 (Ext. 2019)

Engineering in Medicine and Biology

Eli Fromm  
Biomedical Engineering & Sciences Program  
Drexel University  
32nd & Chestnut Sts.  
Philadelphia, Pa. 19104  
(215) 895-2217

Antennas and Propagation

Prof. Edward Jordan, Chairman  
EE Dept.  
University of Illinois  
Urbana Illinois 61801  
(217) 333-2301

Microwave Theory and Techniques

Lawrence R. Whicker  
Code 5250  
Naval Research Lab.  
Washington, D.C. 20390  
(202) 767-3312

Professional Communications

Robert M. Woelfle  
11250 Drummond Drive  
Dallas, Texas 75228  
(214) 455-3450

Reliability

H. D. Hulme  
Westinghouse Electric Corp.  
Electronic Tube Div.  
P. O. Box 284  
Elmira, N. Y.  
(607) 739-7951, Ext. 248

Section officers wishing to invite speakers on the Groups and Societies list should contact IEEE Headquarters (Mary Jo Vogelsang) in advance, if financial assistance is needed.



# TECHNICAL ACTIVITIES BOARD

## NEW ADDRESS FOR IEEE WAREHOUSE

Until further notice, please use the following address when shipping material to be warehoused by IEEE:

Institute of Electrical and Electronics Engineers  
Hadley Industrial Plaza  
3001 Hadley Road - Unit #8  
South Plainfield, New Jersey 07080

## BROADCAST AND TELEVISION RECEIVERS GROUP CHANGED TO CONSUMER ELECTRONICS

At the May 18-19, 1974 Executive Committee meeting, a petition for changing the Broadcast and Television Receivers Group to Consumer Electronics was unanimously approved. The new field of interest statement is given below:

" Article III - Section II. The field of interest of the Group shall be that which stems from the design of, manufacture of, and other activities related to electronic consumer products and shall include scientific, technical, industrial, standardization or other activities that contribute to this field or utilize its techniques or products. This definition includes electronic equipment for sound reproduction, picture reproduction, and related devices normally used by the consumer for educational, informational, and leisure-time entertainment purposes."



## TAB INTERDISCIPLINARY AND SPECIAL COMMITTEES

### TAB Committee on Man & Radiation (COMAR Division IV)

The Chairmanship of COMAR has been accepted by:

Dr. H. Allen Ecker  
Radar Division  
Engineering Experiment Station  
Georgia Institute of Technology  
225 North Avenue, NW.  
Atlanta, Georgia 30322

Phone: (404) 894-3411

### TAB Transportation Committee

A new Chairman has been appointed to head the TAB Transportation Committee :

Mr. Julian S. Reitman  
Norden Division  
United Aircraft Corp.  
Norwalk, Connecticut 06851

He is the representative of the Systems, Man, & Cybernetics Society to this committee.

Phone: (203) 858-4471 X. 2076

### TAB Urban Technology Committee

This Committee has been established under the Chairmanship of:

Dr. John E. Gibson, Dean  
School of Engineering  
University of Virginia  
Charlottesville, Virginia 22901

Phone: (804) 924-3072

conformity with ethical principles may have placed them in jeopardy. Committee members are: Directors Barnes, Goldberg, Saunders, Shuffler and Young.

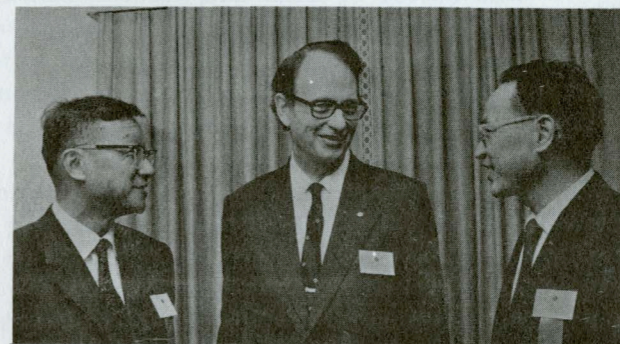
### TOOLS AND AIDS

XEROX TELECOPIER 410 has been installed at IEEE Headquarters. The equipment features automatic document handling 24 hours/day. Use this number for service: (212) 752-4929. Questions on operation—call Emma White.

### FOR YOUR INFORMATION

"IEEE MEMBERSHIP UP AGAIN," says the unimpeachable IEEE computer. The June 30, 1974 report from that redoubtable bundle of circuit boards shows totals up by 3.0% or nearly 4,750 more members than last year at the same time.

FROM THE PEOPLE'S REPUBLIC OF CHINA LASER SCIENTISTS met with IEEE Officers and G/S Presidents at the New York City St. Regis-Sheraton on June 29. The delegation of Chinese scientists and engineers were touring the U.S. as guests of the National Academy of Sciences.



Shown above (l to r) are Prof. Wang Ta-heng, Head of the Chinese Laser Group, IEEE Past Pres. Robert Tanner, and Mr. Lu Ming, Deputy Head of Laser Group. They also attended the International Quantum Electronics Conference in San Francisco.

531,000 SCIENTISTS AND ENGINEERS worked in research and development during 1973, up 1% over 1972 and the first increase since 1969, according to the NSF.

THE POPOV SOCIETY has once again invited qualified delegates from IEEE to the annual Congress to take place in Moscow during May or June, 1975. Conference theme will be related to the technologies of IEEE Division I. Interested members should begin the application procedure by applying to their G/S president. Further information is available from Audrey van Dort. (See SPECTRUM, June, page 82.)

"PROCEEDINGS of the Washington Energy Symposium" held June 15, 1974 in Washington, D. C. are available. Notable contributors were Rep. Mike McCormack, Prof. David J. Rose of MIT, Dr. M. King Hubbert of the U.S. Geological Survey and Dr. Alfred J. Eggers of NSF. Write Vince Giardina. Price \$10 to members and \$12.50 to non-members.

### HONORS

DONALD G. FINK has been appointed to the U.S. Delegation to the Plenary Assembly of the International Council of Scientific Unions (ICSU) to be held Sept. 23-26 in Istanbul, Turkey. He will represent the U.S. engineering community.

JAMES MULLIGAN has agreed to serve as Honorary Secretary of the IEE in the United States.

THOMAS W. BARTLETT was promoted to Controller of the Institute on the basis of his outstanding job as Assistant to the Treasurer.

NOMINATION DEADLINE FOR W.R.G. Baker and Browder J. Thompson Prize Paper Awards is September 15. Each award consists of a certificate and \$1000. The Baker Prize is for the most outstanding paper in TRANSACTIONS and JOURNALS or PROCEEDINGS. The Thompson Prize goes to the most outstanding paper in any IEEE publication by an author(s) under 30 years of age. Only one paper should be nominated by each G/S for each award. Write Una Lennon, staff secretary of the Awards Board for nomination blanks. Forms are different so please specify which Award.

ACADEMY OF ENGINEERING just elected 78 engineers including 17 (22%) IEEE members. Among those from IEEE were Harold Chestnut, James Mulligan, Howard Barnes and Jordan Baruch. All but one of the new IEEE members of NAE are Fellows of the Institute.

#### IN MEMORIAM

DR. ALFRED N. GOLDSMITH, 86, co-founder of the Institute of Radio Engineers (IRE) in 1912 died July 2 in St. Petersburg, Florida. He was Director Emeritus and Editor Emeritus of the IEEE and at the time of his death was Honorary Vice President of RCA and its Senior Technical Advisor. (See SPECTRUM, Aug., pages 32-37.)

#### WELCOME ABOARD!

ALL NEW OFFICERS and officials in the Sections.

#### Renamed Group/Society:

IEEE Consumer Electronics (CE-8)  
(See Story page 1.)

#### New Subsections:

Eastern Zone of the India Section will comprise 9 Eastern States in India.  
El Salvador Subsection of Central America Section encompasses the country of El Salvador.  
Upper Peninsula Subsection of Northeastern Wisconsin Section encompasses the Northern Michigan Peninsula.

#### New Group/Society Chapters in Sections:

Lehigh Valley Section: Parts, Hybrids and Packaging Chapter.  
Phoenix Section: The Joint Information Theory/Computer/Communications/Control Systems Chapter will operate as two separate Chapters--COMP Chapter and Joint IT/COMM/CS Chapter.

#### New Student Branches:

Alexandria University  
Chatby, Alexandria, Egypt  
H. T. S. voor Radiotechniek en Elektronika  
Haarlem, Holland  
Istituto Universitario Politecnico  
Barquisimeto, Venezuela  
Korea Advanced Institute of Science  
Seoul, Korea  
Institut Superior d'Electronique du Nord  
Lille, France  
Seneca College of Applied Arts and  
Technology  
Willowdale, Ontario, Canada

#### New Staff:

Roger Allan, Associate Editor of SPECTRUM, joins the staff after several years in electronics publications with ELECTRONIC DESIGN and most recently with ELECTRONIC DESIGN NEWS. He has done design work with several companies including Trio Labs and New York University where he earned his B. E. E.

Gadi Kaplan is a new associate editor of SPECTRUM. His background includes design and development work with EMI and Hayes in England and Polarad Electronics and Photo Electronics and Photo Electronics. He was editor of EEE and holds a BSEE, MSEE and D. Tec. Sc. from Technion.  
Donald H. Gieb joins IEEE as Marketing Manager—INSPEC primarily responsible for overseas publications. He has extensive sales and publishing experience with Prentiss Hall, Bruce Publishing and RCA Institute among others. He received his B.S. from Fairleigh Dickinson University.

Mary-Jo Vogelsang is part-time Coordinator, Regional Lecture Tour Program. She graduated from Ohio State University.

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#### Centerfold pages:

Pink	- Election Information	4A
White	- Hearings on Federal Policy	4C-4F
Canary	- Wescon Program	4G
Blue	- Lecture Tour	4I-4J
Green	- TAB News	4K-4L