

EDITOR'S PROFILE of this issue

from a historical perspective ...

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

June, 1971:

Cover: A drawing of the lobby of the Engineers Club, in S.F. The Section's annual dinner is being held here.

Page 2: The Section chair's report covers the spreading unemployment around the Bay Area and the nation.



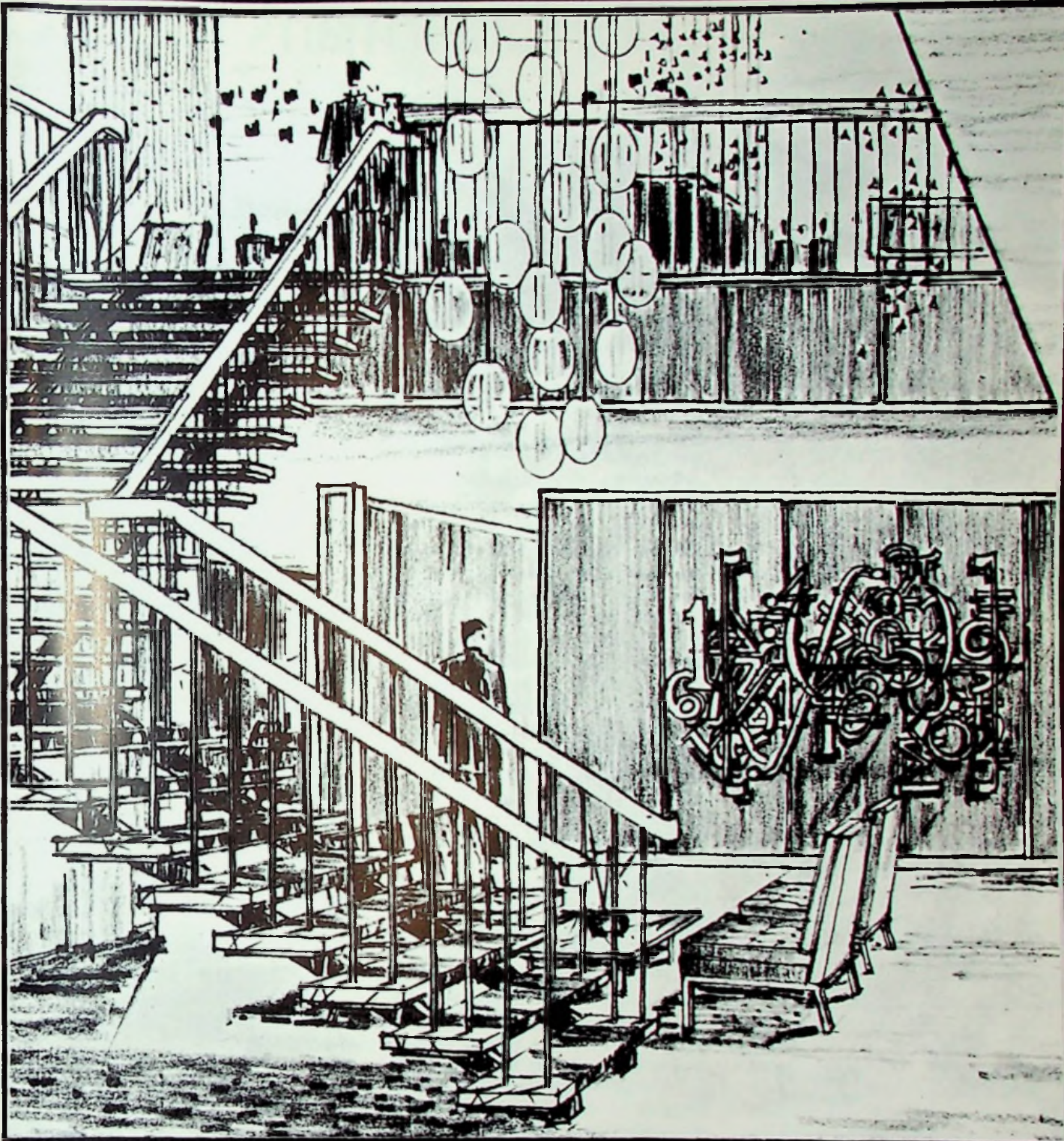
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https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

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

April, 2025

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SAN FRANCISCO SECTION THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Grid
JUNE 1971



ON THE COVER

An architect's drawing of the beautiful lobby of the Engineers Club. The annual dinner of the San Francisco Section will be held at the Club the evening of June 4.

ANNUAL DINNER

The Engineers Club in San Francisco will be the scene of the Section Annual Dinner on Friday, June 4th, honoring our 1971 Fellows and introducing new Section officers for 1971-72. No-host cocktails and hors d'oeuvres at 6:30, dinner at 8:00 PM, dancing till midnight. Tickets are available thru the Section office at \$8.00 per person including tax, tip and dinner wine. Tables can be arranged thru Mrs. Jean Helmke at the Section office. Reservations: Section office: (415) 327-6622 in Palo Alto; Mrs. Pat Conroy, (408) 291-4006 in San Jose and Mary Vilter, (415) 399-4974 in San Francisco.

VEHICULAR TECHNOLOGY

The Vehicular Technology Chapter will hold a meeting on Monday, June 21. Details will be announced by special mailing. For information call G. L. Godwin, (415) 894-4675.

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The Chairman's Report

It is difficult for me to envision a time when it would not be exciting to be the Chairman of the San Francisco Section of the IEEE. The Bay Area is a stimulating scene in terms of its social and industrial vitality. Nonetheless, as has been the case nationally, this past year in the Bay Area has been a year fraught with social and economic problems. And for us in electronics, it has been a year of depression. Even though the Bay Area has escaped the eye of the storm, as compared with other parts of the nation, by early last summer it was clear to us in the San Francisco Section that the depression would not leave us unaffected.

By the beginning of the Section year, there were slow-downs, layoffs, shorter work-weeks, and worry. At the initial meetings of the Executive Committee of the Section, the economic aspects and their effect on our membership were discussed. Our problem naturally was to determine what could be done to aid our membership. We did not have the resources to engage in a comprehensive canvass of our members to determine the level of employment and under-employment, and we were frustrated by the inconclusive results of our informal sampling. Our initial efforts in the fall were to make available in the Section Office a directory for our members to list their availability as well as for companies to list available job openings. We also cooperated with the local section of the AIAA in their employment seminars which had proven to be helpful in the Los Angeles area. Neither of these activities proved to be particularly effective. Some contended that unemployment of our members was not as severe as anticipated. By the first of the year, it became clear that this was the case. Certainly — there was unemployment of professionals in the Bay Area, as well as under-employment. However, for the membership of the IEEE, as best as we could determine, the unemployment problem was not severe, except of course when reduced to an individual level. Much worry, much concern, but little actual unemployment. For the past several months, now that the electronic economy seems to have bottomed-out, we have kept monitoring the unemployment problem. Each month we have asked the group chapters and the sub-sections about the numbers of their unemployed members. It continues to appear as if there are few.



Don Pederson

This pattern is in striking contrast to that of other areas in the nation. It is reported that in the Los Angeles area 10% of the Institute's members are unemployed, while another 10% are under-employed. In Boston, unemployed members are quoted to be of the order of 20%. In Seattle, the problem may be even worse. Of course, a great round of applause should be given to the leadership of the electronic industry in our area. Through skillful management and marketing, they have clearly maintained a better position than most other geographical areas and are able to keep our membership employed. So the members of the IEEE in our area have weathered well this year of depression; although the uptake may be slow, there appears to be no question that better times are ahead.

This year, the group and society chapters and the sub-sections have held 174 meetings. The officers of the chapters and sub-sections are to be complimented for organizing a broad range of informative meetings for their members. In addition to the usual technical presentations, the subject of several meetings has been the social responsibility of engineers, including our concern about ecology. It is clear that our members are not only aware of these problem areas but genuinely giving their attention to the solutions.

In the chapters, as well as in the section at large, there has been considerable concern and discussion this past year about the mandate of the Institute. In the continuing discussions at meetings of the Section EXCOM, there has been a clear consensus that the Institute should continue to be primarily an organization concerned with the technical and educational needs of its members. However, several members of the Section believe strongly that the Institute should exist, for the U.S.A. members, primarily for the economic betterment and well being of its members. An amendment to the IEEE constitution with regard to this matter has been proposed by an ad hoc national committee, one of whose members is from the Bay

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Area. This proposed amendment will be voted on by the entire Institute membership in this year's election.

It should also be stressed that several of our chapters have organized instructional seminars for which a small fee has been charged. These groups, such as MPM, CT, and POWER, have achieved by these arrangements a very adequate budget to finance their meetings and operations throughout the year, including the extra efforts for its members which cannot be accomplished with the ordinary rebates that come to us from the Institute.

The Bay Area IEEE student members continue to be as exciting a group of young professionals as ever. EXCOM has continued its procedure of meeting with the Student Branch Chairmen and Counselors twice a year for dinner and discussion about the problems and topics of particular interest to our student members. Student and EXCOM members alike find these get-togethers extremely valuable.

Our membership on January 1, 1971, was 8547 in comparison with 8331 a year earlier. Within our membership, we have 202 Fellows, 1147 Senior Members, 5729 members, 532 Associates, and 936 Student Members. Our Section finances have remained sound. On the negative side, we have been caught badly by the drop-off in technical advertising in the GRID. Thus our GRID operating costs have been higher than budgeted. Fortunately, this increase has been offset from three sources. Our income from the 1970 WESCON was higher than anticipated, and in addition, our participation in two major technical conferences in the Bay Area led to sizable rebates. Thus the year will close with an approximate break-even budget. Our thanks to Don Larson and all of the personnel who contributed to make the WESCON show and convention a success, as well as to our members for their successful efforts with the ICC and ICPS meetings.

I have had the opportunity this year of working closely with some of the best people in our Institute. The Executive Committee has been an excellent group; and for their advice and cooperation, I am thankful. In particular I thank my fellow officers, Larry Fitz-Simmons, Bud Eldon, and Dalton Martin for their strong support. All of the standing committees served well. Jack Barkle, one of the Section Directors, deserves special thanks for his help as an ad hoc committee of one to study the present and past GRID operations. Ernesto Montano, our GRID editor and

advertising manager, has continued to give us his best artistic, editorial, and merchandising abilities. Now that we are about to move into a GRID operation on a fixed budget, no advertising plan, Ernesto will leave us. We thank him most heartily for his efforts and for his friendship these past years. He will have the memory and reward of producing probably the most outstanding Section publication of the IEEE. Finally, from the Section at large, and especially from me, I thank Mrs. Jean Helmke, our Office Manager. She is delightful to work with and makes the Chairman's job possible.

Packard to receive award

The 1971 Morris E. Leeds Award recipient is Dr. Martin E. Packard of Varian Associates.

The presentation will be made at WESCON '71 in San Francisco, honoring him "for his pioneering research leading to the practical use of nuclear magnetic resonance for the accurate measurement of magnetic fields, and for his contributions to the spectrometry of complex molecules."



Dr. Packard

Dr. Packard was born in 1921 in Eugene, Oregon. After graduating from Oregon State College in 1942 with a B.A. in physics, he joined the Westinghouse Electric Corporation as a research engineer in Pittsburgh. In March 1945, he joined the University of California Radiation Laboratory at Berkeley to participate in the Manhattan project, the Nation's crash atomic bomb.

After the war, he became a physics instructor at Stanford University and received his Ph.D. there in 1949. In 1951, Packard joined Varian Associates as Research physicist and subsequently worked as Assistant Director of R-F Spectroscopy, Director of Research in the instrument division and now holds the position of Vice President of the Analytical Instrument Division.

Dr. Packard is a member of the American Physical Society and the Geophysics Society.

A&E group honors Linvill

The Recipient of the 1970 Senior Award of the Audio & Electroacoustics Group is Dr. John G. Linvill, for contributions to Audio Technology as documented in publications of the IEEE.

Dr. Linvill was born in Missouri in 1919. He received the A.B. in mathematics from William Jewell College, Liberty, Mo., in 1941, the B.S., M.S., and Sc.D. degrees in electrical engineering from the Massachusetts Institute of Technology, Cambridge, in 1943, 1945 and 1949, respectively.



Dr. Linvill

From 1949 to 1951 he was Assistant Professor of Electrical Engineering at M.I.T. From 1951 to 1955 he was a member of the technical staff at the Bell Telephone Laboratories, Murray Hill, N.J., where he did research on transistor circuit problems in linear and pulse circuits. Since 1955 he has been with Stanford University, Stanford, California, where he is now Head of the Department of Electrical Engineering. His recent research is concerned with integrated circuits.

Dr. Linvill is a member of Sigma Xi and Eta Kappa Nu and a Fellow of IEEE. His IEEE activities include: Organizing Chairman, Transistor Circuitry Subcommittee of IRE, 1953-55. Continuing member of Solid-State Circuits Subcommittee, IRE 4.10 and participant in half dozen of its Technical Discussions. First Program Chairman, IRE-AIEE Conference on Transistor Circuits, February 1954. Chairman, Discussion Panels, Solid-State Circuits Conference, February 1959, February 1960. Fellow, IRE, 1960. Vice-Chairman, Professional Group on Circuit Theory 1961-65. Vice-Chairman, Technical Program Committee, 1963 Wescon. Chairman, IEEE Group on Circuit Theory, 1965-66. Chairman, IEEE Solid-State Circuits Council, 1966-1969. Editorial Reader, IEEE Publications Review Board, 1950-present. Member Visiting Committee of the ECPD Engineering Education and Accreditation Committee, 1966-present.

WESCON sets 32 sessions for August program

WESCON'S technical program committee has chosen 32 session proposals for its four-day program in San Francisco, August 24-27, it has been announced by Ray Leadabrand (SRI), chairman.

Announcement followed a "second-round review" of earlier proposals, submitted by 65 prospective organizers. The 32 sessions will include about 130 individual paper presentations, Leadabrand said.

The program lineup includes sessions that fall into six major categories: computer equipment and engineering software (eight sessions); communications (four sessions); medical electronics (two sessions); manufacturing (six sessions); management and marketing (five sessions); and technology (seven sessions).

Management sessions will address major questions in a rapidly changing electronics industry economy. One session, organized by John J. Guarrera, Region 6 IEEE director and president of Guide Scientific Industries, will present a panel that will include Dr. James Mulligan, president of IEEE, a WEMA officer, a senior executive of the National Society of Professional Engineers, and a fourth panelist of national stature still to be confirmed.

Following is a full list of sessions and speakers for WESCON (time-and-place schedule to be announced):

COMPUTER EQUIPMENT AND ENGINEERING SOFTWARE SESSIONS

TOMORROW'S PROGRAMMABLE CALCULATORS

Chairman: Rudolf Panholzer, Naval Postgraduate School.
WHAT WILL BE THE DESIGN OF TOMORROW'S PROGRAMMABLE CALCULATOR. Robert Watson, Hewlett-Packard Co.
WHAT WILL TOMORROW'S PROGRAMMABLE CALCULATOR DO? Ned Chang, Wang Laboratories.
HOW WILL TOMORROW'S PROGRAMMABLE CALCULATOR FIT INTO SYSTEMS? I. Wunderman and J. J. Murray, Cintra/Physics International Co.
WHO WILL USE TOMORROW'S PROGRAMMABLE CALCULATOR? Henry Pinault, Monroe International.

PRESENT AND FUTURE OF AUTOMATIC TEST LANGUAGES

Chairman: R. A. Grimm, Hewlett-Packard Automatic Measurement Div.
PROGRAMMING LANGUAGES FOR COMPONENT TESTING. Milton Collins, Teradyne Inc.
THE DIALECT CONCEPT IN ATE LANGUAGE DESIGN. Michael Ellis, PRD Electronics.
ATLAS — ABBREVIATED TEST LANGUAGE FOR AVIONICS EQUIPMENT. T. A. Ellison, United Air Lines.
INSTRUMENTATION LANGUAGES FOR PRODUCTION AND ENGINEERING. William Ray, Hewlett-Packard Microwave Div.

COMMERCIAL APPLICATIONS OF AUTOMATIC TEST EQUIPMENT.

Chairman: Fred Liguori, Naval Air Engineering Center.
COMMERCIAL ATE REVISITED. David S. Kline, Hewlett-Packard Automatic Measurement Division.
AUTOMATIC TEST EQUIPMENT DESIGN. P. W. La Clair and J. Katsikas, Librascope Division.
AVMOTS — A NEW ATE FAMILY. L. H. Bohl, Avco Systems Division.
AUTOMATED TEST OF JET ENGINE ACCESSORIES. O. T. Carver, RCA.

COMPUTER-AIDED TRANSLATION USING TIME-SHARED SYSTEMS

Chairman: R. E. Puckett, University of Kentucky.
COMPUTER BRAILLE TRANSLATION AT THE ATLANTA PUBLIC SCHOOLS. Marion P. Boyles, Atlanta Public Schools, and Robert E. Lagrone, IBM/FSD.
AN AUTOMATED BRAILLE TRANSLATION SYSTEM. R. L. Haynes, American Printing House for the Blind.
THE DEVELOPMENT OF A COMPUTER GRADE 2 BRAILLE TRANSLATION ALGORITHM. Lois C. Leffler, Argonne National Laboratory.
ENHANCEMENT OF GRADE 2 BRAILLE TRANSLATION. E. L. Steele and R. E. Puckett, University of Kentucky.

CHOOSING A MINICOMPUTER — THE USER'S VIEWPOINT

Chairman: Steven A. Erenburg, Electronic Design Magazine.
Panelists and Topics:
APPLICATION DEPENDENCY. H. Nathan Yagoda, Computran Systems Corp.
SOFTWARE. Gary Hornbuckle, Applicon Inc.
INTERFACE AND PERIPHERALS. Robert C. Larkin, U.S. Army Electronics Command.
PURCHASING THE MINI. Frank C. Milstead, Unitech Inc.
SELECTION STRATEGICS. Robin T. Ollivier, Sierra Data Systems.

EXPLOITATION OF AVAILABLE COMPUTER PROGRAMS IN ELECTRONIC CIRCUIT DESIGN

Organizer: Ronald Rohrer, UC, Berkeley; Moderator: N. O. Sokal, Design Automation.
SIMULATION PROGRAMS: Richard McNair (CIRC) Xerox Data Systems; Ronald Rohrer, UC and Sof Tech Inc.
OPTIMIZATION PROGRAMS: William Cave (COD & MOD) Optimal Systems, Research Inc.; Robert Hall (OPTINET) Dean Hall Associates.

INSTRUMENTATION FOR AUTOMATIC DYNAMIC TEST SYSTEMS

Chairman: Howard W. Mette, Systron Donner Datapulse Division.
AUTOMATIC STIMULI GENERATION. R. J. Johnson, Datapulse.
COMPUTERIZED WAVEFORM MEASUREMENTS. Dave McCracken, Tektronix.
REMOTELY CONTROLLED DIGITAL MEASUREMENT INSTRUMENTATION. Fred Kreiss, Systron Donner Concord Instrument Div.
AUTOMATIC TEST EQUIPMENT AND ITS INTERFACE WITH A COMPUTER OR CONTROLLER. G. K. Mercola, Sagetec Corporation.

PERIPHERALS FOR MINIS

Chairman: George King, Electromechanical Design Magazine.
Paper Titles and speakers to be announced

COMMUNICATIONS SESSIONS

MOBILE RADIO IN THE 70s: SPECTRUM UTILIZATION AND VEHICLE LOCATING

Chairmen: D. C. Cox and D. O. Reudink, Bell Telephone Laboratories
MODELLING THE URBAN PROPAGATION MEDIUM. G. L. Turin, UC Berkeley.
THE ACCURACY OF VEHICLE LOCATION BY TRILATERATION IN A HEAVILY BUILT UP URBAN AREA. H. Staras and S. N. Honickman, RCA Laboratories.
SOME EFFECTS OF RAYLEIGH FADING AND DIVERSITY ON FM CO-CHANNEL INTERFERENCE. R. E. Langseth, Bell Telephone Labs.
DYNAMIC CHANNEL ASSIGNMENT IN MULTI-CHANNEL MOBILE COMMUNICATIONS SYSTEMS. D. C. Cox and D. O. Reudink, Bell Telephone Labs.

NETWORKS, EQUIPMENTS, AND STANDARDS: THE CHALLENGE OF THE DATA COMMUNICATIONS EXPLOSION.

Chairman: Sheldon Edelman, The Electronic Engineer Magazine.
AN OEM VIEWS THE DATA-COMMUNICATIONS REVOLUTION. R. F. Dean, IBM Corp.
THE CHALLENGE OF INTERACTIVE COMPUTER NETWORKS TODAY. Max P. Beere, Tymshare Inc.
A COMMON-CARRIER NETWORK FOR POINT-TO-POINT SWITCHED DATA TRANSMISSION. David E. Gourley, Data Transmission Co.
DATA-COMMUNICATIONS NETWORKS: The Need for Standards. (Speaker to be announced from FCC.)

DIRECT DETECTION LASER COMMUNICATIONS

Chairman: Monte Ross, McDonnell Douglas Astronautics Co.
LASER MODULATION FORMATS FOR SPACE COMMUNICATIONS. Gary Lee and E. A. Paddon, McDonnell Douglas Astronautics.
ACQUISITION AND ANGLE TRACKING OF LASER COMMUNICATIONS LINKS. Art Kraemer, Sylvania Electro-Optics.

CRITICAL COMPONENT TECHNOLOGY FOR SPACE LASER COMMUNICATIONS. Robert R. Rice, McDonnell Douglas Astronautics.
HIGH SPEED ELECTRONICS FOR LASER COMMUNICATIONS. Carl Ryan, Motorola.

SYSTEMS CONSIDERATIONS AND NEW EQUIPMENT FOR MICROWAVE POINT TO POINT COMMUNICATION

Chairman: David Fairley, Lenkurt Electric.
Paper titles and speakers to be announced.

MEDICAL ELECTRONICS SESSIONS

THE FUTURE OF MEDICAL INFORMATION SYSTEMS

Chairman: Temple W. Neumann, Philco-Ford, WDL

HEALTH CARE DELIVERY IN THE 70'S - A PREVIEW. (Introduction by T. W. Neumann.)

THE MEDICAL INFORMATION SYSTEM: PRACTICE AND PROSPECTS - A HOSPITAL DIRECTOR'S VIEW. B. G. Lamson, M.D., UCLA.

MEDICAL INFORMATION SYSTEM: BASIC THEOLOGY FOR A REALISTIC APPROACH. J. H. Grossman, M.D., Massachusetts General Hospital.

MEDICAL DATA INPUT: A CRITICAL BOTTLENECK. Warner V. Slack, M.D. Beth Israel Hospital.

BOUNDARY CONDITIONS: KEY LEGAL, ETHICAL, AND TRADITIONAL MEDICAL CONSTRAINTS ON MEDICAL INFORMATION SYSTEMS. R. J. Gampell, M.D., J.D., Attorney.

MEDICAL ELECTRONICS

Chairman: Morton D. Schwartz, California State College, Long Beach.
MEDICAL ELECTRONICS FOR THE 1970's. Morton D. Schwartz, Biochemical Engineering, Cal-State.

AUTOMATED MULTITEST LABORATORIES - CURRENT NEEDS AND FUTURE POTENTIAL. M. F. Collen, M.D., Permanente Medical Group and Kaiser Foundation Research Institute.

INFORMATION HANDLING NEEDS FOR THE INTENSIVELY MONITORED HOSPITAL PATIENT. G. I. Hickey Jr., Bio-Medical Eng., USC.

EXERCISE PULMONARY RESPONSE TESTING AND PULMONARY FUNCTION TESTING USING A TIME-SHARED COMPUTER. Paul H. Griffith and William L. Beaver, Varian Associates.

ENGINEERING PRODUCTIVITY IN THE DELIVERY OF HEALTH CARE SERVICES. Philip A. DeLangis, Verite Scientific Inc.

MANUFACTURING SESSIONS

AUTOMATIC MANUFACTURING

Chairman: Irwin Stern, Circuits Manufacturing Magazine.
AUTOMATIC TESTING. W. C. Sequin, Honeywell Information Systems.

AUTOMATIC INTERCONNECTION OF CHIP TO CIRCUIT. Richard Faulke, Mech-EI Industries Inc.

AUTOMATIC PACKAGING OF ICs. (tentative) Milton Stoll, Research Instrument Co.

PRINTED CIRCUIT AND MULTILAYER MANUFACTURING TECHNOLOGY. (speaker to be announced).

HYBRID MANUFACTURING

Chairman: Irwin Stern, Circuits Manufacturing Magazine.

THICK FILM ADVANCES. Ralph Ponce de Leon, Sloan Microelectronics.

THICK FILM ADVANCES. L. Coronis, Industrial Reproductions Inc.

ADVANCES IN INTERCONNECTION TECHNIQUES. Richard Fritz, Radiant Energy Systems.

ADVANCES IN THICK FILM MATERIALS. (tentative) Lewis Hoffman, E. I. duPont Co.

BEAM-LEAD TECHNOLOGY: HERE AND NOW

Chairman: L. K. Keys, Magavox Co., Co-Chairman: Stanley Stuhlbarg, Raytheon Co.

BEAM-LEAD DEVICES, AVAILABILITY AND APPLICABILITY. F. J. Francis and L. K. Keys, Magnavox Co.

RELIABILITY OF BEAM-LEAD DEVICES. Jorge Acosta and Hans Legat, Raytheon.

BEAM-LEAD PROCESSING FOR COMPLIMENTARY MOS. L. W. Murray and Ben Richards, COSMOS Technology, RCA/Electronic Components.

ADVANCED BONDING, TESTING, AND REPAIR OF BEAM-LEAD DEVICES. Richard L. Cunningham, Texas Instruments.

COMPUTER AIDED MANUFACTURING

Chairman: T. P. Rigoli, EDN/EEE Magazine.

HOW NOT TO APPROACH COMPUTER AIDED MANUFACTURING. C. E. Coffee, Autologic Inc.

Cam Software: INPUTS REQUIRED - AND OUTPUTS PRODUCED. P. R. LaBahn, Standard Logic Inc.

ECONOMIC ADVANTAGES OF INTEGRATING STANDARD DIP HARDWARE WITH FLEXIBLE SOFTWARE. Donald Miller, Scanbe Manufacturing Corp.

NEW VISTAS FOR CAM. W. O. Fordiani, EECO.

CAM - A USER'S VIEWPOINT. M. J. Mendelsohn, Raytheon Co.

AUTOMATED TESTING OF MOS INTEGRATED CIRCUITS

Chairman: Frederick Van Veen, Teradyne Inc.

AN INNOVATIVE APPROACH TO THE TESTING OF MOS ON THE PRODUCTION LINE. F. Mansfield Young, Teradyne.

DESIGNING MOS FOR MAXIMUM TESTABILITY. A. E. Pound, American Micro-Systems.

MOS TEST INSTRUMENTATION. William Routh, Fairchild Systems Technology Division.

WESCON '71 moves to downtown San Francisco

An unprecedented action for a major convention, WESCON'S directors announced this week that the big product show and conference in August will be moved from the Cow Palace to downtown San Francisco.

All exhibits, technical meetings, and other activities will be presented in Brooks Hall/Civic Auditorium in the heart of the City's Civic Center, it was announced by Robert M. Ward (Perkin-Elmer), Chairman of the WESCON Board of Directors.

In a special bulletin to exhibitors, Ward said, "The very best place for a 700-booth show in San Francisco is Brooks Hall. WESCON for 1971 will be a 700-booth show.

"The advantages to exhibitors, visitors, and everyone else concerned are significant and numerous. The building is air-conditioned throughout - and it was designed for conventions. Hotels and Restaurants are within walking distance. Meeting facilities are just excellent. Multi-level parking is next door. Freeway access is within a few blocks.

"I personally doubt that most major shows could accomplish such a major change with only 90 days to go before opening day. The Directors feel we have unusual capability in our 12 volunteer committees and our show management staff, exceptional flexibility in our decorator-contractors, and a real understanding of how to make this show better in every way.

"We will greatly expand our continuous shuttlebus service from the airport and Peninsula locations for the convenience of visitors. For exhibitors the saving in car rentals alone is a big item.

"I am very proud that in a year of restraint for our industry we are able to move positively to produce a better, more effective, and more economical major show and convention in every way," Ward said.

TRENDS IN VACUUM DEPOSITION TECHNOLOGY

Chairman: Scott T. Porter, Varian Associates.

Paper titles and speakers to be announced.

MANAGEMENT AND MARKETING SESSIONS

EMPLOYEE LOYALTY: A TWO-WAY STREET

Chairman: Don Hoefler, Electronic News.

EMPLOYMENT CONTRACTS: WHO IS PROTECTED? John Larson, Brobeck, Phleger & Harrison.

EMPLOYER RESPONSIBILITY IN A DOWN MARKET. Warren J. Bowles, Fairchild Camera & Instrument Corp.

THE UPS AND DOWNS OF STOCK OPTIONS. Charles E. Sporck, National Semiconductor Corp.

PUTTING TOGETHER THE BENEFITS PACKAGE. Jack R. Yelverton, Wilkinson, Sedwick & Yelverton.

REWARDING THE SUPERIOR PERFORMER. James F. Riley, Intersil Inc.

RECOGNIZING AND GEARING UP FOR NEW ELECTRONIC MARKETS

Chairman: Nelson Harnois, Cubic Corporation.

CASE HISTORIES OF AEROSPACE COMPANIES WHO HAVE SUCCESSFULLY TRANSITIONED FROM MILITARY TO NON-MILITARY BUSINESS. Thomas M. Self, Business Week Magazine.

ADJUSTING Internally to Best Serve New Markets. Tom Grady, Cubic Corporation.

YOUR PRESENT WORK FORCE: RETRAINABLE OR REPLACEABLE? Paul E. Putney, Korn/Ferry International.

EXPLORING NEW MARKETS REPRESENTED BY OTHER GOVERNMENT AGENCIES. (Speaker to be announced.)

AIR POLLUTION CONTROL: WHERE WE ARE AND WHERE WE ARE GOING

Chairman: Dr. Charles H. Wells, Systems Control Inc.

Paper titles and speakers to be announced.

TURNAROUND '71, STRATEGY FOR THE 70's

Chairman: Frank J. Burge, Precision Monolithics.

WHAT IT TOOK TO COME OUT OF CHAPTER XI. H. D. Tenney, Kinetic Technology.

HE MODERN DAY 49er. Robert McGrath, Dynamic Associates.

TECHNOLOGICAL INNOVATION, EMPHASIS ON IMPROVED PERFORMANCE. M. B. Rudin, Precision Monolithics.

TWO PLUS TWO EQUALS FIVE. George Didinger, Intellex.

TECHNOLOGY SESSIONS

CURRENT TRENDS IN INDUCTORLESS FILTERS

Chairman: Sanjit K. Mitra, University of California, Davis.

PITFALLS IN STATE VARIABLE FILTER DESIGN. Yu Jen Wong and Brian K. Conant, Burr-Brown Research Corp.



WESCON PLANNERS — Executive Committee for upcoming WESCON show and convention in San Francisco August 24-27 are shown at informal meeting at Rickey's. Left to right, they are Fred J. MacKenzie (SRI) and Dr. Stanley F. Kaisel (both IEEE representatives on the board), Alfred P. Oliverio (Hewlett-Packard) and Robert F. Ward (Perkin-Elmer Corp.), both WEMA representatives, and Don Larson, WESCON general manager. Ward is chairman of the executive committee and Dr. Kaisel is board chairman. MacKenzie and Oliverio are convention director and show director, respectively. Four Southern California board members serve this year as long-range planning committee.

DESIGN OF DISTRIBUTED ACTIVE-RC FILTERS. L. P. Huelsman, University of Arizona.

COUPLED RESONATOR CRYSTAL FILTERS. Desmond F. Sheahan and Charles E. Smith, GTE Lenkurt Inc.

SURFACE WAVE SIGNAL PROCESSING FILTERS. Joseph Burnsweig, Aerospace Group, Hughes Aircraft.

PRACTICAL DIGITAL FILTER STRUCTURES USING MOS/LSI. Stanely A. White, NAR Microelectronics Co.

ELECTROOPTIC MEMORY, IMAGE STORAGE AND DISPLAY DEVICES

Organizer: Cecil E. Land, Sandia Laboratories; Chairman: John C. Crawford, Sandia Laboratories.

ELECTROOPTIC CERAMIC MATERIALS. Gene H. Haertling, Sandia Laboratories.

CERAMIC ELECTROOPTIC PROPERTIES AND DEVICES. Philip D. Thacher and Cecil E. Land, Sandia Laboratories.

ELECTROOPTIC DEVICES USING STRAIN-BIASED PLZT FERROELECTRIC CERAMICS. J. R. Maldonado, Bell Telephone Laboratories.

THE APPLICATION OF FERROELECTRIC MATERIALS IN OPTICAL MEMORIES. G. W. Taylor, RCA Laboratories.

COMPUTER-AIDED DESIGN OF HIGH FREQUENCY CIRCUITS

Organizer: Les Besser, Fairchild MOD; Chairman: Alan B. Grebene, Signetics Corp.

THE COMPUTER-AIDED DESIGN OF AN L-BAND PHASE SHIFTER. Ted W. Houston, Texas Instruments.

A MEDIUM POWER VHF AMPLIFIER WITH PNP-NPN COMPLEMENTARY SYMMETRY TRANSISTORS. Les Besser, Fairchild.

HYBRID INTEGRATED WIDE-BAND LINEAR POWER AMPLIFIERS FOR S AND C BAND. A. Presser, H. Huang, R. Paglione, and H. Johnson, RCA Advanced Technology Lab.

PERFORMANCE AND RELIABILITY OF TRANSISTORS IN POWER MIC'S. George Luettgenau and R. E. Heijmanowski, TRW Semiconductors.

ION-IMPLANTATION TECHNOLOGY FOR MICROELECTRONICS

Chairman: James A. Marley, Signetics Corp.

ION-IMPLANTED COMPLEMENTARY MOS TECHNOLOGY. L. O. Bauer, P. J. Coppen and H. G. Dill, Hughes Aircraft Co.

PRECISION LADDER NETWORKS USING ION-IMPLANTED RESISTORS. H. H. Strellrecht and D. S. Perloff, Signetics Corp.

APPLICATIONS OF ION-IMPLANTED DEPLETION LOADS TO MOS LARGE SCALE INTEGRATION. Gordon Hoffman, Mostek Corp.

PARTICLE ACCELERATORS FOR ION-IMPLANTATION. J. N. Cecil and N. A. Bostrom, Accelerators Inc.

OPTOELECTRONICS

Chairman: L. Merrill Palmer, Centralab Semiconductor.

OPTOELECTRONICS MEASUREMENTS. Al Seck, Centralab Semiconductor.

LIGHT EMITTING DIODE RELIABILITY. Lynn Weatherall, Texas Instruments.

OPTICAL CHARACTER RECOGNITION — A Status Report. Duane Baxter, IBM Systems Development Div.

OPTICAL MEMORIES. Bruce Ballard, Optical Memory Systems.

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TRANSISTORS FOR THE ERA OF MICROWAVE COMMUNICATION. Sanehiko Kakihana, Hewlett-Packard Co.

MICROWAVE ACOUSTIC DEVICES FOR HIGH DATA RATE PROCESSING. Donald B. Armstrong, Litton Electron Tube Division.

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MICROPOWER ACTIVE FILTERS FOR VHF APPLICATIONS. W. W. Gaertner and F. K. Weinert, W. W. Gaertner Research Inc.

INTEGRATED CIRCUITS FOR MEDICAL APPLICATIONS. J. D. Meindl, P. H. Hudson, and D. M. DiPietro, Stanford University.

LOW-POWER DIGITAL FREQUENCY SYNTHESIS APPLICATION DEMONSTRATES UNIQUE CMOS PERFORMANCE CHARACTERISTICS. R. E. Funk, RCA Solid State Division.

SILICON-GATE CMOS IN MICROPOWER DIGITAL SYSTEMS. J. W. Foltz, Motorola Semiconductor Products.

Berkeley student branch members aid high school students

A group of high school students have a head start towards careers in electrical engineering due to the efforts of several of the members of the University of California Society of Electrical Engineers (UCSEE), the student branch of IEEE in Berkeley. For two years the members of the Committee for Engineering Student Development (CESD) have been spending the time and producing the money to support a training program for high school students whose backgrounds would not normally incline them toward a professional career. The high school students are primarily from ethnic groups which are under-represented in the field of engineering.

The program was also supported this year by a \$200 contribution from the IEEE San Francisco Section and \$300 contribution from the Western Electronics Education Fund. The picture below shows Dr. Pederson, Section Chairman, presenting the contributions to Terry Kvam, Student Branch Chairman, with James Kennedy, a CESD instructor, and Professor Kuh, Chairman of Electrical Engineering and Computer Sciences Department at Berkeley.

The CESD program began in the summer of 1969 when a special interest group in engineering was started in conjunction with the University of California faculty-sponsored Special Oppor-

tunities Scholarship (SOS) Program. SOS, which is sponsored by campus donations and Regent's special funds, is designed to bring to the campus students who have shown potential but would not be prepared for higher education without the intervention of a program of this kind. SOS provides a program that offers a combination of college preparatory courses, tutoring, guidance, and educational stimulation. CESD sponsors a special interest group in electrical engineering and computer sciences for students participating in the SOS program. CESD's program is somewhat different in that it offers an introduction to the field of engineering. It is also different in that the program has been largely financed from engineering student funds. "We got the idea for the program by observing that there were few minority students studying engineering," said Terry Kvam, a CESD member and Chairman of the student branch. "We knew we had to reach these high school students and develop an awareness and an interest in engineering before they became college age."

Some 35 high school students have taken part in the program. Kvam says that there has been real success with about 20 of them. These 20 have learned the basic electrical concepts used in the computers, have learned

how to write computer programs using a simplified version of FORTRAN, and have learned how to operate various campus computers. None has yet graduated from high school, so final results are not in. But the students have shown a lively interest in the program — many of them coming back for a second year and expressing intentions of studying engineering in college.

CESD hires one instructor per quarter. Two instructors have been used, both having done graduate work at Berkeley. Due to the large amount of time required to prepare and teach the courses, the Committee cannot expect the student instructors to donate their time. Well-qualified instructors have been attracted by paying them approximately the equivalent of a Teaching Assistant's wage.

The program has been successful in giving the students an introduction to the concepts of electrical engineering and especially instilling confidence in their ability to study engineering. The program is in jeopardy, however, because of a lack of funds. The current operating expenses are approximately \$1,400 a year, almost entirely for instructor wages. The cost of the program, now beginning its third year, has been primarily borne by Berkeley's engineering students. The student branch has donated \$550, and Engineers Joint Council (an organization representing all engineering students at Berkeley) has contributed \$1,570. But the student funds are now depleted; and, if the program is to survive, support will have to come from outside organizations. As noted above, last fall the Committee gratefully accepted the donations from the IEEE San Francisco Section and from the Western Electronics Education Fund.

The statements made by several IEEE officials, particularly those of Dr. Willenbrock (Sr. past president of IEEE), appearing in the August 1970, and January 1971, issues of SPECTRUM, have encouraged CESD to seek support from our profession. If you or your firm are interested in contributing to this worthwhile program, please write to:

Committee for Engineering Student Development, UCSEE, IEEE Student Branch, Department of Electrical Engineering & Computer Sciences; University of California, Berkeley, California 94720.



From left to right: Dr. Pederson, San Francisco Section Chairman; James Kennedy, one of the instructors; Prof. Kuh, Chairman of Berkeley's Electrical Engineering and Computer Science Dept.; Terry Kvam, Student Branch Chairman.

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be attached. Authors will be notified of acceptance before September 1, 1971. Please send all manuscripts to PROF. S. G. CHAN, DEPT. OF ELECTRICAL ENGINEERING, NAVAL POSTGRADUATE SCHOOL, MONTEREY, CALIFORNIA 93940. Special sheets for the preparation of accepted papers for the PROCEEDINGS will be sent to each author. **Best Paper Award** — Starting this year, the conference committee will present every year an award for the best paper presented at the previous year's conference.

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