EDITOR'S PROFILE of this issue

from a historical perspective …

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

April, 1972:

Cover: The Naval Postgraduate School (the prevous Del Monte Hotel) is shown. A tour is planned, followed by a dinner. More on page 2.

Page 4: The Communications Technology Group becomes the IEEE Communications Society, with Alan Culbertson of Palo Alto as president.

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

IMPORTANT - BALLOT INSIDE

Grid

volume 18

number 7

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THE COVER STORY – SCVSS MEETS WITH NAVAL POST GRADUATE SCHOOL STUDENT BRANCH

The annual joint meeting of the Naval Postgraduate School Student Branch and the Santa Clara Valley Subsection of the IEEE will be held at the Naval Postgraduate School in Monterey, California (the old Del Monte Hotel) on Saturday, April 22, 1972. Wives and guests are welcome.

The program will commence with a light luncheon at 12:00 in the El Rancho Room of the Commissioned Officers and Faculty Club located in Hermann Hall. Following the luncheon, the program will continue with a short movie and tours through some of the school's technical facilities. The tours will include visits to 1) a digital computer, 2) a hybrid/graphics computer, 3) a linear accelerator, 4) a human effects engineering lab, 5) a a laser lab, 6) a solid state lab, 7) a radar lab, 8) an anechoic chamber and 9) the Naval Postgraduate School Oceanographic research vessel, ACANIA.

The program will continue with a cocktail hour from 5:00 p.m. until 6:00 p.m. followed by dinner in the La Novia Room of the club. The luncheon fare entree will be sandwiches for $0.85 per person and the dinner fare entree will be a choice of Cornish Hen for $5.00 per person or Prime Rib for $6.75 per person. The dinner fares include light hors d'oeuvres during the cocktail hour and tip. Dinner fare entree must be indicated when making reservations.

Visitors arriving on Highway 1, via Salinas or Marina, leave the freeway at the exit marked "Naval Postgraduate School" and "Monterey", turn right on Aguajito Road and right again on 3rd St. Entry to the Postgraduate School will be via the 3rd Street gate only.

Early reservation requests for the meeting are desired, and they cannot be accepted later than Tuesday, April 18, 1972.

Reservations may be obtained in the Monterey Bay area by contacting LT. G. F. MONELL, SMC 1091, Naval Postgraduate School, Monterey, California 93940 or by telephone, (408) 646-2156. In the San Francisco Bay area, reservations can be made by contacting Peggy Rawlins, (415) 493-4141, Ext. 238.

INTERNATIONAL SYSPOSIUM ON CIRCUIT THEORY

Announcements for the above symposium to be held in North Hollywood already have been mailed. A special session "Some Recent Advances in Semiconductor Circuit Technology" has been added for Tuesday evening, April 18, 8:00 pm.

Unusual bipolar structure, charge coupled devices, and ion implantation devices are promising new elements for circuit and system synthesis. Three well known experts will discuss latest developments in this field.

ELECTRIC POWER FROM COMBUSTIBLE SOLID WASTE

Obtaining usable heat, electric power and compact fill from combustible waste is a desirable objective from both ecological and conservation standpoints. However, to do these things economically and on a large scale presents a host of challenging engineering problems – separating, shredding, gas generation, gas turbine conversion and electrical generation.

Combustion Power Company is designing, developing and building a one-megawatt pilot model combustion power unit on a government R & D contract. The second planned phase is a 15 megawatt prototype capable of processing 400 tons per day.

Mr. Al Schmid, Engineering Supervisor, Combustion Power Co., Menlo Park, will describe the process and equipment and show a 30 minute film at a luncheon meeting of the Golden Gate Subsection, Wednesday, April 19, at Pacific Gas and Electric Company, San Francisco. See Calendar for program arrangements.

COMPCON 72

CALL FOR PAPERS

COMPUTER SOCIETY CONFERENCE
Sept. 12-14, 1972 – San Francisco
Theme: "Innovation and Change In Computer Design"
1000/2000 word digests by May 1, 1972
To: Professor A. Avizienis, UCLA
Computer Science Department
Boelter Hall 3732, Los Angeles 90024
Final digests required by July 1, 1972

MANAGEMENT SEMINAR RESCHEDULED

Note in the Calendar the Management Seminar originally scheduled to begin Feb. 26 has been rescheduled Saturday April 8th through May 23, 7:00-10:00 p.m. For those who have the January GRID available, this Seminar was well outlined on page 4.

See CALENDAR for Program Arrangements

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BALLOT FOR ELECTION OF OFFICERS, SF SECTION, 1972-73

(See February GRID for background of candidates)

CHAIRMAN:	C. A. Eldon, Consultant	☐
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	A. B. Grebene, EXAR Integrated Systems	☐
	R. J. Whittier, INTEL Corp.	☐
SECTION DIRECTOR:	J. L. Melchor, Palo Alto Investment Co.	☐

MEETING CALENDAR

AEROSPACE & ELECTRONIC SYSTEMS
APR. 20, 27

Story on page 5

TOURS OF FAA AIR ROUTE CONTROL CENTER, FREMONT. Limited to 20 persons each tour.

APR. 20, 27, Thursdays, 7:30 PM, 5125 Central Ave., Fremont. Reservations: RP. Hoppe, (415) 326-4350 x 6143 by Monday, Apr. 17th.

ANTENNAS & PROPAGATION
APR. 13

Story on page 7

BURIED HIGHWAY COMMUNICATION ANTENNAS. Howard Hochman, GTE Sylvania, Mt. View.

APR. 13, Thursday, 8:00 PM, Lockheed Research Lab, Bldg. 202, 3251 Hanover St., Palo Alto. Cocktails 5:30 PM, dinner 6:15 PM at Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. No reservations required.

CIRCUIT THEORY
APR. 15

Story on page 5

ONE DAY COURSE ON DIGITAL FILTERS. Organizer: Sydney R. Parker, USNPGS.

APR. 15, Saturday, 9:00 AM to 5:00 PM, SLAC Auditorium, 2575 Sand Hill Road, Menlo Park. Lunch and lecture notes included in fee. See story for registration and other information.

COMPUTER SOCIETY
APR. 25

Story on page 5

SHAKEY, THE ROBOT. Dr. John Munson. Ladies night. Wives invited.

APR. 25, Tuesday, 8:00 PM, Skilling Auditorium, Stanford. Dinner: 6:15 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Pat Fleming, (415) 321-3300 x 258 by Apr. 24th.

COMPUTER SOCIETY
MAY 6

Story on page 8

ONE DAY COURSE ON DIGITAL SYSTEM DESIGN TECHNIQUES. Speakers: Ted Laliotis, Fairchild; J. Michael Galey, IBM and Tom Osborne, Hewlett-Packard.

MAY 6, Saturday, 8:30 AM to 4:00 PM, Daly Science Hall, Room 207, University of Santa Clara. See story for registration information. For more information, contact IEEE Short Course, Div. Continuing Education, University of Santa Clara. (408) 984-4519.

EAST BAY SUBSECTION
APR. 24

BEGINNING WITHOUT END – FILM AND TOUR OF THE LAWRENCE RADIATION LAB FACILITIES. Lee B. Davenport, LRL, Berkeley.

APR. 24, Monday, 7:30 PM, LRL Auditorium, Berkeley. No dinner. No reservations required.

ELECTROMAGNETIC COMPATIBILITY
APR. 17

Story on page 7

SOLAR SYSTEM ELECTROMAGNETIC THEORY. W. F. Dimmick, Communications Engineer, LNSC, Sunnyvale.

APR. 17, Monday, 8:00 PM, Hewlett-Packard Auditorium, 5301 Stevens Creek Blvd., Santa Clara. Dinner: 6:15 PM, Custom House, 20080 Stevens Creek Blvd., Cupertino. No reservations.

ELECTRON DEVICES
APR. 18

Story on page 6

N-CHANNEL SILICON GATE TECHNOLOGY. Lesley Vadasz, Mgr., of MOS Circuit Design Dept., Intel Corp.

APR. 18, Tuesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails: 6 PM, dinner 7 PM. Reservations: Section Office, (415) 327-6622.

ENGINEERING MANAGEMENT
APR. 19

Story on page 8

MANAGEMENT ALPHABET SOUP. Dr. William H. Brickner, Chairman, Dept. of Management, School of Business, San Jose State College.

APR. 19, Wednesday, 8:00 PM, Red Coach, Vallco Park, Wolfe & Homestead Rds., Cupertino. Cocktails 6:00 PM, dinner 6:30 PM (Roast brisket of beef – $4.75). Dinner reservations: Judy Webb (415) 321-2300 x 3619 by April 14.

GOLDEN GATE SUBSECTION
APR. 19

Story on page 2

ELECTRIC POWER FROM COMBUSTIBLE SOLID WASTE. Al Schmid, Engineering Supervisor, Combustion Power Co. Menlo Park.

APR. 19, Wednesday, 12:00 noon – Luncheon meeting. PG&E Co., 77 Beale St., 3rd floor Cafeteria. Reservations: Molly Milan (415) 445-2227 by April 18th.

INDUSTRIAL ELECTRONICS & CONTROL INSTRUMENTATION.
APR. 19

Story on page 7

INSTRUMENTATION: TRANSITION FROM CONCEPT TO HARDWARE. Dr. Eugene Mittelmann, National lecturer for IECI for 1971-72.

APR. 19, Wednesday 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails: 6:15 PM, dinner 6:45 PM. Reservations: Nancy Lee, (408) 289-2216 by Apr. 18th. (NY steak – $5.10 incl. tax & tip.)

INFORMATION THEORY
APR. 20

Story on page 7

HOLOGRAPHIC IMAGE STORAGE AND RETRIEVAL AS A COMMUNICATION PROBLEM. Joseph W. Goodman, Assoc. Prof., Stanford University.

APR. 20, Thursday, 8:30 PM, SRI Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: 6:30 PM, Tong's, 1037 El Camino, Menlo Park. Reservations: Paul Shaft, (408) 734-2244 x 342 by Apr. 18th.

INSTRUMENTATION MEASUREMENT
APR. 10

Story on page 8

TEST METHODS FOR MODERN ELECTRONIC EQUIPMENT. John Christensen, GTE Lenkurt.

APR. 10, Monday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails: 6:30 PM, dinner 7:00 PM. Reservations: Sunny Marr, (408) 742-6868 by Apr. 10th.

MAGNETICS SOCIETY
APR. 27

Story on page 5

MAGNETICS LEVITATION FOR HIGH SPEED TRANSPORTATION. Prof. P. L. Richards, UC Berkeley.

APR. 27, Thursday, 8:00 PM, Stanford Lecture Hall PH 104. Dinner: Rickey's Hyatt House, 4219 El Camino, Palo Alto, at 6:30 PM. Reservations: Section office (415) 327-6622.

MICROWAVE THEORY & TECHNIQUES

Story on page 6

A MICROWAVE SPECTROMETER & ITS APPLICATION TO AIR POLLUTION CONTROL. John Hearn, Hewlett-Packard Co., Palo Alto.

APR. 20, Thursday, 8:00 PM, SRI Auditorium, Bldg. 44, Menlo Park. Entrance off Laurel Street. No dinner.

POWER ENGINEERING SOCIETY
APR. 11, 27

Story on page 5

TWO SEMINARS: POWER ENGINEERING PROGRAM AT IOWA STATE UNIVERSITY and EVALUATION OF GENERATION AND TRANSMISSION SYSTEM RELIABILITY

APR. 11, Tuesday and Apr. 27, Thursday at 5:30 to 7:00 PM. PG&E Co., 77 Beale St., Room 1760. No. dinner.

RELIABILITY
APR. 27

Story on page 6

MATERIALS FAILURE IN ELECTRICAL /ELECTRONICS SYSTEMS. Charles H. MacLean, Design Specialist, LMSC, Sunnyvale.

APR. 27, Thursday, 8:00 PM, Stanford University Physics Lecture Hall – PH 107 Dinner: Stanford View Restaurant, El Camino & Stanford Ave., Palo Alto. Reservations: Dick Cornwell (415) 966-3877 by Apr. 26th.

SANTA CLARA VALLEY SUBSECTION/US NAVAL POSTGRADUATE SCHOOL
APR. 22

Story on page 2

MOVIES AND TOUR OF USNPGS TECHNICAL FACILITIES. No reservation accepted after April 18th. See story for further details.

APR. 22, Saturday, 12:00 noon luncheon in El Rancho Room of Faculty Club, located in Hermann Hall. Cocktail hour 5 - 6 PM followed by dinner in the Novia Room of the Club. Reservations: Lt. G. F. Monell, SMC 1091, USNPGS, Monterey, Ca. 93940, (408) 646-2156 by April 18th. SF Area call Peggy Rawlins (415) 493-4141 x 238.

SYSTEMS, MAN AND CYBERNETICS SOCIETY /HUMAN FACTORS SOCIETY
APR. 10

Story on page 6

JOINT MEETING. PRESENT AND FUTURE OF BIOFEEDBACK RESEARCH. Dr. Joseph Kamiya, Project Scientist, Langley Porter Neuropsychiatric Institute, San Francisco.

APR. 10, Monday, 8:00 PM, Ness Auditorium, International Bldg., SRI, 333 Ravenswood Ave., Menlo Park. Dinner: 6:00 PM, International Bldg., SRI. Reservations: Section office (415) 327-6622 by noon, Apr. 7th.

THE ENGINEERING MANAGEMENT GROUP is sponsoring an 8-session seminar on BUSINESS MANAGEMENT. Dates have been changed from those given in February GRID. Correct dates and times are: April 8, Saturday, 9 AM to 5 PM; April 11, 18, 25 and May 2, 9, 16, 23 (all Tuesdays) from 7:00 to 9:00 PM. The moderator will be Dr. Roger K. Summit of Lockheed Palo Alto Research Lab. The $30 fee includes handbook, notes and a certificate. The location will be the Lockheed Palo Alto Research Lab., 3251 Hanover St., Palo Alto. For additional information call or write John Oblanas, SRI, Menlo Park (415) 326-6211 x 3191.

See CALENDAR for Program Arrangements

SUBSECTIONS' NOMINEES

EAST BAY SUBSECTION

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FOR SECRETARY:
J. Wiedwald, Electrical Engineer, Lawrence Livermore Laboratory since 1965. Project Leader. Member IEEE Former Treasurer EBSS.

FOR TREASURER:
James A. St.Arnaud, Jr., present Secretary. Engineer in Protection and Quality Group, Transmission Engineers, Chief Eng. Dept., Pacific Telephone, Member IEEE.

GOLDEN GATE SUBSECTION

FOR CHAIRMAN:
Bryan R. Barts, present Vice Chairman. Engineering Dept., PG&E. Member IEEE, Power and Insulation Groups.

FOR VICE CHAIRMAN:
J. Arthur Wells, present Secretary. President of Artwell Electric, Inc. Senior Member IEEE. Former SCVSS Chairman.

FOR SECRETARY:
Leon C. Glahn, Chief Electrical Engineer, Bechtel Corp. Present Treasurer. Member IEEE. Former Chairman IGA Chapter.

FOR TREASURER:
Charles L. Ostrofe, Member IEEE. Engineer, Pacific Telephone Co. With Bell since 1962. Experience with AT&T in New York on long-range planning of switching systems, TV transmission.

SANTA CLARA VALLEY SUBSECTION

FOR CHAIRMAN:
Raymond A. Power, present Vice Chairman. Senior Member IEEE. Advisory Engineer at IBM Systems Development Division Laboratory, San Jose.

FOR VICE CHAIRMAN:
Robert A. Martin, present Secretary. Senior Member IEEE. General Traffic Engineer, Central Counties Area, Pacific Telephone.

FOR SECRETARY:
Phillip H. Simpson, present Treasurer. Member IEEE. Personnel Supervisor in Engineering Dept., Pacific Telephone, Central Counties Area.

FOR TREASURER:
Clint R. Gilliland, Member SCVSS Executive Committee. Project Engineer for Ionospheric Sounding and Receiving Equipment, Barry Research Corp., Palo Alto.

FOR TREASURER:
Jack W. Hogg, Member SCVSS Executive Committee. Associate Managing Engineer in Electrical Department, Underwriters Laboratories, Inc., Santa Clara.

ALAN F. CULBERTSON FIRST PRESIDENT OF NEW IEEE COMMUNICATIONS SOCIETY

Alan F. Culbertson, president of Culbertson Industries, Palo Alto, has been elected president of the newly formed IEEE Communications Society, a professional subdivision of the Institute of Electrical and Electronics Engineers.

The new IEEE Communications Society is the third largest of the 31 Groups and Societies which make up the Institute. The new society was originally formed in 1964 as the IEEE Communication Technology Group. Now the new society has nearly 10,000 worldwide members who are electrical and electronics engineers involved in radio, telephone, television, satellite and computer communication systems. The society will aggressively pursue IEEE objectives in new and expanding areas of development of communication technology.

IEEE PRESS PUBLISHES FIRST THREE BOOKS

The first two titles in the new IEEE PRESS Selected Reprint Series were published in November 1971 and a third is to appear soon. Other volumes are being readied for publication later in 1972.

Already published are "Active Inductorless Filters", edited by S. K. Mitra of the University of California, and "Clearing the Air: The Impact of the Clean Air Act on Technology", edited by John C. Redmond of General Dynamics, John C. Cook of Teledyne Geotech Company, and A. A. J. Hoffman of Texas Christian University. "A Practical Guide to Minicomputer Applications", edited by Fred F. Coury of Hewlett–Packard Company will be published in January. The first of these books is sponsored by the IEEE Educational Activities Board, the second by the Geoscience Electronics Group, and the third by the IEEE Computer Society. See the advertisement in the January 1972 issue of IEEE SPECTRUM for a description of these three books and for ordering information.

JOHN B. DAMONTE ELECTED 1972 ADCOM PRESIDENT OF ANTENNAS AND PROPAGATION

John B. Damonte, Chairman of the San Francisco IEEE Section for 1969-70, has been elected President of the G-AP AdCom for 1972. He is a Senior Member of IEEE, and has been active in both local and national IEEE affairs. John Damonte is Manager, Antennas and Microwave, electrical at LMSC, which position he has held since 1966. He is the author of many papers in the antenna and microwave fields.

See CALENDAR for Program Arrangements

MAGNETIC LEVITATION FOR HIGH SPEED TRANSPORTATION

A magnetically levitated train is under construction in Japan for operation in a revenue system by 1981. Levitation is obtained from superconducting magnets on board the train interacting with a diamagnetic aluminum track. Topics covered will include magnetic lift and drag forces from various track configurations, linear electric drive motors, and damping of suspension instabilities.

Professor Richards received his Bachelor's degree from Harvard in 1956, his Ph.D. in Physics from University of California at Berkeley in 1960, and was a Post-doctoral Fellow at Cambridge, England in 1959-60. He was a Member of Technical Staff, Bell Telephone Laboratories from 1960-66, and is currently Professor of Physics at University of California at Berkeley.

SHAKY, THE ROBOT

SRI's Artificial Intelligence Center has been developing Shaky, an intelligent robot, for the past six years. Dr. John Munson of the center will discuss some of Shaky's problem solving abilities including his ability to move around a room and manipulate simple objects. The talk includes a movie showing Shaky at work. A number of interesting problems and prospects for the future will be described.

Dr. John Munson received a B.A. from Cal Tech in 1960 and a Ph.D. from the University of California at Berkeley in 1964. He has been with SRI since then, and has contributed to several areas of artificial intelligence and pattern recognition.

This will be an interesting subject for Computer Society Ladies Night.

AES TOUR OF FAA AIR ROUTE TRAFFIC CONTROL CENTER

AES will tour the FAA Air Route traffic Control Center with its new computer facilities on two Thursdays in April at 7:30 p.m., because each tour is limited to 20 visitors. Mr. Joseph Farrell of the FAA will be the tour leader and will cover the control "floors" where all controllers and operators work, and will provide a graphical display of what goes on. Tour members will observe how the controllers communicate and how they identify an airplane on special radar displays. A question and answer period will then be held in the conference room.

To locate the FAA Center, turn off Freeway 17 East on Thornton Avenue, then South (right) on Blacow Road to Central Avenue, west on Central to 5125 which is on the right hand side just past Blacow Road.

POWER ENGINEERING SOCIETY APRIL SEMINARS

On April 11, Dr. P. M. Anderson will discuss the power engineering program at Iowa State University. Dr. Anderson is currently a Professor of Electrical Engineering and Project Director for the Power Affiliate Research Program at Iowa State. He has also worked with Iowa Public Service Company with responsibilities in transmission and distribution planning. His discussion and slide presentation will relate to the philosophy and financing of the research program, research projects and to the typical subjects offered at both graduate and undergraduate levels.

On April 27 B. R. Flynn and P. G. Damask will review existing techniques which use probability theory to evaluate the comparative reliability of alternative generation and transmission expansion plans. They will also describe new techniques being developed. B. R. Flynn is a Transmission Planning Engineer with P.G. andE. and received his BSEE from the University of California. P. G. Damask is a Civil Engineer with P.G.andE. and received his BSCE and MSCE from Stanford University.

Both of these seminars will be from 5:30 to 7:00 pm at the P.G.andE., 77 Beale Street, San Francisco in Room 1760.

CT GROUP SHORT COURSE ON DIGITAL FILTERS

A one-day short course on digital filters will be offered by the San Francisco Section IEEE Circuit Theory Group on Saturday, April 15, 1972 (9:00 a.m. – 5:00 p.m.) and will be held at the S.L.A.C. auditorium, 2575 Sand Hill Road, Menlo Park. Organizer for the course is Dr. Sydney R. Parker, Dept. of Elec. Eng., Naval Post Graduate School, Monterey. The purpose of the course is to familiarize the practicing engineer and the scientist with the theory and practice of digital filters. The course will cover the theory and the analysis of digital filters as well as practical design techniques and examples. Included will be such areas as the Z-transform techniques, the approximation problem, practical realizations, scaling and quantizing effects.

The other lecturers for the course will be: Dr. E. I. Jury, Professor of Elec. Eng. UC Berkeley; Dr. Roger M. Golden, Senior Scientist, Technology Service Corp., Santa Monica; and Dr. James F. Kaiser, Member Technical Staff, Bell Telephone Lab's., Murray Hill, N.J.

Fee for this course is $10.00 for IEEE, $5.00 for student members, and $20.00 for non-members. Fee includes lecture notes and lunch. Enrollment for this course is limited, and persons interested in taking this course are urged to enroll early. Complete and mail the registration form. To ensure enrollment, complete registration form must be received before April 8. For information, Mr. L. O. Chua, Dept. of E.E., UC Berkeley 94720, (415) 642 3306; or Prof. Sydney Parker, Dept of E.E., Naval PG School, Monterey 93940 (408) 646-2081.

CIRCUIT THEORY GROUP SHORT COURSE
ON DIGITAL FILTERS
REGISTRATION

(Should be received before April 8, 1972)

Mail to William Dunn, c/o IEEE San Francisco Section Office, 701 Welch Road – Suite 2210 Palo Alto, Calif. 94304

Enclosed is check (payable to San Francisco G–CT Chapter) in amount of $_____ to cover enrollment fee.

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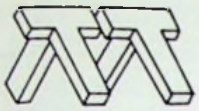


MTT – APPLICATION OF A MODERN MICROWAVE SPECTROMETER TO AIR POLLUTION CONTROL

The principles of microwave spectroscophy will be described and some of the features of the technique illustrated by John R. Hearn of Hewlitt-Packard. Some important specifications and the design of a practical instrument will be discussed. The potential of the technique as a dry, physical method for analyzing mixtures of small polar molecules typical of air pollutants will be evaluated.

John Hearn, engineering manager of the Scientific Instruments Group of Hewlitt-Packard, is a 1956 graduate of the University of Southhampton, B.Sc. Physics. He became a member of the Microwave Division in 1966 as a project leader. He assumed his present position in 1968.

N-CHANNEL SILICON GATE TECHNOLOGY

In the last 3 years, P-Channel Silicon Gate Technology has become an industry standard. It appears that the next generation of MOS/LSI products will use N-Channel Silicon Gate Technology. This technology maintains the manufacturability features of P-Channel Silicon Gate, while improving circuit performance and easing interfaceability with bipolar circuits.

Two basic directions are evolving in the use of this technology. One approach utilizes the higher device performance of n-channel transistors in developing high performance MOS circuits. A second approach, based on V_T of less than 1V results in completely TTL compatible MOS products, including the use of a single 5V supply voltage.

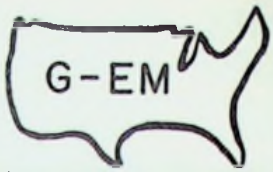
Product developments in both of these areas will be discussed by Mr. Vadasz, currently Manager of MOS Circuit Design Department at Intel Corporation. Previously he has held a number of technology development and circuit design oriented positions at Fairchild and Transitron.

BE MATERIALISTIC ABOUT FAILURES

"Behind every successful part failure there is a material that deserves all the credit." That is the belief of Charles MacLean, Lockheed materials specialist, who will address the Reliability Group at their April meeting. (Actually, that is a paraphrase of what he actually said, to get the reader's attention.)

In speaking on material failures in electrical/electronics systems, Mr. MacLean will divide system components into several categories, then discuss the effects of various environmental factors on each category, and on specific devices within each category. One of the environments he considers is "manufacturing, handling, and maintenance", which often gets little attention in electronic designs. Another area he will cover that might not be anticipated is the design and materials for packaging.

Mr. MacLean has had wide experience in materials and processes engineering, metallurgy, and chemical analysis. For the last 16 years he has had a variety of materials and process related responsibilities in the Space Systems Division of Lockheed. Currently he is responsible for advanced structural materials utilization and maintains the SSD Advanced Structural Materials Handbook. In addition, he teaches several evening courses in materials engineering, sponsored by LMSC and DeAnza Junior College.



MANAGEMENT ALPHABET SOUP

Certain Classical management styles were characterized by Douglas McGregor as "Theory X and Theory Y." Can all managers handle these and other management styles? What happens to middle managers when top management style is changed? Is one management style best for any given organization? Should one management style be retained for the life of an organization?

Dr. William H. Brickner will explain various management styles and their appropriateness to an organization at different stages of its development. He will particularly focus on management styles in small innovating organizations. Dr. Brickner also will discuss his perceptions of the styles, personalities and values which will be required of managers in order for them to supply leadership in coping with the changes in the 70's and 80's.

Dr. Brickner is Chairman, Department of Management, School of Business, San Jose State College. He operates Brickner Associates which serves as a consultant on planning, business and financial strategy, primarily for new, small, high technology companies. Dr. Brickner has held directorships in, or was a founder of, several companies in this field.

PRESENT AND FUTURE OF BIOFEEDBACK RESEARCH

Man, when viewed as a biological system, consists of an intricate network of internal feedback loops, organized and integrated by a central neural network whose pathways are still being discovered through biological experiments. Dr. Joseph Kamiya of the Langley Porter Neuropsychiatric Institute of San Francisco will present and discuss another approach to gaining insight concerning this central neural organization. By adding external feedback loops which provide the investigator himself with sensory input indicative of his own brain states, it is possible for him to study the relationship of the events in his consciousness to the sensory signals he is receiving.

Individuals have been able to learn how to discern and control the electroencephalogram (EEG) in several frequency ranges. Lateral dominance and coherence are likewise controllable. Implications of this area for the future of education, psychosomatic health, and personal development will be discussed.

Dr. Kamiya obtained his Ph.D. degree from the University of California at Berkeley in 1954 and subsequently joined the Psychology Department at the University of Chicago. In 1958 he returned to California to direct a project on the psychophysiology of sleep at Langley Porter. He is currently a lecturer in Medical Psychology at U.C, Medical School in San Francisco and is Project Director of a project on the psychophysiology of consciousness.

TO ALL VOTING MEMBERS OF THE SAN FRANCISCO SECTION:

Please complete the attached ballot for your 1972-73 Section Officers, and mail before May 15, 1972. All IEEE members other than Student Grade are entitled to vote, and are urged to do so.

TO ENCOURAGE YOUR VOTE, THE RETURN BALLOT IS PREPAID.

IECI – INSTRUMENTATION: TRANSITION FROM CONCEPTS TO HARDWARE

This talk is based on a series of four lectures presented by Dr. Mittelmann at the University of Illinois in late 1970. It is divided into four parts:

1. The recognition of problems and the generation of concepts.
2. Theory and methodology.
3. Performance requirement of transducers, or of any other devices with well-defined fields of application.
4. Hardware implementation and validation of theory.

New concepts are generated when new problems are recognized in terms of existing knowledge. Cross-fertilization of ideas, through the interchange of knowledge from widely diversified fields, has proven as one of the most fruitful means of arriving at new concepts. In many instances guidelines to solutions pre-existed in other fields before their applicability in other areas was recognized by specialists working on essentially identical problems. After the concept is established, the designer must develop design equations predicting the accurate behavior of the device. To be meaningful, these equations must have a physical content. Deviations from the prediction demand a reconsideration of a theory's validity, leading usually to a broadened knowledge and problem recognition. Examples taken from the fields of industrial electronics and biomedical engineering are given to illustrate the applicability of the concepts arrived at theoretically.

Dr. Eugene Mittelmann has been elected as the Industrial Electronics and Control Instrumentation National Lecturer for the 1971/72 season. He is a Fellow of the IEEE, having been elected in 1957 "for pioneering in the field of industrial electronics." He has received many honors from other technical societies. More than 75 patents issued in his name, together with about 100 publications in technical and scientific journals, are public record of his work. He is presently an independent consultant in the field of applied electronics with offices and laboratories in Chicago.

BURIED HIGHWAY COMMUNICATION ANTENNAS

The Sylvania Antenna Department has been involved in a program to determine buried antenna performance as it applies to a highway communication system. Howard Hochman of Sylvania will speak to the group on Antenna and Propagation on Thursday, April 13, concerning applications of buried highway communication antennas and the measured data that was taken during a recent field test. A buried antenna was employed as a transmitting antenna while two types of instrumented receiving vehicles recorded electric field strength distributions. Dipole antennas at 50 and 450 MHz were used as the transmitting antenna, which were buried in asphalt along side a runway at an airport test site. Adverse road conditions were simulated by covering the buried antennas with layers of sand and salted water.

Mr. Howard Hochman received his B.S. degree from San Jose State in 1967. Since joining the Sylvania Antenna Department, he has been involved in the design and development of buried antennas, log periodics, integrated antennas and matching networks.

ELECTROMAGNETIC THEORY OF THE SOLAR SYSTEM

The solar system has long been the hobby of Walt Dimmick, a Communications Engineer at Lockheed Missiles and Space Company in Sunnyvale. During his study of the solar system, Mr. Dimmick has developed theories to explain the nature of the solar system. These theories include the structure of the solar system, sun spots as as giant radio transmitters, theory of pulsars, and theory of magnetic attraction.

On Monday, April 17, Mr. Dimmick will discuss his theory of magnetic attraction as it relates to our solar system and give us some insight into the laws governing magnetic fields.

Mr. Dimmick is a 1947 graduate in electrical engineering at San Jose State. Mr. Dimmick was cofounder of Industrial Testing Engineers, Electronics and Nuclear Engineer at U.C. Radiation Laboratory, Production Engineering Manager at Lenkurt, Plant Manager at Schockley Transistors, Inc. and ITT, and Executive Vice President of Communications, Inc.

HOLOGRAPHIC IMAGE STORAGE AND RETRIEVAL AS A COMMUNICATION PROBLEM

In many respects, the problem of image storage and retrieval bears a close resemblance to the classical problem of information transmission over an imperfect channel. Holography represents one method of encoding the information to be stored. In the simplest case, each resolution element of the data is encoded as a spatial "chirp" signal on the hologram. Often it is advantageous to further encode the data to be stored by means of a diffuser, in which case the total signal stored on the hologram is a narrowband gaussian random process. The chief defects of the recording medium are its limited dynamic range, and noise, which in some cases can be modeled as additive. Recovery of the stored data is achieved by pulse compression, which occurs naturally as light propagates from the hologram to the image plane. This talk will review the basic theory of holography, and will point out areas in which communication theory has in the past or may in the future play an important role.

Joseph W. Goodman received the A.B. degree in Engineering and Applied Physics from Harvard University, and and the M.S. and Ph.D. degrees in Electrical Engineering from Stanford University. Since 1963 his fields of speciality have been Fourier optics, optical data processing, and holography. He is the author of the textbook Introduction to Fourier Optics, published by McGraw-Hill. Dr. Goodman is an Associate Professor in the Department of Electrical Engineering at Stanford.

ONE DAY SHORT COURSE DIGITAL SYSTEM DESIGN TECHNIQUES

IEEE Computer Society
May 6, 1972 Symposium on
Digital Design Techniques

(Must be received by May 1, 1972)

Enclosed is check (Payable to University of Santa Clara) in amount of $_____

Name:_____

Address:_____
(Street)

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(City, State, Zip)

Telephone:_____

Check One:_____Regular Member

_____ Student Member _____Non-member

Mail this form and payment to:
IEEE Computer Society Seminar
Division of Continuing Education
University of Santa Clara
Santa Clara, California 95053

Subsequent topics will include one day courses on Digital Applications, and Software Systems.

To register, complete and mail the accompanying form:

The Office of Continuing Education, University of Santa Clara, and the IEEE Computer Society will present a one day short course on Digital Design Techniques at Daly Science Hall, Room 207 on May 6, 1972. This is the third in a series of one day symposia aimed at the needs of the practicing engineer. An Engineering or Science degree or equivalent background is assumed.

The sourse will emphasize current state of the art and new techniques in the practical design of digital systems.

Topics to be covered will include:
- OVERVIEW
- DESIGN OF LSI
- COMPUTER AIDED DESIGN
- A NEW APPROACH IN DIGITAL DESIGN

Speakers: Ted Laliotis, Fairchild Systems Technology; J. Michael Galey, IBM; Tom Osborne, Hewlett-Packard.

Fees: IEEE Members $20.00, Student Members $15.00, Non-Members $25.00. Cost includes course notes and lunch on the Santa Clara Campus.

For more information, write or telephone, IEEE Short Course, Division of Continuing Education, University of Santa Clara, Santa Clara, Calif. 95053, (408) 984-4518.

EDUCATIONAL OPPORTUNITIES

TUTORIAL COURSE AVAILABLE

"Current Directions in Applied Holography"
Date: June 19–21, 1972
Location: Univ. of Calif., Berkeley
Leader: John R. Whinnery, professor of E.E. & Computer Science
Fee: $200.00
Information: Cont. Educ. in Eng'r'g Univ. of Calif. Extension, 2223 Fulton St., Berkeley 94720 or call (415) 642–4151

TEST METHODS FOR MODERN ELECTRONIC EQUIPMENT

Product testing is an essential part of any production facility. In developing a test program the test engineer is faced with a number of decisions. These decisions range from considering the use of computer-controlled test systems down to the use of simple test adapters. Other considerations involve functional versus component testing, cost/benefit tradeoffs and the need for automatic failure analysis. John Christensen will discuss how one company has made these decisions and illustrate his talk with examples of automatic test systems and other test methods in use in the GTE Lenkurt factories.

John Christensen received his BSEE degree from the University of California in 1960. He has had considerable experience both in engineering and testing Telephone Signaling and Pulse Code Modulated (PCM) Voice and Data Carrier equipment and has authored several papers in these areas. He is manager of Instrumentation Development at GTE Lenkurt.

NATIONAL LIST OF SPEAKERS AVAILABLE AT SECTION OFFICE

A list of speakers who recently have presented noteworthy talks has been assembled by the IEEE Technical Services Department. These talks cover a wide range of subjects.

If any G/S is interested in the possibility of using one of these talks by recommended speakers, a list of both speakers and talks is available at the Section Headquarters. The list is too long to reproduce in the GRID.

Many of these speakers reside in the east or midwest. It is suggested that, rather than become involved in a question of fees or travel expenses, any approach be made on the basis of whether the speaker expects to be in the San Francisco area on other business.

COMMUNITY COMPUTER CENTER

A new Community Computer Center is forming in San Francisco called Resource One. They will operate a school that will "demystify" computer technology and teach programming and technical skills. Community groups will be free to use the donated XDS 940 which is scheduled to arrive in late February. The first system in operation will be a Switchboard Inquiry System which will tie all the bay area switchboards to a common data bank. Resource One, which is a non-profit, charitable corporation is currently in need of operating funds, terminals, testing equipment and educational materials. They would like contact with the professional computing community. Anyone interested may contact Pam Hardt or Henry Tarrson at 864-8663 or stop by their offices located at Project ONE, 1380 Howard (at 10th Street) in San Francisco.

See CALENDAR for Program Arrangements