Job Corps electronic tech training for industry

meeting reminder

Aerospace & Electronic Systems, Thursday, February 24
Antennas & Propagation, Tuesday, January 18
Audio & Electroacoustics, Thursday, January 20
Communications Technology, Wednesday, February 23; Wednesday, March 30
Fort Bay Subsection, Wednesday, January 12 (SFS/EM/I&GA); Monday, January 24
Electromagnetic Compatibility, Wednesday, January 26
Engineering Management, Wednesday, January 12 (SFS/EBSS/I&GA)
Fresno Subsection, Tuesday, January 18
Industry & General Applications, Wednesday, January 12 (SFS/EBSS/EM)
Information Theory, Thursday, January 27
Microwave Theory & Techniques, Thursday, January 20
Nuclear Science, Tuesday, February 15
Parts, Materials & Packaging, Tuesday, January 25
Power, Tuesday, January 18
Reliability, Monday, January 17
San Francisco Section, Wednesday, January 12 (EBSS/EM/I&GA)
Santa Clara Valley Subsection, Wednesday, January 19
Vehicular Communications, Thursday, January 13
When it comes to digital voltmeters, we feel there's an "optimum combination" of capabilities which might be offered. So, with this in mind, we set out to design our Model 511. Here's the story.

**Smaller on the outside**

We've kept things like size and weight (not to mention cost) down to a bare minimum. The entire cabinet-enclosed instrument weighs only 12 pounds, measures only 5½ x 10½ inches at the front panel, and 15 inches deep. And it costs just $995.

**Bigger on the inside**

With all solid-state circuitry, it gives you 0.01% accuracy, is sensitive to $100 \mu V$, and ranges from $0.0000$ to $±999.9$ volts. And it automatically tracks voltage bidirectionally. Input impedance is 10 megohms, with a special 10,000 megohm, 0 to .9999-volt high impedance (hi-Z) range.

**Ratiometer at no extra cost**

This Cohu 511 is an 0.01% accuracy ratiometer as well. DC/DC ratios are from $0.0000:1$ to $±9999:1$ in the 1:1 range through $000.0:1$ to $±999.9:1$ in the 1000:1 range. Including hi-Z, there are five ratio ranges. So why not check out the Model 511 DVM/Ratiometer with your Cohu engineering representative. He's in every major city.
Meanwhile, back at the ranch...

“Down-time” is a short, uncomplicated word for your Neely man, the one who sells you quality Hewlett-Packard instrumentation. Back at the "ranch", he has a bunkhouse full of factory-trained technicians ready to cope with most any situation. Whether it be a matter of repair, calibration or modernization, your Hewlett-Packard instrumentation can be put in new condition in a matter of a few days at your Neely service center. For quality instrumentation with service to match, call Neely:

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Tucson—(602) 623-2564
Albuquerque—(505) 295-5586
Las Cruces—(505) 526-2486
Seattle—(206) 454-3971
Denver—(303) 771-3455
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samping
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simple

with your existing
Type 530, 540, 550,
or 580 Series Oscilloscopes

Here's a new dc-1 GHz sampling unit with operation practically as simple as conventional plug-ins—as you can see by the front panel of the sampling plug-in. You need no pretriggers or external delay lines—the 1S1 unit has internal triggering with a built-in delay line.

Many other features add to the capabilities and operating ease of the Type 1S1, such as:
- A tunnel-diode trigger circuit that insures stable triggering through 1 GHz
- A single control to select the sweep rate and magnify the display up to X100 when desired
- Direct readout of the sweep rate even when magnified
- A dc-offset control that permits observation of millivolt signals in the presence of up to ±1 volt input levels
- Less than 1 mV noise in the display, with a smoothing control for further reduction
- Output signals available at the front panel for driving chart recorders—and for powering an auxiliary time domain reflectometer pulser unit.

**BASIC CHARACTERISTICS**

- **RISETIME** ≤0.35 ns.
- **SENSITIVITY** from 2 mV/cm through 200 mV/cm, in 7 steps.
- **DYNAMIC RANGE** ±2 V.
- **SAFE OVERLOAD** ±5 V.
- **DC OFFSET RANGE** is greater than ±1 V.
- **SWEEP RATES** from 100 ps/cm to 50 μs/cm, with ±3% accuracy normal or magnified.
- **SAMPLES/CM** continuously variable.
- **TRIGGERING** ac-coupled, ± internal, ± external, and free run.
- **DISPLAY MODES** are repetitive, single display, manual scan, or external scan.
- **VERTICAL OUTPUT** is 200 mV per displayed cm through 10 k.
- **HORIZONTAL OUTPUT** is 1 V per displayed cm through 10 k.

<table>
<thead>
<tr>
<th>Type 1S1 Sampling Plug-In Unit</th>
<th>$1100</th>
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</thead>
<tbody>
<tr>
<td>Type 281 TDR Pulser Unit</td>
<td>$95</td>
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</table>

*used with Type 81 Plug-In Adapter.

For a demonstration,
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Tektronix, Inc.
KIRBY FOR ZEIDLER

David B. Kirby, public relations manager of Hewlett-Packard Co., has been appointed publications advisor of the San Francisco Section by Chairman Jack L. Melchor.

He succeeds Howard Zeidler, Stanford Research Institute, who served the Section for many years in that capacity and as a member of the publications board.

Prior to joining Hewlett-Packard in 1962, Kirby was public relations director of the San Francisco division of Lennef & Newell, advertising and public relations agency. Previously he had been associated with the public relations staffs of Kaiser Aluminum & Chemical Corp., the Wine Institute, and Bechtel Corp. He also was on the editorial staff of the S.F. News, since incorporated into the S.F. Examiner.

A UC journalism graduate, he also serves the Section as chairman of the public relations committee and was vice chairman of the WESCON public relations committee in 1965.

The thanks of Grid and the Section go to Zeidler for many years of service.

MEMBERSHIP CAMPAIGN

Many members of the Section have sent in the pledge card carried in the December Grid, agreeing to take the responsibility of bringing in a new member of the IEEE. Most have requested additional application forms for their engineering colleagues.

Have you done your part?

You are IEEE’s best membership salesman. Return the pledge card in the December issue and deliver the application form to one of your engineering colleagues, following up to see that he completes and mails it with his check.

For details of the highly interesting tour of the electronic tech training facilities at Parks Job Corps Center, Pleasanton, planned for January 12 under joint sponsorship of the Section, East Bay Subsection and Engineering Management and Industry & General Applications chapters, see page 4.
January 12, Wednesday, 7:30 p.m.—San Francisco Section/ East Bay Subsection/Engineering Management/Industry & General Applications—Ladies Night

Job Corps electronic tech training for industry
Tour of Parks Job Corps Center from 10 to 11 and from 2 to 3 p.m.; dinner at 5:30 p.m., Hap's, Pleasanton. Reservations: Mrs. Helmke, Section office, 327-6622, by January 10

January 13, Thursday, 7:30 p.m.—Vehicular Communications
The role of audio in vehicular communications
Al Goldstein, area systems engineer, Motorola Communications & Elect., Inc.
Place: College of San Mateo, Bldg. 11, Room 20; meeting to be followed by tour of CS1 electronics dept. and Channel 14 campus educational TV station
Dinner: 6:30 p.m., College Cafeteria; $1.25
No reservations required

January 17, Monday, 8 p.m.—Reliability
Role of functional reliability in electrical design
G. A. Faruqui, project engineer at Service Bureau Corp., Palo Alto
Place: Physics Hall 101, Stanford University
No dinner

January 18, Tuesday, 8:15 p.m.—Antennas & Propagation
Solution of antenna and microwave problems by digital computer technique
Dr. Mogens G. Andreasen, senior supervisory engineer, TRG West
Place: Lockheed Auditorium, Bldg. 502, 3251 Hanover St., Palo Alto
Dinner: 6:15 p.m., L'Omelette, 4170 El Camino Real, Palo Alto
Reservations: Claes Elfving, 966-3551, by January 17

January 18, Tuesday, 7:30 p.m.—Fresno Subsection
Design and construction of California aqueduct
L. R. Illingworth, chief, operations section, San Joaquin Dist. Dept. of Water Resources
Place: PG&E Bldg., 10th floor, 1401 Fulton St., Fresno
No dinner

January 18, Tuesday, 7:30 p.m.—Power/American Nuclear Society, Northern California Section
Desalination and electric power
W. K. Davis, vice president, Bechtel Corp.
Place: Engineers' Club, 206 Sansome St., San Francisco
Dinner: 5:30 p.m.—cocktails; 6:30—dinner; 7:30—meeting
Reservations: Engineers' Club, GA 1-3184

January 19, Wednesday, 7:30 p.m.—Santa Clara Valley Subsection/University of Santa Clara Student Branch
Employment opportunities for new engineers in industry
John Cage, manager, advanced technical planning, Hewlett-Packard Co., Palo Alto
L. Fitzsimmons,chief division engineer, FTG, San Jose
A. Steele, division manager, Lockheed's NASA vehicle design, LMSC, Sunnyvale
Place: University of Santa Clara, Sullivan Engineering Center, Room E551
No dinner

January 20, Thursday, 8:15 p.m.—Audio & Electroacoustics
Calibration and construction problems of a new low-cost capacitor microphone system
Problems and solutions to audio compression and limiting devices
Ted Gourley, senior engineer, and Charles Swisher, marketing dept., Vega Electronics Corp., Santa Clara
Place: Stanford Research Institute, Conference Room B, 333 Ravenswood Ave., Menlo Park
Dinner: 6:00 p.m., Menlo House, 1850 El Camino Real, Menlo Park
Reservations: Renda Blackler, 948-0571, by January 19

meeting ahead

Job Corps electronic technician training for industry will be the subject of a joint Section, East Bay Subsection, Engineering Management, and Industry & General Applications meeting at Parks Job Corps Center, Pleasanton, on January 12. Ladies are particularly welcome, many having expressed an interest in the program.

The session will begin at 7:30 with an hour tour of the electronics department in Bldg. 870, during which visitors will meet instructors and corpsmen and view the training program and electronic equipment in action.

A panel discussion will begin at 8:30, with the department head, department supervisor, instructors, corpsmen, and two IEEE representatives taking part, the latter being William L. Martin, engineering manager, Berkeley Division, Beckman Instruments, and Al Hockley, director, technical personnel, HP.

Prof. Harry Belman, head of corpsmen placement, George Mathews of placement, and Dr. Steve Gale, vocational training dept., will also answer questions.

Approximately 1,900 corpsmen are being trained at Parks by Litton Industries under contract, about 550 of them in the electronics dept., other training operations being culinary arts, building and grounds maintenance, and automotive repair.

The main gate is off of Highway 50 on Daugherty Rd. Guards will direct visitors to Bldg. 870.

Reservations for the highly interesting tour, already sampled by the Section vice chairman and Grid editor, must be made by January 10 with Mrs. Helmke, Section office, 327-6622.

meeting ahead

OUTER SPACE BEINGS

L. E. Reukema, professor of electrical engineering emeritus, University of California, will address the January 24 meeting of the East Bay Subsection. His subject will be space communications for consideration of the possibilities and techniques of communication with intelligent beings beyond our solar system.
January 20, Thursday, 8:00 p.m.—Microwave Theory & Techniques
Panel discussion on the problems encountered by engineers as they venture into business for themselves
Moderator: George R. Chambers, Stanford Research Institute
Place: Hewlett-Packard, Conference Room 1A, 1501 Page Mill Rd., Palo Alto
No dinner

January 24, Monday, 7:30 p.m.—East Bay Subsection
Space communications for consideration of the possibilities and techniques of communicating with intelligent beings beyond our solar system
Professor Emeritus L. E. Renkema, University of California
Place: PG&E Oakland Service Center, 4801 Oakport Rd., Oakland
Dinner: 5:30 p.m., Oakland Airport Inn
Reservations: Oakland: Mrs. Emerson, 835-8500; Concord: Mrs. Grey, 685-4441; San Jose: Mrs. Dhyvetter, 291-4852

January 25, Tuesday, 8:00 p.m.—Parts, Materials & Packaging
Rewards and penalties of micro-electronics usage: a panel discussion of various aspects of microwave applications, by representatives of current or anticipated users
Moderator: W. Dale Fuller
Place: Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto
No dinner

January 26, Wednesday, 8:00 p.m.—Electromagnetic Compatibility
Measurement of electromagnetic radiation
Dr. Fred Morris, Electromechanics Co., Austin, Texas
Place: Hewlett-Packard Auditorium, 1501 Page Mill Rd., Palo Alto
Dinner: 6:00 p.m., Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto
Reservations: Gordon Westwood, 962-2451, by January 24

January 27, Thursday, 8:15 p.m.—Information Theory
Digital measurements of frequency
Dr. Norman M. Abramson, visiting lecturer, Harvard University
Place: Stanford Research Institute, Bldg. 1, Conference Room B, 333 Ravenswood Ave., Menlo Park
Dinner: 6:30 p.m., Villa D'Este, 3401 El Camino Real, Atherton
Reservations: Shirley Jackson, 966-3865, by January 26

February 15, Tuesday, 8:00 p.m.—Nuclear Science
X-Ray the Egyptian pyramids
Dr. Luis W. Alvarez, University of California, Berkeley
Place: Spenger's Fish Grotto, 1919 - 4th St., Berkeley
Dinner: 6:30 p.m., Spenger's Fish Grotto
Reservations: 447-1100, Ext. 7821, by February 14

February 23, Wednesday, 7:30 p.m.—Communications Technology
Communications for the power industry
Robert J. Brown, general project administrator, PT&T, San Francisco
Place: PT&T Bldg., 666 Folsom St., Room 140, San Francisco (near cor. 3rd St.)
Dinner: 6:00 p.m., Schroeder's Cafe, 240 Front St., San Francisco (No-host cocktails at 5:45 p.m.)
Reservations: A. R. Dole, 399-4430; C. G. Griffith, 591-8461, Ext. 525; or Miss Wynne, 291-4039, by February 21

February 24, Thursday, 8:00 p.m.—Aerospace & Electronic Systems
Tour of Federal Aviation Authority facility at Fremont
Limited to 50 persons with advance reservations
Place: 8125 Central Ave., Fremont
No dinner
Reservations: Steve Marx, (415) 326-4350, Ext. 6048, by February 17

(Continued on page 6)
A CAREER DECISION
for three men

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R S ELECTRONICS has already completed the development of 1435-1535 mc and 2200-2300 mc receivers for new fighter aircraft. Development of down-converters, transmitters and FM signal generators is underway. These accomplishments place RSE into 1970 technology right now! To enhance this position three men are invited to join RSE as Senior Design Engineers. These men must be capable of developing new high frequency signal and command systems to perform in difficult environments such as missiles, aircraft and satellites.

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Robert K.F. Seal, President of RSE, will personally select these three men. In doing so, Mr. Seal will be continuing a tradition of building a hand-picked exceptional staff. The three men must enjoy the personal design, construction and evaluation of advanced prototypes. They must combine ingenuity and aggressiveness with a knowledgeable approach to their work.

The name of the game is “CHALLENGE”! If you qualify for our team, contact Robert Seal.

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Sunnyvale, California 94086

New Vega Electronics Corp. microphone is fondly regarded by Charles Swisher and Ted Gourley, speakers at the January 20 Audio & Electroacoustics meeting.

meeting ahead
CAPACITOR MICROPHONE

A new low-cost capacitor microphone system having very flat frequency response and extremely low distortion will be described at the January 20 meeting of the Audio & Electroacoustics chapter. Calibration and construction problems will be discussed. A unique compression/distortionless limiter will also be described. Problems and solutions to audio compression and limiting devices will be discussed. Demonstrations will follow the presentation.

The papers will be presented jointly by Ted Gourley, senior engineer, and Charles Swisher, marketing department, Vega Electronics Corporation, Santa Clara. Mr. Gourley studied electrical engineering at Oregon State University and was on a special assignment at IBM before joining Vega in 1964. Mr. Swisher graduated from the University of Illinois with an electrical engineering degree. Prior to joining Vega early this year, he worked for Ampex.

Have you returned the membership pledge card carried in the December issue?

FELLOW NOMINATIONS

Dr. Stanley F. Kaisel, chairman of the section committee on Fellows & National Nominations, invites suggestions from the membership for nominations for the grade of Fellow for 1967.

To submit suggestions for nominations, send a brief letter to Dr. Kaisel, c/o the Section Office, by February 1, including a biography of the candidate and an indication that you would serve as sponsor.

Nominees must meet the requirements for Senior Member as stated in the bylaws (even though they may hold the present grade of Member) and must have been a member in any grade for a period of seven years preceding nomination, other than in exceptional cases. The principal criterion is the nominee’s technical contribution.

meeting ahead
AES CANCELLATION

The January 27 meeting of the Aerospace & Electronic Systems chapter, a tour of Ames Laboratory announced in the December Grid, has been cancelled.

MEETING CALENDAR

March 30, Wednesday, 7:30 p.m.—Communications Technology
Communication systems for the Bay Area Rapid Transit
David Noton, engineer, Bechtel Corp.
Place: Bechtel Corp. Bldg., 101 California St., San Francisco
Dinner: to be announced
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.

**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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DESALINATION & POWER

W. K. Davis, vice president-scientific development department, Bechtel Corporation, will discuss large scale desalting of sea water in combination with electric power production at the January 18 meeting of the Power chapter.

Special attention will be directed toward the recent prominent study for the Metropolitan Water District of Southern California—Office of Saline Water, Department of the Interior—and the U.S. Atomic Energy Commission by Bechtel Corporation, which is regarded as a possible first step to the actual construction of large dual-purpose desalting plants. Also, other national and international developments will be briefly discussed. The talk will cover both the design and application of dual-purpose desalting plants, including their integration in a combined electric power grid and water distributing system, economic comparison between conventional and nuclear fueled plants, optimization of the output, and basic design features.

Mr. Davis is a leader in the U.S. nuclear power industry. In addition to his responsibilities with Bechtel, he is now president of the Atomic Industrial Forum. He was formerly director of reactor development for the U.S. Atomic Energy Commission and, before that, manager of the research division of California Research and Development Company.

Because of the special interest in applications of nuclear reactors to dual-purpose desalting plants, this will be a joint meeting with the American Nuclear Society, No. Calif. Section.

Help the Section grow by pledging yourself to bring in a new member.

Return the card in the December Grid.
Dr. Mogens G. Andreason, senior supervisory engineer, T.R.G.-West, Menlo Park, will discuss solution of antenna and microwave problems by digital computer technique at the January 18 meeting of the Antennas & Propagation chapter. R. L. Tanner is the co-author of the paper he will present.

The development of modern high-speed digital computers has made possible the solution in an essentially exact manner of a great many electromagnetic problems that could heretofore be treated only by relatively crude approximation. The technique employed—the direct solution by numerical techniques of the relevant integral equations—is much less subject to restraints imposed by coordinate systems and other considerations which have restricted the range of problems amenable to treatment by classical analytical methods. Among the problems that can be dealt with are the impedance, radiation pattern, and distribution of current on linear antennas of arbitrary configuration; radiation from wave guides and slots; current distribution and radiation patterns of reflector type antennas; and radar bi-static and back scattering cross-sections.

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SENIOR ENGINEER

A background in scientific instrument development and design of complicated systems necessary. Must be able to contribute to a team effort in product engineering. Should have MS in EE or Physics and mechanical background in design or development. Knowledge of spectrometers or similar instrumentation necessary.

ELECTRONIC ENGINEER

We seek an engineer with 2 to 4 years design experience. This position will be in our superconducting magnet project. Initial duties will include design of power supplies and product engineering.

MECHANICAL ENGINEER

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meeting ahead

RADIATION MEASUREMENT

Dr. Fred Morris, Electromechanics Co., Austin, Texas, will be the speaker at the January 26 meeting of the Electromagnetic Compatibility chapter. His subject will be the measurement of electromagnetic radiation. The general problems encountered in EMC rf radiation measurements will be described and various approaches to their solution discussed. Special emphasis will be given to new techniques of broadband spectrum measurements and characteristics and recommended use of log conical antennas for MIL-STD-826 type measurements as well as new techniques for measuring ELF signals presented. The talk will be summarized by a discussion of the objectives and philosophy of interference measurements and their relationship to future analysis and control techniques. A movie and slides will supplement the talk.

A graduate of the University of Texas, the speaker is the author of many articles on electromagnetics, and founder and director of research of his company.

meeting ahead

MEASURING FREQUENCY

Dr. Norman M. Abramson, visiting lecturer at Harvard University, will discuss digital measurements of frequency at the January 27 meeting of the Information Theory chapter. He will investigate the use of zero-crossing rate as an estimate of the instantaneous frequency of several random processes. The expected value of the number of zero-crossings in an interval \((-\frac{T}{2}, +\frac{T}{2})\) and the conditional expected value, given the instantaneous frequency at \(t = 0\), are (Continued on page 12)

meeting ahead

EE BUSINESS VENTURES

Five panelists will wrestle with the problems encountered when engineers venture into business for themselves at the January 20 meeting of the Microwave Theory & Techniques chapter. George R. Chambers of the electronics industry economics group at Stanford Research Institute will moderate the discussion.

Taking part will be Robert A. Craig, president, Physical Electronics Laboratories, Menlo Park; Herbert M. Dwight, vice president, Spectra-Physics, Inc., Mountain View; Theodore D. Geiszler, president, Western Microwave Laboratories, Inc., Santa Clara; Stanley F. Kaisel, president, Microwave Electronics, Palo Alto; and Keith Petty, attorney, Petty, Andrews, Olsen & Tufts, San Francisco. Participation from the floor will be encouraged.

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Meeting Ahead

SCVSS/University Meeting

The Santa Clara Valley Subsection will present a meeting at the Sullivan Engineering Center, University of Santa Clara, on January 19 jointly with the University of Santa Clara Student Branch. Three speakers from various industries will discuss employment opportunities and the relative advantages of their respective industries, followed by a question-and-answer period.

Panelists will be John Cage, manager, advanced technical planning, HP; L. Fitzsimmons, chief division engineer, PT&T, San Jose; and A. J. Steele, division manager of Lockheed's NASA design, Sunnyvale.

Engineering students from all local universities and colleges are invited to attend, and representatives of local industries are also encouraged to attend, in order that employment opportunities can be described.

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Mil-P-11268
NASA-200-2
Mil-I-983
Mil-F-18870

meeting ahead
MICRO-ELECTRONICS
The rewards and penalties of micro-electronics usage will be discussed by a panel of experts at the January 25 meeting of the Parts, Materials & Packaging chapter. W. Dale Fuller, project leader, Lockheed Missiles & Space Co., will serve as moderator.

Panelists will include Charles Anthony, manager of product design, Dalmo-Victor; Walter A. Koenig, assistant manager of electronic design, LMSC; Dan Lansdon, engineering manager of frequency and time division, HP Co.; John Rock, production engineer, analytical instrument division, Varian; Neale A. Zellmer, senior staff engineer, Lenkurt.

MORE FREQUENCY MEASURING
evaluated. In some cases, bias terms are found which affect the accuracy of the digital frequency measurements.

Dr. Abramson, a graduate of Harvard, UCLA, and Stanford, and a member of the Stanford faculty from 1958 to 1965, was visiting professor at UC from January to June, 1965. He has served as consultant in communications and radar problems to several government and industrial laboratories.

He has worked on the analysis and synthesis of radar systems for processing data in the presence of noise. He has also done work in sampling theorems frequency modulation, properties of binary communication channels, and burst error correcting codes. Recently his research has been concerned with the theory of pattern recognition and machine learning and with data processing for seismic signals. He is the author of “Information Theory and Coding,” published by McGraw-Hill Book Company in 1963. He is also editor of the Holden-Day series on communication and information processing.

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AUDIO AWARDS

Two members of the San Francisco Section have been honored with awards recognizing the quality of their articles in institute publications. They are Donald F. Eldridge, vice president, corporate development, Memorex Corp., Santa Clara, and Dr. C. Denis Mee, senior scientist, device technology department, IBM, San Jose.

They were presented the Achievement Award of the IEEE Audio Group, a certificate, and $200 check at a meeting of the Audio chapter at Stanford Research Institute. Making the presentation was Dr. Jack L. Melchor, chairman of the San Francisco Section and president of HP Associates, Palo Alto.

Both were honored for meritorious publication in the audio field over a period of years. Eldridge received the award for 1963, Mee for 1964.

Eldridge was formerly head of the magnetics department research for Ampex Corp. before resigning in 1960 to join Memorex. Mee formerly engaged in shortwave magnetic recording research for CBS Labs, Stamford, Conn., before joining IBM at Yorktown Heights, N.Y., in 1962 and transferring to the San Jose facility in 1965.

IEEE news

RELIABILITY SYMPOSIUM, SAN FRANCISCO, JANUARY 25-27

The 1966 Annual Symposium on Reliability will be held January 25-27 at the Sheraton-Palace Hotel, San Francisco. Formerly known as the National Symposium on Reliability and Quality Control, the meeting is held annually in various cities and attracts close to 1,500 engineers and scientists from the United States and abroad.

Professional societies sponsoring the Symposium are: the American Society for Quality Control, electronics division; the Institute of Electrical and Electronics Engineers, Reliability Group; the Institute of Environmental Sciences; and the Society for Nondestructive Testing.

Highlights of the program include an address by Daniel J. Haughton, president, Lockheed Aircraft Corporation, who will keynote the symposium.


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BANNER YEAR

1966 will be a record year for national IEEE conferences and symposia in the San Francisco area, ten having been announced as the Grid went to press:


May 1-6, Joint Railroad Conference & Transportation Symposium, Jack Tar Hotel, San Francisco; Co-chairman: Jack Barkle, Bechtel Corp., P.O. Box 3965, San Francisco, Calif. 94119.

May 16-18, 1966 International Symposium on Microwave Theory & Techniques, Cabana Hotel, Palo Alto; Chairman: Peter Lacy, Wiltron Co., 930 E. Meadow Dr., Palo Alto.

July 11-13, 8th IEEE Symposium on Electromagnetic Compatibility, San Francisco Hilton; Chairman: Guy L. Ottinger, 1213 Sesame Dr., Sunnyvale, Calif.

July 18-22, Nuclear & Space Radiation Effects Conference, Stanford University; Chairman: S. C. Rogers, Bell Labs, Whippany, N.J.


October 26-28, VII Annual Conference on Switching Theory & Logical Design (Computer Group), University of California, Berkeley; Local Information: Prof. M. A. Harrison, Dept. of Electrical Engineering, University of California, Berkeley, Calif.

November 8-10, Fall Joint Computer Conference, Brooks Hall, Civic Center, San Francisco; Chairman: B. G. Glaser, McKinsey & Co., 100 California St., San Francisco.

November 14-16, 1966 Conference on Engineering in Medicine & Biology, Sheraton Palace Hotel, San Francisco; Chairman: Dr. Victor W. Bolie, 3400 Miraloma Ave., Anaheim, Calif.


Share the responsibility for the Section. Take part in the membership pledge program. See your December Grid for details.

January, 1966
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Following are the names of members who have recently entered our area, thereby becoming members of the San Francisco Section:

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Planned for San Francisco in 1968, with dates not yet set, is the IEEE/ASME Power Generation Conference. Local information: J. J. McCann, PG&E, 245 Market St., San Francisco.

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<table>
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<tr>
<th>Mode</th>
<th>Input Impedance (50 ohms)</th>
<th>Drive Required</th>
<th>Rise and Fall Times</th>
</tr>
</thead>
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<tr>
<td>NORMAL</td>
<td>10000 or 1000Ω (switched by 50 ohms)</td>
<td>3V p-p, 0.1 V p-p, minimum</td>
<td>&lt;50 ns (typically 30 ns)</td>
</tr>
<tr>
<td>VARIABLE</td>
<td>30 kΩ, approx</td>
<td>3V p-p, 0.1 V p-p, minimum</td>
<td>0.2 to 100 µs, linear, continuously adjustable</td>
</tr>
<tr>
<td>Exponential</td>
<td>1000Ω</td>
<td>3 to 10 V, p-p, approx</td>
<td>0.5 to 500 µs, exponential, continuously adjustable</td>
</tr>
</tbody>
</table>

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