IEEE Grid

JUNE 1966

SAN FRANCISCO SECTION

INSTITUTE OF ELECTRICAL
AND
ELECTRONICS ENGINEERS

The growth of world-wide demand for Varian products in commercial, military, and industrial markets is providing new career opportunities for engineers. The following positions are among those now available:

APPLICATION ENGINEER

Provide support to marketing functions in the chemical, electronic, and vacuum fields. Duties will include new equipment evaluation, analysis of customer requirements and samples, and direct support of field sales activities.

LINEAR ACCELERATOR DESIGN

Electrical engineering positions with design responsibilities on special electron linear accelerator projects. Requires B.S. or M.S. in E.E. and microwave engineering experience in areas such as high voltage, pulse, and servo circuits; microwave structure and electron gun design; beam optics; etc.

ELECTRICAL ENGINEER OR PHYSICIST

Electrical Engineer or Physicist for product development in the field of Electron Paramagnetic Resonance. Requirements include: MS and 3 years experience including instrument development; or PhD. A specific knowledge of EPR and microwave and transistor circuits is desirable.

DEVELOPMENT ENGINEER

Responsible for design and development of precision electronics equipment. Should have aptitude for advanced concepts important to frequency standards. Hydrogen masers and magnetometers. BS or MS in Physics or EE and desire to progress in growing division.

TUBE ENGINEERS

Experience in design, development, or manufacture of klystrons, BWOs, or TWTs. Should be familiar with microwave techniques and vacuum tube engineering. Experience in systems and evaluation helpful.

MICROWAVE ENGINEER

MSEE or equivalent. Requires understanding of electromagnetic and semiconductor device theory. Determine properties of and design techniques for microwave semiconductor devices.

Many other technical and professional openings also exist and all inquiries will be welcomed. Successful candidates for these positions will work with technical staff members noted in the industry. Varian is one of the leading employers in Northern California, noted for its unique living, cultural, and educational environment.

For consideration of your qualifications, submit a resume in confidence to:

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1784A Recorder Plug-in, $775
1782A Trace Scanner, $425
1783A Time Mark Generator, $130
1781B Delay Generator, $325

Prices f.o.b. factory.

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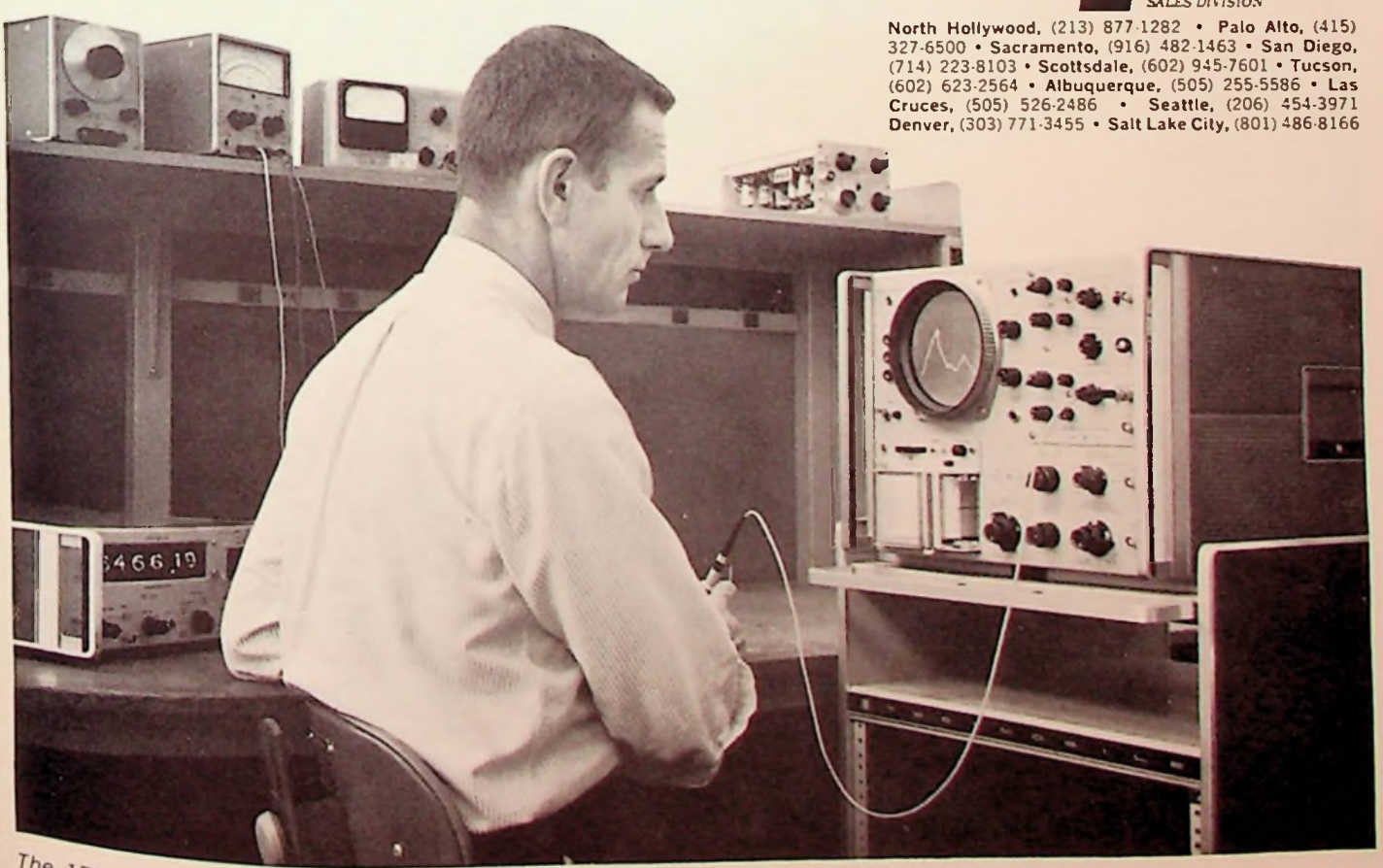

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Up in Seattle, we make basic tools for precision electronic measurement. We make them well. If you think you'd like to help us make them even better and live in the Great Northwest too, let's talk.

For almost a generation, we (The John Fluke Mfg. Co., Inc.) have been one of the world's leaders in metrology. Recently, the demand for our quality instrumentation has created a number of unusually fine professional employment opportunities.

So if you want to join a medium size, well-respected company where your contribution stands out and your identity means something to everyone from the president on down, this is a grand opportunity. Our engineers work in a sophisticated technical environment with great personal freedom to pursue design problems as they see fit. We pick up the total tab on a company-sponsored graduate program for eligible personnel at the University of Washington (now widely regarded as one of the 10 best universities in the Nation).

But, though the job is the main thing, living in the Pacific Northwest shouldn't be ignored either. About 85% of our employees live on wooded acres within 10 minutes of the plant. You can buy twice the house in Seattle for the same dollars you spend in San Francisco or Los Angeles. And the taxes aren't too steep either (there is no state income tax).

Schools are good. The State of Washington ranks among the first three in literacy and number one in terms of college graduates per thousand population. Art, theatre and music flourish in the great new Seattle Center, built for the World's Fair.

If the outdoors is your after hours bailiwick, Washington State offers great skiing (with short lift lines), the nation's best boating, outstanding hunting and fishing (sometimes, the other guy on the stream is five miles away), and fine hiking and climbing.

The company offers in addition to your salary (which is as good or better than anywhere else) profit sharing, medical insurance, and retirement benefits. So if all this excites you and you fit one of the job descriptions below, write our Engineering Manager, Mr. Ted Thomsen, in confidence. Interviews will be arranged in Los Angeles, San Francisco, or Seattle at your convenience. Please address Mr. Thomsen at P.O. Box 7428, Seattle, Washington.

Design or Senior Engineers with communication theory background and/or interest in digital circuits. Preferably an MSEE. Minimum experience, two years. Should be familiar with digital circuit design and frequency calibration techniques.

Design or Senior Engineer with minimum of one year's experience in feedback, digital and analog circuitry. Applicant should be familiar with differential amplifiers, amplifier and feedback design, AC-DC converters, and state of the art measurement instruments. MSEE desired.

Associate Engineer with good scholastic record and BSEE. No experience necessary. Applicant should have an interest in analog and/or digital circuit design and knowledge of solid state circuitry.

Electronic Package Design Engineer with either BSEE or BSME. Applicant should be familiar with packaging methods in the MHz to 10 GHz region. Two to six years' experience with good mechanical design aptitude required.

Industrial Engineer with three years' experience in electronics or associated industry. Should possess a BSIE. A BSEE or BSME is acceptable if applicant has industrial experience. Candidate must have knowledge of methods, value, and process analyses, and work simplification.

Senior Production Engineer with four years' experience. Should be a mechanical engineer familiar with electronics or an electronic engineer familiar with mechanical engineering. Applicant must possess a BSME or BSEE. Must be able to carry new product from design to production.

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IEEE Grid

volume 12
number 10
june 1966

Published monthly except July and August
by San Francisco Section,
Institute of Electrical and Electronics Engineers

address all mail to
IEEE, Suite 2210, 701 Welch Road
Palo Alto, California 94304
Telephone: (415) 327-6622

Members: send address change promptly to IEEE, 345 East 47th St., New York, N.Y. 10017
Send copy of letter to Section Office

executive editor:
JAMES D. WARNOCK

advertising director:
ERNESTO A. MONTANO

editorial & advertising assistant:
MRS. JEAN HELMKE

subscriptions:
$4.00 (members); $6.00 (others); overseas, $7.00 per annum

contents

san francisco section officers

Second class postage paid at San Francisco

advertising

Cristal

Huntley

the section

MEMBERSHIP

The following members have recently been transferred to the grade of Senior Member:

Edward G. Cristal
Wright H. Huntley, Jr.

Following are the names of individuals who have been elected to current membership:

R.L. Castleberry, Jr.
C.E. Cunningham
J.L. Dake
R.F. Helmke
V.H. Reynolds
L.E. Walker

Share the responsibility

FOR THE SECTION AND YOUR GROUP CHAPTER

Take part in the membership pledge program. Bring in at least one new member in '66.

grid errata

PAST SECTION CHAIRMEN

More past section chairmen than met the eye were present at the April 20 pioneers' night meeting and appeared in the photograph in the May Grid.

They were Donald I. Cone, 1926-27; Leonard Fuller, 1927-28 through 1930-31; Ralph Heintz, 1931-32; Charles Litton, 1932-33 and 1933-34; Frederick E. Terman, 1938-39, and L.E. Reukema, 1947-48 and 1948-49.

cover

The Ocean Institute, Makapu, Oahu, will be the locale of one of the field trips of the symposium described on the sign held by the young Polynesian lady at Sea Life Park. Note the leaping dolphins in the left background. The institute's "Man-in-the-Sea" program directed by Taylor A. Pryor, also a state senator, one of the new breed of islanders leading Hawaii to scientific excellence. See page 7 for more on the symposium.

Melchor

Granger

remarks from the chairs

CHAIRMAN'S FAREWELL

Dr. Jack L. Melchor, general manager of -hp associates- and section chairman, ends his term of office June 30. He speaks with broad section experience, having served previously as treasurer, secretary, vice-chairman and in other section and WESCON capacities. In his parting remarks he calls for broadening technical seminars and activities.

The past year, during which I was privileged to serve as your section chairman, has been a banner year for our industry and our section—now the largest within IEEE. With increased military business, many of us have delayed plans for expanding our non-military markets. There is no better time to explore new markets than during booming sales, and no worse time than when facing cutbacks, or exceedingly rough competition. Creative engineering and engineering management should be looking toward new spheres of influence on the periphery of their company's area of interest. It is time to dust off plans that were made two years ago under economic duress, and assess their value in light of today's technology.

The past year has opened new vistas in microwave and optical fields, in communications and in data assimilation, processing, and display. Technological time compression accelerates, as discoveries and applications, once taking years, now occur in weeks. We stand on the brink of technological and sociological revolution, gazing into the Golden Sixties' twilight years. Collectively, we must master our impending environment. Our profession will provide many needs of this era, and direct technological revolution toward benefit of all society.

While youth flails for social guidance amid technological mystery, engineers move toward sophisticated specialties. Through broader self-education, the technical-social gap needs bridging. Time awaits the scientific universalists, when understanding and interests meld between varied physical and social sciences. It is our role to usher in the age of scientific universalism—through professional and avocational deeds, attitudes and contemplations. Serious consideration should be given the broadening of technical seminars to include social implications and value of work reported. Our section, with its extensive group chapters, can provide leadership during the ensuing knowledge explosion.

Thank you for your support during the past year; and many thanks to your executive committee, to the chairmen and vice-chairmen of our various special committees, to our subsections and chapters and to our office staff. I'm sure that you'll extend the same support to your new officers and delegates-elect.

JACK L. MELCHOR

remarks from the chairs

GRANGER GIVES BACKGROUND ON DUES INCREASE

Dr. J.V.N. Granger, president of Granger Associates, Palo Alto, is a member at large of the IEEE board of directors and member of the executive and finance committees. A Fellow, past chairman of the former Palo Alto Subsection, and past director of WESCON, he represented the San Francisco Section in 1962 merger discussions. The following remarks were requested by Grid and the membership committee to provide background regarding the recently announced dues increase.

President Shepherd's letter of April 8 informed the membership of the board of directors action of March 25 approving an increase in dues effective January 1, 1967. A full discussion of the financial basis for this decision will appear in the June issue of *Spectrum*. Because of the many questions raised by section members about this move, a few words of further explanation are appropriate.

After three years of merger, the institute continues to operate at a loss. The budgeted loss for 1966 is approximately $200,000. (Many members do not realize that the IRE suffered a loss of about the same amount in the last year *prior* to the merger.)

At the time the merger was undertaken, a temporary operating loss was expected during the "shakedown" period. It was recognized that dues income would decline ($5 to $10 per year for each AIEE member and $15 to $25 for the 10,000 who belonged to both AIEE and IRE), but expected that savings in operating costs would offset this factor. This expectation has been borne out. For the four years through 1966, operating savings amount to $1,000,000, while dues losses add up to $900,000. The continued losses are due entirely to an unexpected loss of advertising revenue—a net decline of approximately $1,200,000 for the four years through 1966, as compared with the *net* advertising revenues of *both* societies in 1962. This loss of revenue is attributable in part to a change in DOD regulations regarding allowability of advertising costs, and in part to the affects of the change in publications patterns which occurred with the merger. While advertising income is currently on the rise, it is unrealistic to expect that this trend will solve the problems. Only a dues increase can insure continued strength for the institute.

Some facts:

- Dues presently (1966) provide only 37 per cent of total income. After the dues increase, this will rise to a little over 50 per cent.
- Publications budgets are rising at a tremendous rate. The institute published nearly 18,000 pages of technical material in the *Proceedings* and the transactions in 1965, more than 85 per cent of that in the transactions. The technical content of the transactions has risen 20 per cent/year since the merger, and that rate of increase must continue if the institute is to continue to provide publications leadership in the face of the expanding scope of the technology of primary interest to its members.
- The sections and regions (particularly those outside the U.S.)

SECTION ANNUAL MEETING

All past chairmen of the San Francisco Section and its predecessors have been invited to sit at a special head table at the June 15 annual meeting at the Bold Knight in Sunnyvale.

Also especially seated will be newly-elected officers of the section, 1966 Fellows, and incoming chairmen of the subsections and chapters.

Dr. Frederick E. Terman, one of the most honored members of IEEE, past chairman of the San Francisco Section (IRE) and past president of IRE, will report on his recent educational exchange visit to the U.S.S.R. under the sponsorship of the U.S. Office of Education.

"There is an enormous effort in education," said Dr. Terman, "from the first grade on up. Educators seem dedicated to their profession. And the individual, as a student, is very important.

"There is also constant attention to developing and improving courses and teaching techniques. While most institutions are required to follow curricula prescribed in great detail by the state, certain schools are permitted to experiment."

The annual event will honor 1966 Fellows and 1966-67 officers of the section, subsections and chapters. In addition to reservations for couples, tables of eight may be reserved for subsections, chapters, committees and companies by calling Mrs. Jean Helmke, 327-6622.

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need increased direct financial support, and greater support for their technical programs—perhaps in the form of a bureau of outstanding lecturers whose travel costs are subsidized.

- The last dues increase for former AIEE members, in 1956, was revoked with the merger. Former IRE members have not had a dues increase for 18 years.

The institute is strong. A more reliable income base will add greatly to its strength. It is responsive to the needs of its members. President Shepherd's letter solicits comments and suggestions from the members to guide the board of directors, the publications board, the technical activities board, and the sections committee in planning the expanded institute program our expanding profession demands.

J.V.N. GRANGER

Dr. Terman in Moscow. The Bolshoi Theatre is shown in the background, with the Hotel Metropole at right of the photograph.

Meeting Calendar

JUNE 8, WEDNESDAY, 8:00 PM—Instrumentation & Measurement
Why and what-for of digital integrated circuit specification and testing
Dick Crippen, Fairchild Semiconductor
Place: Hewlett-Packard Co., 1501 Page Mill Rd., Palo Alto (visitors' entrance)
Dinner: 6:00 PM, L'Omelette, 4170 El Camino Real, Palo Alto
No reservations required.

JUNE 9, THURSDAY, 7:30 PM—Vehicular Communications
Close frequency spaced mobile repeater system design
James W. Corn, area engineering services manager, Motorola Communications & Electronics, Inc., Burlingame
Place: College of San Mateo, Bldg. 11, Room 130, Science Lecture Hall
No dinner

JUNE 15, WEDNESDAY, 8:00 PM—San Francisco Section/All Subsections and Chapters, ladies night
Annual meeting honoring 1966 Fellows; installation of 1966-67 Section Officers
Engineering education in Russia
Dr. Frederick E. Terman, vice president and provost emeritus, and advisor to the president, Stanford University
Place: The Bold Knight, 769 No. Mathilda Ave., Sunnyvale (2 blocks west of Bayshore)
Social hour: 6:00 PM (refreshments 65c)
Dinner: 7:00 PM—roast sirloin of beef, $4.50 incl. tax & tip
Reservations: Mrs. Jean Helmke, Section Office, 327-6622 by June 13
Tables of eight may be reserved for Subsections, Chapters, Committees and Companies

EMC Symposium committee: (left to right) G. Ottinger, LMSC, chairman; A. Fong, Hewlett-Packard Co., technical programs; W. Coe, MacDonald Associates, finance; R. Snyder, Hewlett-Packard Co., arrangements; J. Kirk, LMSC, publication; B. Cooperstein, Sylvania, secretary; G. Westwood, Fairchild, arrangements; P. Gagner, Filtron, exhibits; R. Holman, Genisco, public relations and publicity.

events of interest

EMC SYMPOSIUM

Final plans for the Eighth IEEE Symposium on Electromagnetic Compatibility, July 11-13, San Francisco Hilton, have been announced.

Keynote speaker will be Brig. Gen. J.S. Bleymaier, commander of the Air Force western test range, Vandenberg AFB. Formerly deputy commander for manned systems at the space systems division in Los Angeles, he has been in charge of comprehensive EMC programs with the Titan missile and at both the Atlantic and Pacific test ranges.

Banquet speaker will be Dr. Frederick E. Terman, vice president and provost emeritus and assistant to the president, Stanford University.

Subjects of technical papers will range from education in EMC to its predictability. Theme of the exhibits will be "What's new in EMC." As a special exhibit, the Air Force FSM-173-D antenna pattern analyzer aircraft will be at San Francisco International Airport for viewing and demonstration. There will be a full program for the ladies.

Guy L. Ottinger is chairman of the committee for the event. Members are John A. Eckert and Richard B. Schulz, vice chairmen; Benard Cooperstein, secretary; Arthur Fong, John E. Maynard, Ben Weinbaum, A. Humphrey Sullivan, Jr., and Hollis Favors, technical program; Gordon Westwood and Ross Snyder, arrangements; Peter F. Spencer and Daniel C. Fogard, exhibits; Fred J. Nichols, public relations and publicity; William G. Coe, finance; and Richard H. Stone, publications.

Advance registration and registration at the door are $8 and $10 for members; $10 and $12 for non-members; and $2 for student members. Tickets for the luncheon are $4.50 and for the banquet $7.50. Additional copies of the symposium digest may be ordered at $5. Make checks payable to 1966 EMC Symposium and mail to William G. Coe, McDonald Associates, P.O. Box 1383, San Carlos, Calif. 94070, who may also be called at 593-6057 for advance technical program or additional information.

Bleymaier

Corn

meeting ahead

MOBILE RELAY VC

James W. Corn, engineering services manager, Motorola Communications & Electronics, Inc., Burlingame, will review the advantages and disadvantages of the mobile relay vehicular communications system at the June 9 meeting of the Vehicular Communications chapter. A method of increasing the utility and reliability of the mobile relay system by designing with close spacing between the transmitter and receiver frequencies will be presented.

Design factors such as transmitter wide band noise, receiver desensitization and antenna coupling will be discussed as well as application of selectivity increasing devices. A typical system design will be described and slides of several systems will be shown.

A graduate of Spartan School of Radio & Electronics, Tulsa, Oklahoma, and the U.S. Navy Aviation Radio and Radarman's School, Mr. Corn previously served Motorola in military electronics development, semiconductor device development, two-way radio sales engineering, and vehicular communications systems engineering.

events of interest

SUMMER POWER

New Orleans is the site of the IEEE 1966 Summer Power Meeting. Registration at the Jung Hotel is estimated at 1500.

Registration will begin at the Jung Hotel on July 10 through July 14. Registration fees have been set at $13 for members, $15 for non-members, $2 for ladies, and no charge for student members.

Scripps Institute research vessel "Flip" demonstrated its unusual underwater observation capability off the beach at Waikiki recently, part of the growing ocean technology of the Pacific and Hawaii.

events of interest

OCEAN SYMPOSIUM

From the response received so far there is considerable interest in ocean electronics and it appears that the IEEE 1966 Ocean Electronics Symposium will be well attended. This was reported by Robert R. Hill, general chairman of the event to be held in Honolulu, Hawaii, this coming August 29 through 31. The symposium is scheduled the week following WESCON to allow as many as possible to visit Hawaii for the first IEEE meeting exclusively devoted to ocean electronics.

Advance programs have been mailed to members of the Aerospace and Electronic Systems and the Geoscience groups. Others may obtain a copy of the program by writing the IEEE Ocean Electronics Symposium Headquarters, 1441 Kapiolani Boulevard, Suite 1320, Honolulu, Hawaii 96814 (telephone 963-931)

Four technical sessions are scheduled with thirty papers to be presented by outstanding speakers. Rear Admiral O. D. Waters, Jr., oceanographer of the Navy is the invited key-note speaker and Dr. Robert Frosch of ARPA the final luncheon speaker. A panel discussion of key leaders in the field of ocean technology will be chaired by Maj. Gen. Edmond H. Leavy (USA Ret.), a past president of ITT. A unique adjunct to the meeting will be field trips of scientific facilities on Oahu and the neighbor islands of Kauai, Maui and Hawaii.

HELP THE SECTION GROW BY PLEDGING YOURSELF TO BRING IN A NEW MEMBER.

16,000 high school and junior high students visited the San Mateo County Occupational Guidance Center held at the county fairgrounds May 2 through 6 under the sponsorship of the San Mateo County Industry-Education Council. The section manned and sponsored booths on electrical/electronic engineering and electronic technician, two of more than 80 presented by trade associations and professional societies. Here Prof. A.M. Hopkin, UC electrical engineering dept., talks to one of 40 student groups, each of whom had 50 minute counseling sessions.

Harmon Traver, Paeco, Hewlett-Packard Co., PMP chapter chairman, counsels prospective electronic techs. Other section members serving in the two booths during the week were Jack Savage, Lawrence Radiation Lab, section secondary education chairman; Warren Davis, PT&T; Jim McCann, PG&E, Power chapter chairman, Norman Weed and Claes Elfing, both of Sylvania; Ron Church and Howard Poulter, both of HP; John Eidson, Hansen Lab, Stanford; Fred Beale, Lenkurt; Dick Honey, SRI; John Damonte, Dalmo Victor; Roy Hurd, Heald Engineering College; and Victor Siegfried, LMSC.

educational notes

UC EXTENSION OFFERINGS DEPEND UPON YOUR RESPONSE

University of California Engineering Extension plans to offer a variety of package programs, short courses and conferences for the professional engineer in the late spring and summer:

Direct Energy Conversion and Plasma Engineering—latest developments in direct energy conversion systems and plasma engineering applications. A three to four day short course, June 1966.

Engineering the Environmental Model—simulation equipment, its design, reliability and quality control with emphasis on latest developments, associated instrumentation, and laboratory practices. A two day short course, July 1966.

Welding and Casting for the Professional Engineer—recent advances and techniques in the field of welding technology; electron beam, laser and arc welding. New techniques in casting applied to old and newer materials; vaccum arc and electron beam melting. A three day short course, July 1966.

Modern Automatic Control Engineering—introductory and advanced information on techniques in modern automatic control engineering and instrumentation in engineering systems and processes. A five day short course, Aug. 29—Sept. 2, 1966.

Review Courses in Civil, Electrical and Mechanical Engineering for the Professional Registration Examination. If there is sufficient interest, these courses will be offered in the late summer and early fall prior to the November 1966 examination (classes to meet alternate Saturdays 9:30—12:00 noon, 1:00—3:30 p.m.).

Reliability Engineering—system and component reliability as influenced by the variables of manufacture, assembly, and established quality control. Application of statistical and probability

events of interest

FJCC APPOINTMENTS

The general committee to plan and execute details for the 1966 Fall Joint Computer Conference in San Francisco November 8-10 has been announced.

Headed by R. George Glaser, general chairman, the steering group has been meeting since early in the winter and this month completed virtually all appointments to carry out the principal functions for the big technical conference and exhibit at civic center.

educational notes

CAL AC COURSE

A five-day short course, "Modern Automatic Control Engineering," will be given August 19 to September 2 by Engineering Extension and the College of Engineering at the University of California Berkeley campus.

The course is intended to provide introductory and advanced information on techniques of control engineering for the professional engineer. Yasundo Takahashi, professor of mechanical engineering at Berkeley, will head the instructional staff.

Tuition is $185. Further information may be obtained from Engineering Extension, University of California, 2223 Fulton St., Berkeley, California 94720.

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theory to simple and advanced reliability studies. A five day short course, Sept. 1966.

Surface Coatings for Metals in Aggressive Environments—mechanisms of adhesion, corrosion prevention, and environmental control. A four to five day short course, September 1966.

Engineering Applications of Statistical Theory—formulation and application of probabilistic models to analysis of equipment performance, experimental data, and stochastic processes. A four weekend package program, Sept. 1966.

Photogrammetric Digitizing Applied to Cadastral Surveys and Engineering Projects—a two to three day short course oringinally planned for summer but now rescheduled for Dec. 1966.

Early written inquiries concerning these programs will be used as a measure of the interest shown by the professional engineer. Dates are provisional and the lack of response for a specific program will result in cancellation of plans to offer the program. Announcements of programs for which a definite need is established for the professional engineer will be sent one month in advance of the scheduled program date. To indicate your interest in one or more of the courses offered and be placed on the list to receive announcements, write: Engineering Extension, University of California, Berkeley, California 94720.

Ed Crosse of Lenkurt Electric (at left above) explains preparation of material lists using an automatic design engineering program to PMP members at their April meeting. Tom Bean (at right), manager of automatic design engineering for Lenkurt describes ADE. He was assisted by Crosse, Doug Vandever, and Ron De Lora, also staff members. Photos by Harmon Traver.

w e m a n e w s

1966 DIRECTORY

A completely updated "who's who" in electronics manufacturing in the western states has been published by WEMA.

The 380 members of WEMA throughout the west are listed in the directory, with detailed information for each company on management personnel, principal products, numbers of employees, how securities are traded and how products are marketed.

In addition, there is a product cross-reference section which lists companies engaged in manufacture of specific components, instruments and systems.

Member companies account for more than 80 percent of the total electronics sales volume in the west.

The new directory may be obtained from WEMA, 780 Welch Rd., Palo Alto, 327-9300. Price per copy is $5.

e v e n t s o f i n t e r e s t

JACC

The seventh annual joint automatic control conference, sponsored by AIAA, ASME, ISA, IEEE, and AIChE, will be held on the campus of the University of Washington, Seattle, Washington, August 17-19.

The technical program will consist of more than 100 papers presented in more than 20 different technical sessions. About one fourth of these will be invited papers dealing with the following subjects: control system components, applications of control theory, review of control theory, process control applications, education in automatic control, and data acquisition systems.

The three-day, IEEE 1967 Winter Convention on Military Electronics (WINCON '67) will be held February 7, 8 and 9 at the International Hotel in Los Angeles, according to Dr. A.M. Zarem, Electro-Optical Systems, Inc., 300 N. Halstead St., Pasadena, chairman of next year's event.

student branch news

AREA PAPERS WINNERS

"Depolarization of nervous tissue by means of an electrostatic field" by Michael R. Radisich, University of Santa Clara, and "A convergent method for solving polynomial equations" by John B. Moore of the same student branch were first prize winners, respectively, in the undergraduate and graduate divisions of the area IEEE student papers contest on April 1.

The contest, held at San Francisco State College, was jointly sponsored by the San Francisco and Sacramento Sections as part of the Region 6 and IEEE competitions.

Other prize winners in the undergraduate division were "Hardware for the handicapped" by Richard N. Belaustigui of the University of Nevada, second place; and "Bandwidth considerations of a frequency modulated signal with specific applications to the land mobile service" by Dale J. Misczynski of Sacramento State College, third place.

Also winning prizes in the graduate division were "Measurement of the mean energy for electron-hole pair formation in silicon by low-energy electron movement" by Carroll B. Norris, Jr., Stanford University, second place; and "Intermodulation distortion: a controllable parameter in the analysis of the intelligibility of clipped speech" by William J. Lannes III, U.S.N.P.G. School, Monterey, third place.

Undergraduate judges were Dino Ciarlo and Frank Inami, Lawrence Radiation Laboratory; teller was Carlton Furnberg, Sandia Corp. Graduate judges were Joseph Nanevicz, SRI; Thomas Burgess, Jr., LRL; and Herbert Johnston, Sandia Corp.; teller was James B. Wright, Sandia Corp.

Prizes were presented by E.H. Hulse, LRL, vice chairman of the San Francisco Section. Arrangements for the dinner and meeting were handled by Prof. Rene Marxheimer, San Francisco State, and Eugene Aas, education and student relations chairman, San Francisco Section.

events of interest

POWER GENERATION

Peaking and emergency power supply concepts will be covered at one of the technical sessions scheduled for the 1966 ASME-IEEE Power Generation Conference to be held in Denver from September 18-22.

The technical program is nearly completed. Papers to be considered for inclusion in the program should be received before June 20 by E. G. Norell, technical program chairman, Sargent & Lundy, 140 South Dearborn Street, Chicago, Illinois 60603.

MORE SWINGS

Tymshare, Inc., Los Altos, a computer time-sharing service, has added two systems analysts to its staff: Verne Van Vlear and James L. Ryan.

Robert D. Gray has been appointed director for security systems product management at Sylvania Electronic Systems, Mountain View.

Joseph Dietz, western regional sales manager, Fairchild Instrumentation, Palo Alto, has been promoted to product service manager.

John P. Gates has been appointed manager of manufacturing and engineering for Stewart-Warner Microcircuits, Inc., Sunnyvale, was formerly manager of digital integrated circuits for Fairchild Semiconductor, Mountain View.

Purl

Davis

Dr. O. Thomas Purl, manager of the electron devices div., Watkins-Johnson Co., Palo Alto, has been elected a vice president.

Thomas E. Davis, former vice president-marketing, Ampex Corp., Redwood City, has been named vice president, general manager of the company's new audio/video communications division.

Raymond R. Bourret has been promoted to vice president of manufacturing for Pacific Plantronics, Santa Cruz.

Alan W. Drew has been appointed president and chief executive officer of Friden, Inc., San Leandro.

Raytheon Company will expand integrated circuit production at Mountain View, establish a circuit facility at Santa Ana, and move a transistor assembly activity from Mountain View to Paso Robles.

Hewlett-Packard Company, Palo Alto, has announced the consolidation of its advanced research and development activities into a new organization known as HP Laboratories and headed by Dr. Bernard M. Oliver, vice president of research and development, to engage in advanced research activities in electronic, medical and chemical instrumentation. Sections and their managers include solid-state physics, John M. Atalla; physical electronics, Donald L. Hammond; electronics research, Paul E. Stoft; and medical and chemical instrumentation research, John M. Cage.

Union Carbide Electronics, Mountain View, announces the appointment of Jay Stone & Associates, Los Altos, as northern California representative for its line of operational amplifiers.

William B. Allen has been named director of engineering for the Sierra Electronic operation of Philco Corp's communications and electronics division, was formerly chief engineer of the video and instrumentation division for Ampex Corp.

Micro Systems, Inc., Pasadena, has formed a bio-medical instrumentation group and named Eph Konigsberg to the position of product manager.

Joseph I. Davis has been appointed general manager for southern California operations of Litton Industries' mellonics systems development division, Sunnyvale, was formerly manager of data management systems for Litton's data systems division.

Harold A. Page has been named manager of manufacturing engineering and physical design for Melabs, Palo Alto, was formerly manager of mechanical engineering and documentation for Applied Technology, Inc., Palo Alto.

Dr. David B. James and Charles A. Piercey have been named vice presidents of Ultek Corp., Palo Alto.

Stellarmetrics, Inc. Santa Barbara, has received $55,000 in contracts from Douglas Aircraft for solid state microcoders or commutators for aerospace telemetry.

R.M. Hoffman Co., Sunnyvale, has been named northern California representative for Force Limited, Santa Monica.

Manufacturer / Representative Index

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rp. ..... Dietrich-Heffner Assoc.
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Dynamics Corp. of America ..... L & M Engineering
Remanco Inc. ..... Jay Stone & Assoc.
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lo Alto; DA 1-3745

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ountain View; 961-8760

rich-Heffner Associates
555 Park Blvd.,
lo Alto; 321-4321

mic Associates
711 Industrial Way,
rlingame; 344-2521

Frauman Associates
P. O. Box 357,
Menlo Park; 322-8461

Geist Co., W. K.
Box 746, Cupertino;
968-1608, 253-5433

Kennedy Co., J.D.
770 Welch Road, Palo Alto;
(415) 327-0413

L & M Engineering
2620 The Alameda
Santa Clara; 243-6661

O'Halloran Associates
3921 E. Bayshore,
Palo Alto; 326-1493

Rupp Co., V. T.
1182 Los Altos Avenue,
Los Altos; 948-1483

SMA/WEST
(Scientific Marketing Assoc.)
1094 West Evelyn Ave.,
Sunnyvale; 245-2500

Snitzer Co., T. Louis
1020 Corporation Way,
Palo Alto; 968-8304

Stone & Assoc., Jay
140 Main Street,
Los Altos; 948-4563

The Thorson Company
2443 Ash Street,
Palo Alto; 321-2414

Walter Associates
175 S. San Antonio Road,
Los Altos; 941-3141

Wadsworth-Pacific Mfg. Assoc., Inc.
71 Parker Avenue, Atherton;
321-3619

Willard Nott & Co.
1485 Bayshore Blvd.
San Francisco; 587-2091

events of interest

A & P SYMPOSIUM

The 1966 International Antenna and Propagation Symposium (December 5 through 7, 1966) will be held in conjunction with the USA 1966 Fall URSI meetings (December 7 through 9). The symposium headquarters will be the Cabana Motor Hotel, Palo Alto.

The G-AP and URSI technical programs will be separately arranged except for appropriate coordination. Authors are invited to submit 400 to 600 word summaries of papers for presentation at the G-AP sessions. Papers are solicited in all theoretical, experimental and developmental fields of interest to G-AP such as: plasma physics, scattering and diffraction, electromagnetic theory, radio physics, radio astronomy, radar astronomy, radio wave propagation, and antennas.

Summaries only of accepted papers will be printed in the symposium digest.

Mail summaries to: Ray L. Leadabrand, chairman, technical program committee, 1966 International Symposium on Antennas and Propagation, Radio Physics Laboratory, Stanford Research Institute, Menlo Park, Calif.

Deadline for receipt of summaries is August 1, 1966. Authors will be notified of acceptance or rejection by September 1, 1966.

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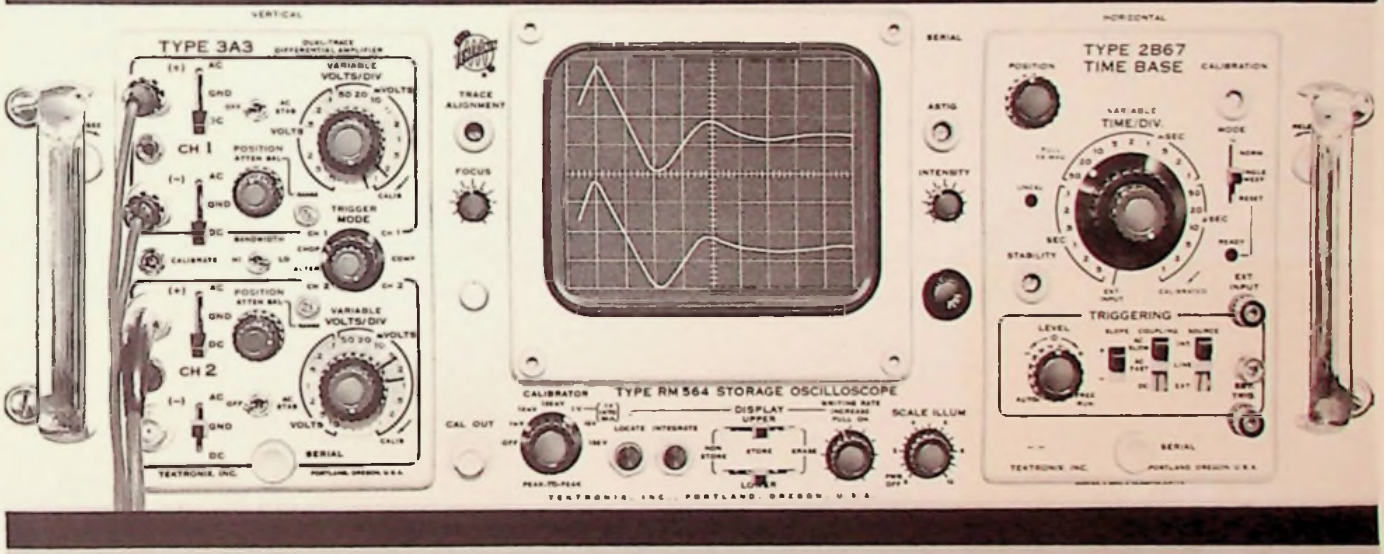

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