

EDITOR'S PROFILE of this issue

from a historical perspective ...

with Paul Wesling, SF Bay Area Council GRID editor (2004-2014)

December, 1970:

Cover: This holiday issue shows a Christmas tree made up of IEEE logos.



Archive of available SF Bay Area GRID Magazines is at this location:

https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

At time of scanning, the bound volumes are held by Paul Wesling.

April, 2025

Contact p.wesling@ieee.org

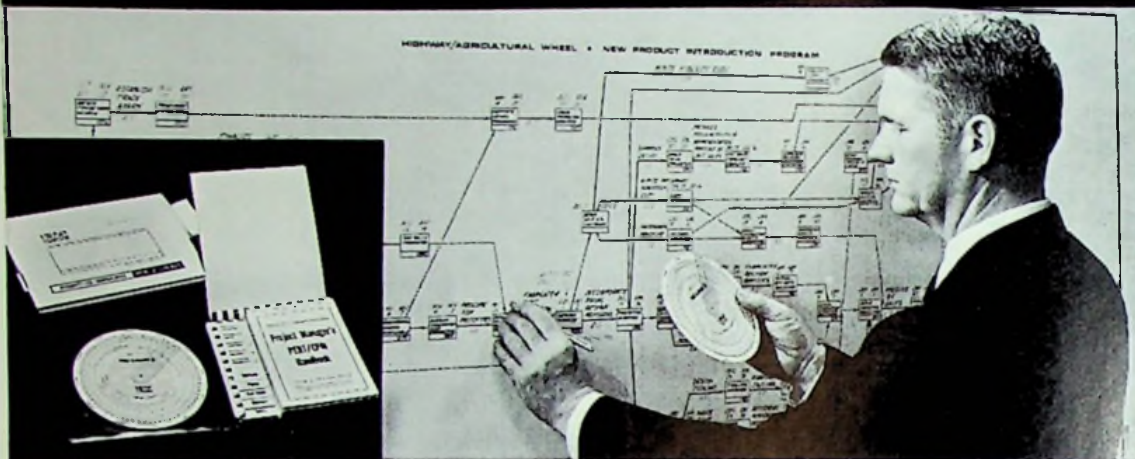


Grid
DECEMBER 1970

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MEETING CALENDAR

MAGNETICS/ ENGINEERING IN MEDICINE & BIOLOGY NOV. 30

Story on
page 8

MEDICAL APPLICATIONS OF MAGNETISM. Noboru Tsuya and associates, Tohoku University, Sendai, Japan. JOINT MEETING.

NOV. 30, Monday, 8:00 PM, PH 100, Stanford Lecture Hall. Dinner: 6:30, Red Cottage, 1706 El Camino, Menlo Park. Reservations: Loretta Routh (415) 324-3311, ext. 45616 by noon, Nov. 30th.

EDUCATION DEC. 5

Story on
page 10

EMPLOYMENT AND CAREER OUTLOOK FOR THE GRADUATE IN ENGINEERING. Adolph O. Berger, Asst. Regional Director of Operations, U.S. Dept. of Labor.

DEC. 5, Saturday, 9:30 AM, Room 147, Science Bldg., S.F. State College, 1600 Holloway, San Francisco. Lunch at the Red Chimney in Stonestown after the meeting. No reservations required. Coffee and donuts will be served 9:30 to 10 prior to the meeting.

ELECTRON DEVICES DEC. 8

THE SEMICONDUCTOR FAMILY TREE REVISITED. Don C. Hoefler, Electronic News.

DEC. 8, Tuesday, 8:00 PM, Rickey's Hyatt House, 4219 El Camino, Palo Alto. Cocktails: 6:00 PM; dinner 7:00 PM. Reservations: Section Office (415) 327-6622 by Dec. 7th.

ENGINEERING IN MEDICINE & BIOLOGY DEC. 8

Story on
page 7

ELECTRICAL SAFETY IN THE HOSPITAL. Panel discussion. Delmar E. Snider, M.D., Dept. of Anesthesia, Stanford; Tom Bailey, District Sales Mgr., Hewlett-Packard Co. and W. D. McKinney, U.C. General Hospital, San Francisco.

DEC. 8, Tuesday, 8:00 PM, Room M 112, Stanford University Medical School. Dinner: 6:00 PM, Red Cottage, 1706 El Camino, Menlo Park. Reservations: Harry Miller, (415) 321-1200, Ext. 6141 by Dec. 7th.

INDUSTRIAL ELECTRONICS & CONTROL INSTRUMENTATION DEC. 8

Story on
page 9

INFORMATION DISPLAYS (CRT). Ralph Thomason, Application Engineer, Tektronix, Palo Alto.

DEC. 8, Tuesday, 6:30 PM, Rickey's Hyatt House, University Room, 4219 El Camino, Palo Alto. Cocktails: 6:30 PM; dinner 7:00 PM. Reservations: Fran Casalino, (408) 289-2365 by Dec. 7th.

INDUSTRY & GENERAL APPLICATIONS/ GOLDEN GATE SUBSECTION DEC. 16

Story on
page 10

USE OF NATURAL RESOURCES. Maynard Munger, Director, Sierra Club. Annual Christmas meeting. Wives and guests welcome. JOINT MEETING.

DEC. 16, Wednesday, 7:30 PM, Engineers Club of San Francisco, 160 Sansome St., S.F. Cocktails: 5:30 PM; dinner 6:30 PM. Reservations: John Michelsen, (415) 764-6378 or M. McLaren, (415) 764-5294 by Dec. 14th.

MICROWAVE THEORY & TECHNIQUES/ COMMUNICATION TECHNOLOGY DEC. 9

Story on
page 8

THE NEW BREED OF SPECIALIZED MICROWAVE COMMON CARRIERS. John D. Goeken, Pres., Microwave Communication, Inc. JOINT MEETING.

DEC. 9, Wednesday, 8:00 PM, Hewlett-Packard, Santa Clara Facility, 5301 Stevens Creek Blvd., Santa Clara. No dinner.

SANTA CLARA VALLEY SUBSECTION DEC. 7

Story on
page 4

THE BART TRAIN CONTROL SYSTEM AND VEHICLE. Allen C. Rogers, BART Public Information Officer.

DEC. 7, Monday, 8:00 PM, Precision Monolithics, 1500 Space Park Drive, Santa Clara. (See map with story). No dinner.

DECEMBER 1970

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Grid

volume 17
number 4

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BART train control system

The BART \$26 million automatic train control system will be the subject of the December 7 Santa Clara Valley subsection program. Mr. Allen Rogers will describe the overall system and the electronic control capable of handling the movement of as many as 105 BART trains at one time. The computer is capable of making 6,000 decisions every half second.

The automatic train control center will be located in the combined administration and subway station now under construction between 8th and 9th Avenues in Oakland. Mr. Rogers will also describe the new BART car and some of its unique features.

Allen G. Rogers joined the Bay Area Rapid Transit District as Public Information Officer, in June, 1968. Before joining BART, Rogers was director of manpower for the Economic Opportunity Organization in Southern Alameda County. Prior to that, Rogers was sales manager for an international publishing firm on the East Coast and in San Francisco. A native of Fort Smith, Arkansas, Rogers is a graduate of Tennessee A. & I. University, with a bachelor of science degree in political science.

The meeting will be held at Precision Monolithics, 1500 Space Park Drive,



Allen Rogers

Santa Clara, starting at 8:00 PM. Space Park Drive is between 101 and the Central Expressway off the northern end of Scott Blvd. Access to the Central Expressway from 101 can be made from either De La Cruz or San Thomas Expressway.

As a second part of this series, the BART Fare Transaction System being developed by IBM will be presented in the spring. This fare system utilizes a card similar to the standard credit card. The card has a magnetic strip on which the credit balance is recorded and is also printed on the card as the fare is used.

The administration building of the Bay Area Rapid Transit District will be built directly over the system's Lake Merritt subway station, as depicted in this photograph of the architect's model. BART's automatic train control center, its headquarters and the subway station are all contained in this complex between 8th and 9th Avenues in Oakland.

BAY AREA RAPID TRANSIT DISTRICT PHOTOGRAPH



Funds for chapter and subsection treasuries

EXCOM of the San Francisco Section has adopted a plan for distributing additional funds to Group Chapters and Subsections. The plan is "one-time-only" for the year 1970-71 and there is no plan at present to continue distributing these special funds after June 30, 1971. This special disbursement of funds is in addition to the regular meeting payments.

The plan attempts to recognize and provide incentives in the following areas:

1. Recognize membership in Group Chapters.

2. Stimulate new or reinstated membership in the Institute and the Group Chapters.

3. Pay a bonus for attendance at Group Chapter and Subsection meetings over and above the regular meeting payments and to help Group Chapters and Subsections to defray extraordinary expenses in connection with promoting meetings.

4. Payments will be made only where Group Chapter and Subsection Treasury balances are below established levels (on the theory that these Treasuries are "working funds" and monies in them should be spent for the good of the membership — they are not "hoarding" accounts.)

Details of the plan are as follows:

Fellow nominations

Nominations for award of Fellow grade for 1972 are now being solicited, and the San Francisco Section Fellow Committee is organizing its efforts to propose for Fellow prominent members of the engineering community. Assistance of all members, Group Chapters and present Fellows is welcome in identifying IEEE members of unusual professional distinction with "outstanding and extraordinary qualifications and experience." They may be of any grade in IEEE and must have been members for seven years.

Nominations will be processed for submission in April, 1971 and should be in the Section office by February 15, 1971. Forms and instructive packets are available at the Section office (phone 3327-6622). Preliminary biographical information may be sent in by letter to the Section office for committee assistance in preparing the proposal.

The Fellow Committee is headed by Victor Siegfried, who may be reached at 7743-0722 daytimes or 854-3593 evenings.

1. Bring each of the Subsection Treasuries up to \$200 based on July 1, 1970 balance.

2. Bring each Group Chapter's Treasury up to 40 cents per member based on July 1, 1970 membership.

3. Set aside a discretionary fund of \$500 under control of the Section Vice-chairman to be allocated to Group Chapters and Subsections for large meetings or meetings with extraordinary expenses. Applications for payment from this discretionary fund are to be submitted to Ed Jackson, the Group Chapter Coordinator who will serve as Chairman of a special 3-man committee — the other two committeemen will be a Group Chapter Chairman and a Subsection Chairman appointed by the Section Chairman. This special committee will act on all applications and will certify requests up to \$50 maximum (larger requests require EXCOM approval). Payments may be requested for large meetings at 50 cents per attendee above 40 up to a maximum of 200 attendees if (a) the meeting has been advertised in the GRID, (b) IEEE mem-

bership forms and applications are available and promoted at the meeting, (c) the Treasury balance of the group sponsoring the meeting is under \$300 or would exceed \$300 after payment. Social meetings and Ladies Nights do not qualify, but Joint Meetings can qualify at a reduced rate. Payments from the fund also can be requested for extraordinary meeting expenses subject to qualifications similar to payments for large attendance.

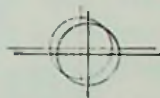
4. To stimulate membership in the Institute and in Group Chapters payments of 50 cents per each additional member will be made to each Group Chapter whose official membership increases from June 30, 1970 to March 31, 1971. There are restraints on each Group Chapter's Treasury balance, similar to those in Item 2 above so that each Treasury shall not exceed 50 cents per member as of March 31, 1971.

For further information on this plan and for help in preparing requests for payment from the discretionary fund, contact Ed Jackson whose telephone number is (408) 291-4586.

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12 Wednesday evenings, January 6 through March 24, 1971, from 7 to 9:30 p.m. at the University Extension Center, 55 Laguna St. (at Market), San Francisco.

The growing complexity and size of engineering projects has made systems engineering increasingly important to all engineers. This lecture series will provide an understanding of the systems approach to design and evaluation, covering:

- General concepts, with examples explaining how they have been applied in civil, mechanical and electrical engineering.
- Analytic tools of the systems engineer.
- Methods of implementing systems design goals.

Program chairman: Paul Gray Senior Research Engineer, Systems Evaluation Department, SRI. Other speakers, also from SRI: David A. Curry, Paul S. Jones, D. Warner North, E. Arlin Torbett, Iram J. Weinstein and Oliver J. Whitby.

Registration fee for the series: \$75. For detailed program brochure write to D. E. Stern, Continuing Education in Engineering, University Extension, University of California, 2223 Fulton St., Berkeley, CA 94720; or call (415) 642-4151.

'Art of speaking'

The San Francisco Engineers Speakers Club is in its 32nd year of providing practice and informal training in the art of speaking before groups of people.

Meetings are held every Thursday lunch from 12:10 p.m. to 1:00 p.m. at the Engineers Club of San Francisco, 16th Floor of 160 Sansome Street. Luncheon cost is \$3.25 complete.

In November the following topics will be discussed:

November 5 —

"Revolution in America — Is it possible?"

November 12 —

"Can Peace be Won or Lost by Waging War?"

November 19 —

"How to Unify the Engineering Profession"

November 26 —

Thanksgiving Day — No Meeting

All Bay Area Engineers are welcome. Come to a meeting and evaluate our program. For information, call Club President Edward M. Walker, P.E., at 421-1042.

MAJOR SYSTEMS CONFERENCE

The 1971 Joint National Conference on Major Systems will be held October 25-29, 1971, in Anaheim, at the Disneyland Hotel.

Reliability announces schedule

The Reliability Group will not hold a meeting in December but wants to take this opportunity to announce their schedule for 1971. Further details concerning these meetings (all on the Peninsula) will appear in future editions of the GRID. In addition, direct-mail notices will be distributed to Reliability Group members. Other persons interested in receiving these notices should contact Phil Guillot at 742-7026.

DATE	TOPIC AND MEETING LOCATION	SPEAKER
January 14	Reliability aspects of Video Tape Development	To be announced
February 11	Applications of the Scanning Electron Microscope	Panel discussion
March 11	Planning for a Reliability Program	P. Coffman, Lockheed Missiles & Space Co.
April 8	Reliability Problems in a new MOS Product Line	C. Botchek, Larse Engineering
May 13	MIL-STD-883: "The Other Side of the Fence"	J. Feldt, National Semi-conductor Co.

This national conference has been called for the exchange of information, the cross-fertilization of ideas, and the stimulation of workers in the emerging field of Major Systems. It will be held in conjunction with the national meetings of the sponsoring societies, the Operations Research Society of America, and the Systems, Man, and Cybernetics Group of IEEE.

MAJOR SYSTEMS: They are of prime concern to the engineer and scientist, and to the citizen as well. The design and synthesis of large interacting systems, their study and analysis, their management and control, comprise an emerging discipline and field of endeavor with impact on the technological populace.

MAJOR SYSTEMS: Be they ecological or astronomical; human-centered, civil, or economic; quantifiable or indeterminate; imprecise or analytic; ill-conditioned, Zadeh-fuzzy or Wiener-approximable; all, for the first time, are being attacked by the methods of modern science and technology.

Is your work applicable to the fields of Major Systems? or to their components? or to their control and management? Can you contribute to their understanding? or is your work of interest to those responsible for Major Systems? If so, your work should be presented at this conference. Mark the date on your calendar, and send an abstract to: Dr. Frank J. Mullin, Mail Station R3/2054, TRW Systems, One Space Park, Redondo Beach, California 90278.

Electrical safety in the hospital

Medical monitoring and electrical systems employed in the hospital could cost you your life! The problem of PATIENT PROTECTION and ELECTRICAL SAFETY will be explored at the December 8th meeting of the Group for Engineering in Medicine and Biology.

A three-man panel representing the disciplines of medicine, industry and design standards will be moderated by Mr. Robert Silligman, GEMB Secretary/Treasurer and medical electronic systems consultant. Participants in the panel are Delmar E. Snider, M.D., Mr. Tom Bailey and Mr. W. D. McKinney. The panel will present information regarding the cause and effect of "micro-shock," present status of hospital conditions, current and future electrical equipment manufacturers. A group discussion encouraging audience participation will follow the panel presentation.

Dr. Snider received his B.S. degree (1957) from the U.S. Naval Academy, MS.EE. (1958) from the University of Illinois and M.D. degree (1967) from the University of California. He has had experience in consulting to industry, hospitals and public medical organizations and worked in computer systems in bioengineering. He is presently Chief Resident and Acting Instructor in the Department of Anesthesia at Stanford University School of Medicine. He is actively in-

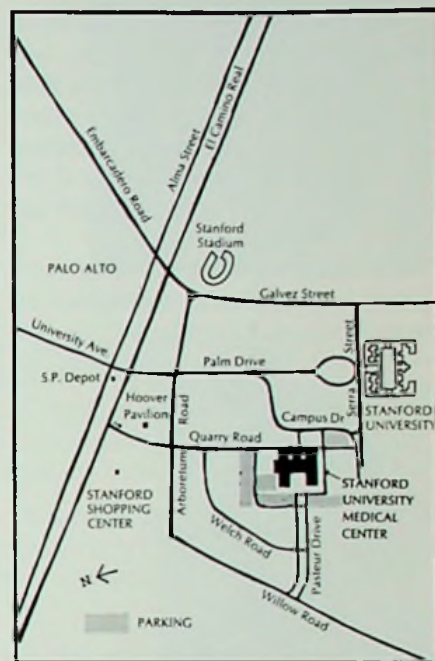
involved in research in monitoring of physiologic parameters, respiratory physiology and electro-anesthesia.

Mr. Tom Bailey is presently District Sales Manager of Hewlett-Packard Company, Medical Electronics Products in Palo Alto. He received his education at Sacramento State College and joined Hewlett-Packard in 1965 as medical instrument sales representative. Previous to that he was employed by Aerojet-General Corporation in Instrumentation Engineering from 1958 to 1965.

Mr. Dave McKinney is presently Electronics Consultant of the Regional Medical Programs Area I, University of California, San Francisco General Hospital. His present position involves evaluation of patient monitoring equipment and electrical hazard survey of 84 northwestern California hospitals. Mr. McKinney is a member of the California Hospital Association committee on electrical hazards in hospitals. He is presently a member of AAMI and MEDS and has been affiliated with the University of California since 1965.

The meeting will be held in room M112 of the Stanford University Medical School (Medical Center) at 8:00 PM, Tuesday, December 8th. A pre-meeting dinner will be held at the Red Cottage Restaurant, 1706 El Camino Avenue in Menlo Park at 6:00 PM. Reservations

should be made prior to 5:00 PM. December 7th by calling Mr. Harry Miller, 321-1200, Ext. 6141. Members and guests are welcome to both the dinner and the meeting.



Don Larson heads Los Angeles convention bureau

Donald E. Larson, general manager of the Western Electronic Show and Convention (WESCON), has been elected 1970-71 president of the Los Angeles Convention Bureau Inc.

He was installed October 27 during a preview showing of the \$41-million Los Angeles Convention Center to bureau members and civic dignitaries. The 250,000-square-foot facility is scheduled for completion next July 1.

Larson has served two terms as secretary-treasurer of the Convention Bureau, and was a technical advisor in the design and development of the Convention Center. He is also immediate past president of the National Association of Exposition Managers.

The 1972 WESCON will be held in the Los Angeles Convention Center in Sep-



Don E. Larson

tember 1972. The show, which alternates between San Francisco and Los Angeles, will be presented in the San Francisco Cow Palace, August 24-27, 1971.

CIRCUIT DESIGN ENGINEERS

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A joint meeting of the MTT and Com-Tech chapters is scheduled for Wednesday, December 9 at 8:00 PM at the Hewlett Packard Santa Clara Facility.

John Goeken will discuss 1) his seven-year battle with the FCC and the telephone operating companies, 2) the technical aspects of MCI's proposed microwave communication system including fifty GHz loops inside cities and 3) the commercial market aspects of such services.

The timeliness of this meeting in the current marketplace is underscored by the fact that one California MCI customer will need 800 microwave terminals



John Goeken

alone and Mr. Goeken will need perhaps 10,000 microwave sets within two years.

John D. Goeken is Chief Executive Officer and the Founder of Microwave Communications, Inc., better known as MCI. In December of 1963, Mr. Goeken filed an application with the FCC for authorization to construct and operate a common carrier microwave system between Chicago and St. Louis. Mr. Goeken's concept was to offer a wide range of communications facilities for various communications requirements with unusually flexible tariff features on a common carrier basis. The FCC on August 14, 1969, authorized MCI to provide the first new specialized common carrier service to meet the nontelephone communication needs of business, industrial educational and governmental users.

During the past seven years, Mr. Goeken has spent a considerable amount of time assessing the needs of communication users, working with computer firms and terminal equipment manufacturers as well as pursuing MCI's applications before the FCC.

Nelson and Wang new lab members

Dr. Daniel G. Nelson has joined the Singer Palo Alto Research Laboratory as Manufacturing Manager. Dr. Nelson received his MSEE at New York University and his Ph.D. in Electrical Engineering at Stanford. He was formerly with Signetics.

Another technical staff member was also added to the laboratory this week, Yu T. Wang. Mr. Wang will be responsible for sustaining engineering within the laboratory's Pilot Manufacturing Department. He received his BSEE at Oregon State University. Dr. Nelson and Mr. Wang are members of the San Francisco Section of IEEE.

Medical applications of magnetism

The Magnetism and the Engineering in Medicine & Biology chapters will hold a joint meeting on November 30th in PH 100 at Stanford Physics Hall. The speakers will be Takashi Nakamura, Kimio Konno, Takeshi Morone, all of the Department of Internal Medicine, School of Medicine, and Noboru Tsuya, Research Institute of Electrical Communication and Masahiro Hatano, Research Institute of Non-Aqueous Solutions, Tohoku University, Sendai, Japan.

As pointed out by Frei in 1969, medical applications of magnetism seem to be very promising in the medicine of tomorrow. However, as far as the clinical applications are concerned, there are still several fundamental barriers to be solved in order to go beyond the present limitations of magnetism for medical uses. Fundamental investigation is being carried out to clarify the entire behavior of ferromagnetic fine particles (FFP), which are administered into the vascular system of experimental animals. Interesting results concerning the following items have been obtained: 1) Histological observations on rabbits, 2) Biomicroscopical observations on mesenteric small vessels in the rat, 3) Collection of FFP by the extracorporeal bypass circulating system in dogs, 4) Magnetically controlled roentgenography and roentgenocinematography in dogs, rabbits and rats, 5) Isotopical observation of FFP captured in the reticuloendothelial system, 6) Solubility of FFP in blood with chelating agents. The results of these investigations will be presented.

Dinner will be at the Red Cottage at 6:30 PM. For reservations see calendar.

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John Knudsen, Senior Microelectronics Research Engineer, LMSC

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Instructor

Charles M. Botchek, Manager, MOS Engineering, Larse Corp.

Both courses meet on Tuesdays, 7-9 p.m., January 5-March 23, 1971 at LMSC Education and Training Center, 1184 N. Mathilda Avenue, Sunnyvale.

FOR INFORMATION: Phone Donald Hummel, (408) 429-2761.

WINCON names Warren Mathews

Dr. Warren E. Mathews, manager of Hughes Aircraft Company's Missile Systems Division, has been appointed general chairman of the 1971 Winter Convention on Aerospace and Electronic Systems (WINCON), to be held February 9-11, 1971, at the Biltmore Hotel, Los Angeles.

The annual conference, being held for its 12th year, is designed to provide top personnel in industry, government and education with a forum for exchanging ideas on current problems and learning about recent advances in system-oriented technology. It is sponsored jointly by the Los Angeles Council of the Institute of Electrical and Electronics Engineers and the IEEE's Aerospace and Electronic Systems Group.



Warren E. Mathews

Dr. Mathews received his BA degree in Physics and mathematics from Ohio Wesleyan University, a BS and MS in electrical engineering from MIT and a Ph.D. in physics from California Institute of Technology. He is a co-holder of two patents and has authored several papers on various aspects of microwave technology and missile guidance. He is an associate Fellow of the American Institute of Aeronautics and Astronautics, a senior member of the IEEE, and member of Phi Beta Kappa, Sigma Xi and Tau Beta Pi, and an honorary member of Beta Gamma Sigma.

NEW MEMBERS

The Section welcomes these new members:

W. G. Arkush	G. Page
T. H. Cao	V. A. Pearson
C. F. Coburn	F. W. Peoples
A. M. DeAlmeida	W. A. Ray
W. Evans	A. Rendon
K. W. Hoenecke	J.H. Webster
G. I. Kacher, Jr.	R. C. Witwer
H. J. List	H. R. Zulliger
D. W. Nestor	

Information displays (CRT) studied

A recent development associated with the field of minicomputers has been the introduction of a new man-computer interface, an information display on a CRT (cathode ray tube). The application of this device greatly increases the efficient control of a system by concentrating a vast amount of data on a TV-size screen. CRT displays are being used in many industrial applications.

On December 8, 1970, at 8 p.m. the Industrial Electronics and Control Instrumentation Group will hold a technical session at Rickey's Hyatt House in the University Room on information displays. The speaker will be Mr. Ralph Thomason of the Information Display Product Group of Tektronix Incorporated. Mr. Thomason is a graduate of U.C. Berkeley and is an Application Engineer with over six years of experience in computer-based information display systems. The discussion will be a general talk directed to instrumentation, design and application engineers, and potential end users covering general function and operation of CRT displays. Included will be the factors determining the characteris-



Ralph Thomason

tics of a Graphics Computer Terminal, soft-ware consideration associated with CRT displays, and a broad range of typical applications. A question and answer period will follow the talk.

The talk will be preceded by no-host cocktails at 6:15 PM and a dinner at 6:45 PM. Looking forward to seeing you.

For reservations call: Fran Casalino (408) 289-2365 by December 8, 1970.

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The use of natural resources

Maynard Munger, Jr., Chairman of the Board of the Sierra Club Land Trust, will address the Joint Christmas meeting of the Golden Gate Subsection and Industrial and General Application Group. At the December 16th meeting the topic of his talk will be "The Use of Natural Resources."

The Sierra Club has been vitally concerned with the use of natural resources since its founding in 1893 by John Muir. In the past few years the club has taken upon itself a very active role in all areas of conservation. As a member of the club's national Board of Directors for the past 12 years, Mr. Munger is very well qualified to discuss the topic and the legal and political implications of possible protective action which the general public as well as the Sierra Club, can take.

Mr. Munger is a realtor. He received his undergraduate and masters degree in business administration from University of California at Berkeley. He is a director of the Orinda Association.

The dinner meeting will be held December 16 at the San Francisco Engineers



Maynard Munger, Jr.

Club preceded by a social hour starting at 5:30 PM with dinner at 6:30 PM. The Engineers Club is located in the Bank of Hong Kong Building at the corner of Pine and Sansome Streets. Wives and guests are invited. Please make reservations by not later than noon December 15th. Call J. A. Michelsen (764-6378) or M. W. McLaren (764-5294).

Engineering graduate career outlook

Saturday morning December 5, the Education Chapter will meet in Room 147 of the Science Building at San Francisco State. The guest speaker will be Adolph O. Berger, Assistant Regional Director for Operations, U.S. Department of Labor. Mr. Berger will discuss the employment and career outlook for the graduate in engineering in the rapidly growing economy of the 1970's. His remarks will be based largely on the recent studies completed by the Bureau of Labor Statistics. After the talk, there will be a brief discussion period.

Mr. Berger has been with the Bureau since 1942, in Cleveland, Chicago and San Francisco. Prior to his first Bureau appointment, he taught Economics at a struggling new college in Cleveland, then called Fenn College, and primarily a school of engineering. It is now known as Cleveland State University.

Coffee and doughnuts will be served from 9:30 to 10:00, followed by the meeting from 10 to 12, then lunch at the Red Chimney. The lunch will be "order from the menu" basis, and no reservations are required.

Those attending the meeting may park in parking lot No. 6 on the campus.

GGSS seeks members

The Golden Gate Subsection membership is comprised of all IEEE members who receive their IEEE mailings in San Francisco, plus all other IEEE members who wish to affiliate with the Subsection. For members who live outside of San Francisco, but whose professional interests are inside the City, affiliation with the Golden Gate Subsection can be achieved by calling Jean Helmke at the Section Office (327-6622), or by completing and mailing the coupon below. Becoming a member of the Subsection costs nothing, but will place members on the Subsection mailing list, and permit them to vote for Subsection Officers.

I receive my IEEE mail outside of San Francisco, but my professional interest is in San Francisco. Please add my name to the Golden Gate Subsection Roster.

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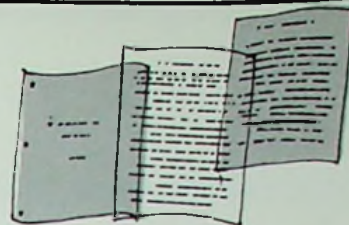


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CALL FOR PAPERS



The 1971 Summer Power Meeting and International Symposium on High Power Testing of the Power Group of the Institute of Electrical and Electronics Engineers is scheduled to be held July 18-23, 1971, at the Hilton Hotel in Portland, Oregon. The technical program will encompass all subjects falling within the power field. Papers dealing with high-power testing will be especially welcome. Authors should advise the Technical Conference Services Office of IEEE Headquarters without delay if they expect to submit a paper. Papers intended for presentation as part of the International Symposium on High Power Testing should be so identified. IEEE Headquarters will then furnish the author a Declaration of Intent form, an Author's Guide, and model paper kits for the typing of the manuscript. The Declaration of Intent form should be returned as soon as possible, preferably by return mail, so that preliminary plans may be made to include the paper in the program.

The deadline date for receipt of papers to be considered for presentation at this meeting, at IEEE Headquarters, is February 15, 1971. Papers accepted will be reviewed and graded Transactions or Conference by the appropriate committee and included in the technical program for the Summer Power Meeting and International Symposium on High Power Testing, if at all possible. It will be necessary to adhere strictly to the February 15 deadline.

Canada, for the first time, will host the world's foremost communications symposium, the International Conference on Communications (ICC 71), to be held in Montreal in June, 1971. The conference is sponsored by the Communications Technology Group and Montreal section of the Institute of Electrical and Electronics Engineers (IEEE).

More than 1500 Engineers, Scientists and Communications Executives from around the world will hear over 200 papers organized in some 40 technical sessions covering the latest develop-

ments and trends in voice, data, video and satellite communications. In addition, a display of sophisticated hardware from more than 40 leading corporations will complement the technical sessions.

The international and social aspects of communications will receive particular emphasis in line with the ICC 71 theme of "Communications and the Community of Man." This theme is denoted by the ICC symbol, a stylized silhouette of Man's head containing the world, which reflects the international bond within all men.

Both the luncheon and banquet of the three-day affair will feature prominent speakers in an informal atmosphere. ICC 71 will also feature an interesting program of activities for the ladies.

For further information, contact: John A. Mahoney, Publicity Chairman, 931-5711 local 8805, (Area Code 514), or ICC, P.O. Box 201, Station H, Montreal 107, Canada.

Submission of papers for the 22nd Annual Appliance Technical Conference are being requested by IGA's Domestic Appliance Committee.

Preferred subjects are new, significant designs and developments relative to domestic appliances. This includes major appliances, electric housewares, portable appliances, air conditioning and heating, and their components, such as controls, motors and heaters. Topic areas may be research, development, product design, materials, quality control, reliability, service, packaging, and so forth.

Each prospective author is to send a synopsis of his proposed paper to S. Mazzoni, 1971 Conference Chairman, Underwriters' Laboratories, Inc., 207 E. Ohio St., Chicago, Illinois 60611.

Rough draft copies of the complete paper, with one set of second-generation slides, are to be received by January 15, 1971. The paper and slides are to meet certain guidelines which will be supplied by the program committee

about December 1, upon acceptance of the initial synopsis by the committee.

The conference will be held at the Sheraton Chicago Hotel, Chicago, Illinois, on May 4 and 5. Plant tours will be scheduled in the area.

The committee will make an award for the best paper presented during the conference. The 1970 award went to J. W. Yartz of The General Electric Co., for his paper, "A New Approach to Food Waste Disposer Design."

The 1971 IEEE Power Industry Computer Applications Conference (PICA) will be held May 24-26, 1971, at the Statler-Hilton Hotel in Boston, Massachusetts. Abstracts of 150-200 words expanding on the conference theme "PICA 7 - Prognosis for the 70's" should explore and trend the increasingly intimate relationship between the engineer and computer in power system planning, operation, and control. The abstracts should be sent immediately to: Paul L. Dandeno, Hydro Electric Power Commission of Ontario, 620 University Avenue, Toronto, Ontario, Canada. Manuscripts are due January 8, 1971.

The 1971 Reliability Physics Symposium will be held at the Stardust Hotel in Las Vegas, Nevada, on Wednesday, Thursday and Friday, March 31 through April 2, 1971. This symposium is co-sponsored by the IEEE Professional Groups on Electron Devices and Reliability. The emphasis of the 1971 meeting will be on the key areas within Reliability Physics of Physics of Failure, Device Characterization and Design for Reliability, for solid-state devices.

A limited number of late news items (suitable for 10-minute papers) reflecting important new developments, will be considered if 100-word abstracts and 300-500-word summaries are received by February 9, 1971.

For further information, contact: Dr. O. D. Trapp, Technical Program Chairman, at Fairchild Semiconductor, 313 Fairchild Drive, Mountain View, Cal. 94040; phone: (415) 962-3116.

Group News Extracts

The IEEE STANDARDS COMMITTEE *Bruce B. Barrow, Chairman*

The IEEE Standards Committee has the responsibility of encouraging and coordinating IEEE standards activity. It carries out its work principally through the production of IEEE standards publications and it also supports standards work carried on in other organizations by appointing IEEE representatives and by providing technical inputs. It is one of the very few committees that REPRESENTS the IEEE; in matters concerned with standardization it develops the IEEE technical position. This responsibility of developing a position through achieving a consensus within the large and complex IEEE organization accounts in significant measure for the sometimes slow and cumbersome process of developing an IEEE Standard.

As a result of the membership attitude survey carried out in 1968, in which 39% of the members polled indicated that they believed that issuing standards was a principal way in which the IEEE served its members, the Technical Activities Board appointed a special committee under I. G. Easton. This committee was charged with recommending how the Standards Committee should act to carry out the total responsibility of the IEEE in standards.

In 1969 the committee made several key recommendations that are now being implemented:

1. Increase the Standards Staff.
2. Publish IEEE Standards in the *TRANSACTIONS*.
3. Review IEEE Standards periodically, on a 5-year basis.
4. Submit IEEE Standards to the American National Standards Institute.
5. Most important of all, stimulate Group activity in the Standards field, so that activities are carried out in all areas of IEEE Technical competence.

We are beginning to show progress in all of these recommended areas. A new Manager of IEEE Standards Operations, Mr. S. I. Sherr, has been added to the IEEE staff. The first of the recent IEEE Standards will be published in the *TRANSACTIONS* before these words appear in print. In addition, we have begun a systematic review of the nearly

150 Standards that are more than five years old and we are submitting most of our younger documents to the American National Standards Institute.

With the appointment of five standing subcommittees to handle its many administrative tasks; the IEEE Standards Committee has cleared decks for action. An Administrative Subcommittee has been established to coordinate activities and develop policy proposals, as well as to handle many routine matters. The Procedures Subcommittee is responsible for maintaining the Standards Manual, a guide both for the members of the Standards Committee itself and for the literally hundreds of IEEE members who are engaged in one way or another in IEEE standardization activity. A new committee, the Resources Subcommittee, will advise on the allocation of IEEE resources to tasks that have to be performed. It will, for example, recommend which of the dozens of IEEE committees should be involved in individual standards projects. It will also advise on the dozens of appointments to American National Standards committees and other outside organizations.

A special committee has been formed to handle the presentation of proprietary IEEE Standards to the American National Standards Institute. Each such submission is a special case and must be handled individually. Finally, an International Liaison Subcommittee handles questions of coordination with the recommendations of international bodies, particularly the International Electrotechnical Commission (IEC) and the International Organization for Standardization (ISO). This committee also prepares material for submission to these international organizations through the appropriate national standardization organizations.

The Standards Committee has given a good deal of attention to defining its proper role of support to the American National Standards Institute, a special relationship because the IEEE is the only technical society representing electrical engineers in the United States, while at the same time maintaining a proper balance with its responsibilities as a senior committee of a non-national

organization. In carrying out its work, the Standards Committee recognizes first of all its responsibility to the total IEEE membership. To that end its principal function is the generation of standards that are representative and useful to the entire membership. These IEEE Standards are then submitted to the American National Standards Institute for consideration as American National Standards. In addition, many IEEE delegates are appointed to American National Standards committees. Within the limits of IEEE resources, similar support is available to the standardizing bodies of other nations if they wish to request it.

The technical work of generating IEEE Standards is for the most part carried on within the Groups. Most of the Groups that carry on extensive standardization work have a number of technical committees that work in their particular areas of specialization. Normally a draft standard is proposed by a fairly small working committee. If things are being carried on in an entirely proper manner, the project is approved by the Standards Committee at a very early stage. The principal reason for this procedural step is to ensure that the proper resources of the IEEE are brought to bear on the problem. If this necessary function of coordinating IEEE resources is performed at the very beginning, it is usually possible to avoid the pain and delay that often result when a new Group interest is brought to bear on a draft standard at a late stage in its development.

After the drafting committee and the responsible Group Technical Committee approve the submission of a draft, it is sent to the IEEE Standards Committee. In the case of a new document, the draft may be approved as a "Proposed Standard," and issued for trial use. Under the new operating procedures, the trial-use standard will be published in the *TRANSACTIONS* just as a full-status standard. However, after it has had a year of exposure to the public, the originating committee will be asked to take into account the comments received and the experience gained, and to prepare a new draft to be balloted for publication as a full-status standard.

Exceptions to the above procedure are few, and principally involve such general areas as definitions, letter symbols, and units, where the IEEE Standards Committee maintains its own technical committees to prepare key basic documents and to coordinate the work submitted by other committees.

The major remaining organizational task is to stimulate the proper degree of activity within those Groups that are not carrying on adequate standards programs. A number of the Groups are carrying on standards activity that is satisfactory both in quality and quantity. However, several of the key Groups of the Institute are carrying on little or no standards activity. In each such case we hope to see formal projects defined and activity begun before the end of 1970. We are glad that so many of the IEEE members have expressed a general interest in standards and would welcome specific suggestions regarding projects that ought to be initiated.

(Condensed from the Engineering Management Group Newsletter)

In mid-1970 we note from such publications as THE NEW YORK TIMES that the recession has hit harder at engineers than any other profession. Ph.D.'s in engineering are finding it impossible to get a job. Middle and even upper level engineering managers are on the street competing with recent graduates who are underpricing them by one half to one third in salary demands.

There are a lot of reasons behind the nation's business recession. And a lot of people are losing their jobs. And they are losing these jobs in a variety of industries, not just the aerospace/defense victims of government budgetary cutbacks. Why are engineers, who are supposed to be at the forefront of technology preparing new products and improving the old, being laid off?

One hardly hears of lawyers being let go; accountants survive purges; marketing survives to a good extent — it's engineering that makes the unfortunate headlines. While other divisions of the organization are out mending fences and convincing management that they are crucial to the firm, engineering management keeps its eyes firmly on the widget development process and when the opportunity presents itself to enhance its position does not rise to the occasion.

Maybe this attitude of non-involvement, professionally, is why you observe such a difference in status between engineers and, for example, lawyers if

you visit a typical firm. A lawyer doing patent work does nothing to enhance a product or service an engineer has designed or is producing. He is simply protecting the firm's marketing investment according to certain legal codes. Some firms depend on the technology involved and do not even patent their products. The attorney is pure overhead to the firm. Yet, in the typical company, the attorney is housed in executive offices, earning, on the average, in the \$20,000 range, and is treated deferentially by top management.

The average engineer works in a place that has all the niceties of a converted barn. I leave it to the reader to make the rest of the comparisons.

Let's stop blaming the hierarchy, no matter how incompetent we believe it to be, if we as engineers cannot be competent enough to build up or own status in our own profession.

Where to start?

Let's start with the individual engineer. The average, incompetent engineer. Yes — he is incompetent even though he may be able to design the best mouse traps in the world. He is incompetent in planning his own career, he is incompetent in acting as a good businessman in a business world, and he is incompetent in even learning how to become competent. The average engineer who spends four grueling years in earning his degree spends less than a week in short, unconnected, non-integrated, incoherent thinking sessions about what he is going to do with that degree. He falls into his line of work largely by default — it appears better than the very limited range of choices he seems to have. Not having any goals, and not going to any meeting where he might define these goals, why should he strive to become highly competent in any but the most obvious areas? He allows fate to push him — if he makes widgets he learns to make better widgets; if he makes product X, he learns product X. Instead of making his experiences cumulative and building his experience carefully, he winds up a man with 15 years of work consisting of one year of experience repeated 15 times. Instead of leading management into better engineering channels and outmanaging the incompetents, and furthering the management of his profession he remains an incompetent businessman, but a good designer of widgets. It has never been, and never will be, except for prominent men in certain prominent firms, sufficient for the average engineer in industry to be solely a good designer

of widgets. If he cannot relate his work to the profit/loss statement and the people who watch that statement, he will suffer at the least bit of financial stringency.

Next we move to the examination of the role of the average engineering manager. It should be the goal of the IEEE to enroll in its ranks, at the very least, every man who aspires to or is in some management role in the profit, non-profit, and service sectors of the economy. To be professionally respected the profession must show that it vigorously promotes a professional interchange of ideas and activities of ALL who practice that profession. Some managers are intelligently equipping themselves with the tools of management by attending evening graduate schools. Some are not quite able to see their present limitations. Some have been born with the natural gifts for management and have used their business experiences cumulatively and wisely. But ALL must have a continuous forum for their ideas away from the stresses of their jobs and away from fears of committing an error and speaking out of turn. ALL should have exposure to the ideas of their peers. If

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you go into any decent hospital and look at the medical bulletin boards you can see this principle in action. There will always be a notice posted on that board reminding the doctors affiliated with the hospital that they must attend some minimum number of lectures per month to retain that affiliation. And the lectures given in the hospital are usually well attended with a lively give and take question period. Question for thought: Could not a company's productivity, creativity, profitability, and managerial competence also be improved by having its staff attend such meetings under an IEEE Group?

Engineering in 1970 is undergoing a crisis situation. The recession is hurting a lot of people. It is hurting the engineer out of proportion to the rest of the population. It provides good object lessons to sons, friends, and relatives to avoid engineering as a career. Enrollment at all but the top engineering schools is falling. And, worst of all, as respect for teachers and other professions builds, that for engineering, relatively, falls. After all, who ever heard of a teacher layoff?

The crisis situation is a management situation. Engineers have been hurt because engineers have not taken the actions to prevent this hurt. Only a careful reblending of the management/engineering mix can help.

Homer Hoard at Philco Ford

Appointment of Homer S. Hoard as director of Ground Terminal Operations at Philco-Ford Corporation's Western Development Laboratories (WDL) Division was announced here by Dr. Walter B. LaBerge, vice president and general manager.

Prior to his new assignment, Mr. Hoard was manager of Telecommunication Programs at WDL Division. He joined Philco-Ford in mid-1960 as a senior engineer at WDL Division and since then has held a number of engineering management positions.

Mr. Hoard was a senior systems engineer with Firestone Tire and Rubber Company's Guided Missiles Division at Monterey, Calif. before joining Philco-Ford, and before that was a mechanical engineer at the University of California Radiation Laboratory at Livermore, Calif.

(Extracted and paraphrased from the G-MTT Newsletter)

In certain industries engineers are something like nomads; that is, they change jobs frequently as our government changes its contract placements from company to company. There is a tendency, like it or not, to follow the contract dollar and to be laid off or terminated when the contract runs out. It is then necessary to hire on where the contracts are landed and work is available. This causes a particular problem with retirement plans presently offered engineers by most corporations. These plans generally involve a contribution by the engineer plus a matching contribution or more by the company. The plan is usually arranged so that it is necessary for the engineer to stay with the company a minimum length of time in order to get a portion of the company-contributed funds. Most plans require at least ten years' tenure before the engineer is entitled to the matching portion.

Suggestions which have been offered to ameliorate this serious problem are (1) obtain company cooperation to reduce investiture time; (2) establish a uniform industry-wide plan where the new company picks up the equity in the plan from the old; (3) allow the individual to set up his own plan by personal contribution (tax free) as in the medical profession.

Sutton joins Dalmo Victor

John G. Sutton, Jr. has joined Textron's Dalmo Victor Division in Belmont as a principal scientist in the Advanced Electromagnetic Defense Systems Department.

Sutton joins DV from Applied Technology where he was program manager on the AIR-45 and other airborne electronics programs. Prior to that he was with Melabs, first as an engineering specialist on the staff to the vice president for systems and later in the same position on the staff of the vice president for engineering. Here he was involved in the analysis and concept formulation of electromagnetic defense systems.

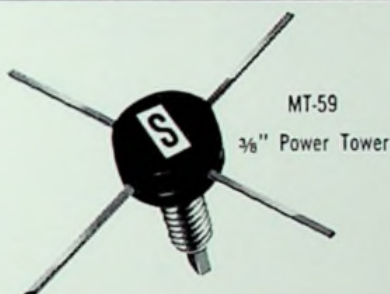
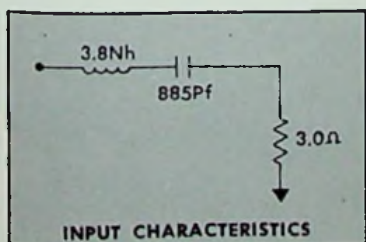
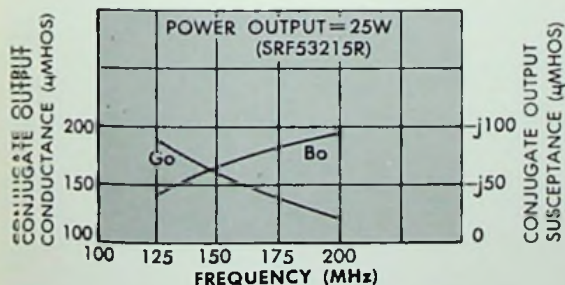
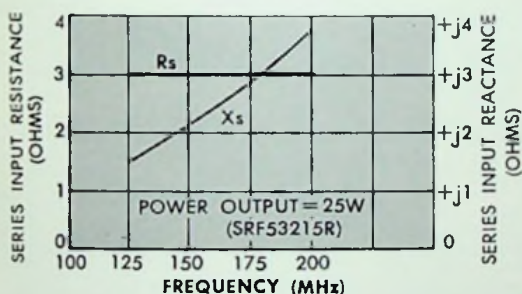
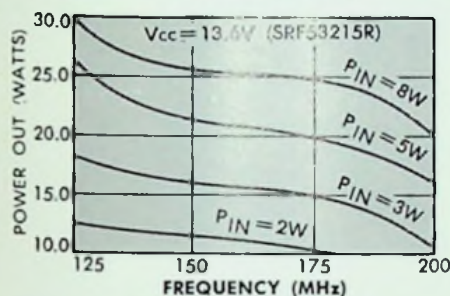
Sutton received a B.S.E.E. from Purdue University and has taken graduate work from both the Massachusetts Institute of Technology and Stanford University. He is a senior member of IEEE.

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