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CHICAGO SECTION • IEEE • INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS

JANUARY 1977

CALENDAR OF EVENTS

*For reservations call the IEEE office at 236-4609
(Unless otherwise indicated)*

- Jan. 11** IEEE Executive Committee Meeting; Brown & Root Offices, 2001 Spring Rd., Oak Brook, Ill., 7:30 PM — ALL WELCOME.
- 13** VT Group. Chicago Fire Dept. E.S.M., Heuer's Restaurant, 5591 River Rd., Rosemont, 6:30 Social Hour, 7:00 Dinner, Meeting 8:00.
- 12** "Industrial Power Systems — A Study in Coordination," IAS/IECI, Nielsen's 7330 W. North Ave., Elmwood Park, Ill. Cocktails 5:30 PM; Dinner 6:15 PM; Meeting 7:15 PM.
- 19** "Impact of New Regulations on CB Radios," NW Sub., Holiday Inn, Mannheim & Touhy Avenues, Des Plaines, Ill. Social Hour 6:00 PM; Dinner 7:00 PM; Meeting 8:00 PM. For reservations call the IEEE office or 971-2010, X228.
- 19** "The Interlocking Influences of the Natl. & Intl. Energy Situation," PES (j w/Joliet Sec., ISPE & Fox V. Sub., ASME), White Fence Farm, Lemont, Ill. Cocktail Hour 6:00 PM; Dinner 7:00 PM; Meeting 8:00 PM.
- 22** "The Viking Mission," MTT/APS, Motorola Tower Bldg., 1301 E. Algonquin Rd., Schaumburg, Ill. Luncheon 12:00 Noon; Meeting 1:00 PM.
- Feb. 8** IEEE Executive Committee Meeting; Brown & Root Offices, 2001 Spring Rd., Oak Brook, Ill., 7:30 PM — ALL WELCOME.
- 9** VT Group. No information by deadline. Call John Zinkus at 298-1591.
- 9** "Discussion of Current Practices & Requirements in the Installation & Testing of Cable," IAS/IECI, Nielsen's, 7330 W. North Ave., Elmwood Park, Ill. Social Hour 5:30 PM; Dinner 6:15 PM; Meeting 7:15.
- 13** Theatre-Dinner Party, PES joint with Fox Valley Sub. Candelight Dinner Playhouse, 5620 S. Harlem Ave., Summit, Ill. Show starts 7:30 PM. Dinner \$11.00.
- 15** "Analytical Aspects of Reflector Antenna Analysis & Design," MTT/APS, Black Steer, 6446 W. North Ave., Chicago, Ill. Social Hour 6:00 PM; Dinner 7:00 PM; Meeting 8:00 PM.
- 23** Engineers Week.
- 23** "Lithium/Metal Sulfide Load Levelling Batteries," PES, Midland Hotel, 172 W. Adams St., Chicago, Ill. Luncheon.

Deadline for copy: One month before date of issue

THE VIKING MISSION

An in-depth presentation of the Viking Mission will be given by MTT/APS at their meeting on Saturday, January 22.

The Viking Mission — one of man's far reaching engineering triumphs — will be presented by Charles Green, Project Leader, Langley Space Center. Photos of

the Martian surface and JPL along with details of Lander design and biological results will be displayed. The difficulties in communication with Mars is easily understood when one considers an antenna misaligned by one thousandth of a degree from Mars would totally miss the

Earth. This lecture has been funded by NASA in cooperation with IEEE.

The meeting will be held at the Motorola Tower Building located at 1301 East Algonquin Road in Schaumburg. Luncheon will be at 12:00 noon and the meeting is scheduled for 1:00 PM.

NEW CB RADIO

On January 19th, 1977 at the Holiday Inn (Mannheim & Touhy) in Des Plaines, the Northwest Subsection will be holding their third meeting for this year. Their guest speaker, who has been seen Nationally and locally in the IEEE, is Mr. Richard Goldstein, Vice President Engineering Cobra Communications Division Dynascan Corporation, Chicago. Greatly involved in the FCC change made this year, Mr. Goldstein will discuss the "IMPACT OF NEW REGULATIONS ON C.B. RADIO." After graduating in 1948 from Northwestern University, Evanston, Illinois, Mr. Goldstein joined A.R.F. Products Corporation, River Forest, Illinois. As a Senior Electronics Engineer engaged in the design and development of radio receivers and transmitters and test equipment for Military communications equipment and radio garage door controls. While attending Graduate School at Northwestern, he joined a new company in Chicago called Perma-Power Corporation. At Perma-Power he directed the technical and engineering activity as Vice President of Engineering and President. Their products mainly were primarily radio receivers and transmitters for re-

mote garage door control, industrial remote controls and various related electronic products. Mr. Goldstein has served on the Technical Committee of Door Operation and Remote Control Association (DORMA) to establish new FCC Regulation and Test Procedures for radio door control certification under Part 15 Rules.

Since 1972 Mr. Goldstein has been associated with The Dynascan Corporation, Chicago. As Vice President for Cobra Communications and B&K Precision Test Equipment Product Groups. His activities involved the design, development, testing and quality assurance of Citizens Bands Transceivers made by Cobra and B&K Precision Products.

Come, bring your friends and associates to learn about the latest changes involving the CB industry. There will be a social hour at 6:00 P.M. followed by an enjoyable dinner at 7:00 PM. Price \$6.75 per person. Meeting time is 8:00 PM. For reservations, call IEEE Office at 236-4609 or Warren Foxwell Treasurer and meeting co-ordinator 971-2010 X228.

NW Subsection sponsored.

HIGH SCHOOL ENGINEERING FAIR

This year the Illinois Institute of Technology Alumni Association is sponsoring their 4th annual High School Engineering Fair. The fair will be held on Monday, February 21, 1977. Because of past successes, an attempt will be made to increase the size of the fair this year, depending on the support of the Chicago area engineering societies. Almost all of the engineering societies have, as a part of their objectives or goals, a statement to the effect that support should be granted to those events which encourage high school or college students to participate in engineering activities or education.

Your support in this event will not go unrecognized. You will not be alone in your support, as two societies — the American Institute of Aeronautics and Astronautics and the American Society of Mechanical Engineers — have already pledged their support. If you decide that the High School Engineering Fair deserves your consideration, please call 312/269-3815 before December 10, 1976.

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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 Service Center in New Jersey. 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 Roseann Schulz, Member Services, IEEE Service Center, 445 Hoes Lane, Piscataway, N.J. 08854. Include your SPECTRUM mailing label if possible. We cannot forward this information for you, so please do not send it to the local office.

REFLECTOR ANTENNAS

Analytical Aspects of Reflector Antenna Analysis and Design

Contemporary needs of producing large reflector antennas having the simultaneous requirements of high gain and extremely low side lobe levels have necessitated a rigorous analytical approach to their design to achieve optimum performance. Typical analysis of these antennas require use of: Conventional Geometrical Optics, G.O.; Conventional Physical Optics, P.O.; the Geometrical Theory of Diffraction, G.T.D. (as advanced by Kouyoumjian's Ohio State group) and/or "Corrected" Asymptotic Physical Optics, C.A.P.O. (as developed by W.V.T. Rusch of the University of Southern California and the speaker). A brief outline of the employment of these analytical approaches (and associated FORTRAN programming) to both the prime fed and Cassegrain or Gregorian antennas is given with comparisons to measured results.

Biographical Sketch

Charles M. Knop was born in Chicago, Illinois. He received the B.S., M.S., and PhD degrees (the latter in 1963) in Electrical Engineering from the Illinois Institute of Technology, Chicago, Illinois, with part of his graduate studies done at the University of Southern California, Los Angeles, and Princeton University, Princeton, New Jersey.

He has been active in research and development work in the fields of microwaves, antennas, and electromagnetic wave propagation and scattering at various midwest and west coast organizations, and has also been a private consultant to both government and industry. Since 1970 he has been the Manager of Research and Development at the Andrew Corporation, Orland Park, Illinois, where his major responsibilities include research leading to the prototype development of new and/or improved antenna and waveguide products. (In these efforts he draws heavily upon the research work done by both universities and the government and continually attempts to impress upon management both the value and need of that research.)

Dr. Knop has taught all the graduate level courses offered in advanced electromagnetics, engineering electrodynamics, microwaves, and antennas in the Department of Electrical Engineering of the Illinois Institute of Technology. He has served as a reviewer for both Radio Science and the I.E.E.E., and has himself published over forty journal articles. He is a member of Tau Beta Pi, Sigma Xi, Eta Kappa Nu, URSI, and the New York

Academy of Sciences.

The meeting will be held on Tuesday, February 15, 1977 at the Black Steer Restaurant, 6446 W. North Avenue, Chicago. Cocktails 6:00 P.M., Dinner 7:00 P.M. and Meeting at 8:00 P.M.

THEATRE-DINNER PARTY Sunday — February 13, 1977

The members and guests of the Power Engineering Society (P.E.S.) and the Fox Valley Subsection will celebrate St. Valentines Day with their ladies at a dinner and show entitled "Saturday, Sunday, Monday", the Italian "Pasta" comedy. The play's colorful, bickering characters make up a typical Italian family with a bossy aunt, hammy uncle, old salty grandfather, tempestuous mama with a disgruntled jealous husband, and a handsome over-gallant neighbor. Their attempt at conversation is constant chatter, minimum understanding and gross exaggerations which all makes for a lovable family. A monumental dispute begins on Saturday as the ragu is being prepared in the kitchen. By Sunday, the sauce is simmering and the argument is boiling. All's well on Monday as the dispute is hilariously resolved.

The play was written by Eduardo de Felippo, Italy's Neil Simon and it won London's Best Play of the Year Award. The Broadway production with Eli Wallach and Sada Thompson received rave reviews. DON'T MISS THIS VERY ENTERTAINING OCCASION!!!

Dinner will commence at 5:45 P.M. at the Candelight Dinner Playhouse at 5620 South Harlem Avenue, Summit, Illinois with the show starting at 7:30 P.M. The \$11.00 per person cost includes the dinner (choice of four menus — London Broil, Baked Chicken with Italian Herbs, Short Ribs of Beef, and Codfish), show, gratuities and tax. Refreshments and other menus are available at extra cost.

Reservation Deadline: Must be received by January 7, 1977 to insure availability. Those received later will be accommodated if possible. Make check payable to: Power Engineering Society and mail to

Carl Schwarz
Sargent & Lundy
Mail Code 26D27
55 E. Monroe Street
Chicago, Illinois 60603

KVA PROTECTION

Don't Let Your KVA's Go Up In Smoke!

Many of the catastrophic electrical fires that occur today could have been prevented if simple, readily available techniques were implemented in designing and maintaining electrical distribution systems.

The Methods of Providing Protection for Medium Voltage Power Distribution Systems will be the subject of the January meeting of the Chicago Chapter IAS/IECI.

The speaker will be Robert L. Smith Jr., Application Engineer Industrial Power Systems, General Electric Co.

He will point out the misplaced confidence many users have in the ability of their protective devices to function and eliminate electrical damage . . . The need for short circuit studies to highlight these deficiencies will be emphasized.

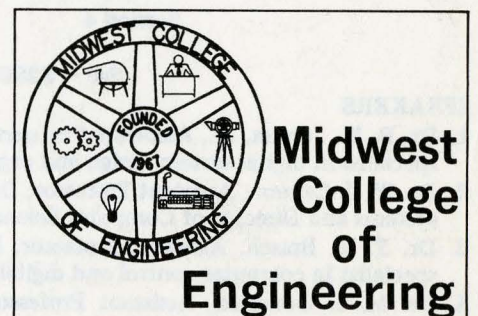
Mr. Smith is a graduate of Cornell University with a BEE (Power Option). He joined the General Electric Company in 1947.

Following five years of engineering assignments in the switch-gear departments, he held positions as Switchgear Specialist in New York City and Syracuse, as well as Industrial Power Distribution Engineer in Buffalo.

He has prepared and taught several courses on different aspects of industrial power distribution and authored several technical articles for trade magazines.

He is an Application Engineer in the Industrial Power Systems Engineering Operation and has made a number of studies of electrical systems for the paper, rubber, film, steel, automotive, and cement industries.

(Continued on following page)



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FOCUS ON FAX

IEEE SCENE

?\$/!X&X†!! Those are just some random printable thoughts on the IEEE membership response to the recent elections for the positions of President and Vice President of the IEEE. You all pay dues each year to belong to this professional organization. Some of you join to get a good deal on the group insurance. Fine, that's what it's there for! Those are the items that leadership can implement for a membership. However, only 37% of the eligible members took the time to fill out their punched cards and respond with their vote in the election. That was a lower figure than the national average. Nonsense you say! The engineer is a more concerned, intelligent, informed citizen than the average American voter.

Well, maybe some of you are too young to vote and some of you are not American citizens. I think that most of you are apathetic engineers in the doldrums who are content to put up with any administration or leadership in the IEEE. The only exception to that might be if dues were DOUBLED!! Caught your

attention, eh? It's not clear what the IEEE should be doing in many segments of the profession, but it is clear that either the membership or the IEEE current posture is not stimulating enough to even offer an opinion. That probably spells more trouble than we care to think about!

If the membership doesn't care to vote, maybe it doesn't care to read and digest the material that the IEEE publishes, maybe it doesn't care to come to any meetings, maybe it just generally doesn't care to really support IEEE activities. For a bunch of concerned, educated, and active, professionals, you sure don't choose to exercise any of your decision privileges.

Saunders won the election for President of the IEEE. Bayless won the election for the Vice President of the IEEE. Feerst got more votes than Rivers. Our new leaders could only pull a minority vote of the entire membership. If they can pull us out of these doldrums, they will certainly have proven their ability as leaders. We can at least all give them our support as they try. They've got one hell of a job!!
— JFJ

IEEE/PES LUNCHEON MEETING

Wednesday, February 23, 1977

Speaker: Albert A. Chilenskaskas, Manager, Commercial Development, Energy Storage Programs, Argonne National Laboratory

Subject: Lithium/Metal Sulfide Load Leveling Batteries

Location:

Midland Hotel
172 West Adams Street
Chicago

KVA PROTECTION

(Continued from previous page)

Mr. Smith is a Senior member of IEEE and has served as Chairman of the Power Group in the Buffalo Section; Member of the Protection and Codes and Standards Subcommittees of I&CPS; and Member of the IEEE Protection Book Working Group.

COURSE ANNOUNCEMENT MICROPROCESSOR SYSTEMS DESIGN

Offered By

Chicago Chapter of IEEE Computer Society,
Chicago Section of IEEE and Northwestern University
To Be Held At Northwestern University, Evanston, Illinois
4 Days — April 7, 14, 21, 28, 1977

This is intended to be a comprehensive course dealing with the design of systems incorporating a microcomputer. Application examples are taken from systems actually designed and built and will be discussed in detail. To allow individual interaction registration will be limited. This course is a repeat of the very successful course offered in both 1975 and 1976.

Session 1	Morning	Fundamentals of Microcomputer Systems
	Afternoon	Architecture of Typical Microprocessors
Session 2	Morning	Microprocessor Interface Techniques
	Afternoon	Design Fundamentals
Session 3	Morning	Application Examples
	Afternoon	Alternatives to Microprocessor Based Design
Session 4	Morning	Design Support Facilities
	Afternoon	Discussion of the Class Design Problem

Fee — \$250 — includes course lectures, materials, texts, and luncheons

SPEAKERS

1. Dr. B. W. Jordan, Jr., Associate Professor, Departments of Electrical Engineering and Computer Sciences, Northwestern University; specialist in digital system design and organizer of microcomputer courses.
2. Dr. W. J. Lennon, Assistant Professor, Department of Computer Sciences, Northwestern University; specialist in real-time computer systems and Director of Computer Sciences Research Laboratory.
3. Dr. F. M. Brasch, Assistant Professor, Departments of Electrical Engineering and Computer Sciences, Northwestern University; specialist in computer control and digital design.
4. Dr. M. J. Gonzalez, Assistant Professor, Department of Computer Sciences, Northwestern University; specialist in computer organization and distributed systems.

For further information contact: IEEE Office, 236-4609

Registration Form

Name: _____

Home Phone: _____ Business Phone: _____

Affiliation: _____ Address: _____

Mail to: IEEE
125 South Clark Street
Room 1545
Chicago, Illinois 60603

Make checks payable to:
Microprocessor Course 76

Registration deadline February 15, 1976