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CHICAGO SECTION • IEEE • INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS

FEBRUARY 1976

CALENDAR OF EVENTS

*For Reservations Call the IEEE Office at 236-4609
(Unless Otherwise Indicated)*

- Feb. 3 IEEE Executive Committee Meeting; Brown & Root Offices, Spring Rd., Oak Brook, Ill., 7:30 PM — ALL WELCOME.
- 4 "Superconductivity, Past Present and the Future," Fox Valley Subsection, Andy's Steak House, 17W611 - 22nd, Oak Brook, Ill., Social Hour 6:30 PM; Dinner 7:00 PM; Meeting 8:00 PM.
- 8 Dinner/Theater Party, Power Engineering Society, Candelight Dinner Playhouse, 5620 S. Harlem Ave., Summit, Ill., "Odd Couple," Dinner 5:30 PM; Play 7:30 PM.
- 10 "Electro-Optic Modulation in Thin-Film Lightguides," Microwave Theory and Techniques Group/Antennas and Propagation Society, Black Steer, 6446 W. North Ave., Chicago, Ill., Social Hour 6:00 PM; Dinner 7:00 PM; Meeting 8:00 PM.
- 11 "Hospital Medical Electronics," Industrial Electronics & Control Instrumentation/Industry Application Group, Nielsen's, 7330 W. North Ave., Elmwood Park, Ill. Social Hour 5:30 PM; Dinner 6:15 PM; Meeting 7:15 PM.
- 24 "Experiences with SF₆ Substation & Transmission Equipment," Power Engineering Society, Midland Hotel, 172 W. Adams St., Chicago, Ill., Cocktails 11:00 AM; Luncheon 11:45 AM, Meeting 12:30 PM.
- 25 "Engineers Week," Fox Valley Subsection (Joint ASME, SAE and ISPE), Gaslite Manor, 2485 Church, Aurora, Ill.
- 4 "Emergency Medical Plan — Washington, D.C.," Vehicular Technology Group, David Hodgins, Spectra Associates, Cedar Rapids, Iowa.
- Mar. 2 IEEE Executive Committee Meeting; Brown & Root Offices, Spring Rd., Oak Brook, Ill., 7:30 PM — ALL WELCOME.
- 3 "A Few Notes on Synthesizers," Fox Valley Subsection (Joint Audio & Electroacoustics Group), Nordic Hills Country Club, Rt. 53 & Nordic Rd., Itasca, Ill., Dinner 7:00 PM; Meeting 8:00 PM.
- 10 "Communications in Alaska," Microwave Theory and Techniques Group/Antennas and Propagation Society, Allegretti's, West Higgins & North Mannheim Rds., Rosemont, Ill. (at O'Hare), Social Hour 6:00 PM; Dinner 7:00 PM; Meeting 8:00 PM.
- 10 "Modern Supervisory Control and Telemetry Systems," Industrial Electronics and Control Instrumentation/Industry Application Group, Nielsen's, 7330 W. North Ave., Elmwood Park, Ill., Social Hour 5:30 PM; Dinner 6:15 PM; Meeting 7:15 PM.
- 15 Information Theory Group (No information by deadline).
- 17 "Tour of Central Telephone Office," Northwest Subsection, 36 S. Fairview, Park Ridge, Ill., (Dinner Time and Restaurant Undetermined), Meeting 8:00 PM
- 18 "Substation Automation," Power Engineering Society (Joint WSE, West Suburban), Richard's Lilac Lodge, 2135 S. Wolf., Hillside, Ill.
- 20 Information Theory Group (No information by deadline).
- May 15 IEEE Recognition Dinner, O'Hare Inn, Chicago, Ill.

Deadline for copy: First week of month preceding publication

METROPOLITAN WASHINGTON- EMERGENCY MEDICAL COMMUNICATIONS SERVICES

At the February 4th meeting of the Vehicular Technology Group, Mr. David Hodgins will cover one of the most advanced two-way radio systems for hospitals in the country. Emergency medical communications are now being improved coast-to-coast.

David Hodgins is president of Spectra Associates whose major effort is in the advanced development and system analysis to optimize cost and communication system performance for law enforcement agencies, medical agencies, mobile radio and other related communication needs. Spectra Associates has provided this service for clients in Iowa, Maryland, Virginia, Nebraska, Ohio and Illinois. Dave is a Past Region 4 Director of IEEE and is a registered Professional Engineer in Iowa, Virginia and Maryland.

The design for the MW-EMCS will be discussed. It was approved by the Metropolitan Washington Regional Program Officers on the basis of a competitive consultant selection by a regional EMS communications task force.

The cost effective system design utilizes fully the latest FCC Rules and Regula-

tions and provides centrally coordinated views and medical data telemetry intercommunications between hospitals, surface and air ambulances, and patient side EMT personnel throughout each jurisdiction.

During the design phase, several alternate system configurations meeting criteria were analyzed. These configurations will be discussed and were:

Portable to base station

Portable to mobile repeater radios (2-way)

Portable to base station via mobile repeater radio (1-way)

Direct base station to portable with portable to satellite receivers.

Note: Building loss will be considered in each of the above configurations for portable communications.

The portable to mobile repeater to a fixed station configuration was selected for the detail design of the medical communications links. It was based on cost and upon minimizing equipment requirements. A mobile relay configuration is utilized for mobile coordination and for emergency back-up hospital communications. The final design configuration will be discussed in terms of its meeting objective criteria for costs, propagation reliability, site locations, message traffic loading, optimum frequency usage, interference, intermodulation, system coordination, operational simplicity and for subjective political relationships within and between jurisdictions.

The meeting will be held at the Holiday Inn, Rolling Meadows, 3405 Algonquin Rd.; social hour begins at 6:00 P.M. and dinner at 7:00 P.M. The meeting will begin at 8:00 P.M.

METRIC TALKS

The National Bureau of Standards has established a nationwide speakers bureau to provide information on the growing use of the metric system of weights and measures, and is serving as contact point to link up interested groups with available speakers. The speakers are to receive detailed information and set of slides from NBS. Interested groups are to contact the National Speakers Bureau, Metric Information Office, Room A166, Technology Building, National Bureau of Standards, Washington, D.C. 20234

Credit: Industrial Communications

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SCANFAX, February 1976 — Volume 28, Number 7. SCANFAX is published monthly, except July and August by the Chicago Section, Institute of Electrical and Electronics Engineers for the information of the members. Business office is at 125 S. Clark St., Chicago, Illinois 60603, telephone number (312) 236-4609. Subscription rate for IEEE members collected in dues, \$1.50; for others, \$3.00 per year. Second-class postage paid at Chicago, Illinois.

Meeting Reservations

Remember that the IEEE office, (312) 236-4609 will take your meeting reservations. Call anytime between 8:00 AM and 5:00 PM, Monday through Friday.

The meeting coordinator for any group should call and leave his number with the office, so they can refer questions on matters other than reservations.

Change of Address

If you have moved — or are about to move — please notify the IEEE office in NEW YORK. Our SCANFAX mailing labels come from there, and we cannot update your mailing address locally in Chicago.

A change of address form is included in each issue of SPECTRUM. Your local post office will also supply you with cards; mail to Emily Sirjane, Membership Services, IEEE, 345 E. 47th Street, New York, NY 10017. Include your SPECTRUM mailing label if possible. We cannot forward this information for you, so please do not send it to the local office.

SCANFAX SCANS

You may wonder what this is . . . a new and probing column in *Scanfax* of all places! Well, I wonder myself! However, *Scanfax* needs as much help as the Chicago Section. (Bound to get letters for that one!) But anything, just to know if all you engineers out there are alive. Through the coming months we hope to make this column a potpourri of wit, wisdom, advice, nonsense, garbage, and an occasional fact or two. What you see before you is a real experiment to see if an engineer trained in formula (or is it formula?) can put together words syntactically correct in a creative fashion which still retains some meaning. Difficult, you bet; but it's fun (so far).

The quip for the month is directed at the technical browser. You know, the person that takes a highly technical journal and looks at the pictures. For the guys the picture is probably the blonde who leans over a voltmeter with her wat-cha-ma-call-its covering the dial; for the girls, I have yet to find out! If that has become a habit, even with the lowly technical journals like *Spectrum* (that should bring at least one letter), then I submit you are becoming obsolete faster than you might think. Technical browsing 's a charade, shall we say an engineer of aristocracy. You owe it to yourself and your profession to take at least one serious article a month and really comprehend it. Do you know how long it took to write and publish it — you have the audacity to browse through every one! The real challenge is then to share it with a colleague, you might even feel like an engineer!

— JFJ

P.S. Any comments on technical publications (or schools), IEEE, industry, government? Let us know.

SAVE THOSE YEAR OLD MANUALS

IEEE Student Branches in the Chicago area have a difficult time obtaining reference material for branch libraries. Many students are working on design projects where even year old manuals and reference materials would be invaluable. Instead of "Deep Sixing" manuals, catalogs, data sheets, application notes and technical magazines, contact Don Owen, 451-1000, X4232 for information and contacts at the student branches.

Please give these students the support they need!

SUPERCONDUCTIVITY - PAST, PRESENT AND THE FUTURE

Superconductivity is a rapidly growing field aimed at supertransmission of electricity and super magnets for magnetic levitation trains and nuclear fusion systems. Many other applications are possible. At the February 4th Fox Valley meeting, Dr. Bruce Strauss of Fermilab will cover the progress in the field.

Dr. Strauss, an MIT graduate, has spent his whole professional career in Superconductivity. An undergraduate thesis on the effect of cold work on the magnetization of Niobium and a graduate thesis on the proximity effect in a composite structure led to work on the operational stability of superconductors at AVCO-Everett Research Lab. At Argonne and presently at Fermilab, his work has been with superconducting bending magnets and alloy development for high field superconductors. A member



of the organizing committee for the 1976 Applied Superconductivity Conference, he will be a guest editor for an issue of IEEE Transactions on Magnetics.

Place: Andy's Steak House

17W611 22nd

Oak Brook, Ill. (Phone 654-2210)

Location:

Butterfield and Midwest Roads

North of E-W Tollway on Midwest Road

Time: Social Hour — 6:30 - Cash Bar

Dinner — 7:00 - \$6.00

Meeting — 8:00

Please call 236-4609 prior to February 3, 1976 for reservations.

CONGRATULATIONS!

Messrs. Albert Hawkes, Deerfield, and Norman Shipley of Barrington recently became Senior members. Let's all strive for more upgrading in the Chicago Section.

(Spectrum 12/75

"News from Region 4")

Congratulations, also to the following who were upgraded to Fellow status: Homer Brown; Harold Fahnoe; Herbert Chang; Martin Cooper and John Johannesen.

(IEEE Fellow Upgrading List)

ADVANCE ANNOUNCEMENT

The 1976 Recognition Dinner will be held on Saturday, May 15 at the O'Hare Inn in Chicago to honor and recognize new Fellow members of the IEEE Society.

The format will be similar as in years past, namely, entertainment, the recognition of Fellow members and the amount of good cheer by the attendees at the dinner to get acquainted with other IEEE members.

Chairman Hank Korman and his committee are working hard to assure that this dinner will be the biggest success of the decade.

Complete details will be in the March issue of *Scanfax*.

WHAT'S YOUR IDEA?

At the last Executive Committee meeting, it was proposed that the Chicago Section (that means all of you out there) take a stand on the issues publicized mostly by Irwin Feerst (if you are interested we'll have him here for a talk) and recently the Santa Clara Section in California. The main issues consist of: the increasing number of graduate engineers, the quality of their education, the group of impractical educators, the heavy use of educators in high level IEEE offices, and the weaknesses of the manpower reports.

Call or send your comments to the IEEE office.

SPEAKERS TRAVELING OVERSEAS

Reciprocal advantages accrue when competent speakers present papers to IEEE Sections in foreign countries. IEEE members contemplating a foreign trip (transatlantic, transpacific, transcaribbean, etc.) and desirous and capable of making engineering contacts of this type are invited to inform Miss Emily Sirjane at the IEEE Headquarters office in New York (212-644-7757), furnish the names and addresses of Section Chairmen with whom the speaker may work out arrangements directly.

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CALL FOR PAPERS

You are invited to submit abstractions of papers for consideration for the 1976 Chicago Spring Conference on Consumer Electronics to be held June 7 and 8, 1976, at the Marriott Motor Hotel in Chicago.

Papers representing innovative concepts and techniques in consumer product design will be selected for presentation at the conference, and subsequently submitted for publication in the *IEEE Transactions on Consumer Electronics*.

Potential authors are requested to submit an outline of their paper plus a 200 to 400 word abstract no later than March

1, 1976. Papers should be limited to 2500 words, and the presentation to 20 minutes. Also include paper title, author's name(s), company affiliation, and position(s).

Prizes for the two best papers are:

1st Prize: Certificate, Plaque, \$300

2nd Prize: Certificate, \$150

Please submit abstracts to:

Mr. Wayne Bretl, Papers Committee

Zenith Radio Corporation

6101 W. Dickens Avenue - Room 288

Chicago, Illinois 60639

Phone: (312) 745-4904

Notification of acceptance, request for biographical information and the format required for publication in the *IEEE*

Transactions will be mailed by April 2, 1976.

Foreign authors are requested to establish a U.S. contact if possible, to expedite communications.

CONTROL SYSTEMS SOCIETY AWAKES

Mark Johnson, Technical Chairman of the Control Systems Society, announced plans for an expanded technical program in the Chicago area. "Because of the many fields related to control theory, such as modeling and optimization," Johnson said, "this program should be of interest to members from other technical societies as well, for example, as automatic control theory is now being applied to national economic problems." Anyone interested in seeing a particular subject presented is invited to contact Johnson at 7624 Maple, Morton Grove, Illinois, 60053, or make a friendly telephone call to 375-4310 Ext. 285 (days).

ELECTRO-OPTIC

On Tuesday, February 10 the Microwave Theory and Techniques Group/Antennas and Propagation Society will have as its speaker Yong-Kyung Lee. Dr. Lee will discuss the field of electro-optic modulation as relating to lightguides. The development of a novel, thin-film electro-optic modulator basically involves two phases: fabricating a lightguiding structure and implementing a new modulation mechanism.

A lightguiding structure consisting of isotropic Ta_2O_5 film ($n=2.2$) on electro-optic LiTaO_3 crystal ($n_o=2.176$ and $n_e=2.183$) was fabricated using sputtering and oxidation techniques. It was used to make modulators based on Bragg-diffraction and polarization conversion schemes.

The Bragg-diffraction type modulator demonstrated a 90% modulation when 34V was applied. Its power per bandwidth requirement is 2.8 mW/MHz at optimum operation. In the polarization conversion modulator, the lightguide was made to support the TE_0 mode only. An electro-optically controlled TE-TM coupling converts this guided TE mode into unguided TM wave. A $\text{Ta}_2\text{O}_5\text{-LiTaO}_3$ modulator based on this scheme showed a 40% modulation at 500 V.

The meeting will be held at the Black Steer Restaurant, 6446 West North Avenue in Chicago with the following schedule: Social hour 6:00 P.M., dinner 7:00 P.M. and the meeting 8:00 P.M.

For reservations call the IEEE office, 236-4609.

DILLARD SPEAKS OUT ON PROFESSIONAL PRIDE

While engineers expressed their feelings on the status of their profession, *TIMES* asked Joseph K. Dillard, the newly elected president for 1976 of the Institute of Electrical and Electronics Engineers, for his views on their position.

The *TIMES* survey responses from numerous IEEE members indicate that, as individuals, they face dilemmas that their own organization seems to discount or ignore.

Comments of their new president, Joseph K. Dillard, typify a cavalier view in the minds of many engineers. Dillard flatly declares that "if unions are necessary for engineers, we are no longer professionals. And, if we engineers resort to collective bargaining, then we are no different than the man on the production line."

Dillard believes each person must raise the status of the engineering profession by his own decisions. Each must examine his situation and decide if he is satisfied with his particular environment.

"If the salary level is below what an engineer feels he deserves," states Dillard, "then he should move on. If we all do that, then an underpaying employer won't be able to get engineers to work for him."

"I hold the same basic belief about engineers who are employed by manufacturers engaged in unethical practices. While an engineer is on a company's payroll, he should not throw rocks. If his professional ethics are violated, he should remove himself from the situation," surmises Dillard. He does not comment on how ignoring unethical practices by leaving a job would affect the level of professionalism.

Dillard believes that professional societies have an obligation to promote adequate compensation for engineers in terms of salary, benefits and ethical practices.

Dillard, who is general manager in the advanced systems technical division at Westinghouse, maintains that many of the problems facing engineers can be solved by opening the lines of communication between employees and management. "My people don't hesitate to tell me when they believe something is wrong," he states. "And if an engineer is put into a position where he is not able to discuss problem areas, then he must move on to where he can feel satisfaction," he stresses.

Many engineers, however, take a "that's-easy-for-you-to-say" view of these positions. "Engineers are treated worse than dogs," says E. M. Engel, a 20-year veteran in engineering. "How can an engineer just move on?" he demands. "Who will take him when no one is hiring?"

For an engineer to "move on" for a better salary is hardly practical in the current economy. To pick up, losing pension benefits and job security, one must be very sure of what he is moving on to. And, to leave a position in reaction to unethical practices would appear to do nothing other than to lower the level of the profession. Somewhere, someone will fill that slot and the malpractice will persist. Keeping quiet and moving on would appear to be a last resort.

The mood of working engineers appears to be that a few 'broken windows' by a few rock-throwers may be the only means of finally being heard on these and similar professional issues.

—Margie Stenzler

Electronic Engineering Times

1-5-76