Scanfax

CHICAGO SECTION · IEEE · INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS DECEMBER 1972

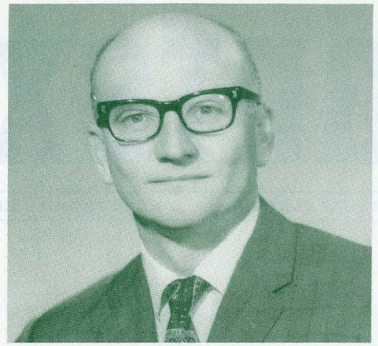
SEE CALENDAR OF EVENTS ON PAGE 3.

[redacted]

SCANFAX, INC. 55 E. WASHINGTON ST., ROOM 532, CHICAGO, ILL. 60602

Postmaster: Second class postage paid at Chicago, Ill. Please dispatch within 24 hours of receipt per 333.321 Postal Manual.

A Message From The Treasurer



When the balance due figure on the annual dues statement changes from the usual $25 to $35, it's time to hear from the Treasurer. This increase is made up of two parts, a $5 increase in the general dues, and a new $5 regional fee.

The general dues have not been increased for six years. In this time new services for the members have been initiated and the cost of traditional services have increased substantially due to inflation. In this six years the cost of producing SPECTRUM has gone up 40 percent on a per page basis, postage charges are up 60 percent, and staff salaries are up 30 percent (same as the Consumer Price Index for the New York area). On top of this the income from advertising and conventions is down due to the depressed state of the electronics industry.

The Institute has made some staff reductions and programs are being managed with severe austerity, however cost trends indicate that the 20 percent increase in general dues is required if a sound financial condition is to be maintained without reducing services.

The regional fee is IEEE's answer to the problem of providing services to one region that are not provided to other regions. Important new services are strongly desired by members in the United States. This was revealed by the recent opinion questionnaire mailed to the membership. These services will be financed by the regional fee.

These new services that are desired are in areas such as guidelines for professional employment practices, public relations, technological forecasting and assessment, salary surveys, career development, pension plans, and activity in the legislative and economic spheres. Some of these programs can go into effect now that the amendments to the Constitution have been so overwhelmingly approved. The membership will assist the Board in determining the emphasis to be accorded the new programs by indicating their preference on the portion of the dues statement to be returned.

The IEEE Directors were keenly aware of the financial difficulties faced by many members and of the conflicting views regarding the best course for the Institute to follow. They have raised the general dues by the minimum amount. The regional fee has been adapted in accordance with the expressed desires of the membership. The Directors are confident that all the members will respond, as they have in the past, with continued strong support.

The year 1973 promises to be a year of considerable activity in engineering organizations. As your Treasurer I urge you to take advantage of your IEEE membership, and take an active part in these activities. (See "Financing Our Future" by R. H. Tanner in August SPECTRUM for more on this subject.

Daniel J. Veith
Treasurer

Coding for Computers

At the Dec. 1, 1972, joint meeting of the Information Theory Group and the IEEE Computer Society, Robert Chien, University of Illinois, Urbana, will speak on "Coding for Computers." The meeting will be held at 7:30 p.m. at the University of Illinois, Chicago Circle Campus. Reservations are not required.

scanfax Dec. 1972,, Volume 25, Number 4. SCANFAX is published monthly except July and August by Scanfax, Inc., Chicago, Illinois, for the information of the members of the Chicago Section, Institute of Electrical and Electronics Engineers. Scanfax, Inc., is a not-for-profit organization with editorial office at 1200 E. Madison Park, Chicago, Ill. 60615, and business office at 55 E. Washington Street, Chicago, Illinois 60602; telephone number (312) 263-5954. Subscription rate for IEEE members collected in dues, $1.50; for others, $3.00 per year. Second-class postage paid at Chicago, Illinois.

THE "NOW" ORGAN

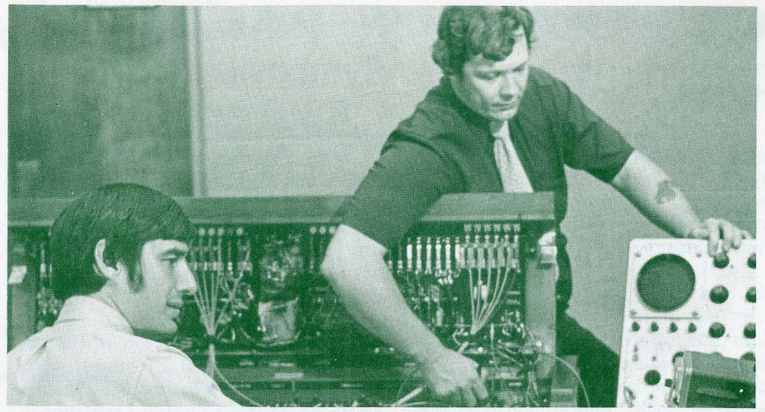
The December 6 meeting of Fox Valley Subsection will feature a combined technical and musical presentation on how electronic organs, their related musical sounds and effects are produced. Title of the presentation is "Electronic Music Synthesis in Relation to the 'Now' Organ." Location is the Tally Ho Restaurant, Route 64, West Chicago. Dinner is at 7 p.m. and the program begins at 8. This is a joint meeting with the IEEE Audio and Electro Acoustic Group and the Chicago Audio and Acoustic Group. For reservations, phone 263-3776.

Technical discussion will be lead by James Southard, advanced development section head, and demonstrated by Curt Wolfanger, specification and performance coordinator, Conn Organ Corporation. Both are with the Oak Brook, Ill. based company's Electronic Design Group in Elkhart, Indiana.

The engineers will demonstrate musical synthesis principles using a tone generator, test and analysis equipment. In addition, the actual sounds resulting from electronic synthesis will be performed on an organ. Demonstrations will touch on the different organ voices used for theatre, jazz, ecclesiastical and classical music.

Subjects to be covered include tone generation methods, keying, voicing, coupling and tonal multiplication, tremolo and Doppler effect, sustained tones and spring reverberation, two channel sound, pedal note production, and the use of a memory circuit for repeating bass notes.

A highlight of the presentation will be a demonstration on how a new LSI chip circuit can be utilized as a read-only memory to produce 22 different automatic rythm percussion patterns plus three rythm breaks. In addition, reiterative production of chords will be discussed and demonstrated. This will be followed by an explanation of how to electronically synthesize various non-organ voices such as banjo, mandolin, harpsichord and piano.



Curt Wolfanger (left) and James Southard analyze an electronic organ tone generator waveform at Conn Organ Corporation's engineering development laboratory in preparation for their December 6 presentation to Fox Valley Subsection and joint acoustical groups.

Southard has been with Conn for more than five years, and is responsible for patent processing, state of the art development and design, MOS/LSI design (both digital and analog) and contract work on LSI projects. Earlier he was with Magnavox Corp. for three years, working on projects including anti-submarine warfare (ASW), testing equipment, radar and bio-electronics at the Advanced Development Group. He attended Indiana Institute of Technology at Fort Wayne for his BS in EE. During his service with the Air Force, he studied radar, missiles and digital computers.

Wolfanger joined Conn's engineering staff in 1960, working on mechanical systems and organ development. Currently, he is highly involved with the specification, voicing, balancing and finishing of new organ models, as viewed from the performing organist's standpoint. He has proposed many system applications and concepts which are currently in production. While at Michigan State University, he was field house organist during junior and senior years for all Big Ten sporting events. He studied mechanical engineering before switching to education, and being graduated with a BA in Industrial Arts. Wolfanger is a member of the American Guild of Organists and the American Theatre Organ Society.

IEEE OFFICE: 263-5954

Chicago IEEE Calendar

Dec. 1	Information Theory Group & IEEE Computer Society Meeting, University of Illinois, Chicago Circle Campus, 7:30 p.m.
Dec. 4 & 5	Chicago Fall Conference on Broadcast & Television Receivers (see page 5)
Dec. 6	Fox Valley Subsection Meeting - Tally Ho Restaurant, Rt. 64, West Chicago, Ill. Dinner 7 p.m., program 8 p.m.
Dec. 7	Noise Abatement Symposium, IIT Research Institute. See page 4.
Dec. 13	IAS/IE Meeting, Nielsen's Village, 7330 W. North Ave. Social Hour: 5:30; Dinner, 6:15; Meeting, 7:15.

Social Needs of Young Engineers

The IEEE Policy & Planning Committee subcommittee on Societal Needs of Young Engineers (under 30) will be conducting an interview program in the Chicago area. Its purpose is to communicate through personal interviews the mechanisms by which IEEE can better fulfill the needs of the newly graduated and experienced young engineers. Interviewers will be asked to talk with groups of from two to six people in informal discussions at companies throughout the Chicago area during latter November and early December. Engineers interested in conducting interviews or who wish to contribute to this constructive program should call Don Owen, 625-0020, Ext. 234.

IEEE AMENDS CONSTITUTION

The IEEE has announced that it will amend its Constitution to permit greater involvement in the social implications of technology. The decision to take this action was made by the members in an overwhelming vote just tallied.

President Tanner stated that the IEEE will now be able to proceed along two main lines of activity: its technical operations which include the publication of engineering journals and the holding of scientific meetings, and involvement in legislative, social, ethical, and economic matters.

He indicated that the engineering group would now be able to embark on new programs concerning political and economic activity, the preparation of position papers to assist Government and other agencies, recommendations on professional employment practices, and establishment of a pension plan for members.

There has been a marked demand by the membership of the IEEE for increased professional activities in behalf of the electrical engineers in the nation.

As a direct result, new Constitutional Amendments were proposed which extend the purposes of the IEEE from purely scientific and educational activities to the "advancement of the standing of the members of the profession."

To accomplish this, the Amendments state that the IEEE may conduct and publish surveys and reports on matters of professional concern to the members of such professions, collaborate with public bodies and with other societies for the benefit of the engineering professions as a whole, and establish standards of qualification and ethical conduct.

One section of the Amendments states that: "The IEEE shall not engage in collective bargaining on such matters as salaries, wages, benefits, and working conditions, customarily dealt with by labor unions."

In addition, the Amendments State: "The IEEE shall strive to enhance the quality of life for all people throughout the world through the constructive application of technology in its fields of competence. It shall endeavor to promote understanding of the influence of such technology on the public welfare."

Since the IEEE has members in many countries outside the U.S., one section of the amended Constitution permits it to "engage in activities directed to the interests and needs of members residing in a particular country or area of the world."

The entire membership was polled for its opinions on the proposed changes. Approximately 85 percent of the vote was cast in favor in balloting which has just been tabulated.

In specific terms, the Constitutional Amendments mean that the IEEE can now advocate certain kinds of legislation, enter more directly into phases of the employment problems of the profession, including referral and placement services, develop a more effective public communications program, establish guidelines concerning equitable employment practices, and seek means by which the IEEE membership can make social and political contributions to society.

Donald A. Fink, Executive Director, said, "All of these will be done without compromising the Institute's reputation for technical excellence.

"The demands of civilization on engineers are clearly deeper and broader than they have ever been to solve such problems as our energy needs, the transportation crisis, and the plight of our cities. At the same time, the appreciation of the role of the engineer in getting answers to these problems is at a low ebb.

"In both areas – the reliance that civilization must place on the competence and breadth of engineering and the vital, creative, and essential role of the engineer – the problems transcend IEEE traditional approaches to technology.

"With these new Constitutional Amendments, IEEE will be better able to meet the new challenges facing the profession, while the technical, scientific and educational objectives of IEEE continue to be strengthened."

Noise Abatement Symposium

The annual Noise Abatement Symposium will be held at IIT Research Institute, 10 West 35th Street, Chicago, Illinois 60616, on December 7, 1972. This Symposium is sponsored by the Chicago Regional Chapter - Acoustical Society of America; IEEE Audio and Electroacoustics Group; Audio Engineering Society; Chicago Acoustical and Audio Group; and IIT Research Institute.

The speakers, who are top officials in federal, state, and local government agencies, will present "What the Boss Should Know About Noise Control Legislation." This program is designed to acquaint management with the legal and enforcement aspects of the situation.

The speakers include Dr. Alvin F. Meyer, Director of the Office of Noise Abatement and Control of the Environmental Protection Agency; Charles Foster, Director of the Office of Noise Abatement, Department of Transportation; Dan Flynn, Chief, Applied Acoustics Section, National Bureau of Standards; H. W. Posten, Commissioner, Chicago Department of Environmental Control; Sheldon Plager, Consultant to State of Illinois for Noise Abatement; Samuel Booras, Director, Cook County Environmental Protection Agency; Edward Largent, U.S. Department of Labor; and James Botsford, Chief Noise Control Engineer for Bethlehem Steel Corp. will be the banquet speaker.

The symposium is chaired by Cosimo Caccavari of the Chicago Department of Environmental Control. Information may be obtained from W. Ernest Purcell of IIT Research Institute.

Low Voltage Fuses

The Chicago Chapter of Industrial Applications Society/Industrial Electronics, will hear M. R. Smith, Bussman Manufacturing Division, McGraw Edison Company, talk on "Application and Selection of Low Voltage Fuses for a Modern Distribution System." Meeting will be held on December 13, 1972, at Nielsen's Village, 7330 W. North Ave. Social hour, 5:30 p.m.; dinner, 6:15 p.m.; meeting, 7:15 p.m. Cost of dinner, $7.00; all who come for dinner will receive complimentary liquid refreshments. For reservations call 263-5954.

The margin for error in the application of overcurrent protectors is constantly decreasing. As code requirements become more stringent, the fuse specifier should be award of the latest materials available for his use.

Martin R. Smith is chief application engineer of the Bussman Manufacturing Division of McGraw-Edison Company. He has been with the company for 18 years and has been involved with the design, development, and application of low voltage (600 volts or less) fuses.

He is a Senior Member of IEEE, a member of the Working Group on Fuse Application, Power Semiconductor Committee and Past Chairman of the St. Louis chapter of the Industry Application Society. Smith has a BS in Electrical Engingineering from the University of Missouri.

Chicago Fall Conference on Broadcast & Television Receivers

The 1972 Chicago Fall Conference on Broadcast & TV Receivers will be held at the Sheraton O'Hare Motor Hotel, 6810 N. Mannheim Road, Rosemont, Ill., on December 4 and 5.

Monday—9:30 A.M.—December 4, 1972

SESSION I – DEFLECTION

Session Chairman: W. E. Babcock
RCA, Solid State Division

A. EHT Generation with Low Internal Impedance for TV Receivers
D. DeBroackere
N. V. Philips Corporation

B. Driver Circuit Design Consideration for High Voltage Line Scan Transistors
M. Maytum, A. Lear
Texas Instruments Ltd.

C. A Boosted B+ Regulator for the SCR Deflection System
W. F. Deitz
RCA, Solid State Division

D. Epochal Active Convergence System by Two Monolithic ICs
S. Matsumoto, K. Funakawa, R. Hero-Ta
Hitachi, Ltd.

E. Sound & Noise Level Measurements
R. Bernstein
William Rainey Harper College

12:30 P.M. IEEE AWARDS LUNCHEON

Session Chairman: Mr. Barton Kruezer
Executive Vice President
RCA, Consumer Electronics

Monday—2:30 P.M.—December 4, 1972

SESSION II – POWER INTEGRATED CIRCUITS

Session Chairman: A. Curll
Texas Instruments Inc.

A. An Improved Television Sound System
M. Ring
Motorola Inc.

B. Power Bandwith in Audio Amplifiers
J. F. Alves
RCA, Solid State Division

C. A Monolithic Class B Drive Designed for Automotive Radio Applications
W. Holsf, L. Sample
Motorola, Inc.

D. Advances in Technology Gives New Economics to IC Power Amplifiers
E. L. Long
National Semiconductor Corp.

E. Thermal Resistance of IC Packages
P. E. Roughan
Sprague Electric Co.

6:00 P.M.—COCKTAIL HOUR

Sponsored by: M. Gottlieb & Assoc.
Videocraft

Tuesday—9:30 A.M.—December 5, 1972

SESSION III—NEW CONSUMER ELECTRONIC PRODUCTS

Session Chairman: W. Padgett
Warwick Electronics, Inc.

A. Constant Luminance Line Sequential Color Television
J. Rennick
Zenith Radio Corporation

B. The Electronics of Odyssey
G. A. Kent
The Magnavox Company

C. General Electric Compatible Multichannel FM Broadcast System
A. Csicstaka, J. F. Foster
General Electric Company

D. Vestigial Sideband Subchannel for Multichannel FM Broadcasting
J. F. Foster, A. Csicsatka
General Electric Company

E. Direct Reading Colorimeter for Cathode Ray Rubes
R. G. Vogel, J. P. O'Donnell
GTE Sylvania Incorporated

Tuesday—2:30 P.M.—December 5, 1972

SESSION IV—SEMICONDUCTOR DEVICES & THEIR APPLICATION

Session Chairman:

A. TV Design Considerations Using High Gain Dual-Gate MOSFETS
S. Weaver
Texas Instruments Inc.

B. Economics of Reliability in the Design of Color TV Receivers
E. Deger
RCA, Consumer Electronics

C. Designing Reliability into Solid State Consumer Systems
N. Doyle
Fairchild Semiconductor

D. The Impact of Ion Implantation on Consumer Electronics
R. W. Lutz
Sprague Electric Company

E. Specification and Testing of Consumer Integrated Circuits
H. Ebenhoech, R. Smith
Fairchild Semiconductor

The times, they are a changin' . . .

This month Chicago Section especially welcomes Elaine M. Heiress, who has upgraded her membership, and Patricia A. Holmes, a new student member. Last month Mary Ann Twojcik upgraded her membership to member status. Yes, the times are really changin' – a far cry from the time I transferred into the Chicago Section and was the only woman member. Over the years, we have had a number of women members although not all of them were active. One who is active both locally and nationally is Dr. Julia Apter, who is on the Administrative Committee for the Engineering in Medicine and Biology Group.

The section, and I as editor of **SCANFAX**, particularly welcomes the new women members and issues a special invitation to them to become active members on the local scene.

Ruth L. Oldfield
Executive Editor

WELCOME TO MEMBERSHIP

MEMBERS
John E. Becker
Walter E. Flynn
Paul R. Malischke
R. Malitzke-Goes
Douglas O. Proctor
Duyck Van Gorder
George P. Wagner
James A. White

ASSOCIATES
Harr M. Leitzell
Kerry D. Rothman
Phillip J. Urquiza

STUDENTS
Joseph S. Byrne
Paul F. Cavallaro
Dennis E. Cwiak
James D. Eaton

STUDENTS (Cont'd.)
Raymond L. Grimes
Edmund J. Gromek
Patricia A. Holmes
Edward L. Kloczkowski
Joseph T. Madziarczyk
Kevin J. Osiowy
Bhupendra S. Patel
James G. Reimer
Robert J. Relstab
Timothy J. Ryan
Roman F. Rycerz Jr.
Frank W. Varisco
Tracy R. White
Robert E. Woltman
Peter G. Wsygalla

CONGRATULATIONS ON UPGRADING MEMBERSHIP

TO MEMBER:
Kermit M. Beseke
Suresh R. Borkar
Raymond F. Cameron
Shi-Chang Chang
Larry J. Divine
Gary P. Eldredge
Mark L. Feldman
Matthew J. Fiske
Stanley L. Gaconis
Paul D. Gutierrez
Elaine M. Heiress
John E. Hennessey
James M. Ho
Noshir F. Klory
Harold A. Kleinbrahm
Dennis Kostrezewski
Ivan M. Kralik
Dennis E. Kruger
John P. Leohs
John M. Machnik
John A. Meier
Herman Y. Moy
Arthur P. Mudek
Joseph E. Muszalski
Ashok L. Nalamivar

TO MEMBER (Cont'd.)
Frank M. Nigh
B. R. Patel
Annasahet A. Patil
Alfred C. Petersen
Charles Rieck
David R. Roach
Thomas C. Ryan
James A. Schackmuth
Pietro M. Scianna
N. B. Shah
John T. Sharkey
M. L. Sterling
George L. Stverak Jr.
Edward W. Thompson
Chris Tsiones
Himanshu K. Vora
Greg E. Weber
Thomas L. Westerfield
Robert A. Young
David A. Zein

TO ASSOCIATE
Arnold R. Aarstad
James E. Brown
Raymond J. Geffre
Joseph G. Hermankel, Jr.
Dennis T. Kelly
Joseph A. Kent
Edward J. Koller
Jon E. Marcussen
Fred A. Mattes
Lawrence Peterson
Theodore T. Serafin
John D. Siciliano
David P. Zaabel

WELCOME TO MEMBERS TRANSFERRED INTO CHICAGO SECTION

SENIOR MEMBERS

F. A. Allenhoff
Bruch G. Wathen

MEMBERS
A. W. Anderman
Stephen E. Beinor
R. L. Bernthal
Jerry M. Blackmon
Dennis M. Boccard
Richard G. Brammer
Raymond E. Fitz, Jr.
R. P. Futrelle
A. D. Furbee
Hugh M. Gitroy
Larrie A. Gould
James M. Hemmings
Neil R. Hovelsrud
Kenneth C. Hudson
Allan E. Jannis
Dennis T. Krempely
Robert M. Lake
Richard E. Malon
Richard A. Newman
Thomas H. Ortmeyer
David W. Peterson
J. Sheehan
R. L. Speers
Dinesh K. Srivastava
John C. Tilley, Jr.
G. S. Tjaden
George D. Voss
James V. Walenga
Ronald L. Ward
Leland Wilson
J. J. Wright

ASSOCIATES
J. L. Boyd
Louis I. Lerner
Marvyn J. Madesksho

STUDENTS
Gary R. Anderson
Robert J. Cheever
William D. Koch
John E. Purviance
Alan F. Raphael
William E. Richter
Stephen D. Turney