

# EDITOR'S PROFILE of this issue

*from a historical perspective ...*

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

October, 1964:

Cover: An electron-beam accelerator used at Raychem to radiate its products (details on page 10). I did testing on their irradiated shrink tubing, and also fused multi-strand wire, in my first job at Lenkurt Electric.

Page 4: Lester Hogan of Motorola visits Stanford University to talk about the future of electronics engineering and American technology. A few years later, he and his "Hogan's Heroes" are brought in to run Fairchild Semiconductor (and he gets sued by Motorola). His stock option at Fairchild had a value of "one Hogan", which became a measure of other large options. I know his daughter.

Page 6: Prof. John Linvill of Stanford demonstrates an electronic reader he developed to assist his blind daughter read a printed page. It was capable of reading 25 words per minute.



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

[https://ethw.org/IEEE\\_San\\_Francisco\\_Bay\\_Area\\_Council\\_History](https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History)

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

July, 2021

Contact [p.wesling@ieee.org](mailto:p.wesling@ieee.org)

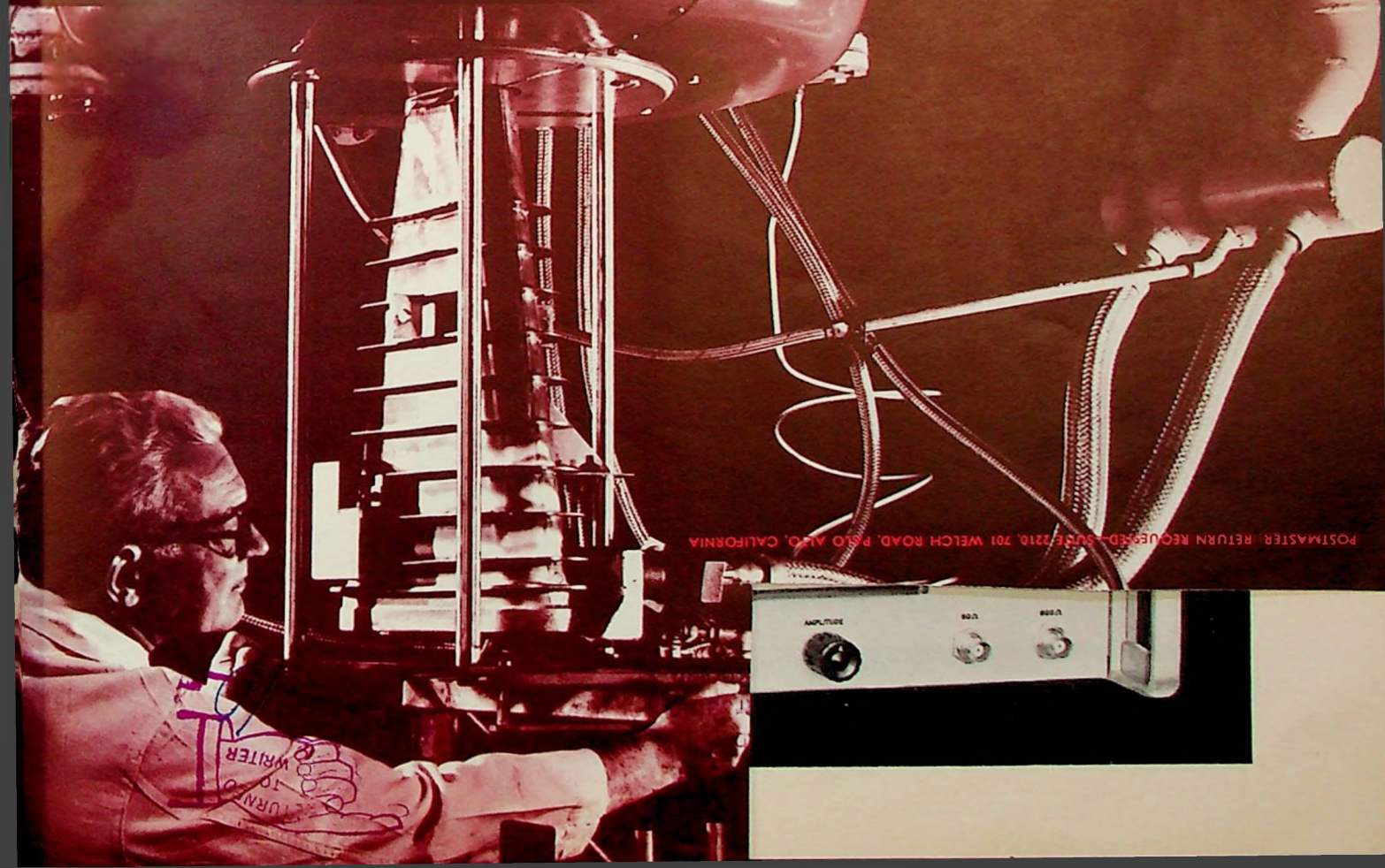
# IEEE *Grid*

OCT. 1964

SAN FRANCISCO SECTION  
INSTITUTE OF ELECTRICAL  
AND  
ELECTRONICS ENGINEERS

## meeting reminder

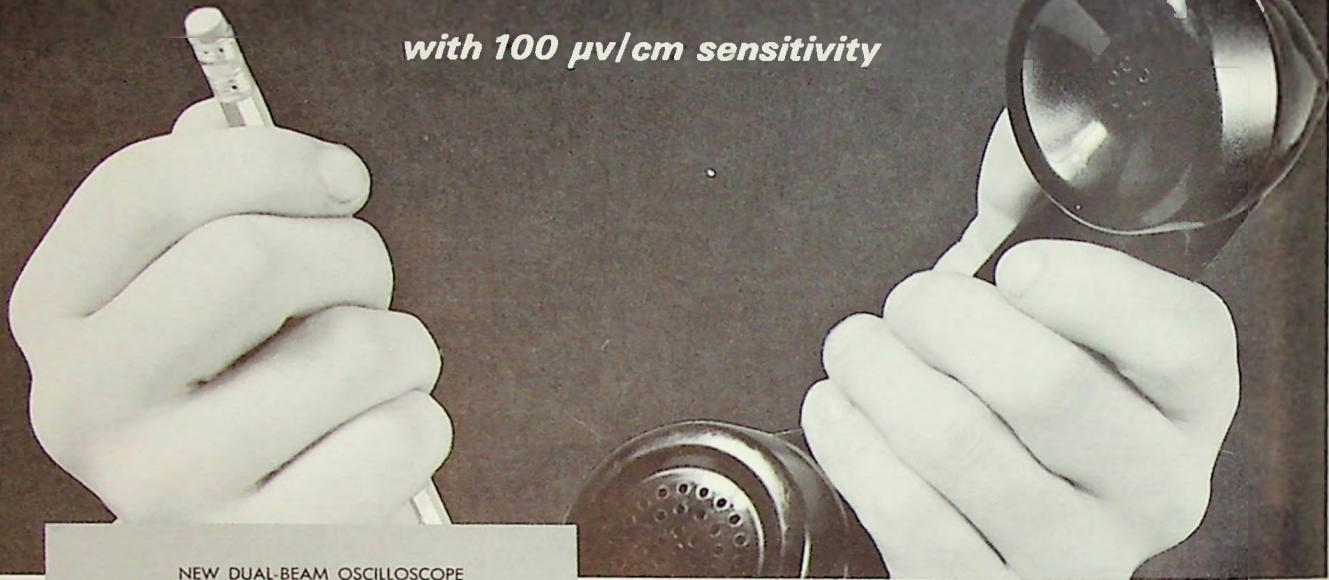
- October 13 (Tuesday) Antennas and Propagation
- October 20 (Tuesday) Fresno Subsection, Automatic Control, Bio-Medical Engineering, Electronic Computers
- October 21 (Wednesday) Santa Clara Valley Subsection, Electromagnetic Compatibility, Electron Devices, Military Electronics, Microwave Theory and Techniques
- October 22 (Thursday) Information Theory
- October 26 (Monday) East Bay Subsection, Reliability
- October 27 (Tuesday) Power, Product Engineering and Production, Space Electronics and Telemetry
- October 28 (Wednesday) Communication Technology
- November 17 (Tuesday) Automatic Control
- November 24 (Tuesday) San Francisco Section



POSTMASTER RETURN REQUESTED-SUBSCRIBE 2210, 701 WELCH ROAD, P.O. BOX 410, CALIFORNIA

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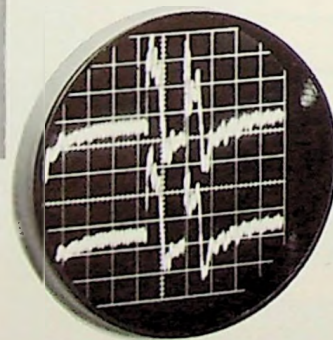


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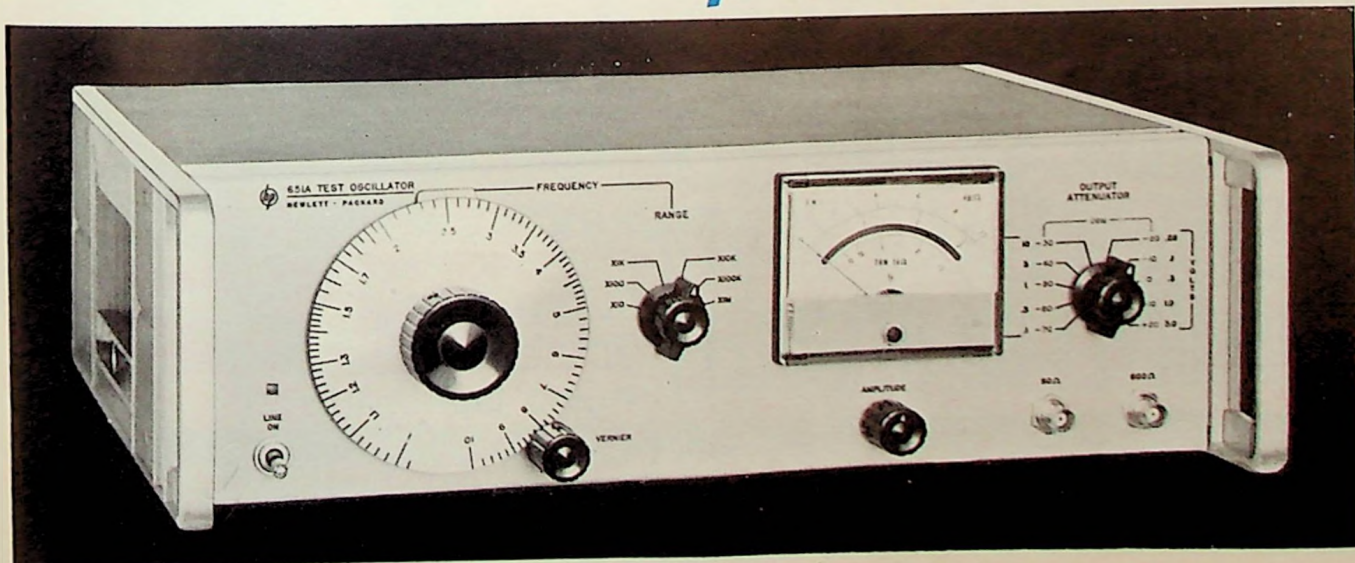
formance of the 651A is indicated by the specifications. Call your Hewlett-Packard field engineer for a demonstration or write Hewlett-Packard, Palo Alto, California 94304, Telephone (415) 326-7000; Europe: 54 Route des Acacias, Geneva; Canada: 8270 Mayrand Street, Montreal.

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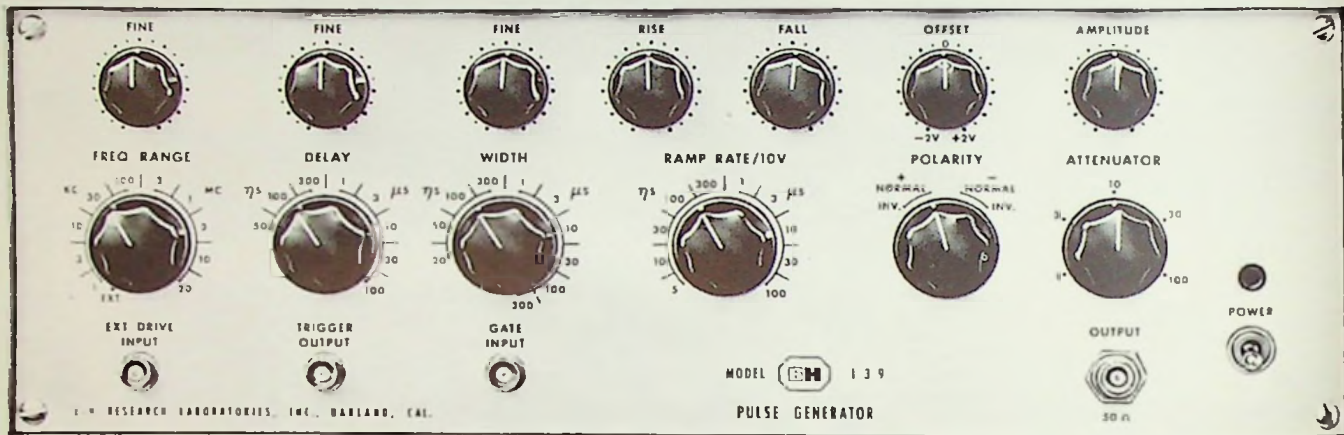
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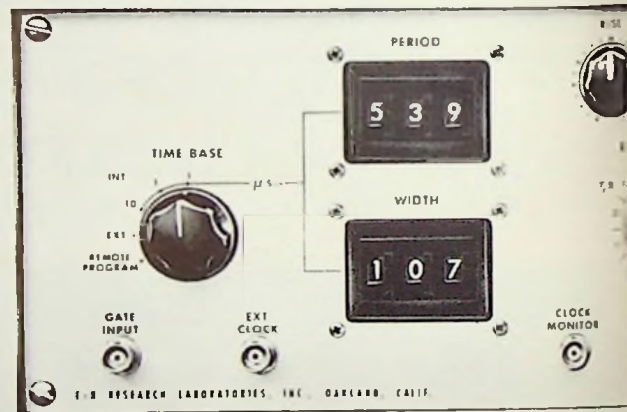
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*from the chairs*

**JOB IN EAST BAY**

East Bay Subsection Members: We have a job to do. How do I know? Because our all-member questionnaire of earlier this year revealed that too many of us didn't even know we existed.

We number approximately 1,200 members and a potential exists for real IEEE service in the East Bay.

This is our first year with official recognition, and our program is modest. With your interest and cooperation, we can expand and become a valuable and important program segment.

You are urged to mention your East Bay Subsection to any colleague who lives in Alameda, Contra Costa, or Solano counties. Invite him to read the GRID, attend our meetings and return the information card included with our recent special mailing.

Let us know what kind of programs and professional groups you want. Let us know what committees you would like to serve on. Come to our meetings.

Let's make this year good, and next year better.

J. W. SAVAGE, Chairman  
East Bay Subsection



Savage



Thompson

*from the chairs*

**POSTNATAL COMTECH**

In today's IEEE, new names, organizations, and goals come into being at a sometimes bewildering rate. The 1964 GRID directory issue lists some  
(Continued on page 16)

*cover*

That's not who you think it is on the cover. It's Dan Defenbacher, communications director of Raychem Corporation, Redwood City, adjusting an electron beam accelerator used to expose compounded mixtures of chemicals or rubbers to high-energy electron radiation and manufacture most of the company's products. Sub-atomic particles, electrons, are accelerated to approximately nine-tenths the speed of light, causing an irreversible change. The Santa Clara Valley Subsection will tour Raychem at 8 p.m. on Wednesday, October 21. See calendar and story.

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## CW X-BAND

William R. Luebke, senior project engineer, Eitel-McCullough, will report on the one-megawatt CW X-Band project at the October meeting of the Electron Devices chapter.

The speaker is concerned with the development of high-power klystrons and traveling-wave tubes. Prior to joining Eimac in 1960, he was research associate in the Stanford electronics labs for nine years.

He will describe results of several experiments performed as part of a super-power klystron development supported by RADC. The goal of the program is to produce one megawatt of CW power at 8 kmc. Initial efforts involved only the beam optics; the design and evaluation of the gun and collector will be described. A number of prototype tubes of both short and long pulse varieties have been built to evaluate extended-interaction output cavity structures and other potential problem areas. Test results on a number of these tubes will be discussed.



Luebke

Dupen

meeting ahead

## SLAC REPORT

Douglas Wm. Dupen will describe Stanford's two-mile accelerator to the Product Engineering and Production chapter at its meeting on October 27. Mr. Dupen is head of technical and public information for the project.

He received his A.B. in speech from Humboldt State College in 1950 and his A.B. in physics from University of California in 1957. His work experience includes serving as a U.S. Navy electronics officer, an electronics engineer, an engineering writer, and, since 1962, as technical information officer for the accelerator center. He is a member of the IEEE, the Society of Technical Writers and Publishers, and the AEC Technical Information Panel.

The illustrated discussion will describe the accelerator and its impact on science, the nation, and the community. Slides made during construction will emphasize the product engineering aspect of the project. Questions of specific interest to the chapter will be answered.

## MEETING CALENDAR

## SAN FRANCISCO SECTION

8:00 P.M. • Tuesday, November 24

The future of electronics engineering in American technology  
*Dr. C. Lester Hogan, vice president and general manager of Motorola, Inc., semiconductor products division, Phoenix*  
Place: Physics 101, Stanford University

## EAST BAY SUBSECTION

7:30 P.M. • Monday, October 26

PG&E computer-controlled generating units at Contra Costa Power Plant  
*L. M. Koskela, steam production engineer, and R. C. Willius, power production engineer, Pacific Gas & Electric Company*  
Place: Contra Costa Power Plant, Wilbur Avenue, east of Antioch. A tour of the computer center will follow the meeting

## FRESNO SUBSECTION

8:00 P.M. • Tuesday, October 20

Joint meeting of professional and student groups  
Place: Room 101, Industrial Arts Bldg., Fresno State College  
Dinner: to be announced

## SANTA CLARA VALLEY SUBSECTION

8:00 P.M. • Wednesday, October 21

Field trip of Raychem with description of their latest developments  
Place: Raychem Corp., Oakside at Northside, Redwood City

## GROUP CHAPTERS

## Antennas and Propagation

8:15 P.M. • Tuesday, October 13

Radio astronomy at the University of California Haf Creek observatory  
*Prof. William J. Welch, University of California, Berkeley*  
Place: 277 Cory Hall, University of California, on Hearst Street  
Dinner: 6:15 P.M. at the Faculty Club (enter campus from Bancroft Way by the Hearst Gymnasium)  
Reservations: 321-4175, Ext. 357, for the Peninsula; 845-6000, Ext. 3539, in the East Bay

## Automatic Control

8:00 P.M. • Tuesday, October 20

The effect of structural dynamics on electro-mechanical servo design  
*Edwin A. Sweo, engineering consultant*  
Place: Nobili Hall, University of Santa Clara  
Dinner: 6:30 P.M., Faculty Club  
Reservations: Mrs. McKenna, 296-3360, Ext. 226, by October 19

## Automatic Control

8:00 P.M. • Tuesday, November 17

Subject to be announced  
*Prof. George J. Thaler, U.S. Naval Postgraduate School, Monterey*  
Place: Nobili Hall, University of Santa Clara  
Dinner: 6:30 P.M., Faculty Club

## Bio-Medical Engineering

8:00 P.M. • Tuesday, October 20

Research on an opto-electronic reading aid for the blind  
*John G. Linvill, professor of electrical engineering, Stanford University*  
Place: Room M-112, Stanford Medical School, Palo Alto  
Dinner: 6:30 P.M., Red Cottage Restaurant, 1706 El Camino Real, Menlo Park  
Reservations: Dr. Bliss, 326-6200, Ext. 3488

## Communications Technology

8:00 P.M. • Wednesday, October 28

Communications in the multiversity  
*R. A. Isberg, communications engineer, University of California*  
Place: Physical Sciences Lecture Hall, near East Gate of Berkeley campus, Gayley Road entrance  
Dinner: 6:30 P.M., \$3.25. Lewis Latimer Room, Faculty Club, southeast of Campanile. Parking: 50c, lot near Stadium across Gayley Road from Cowell Hospital  
Reservations: F. S. Beale, LY 1-8461, Ext. 2920

## Electromagnetic Compatibility

8:00 P.M. • Wednesday, October 21

### Mobile communications and EMC

*William Nye, district sales manager, communications products, G.E.*

Place: Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto

Dinner: 6:30 P.M., Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto

Reservations: R. Stone, General Electric, 324-1661, Ext. 286, by October 20

## Electronic Computers

8:00 P.M. • Tuesday, October 20

### Computer hardware design from a software viewpoint

*Dr. Daniel Scott, General Electric Computer Lab, Sunnyvale*

Place: GE Computer Lab, 310 DeGuigne Drive, Sunnyvale

Dinner: 6:15 P.M., Old Plantation, Bernardo and El Camino Real, Sunnyvale

Reservations: none required

## Electron Devices

8:00 P.M. • Wednesday, October 21

### Joint meeting with Microwave Theory and Techniques

#### Report on the one-megawatt CW X-Band project

*William R. Luebke, senior project engineer, Eitel-McCullough*

Place: Physics Lecture Hall 100, Stanford University

Dinner: 6:15 P.M., Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto

## Information Theory

8:00 P.M. • Thursday, October 22

### The 1964 Tokyo ICMCI conference—review of Information Theory papers

*Prof. D. J. Sakrison, University of California, Berkeley; and Dr. T. M. Cover, Stanford University*

Place: Philco Auditorium, 3825 Fabian Way, Palo Alto

Dinner: 6:15 P.M., Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto

Reservations: Mrs. Saltzman, 326-4350, Ext. 4101, by October 21

## Microwave Theory and Techniques (see Electron Devices)

## Military Electronics

8:00 P.M. • Wednesday, October 21

### Effects of radiation on components

*Edwin A. Smith, senior research engineer, Lockheed Research Laboratory*

Place: Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto

Dinner: 6:30 P.M., Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto

Reservations: Victor Conrad, 326-4000, Ext. 2212, by October 21

## Power

7:30 P.M. • Tuesday, October 27

(Joint meeting—ASME/IEEE)

### Nuclear Power Plant Development

*W. G. Lalor, Jr., manager power reactor sales, GE Company, San Jose*

Place: Engineers' Club of San Francisco, 206 Sansome St., San Francisco

Dinner: Cocktails 5:30 P.M.; Dinner 6:30 P.M., \$4.00

Reservations: Engineers' Club, GA 1-3184, by October 26

## Product Engineering and Production

8:00 P.M. • Tuesday, October 27

### Stanford University's Linear Accelerator

*Douglas W. Dupen, head of public and technical information for the project*

Place: Stanford Linear Accelerator, administration building, 3101 Sand Hill Road,

Menlo Park (opposite Sharon Heights Golf and Country Club)

No dinner

## Reliability

8:00 P.M. • Monday, October 26

### The reliability of integrated circuits

*Tim DaSilva, manager of Reliability at Signetics Corporation*

Place: Physics Lecture Hall, Room 100, Stanford University

Dinner: 6:30 P.M., Ed's Chuck Wagon, 4545 El Camino Real, Mountain View

Reservations: W. H. Wahrhaftig, 326-4350, Ext. 4255

## Space Electronics and Telemetry

8:15 P.M. • Tuesday, October 27

### Electro-mechanical speed control

*James Lindgren, president of Lind Instruments*

Place: Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto

Dinner: 6:15 P.M., El Camino Bowl, 2025 El Camino Real, Mountain View

Reservations: Charles Jamgotchian, 697-7774, by noon October 27

*meetings ahead*

## RADIO ASTRONOMY

Prof. William J. Welch of the department of electrical engineering, University of California, will discuss radio astronomy at the UC Haf Creek observatory at the October meeting of the Antennas and Propagation chapter.

Dr. Welch received the B.S. from Stanford in 1955, and the M.S. and Ph.D. from UC in 1958 and 1960. Since then he has been assistant professor, conducting research in electromagnetic theory and antennas and, more recently, in planetary radio astronomy. During 1964-65 he has an additional appointment with the radio astronomy laboratory at the University.



Welch



Smith

*meeting ahead*

## 64 TOKYO ICMCI

A report on the International Conference on Microwaves, Circuit Theory, and Information Theory, held in Tokyo on September 7-11, will be given at the October meeting of the Information Theory chapter.

Speakers will be Prof. D. J. Sakrison, University of California, and Dr. T. M. Cover, Stanford. They will discuss some of the contributions presented at the conference in the field of information theory. Major attention will be given papers on signal detection, pattern recognition, and learning.



Sakrison



Cover

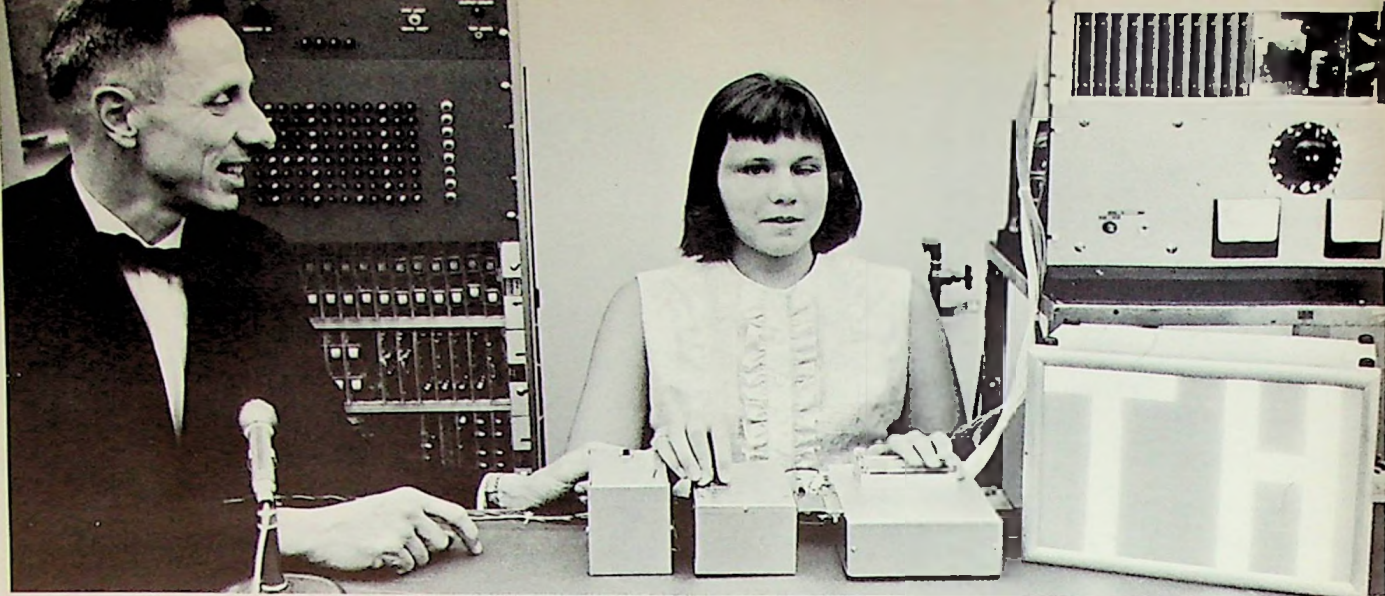
*meeting ahead*

## NUCLEAR POWER

W. G. Lalor, Jr., manager, power reactor sales, General Electric, San Jose, will discuss nuclear power plant

(Continued on page 10)





Electronic reader for the blind is being developed by Prof. John G. Linvill with the help of his 12-year-old blind daughter, Candace. Practicing with the computer-controlled model she can already read

25 words per minute. The eventual device would be pocket-size with self-contained power supply. (Photo by Stanford University)

meeting ahead

### READING AID PROTOTYPE DEVELOPED AT STANFORD, SRI

Prof. John G. Linvill, Stanford University, will present research on an opto-electronic reading aid for the blind at the October meeting of the Bio-Medical Engineering chapter.

For many years, research efforts have been directed toward finding a means, operable by a blind person, to

translate material on a printed page directly to a form comprehensible without vision. If the optical image of the printed character is transformed into a "touch" image formed by an array of tactual stimulators, the blind person may "read" this dynamically embossed version of the printed ma-

terial. Such a device would open practically all of presently available printed material to blind people, who must now rely on the limited source of embossed Braille books. At the same time, books can be printed in Braille (not embossed) for those who have learned or wish to learn the Braille alphabet. The device would translate printed Braille into tactual Braille, thus simplifying book production and reducing the Braille book's size, weight, and cost.

The current design concept involves the use of a photocell array with each photocell connected to a corresponding piezoelectric stimulator. The use of high-sensitivity photoconductors and bimorph (bender) stimulators permits a simple design and a minimum of electronic circuitry.

In order to determine the effectiveness of the tactual display, both air jet and bimorph stimulator arrays were constructed and connected to a computer. The computer was able to present characters in different forms and at various rates and spacings. The display was of the "Times Square" variety, in which the characters move across the display field, but other forms could be programmed into the computer. This tactual simulation was presented to a number of subjects, both blind and sighted, and learning rates were measured. A blind subject has read the embossed output of Roman capital letters at a rate exceeding 25 words per minute, using narrative material.

Additional studies are being performed both by Dr. Linvill at Stanford and Dr. James Bliss at Stanford Research Institute, but present results indicate that a device is feasible and that it would be usable by the blind

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20-20S	20			650
20-24S	24			600
20-26S	26			550
20-28S	28			550
20-30S	30			500
20-40S	40			375
20-50S	50			300
20-100S	100			150

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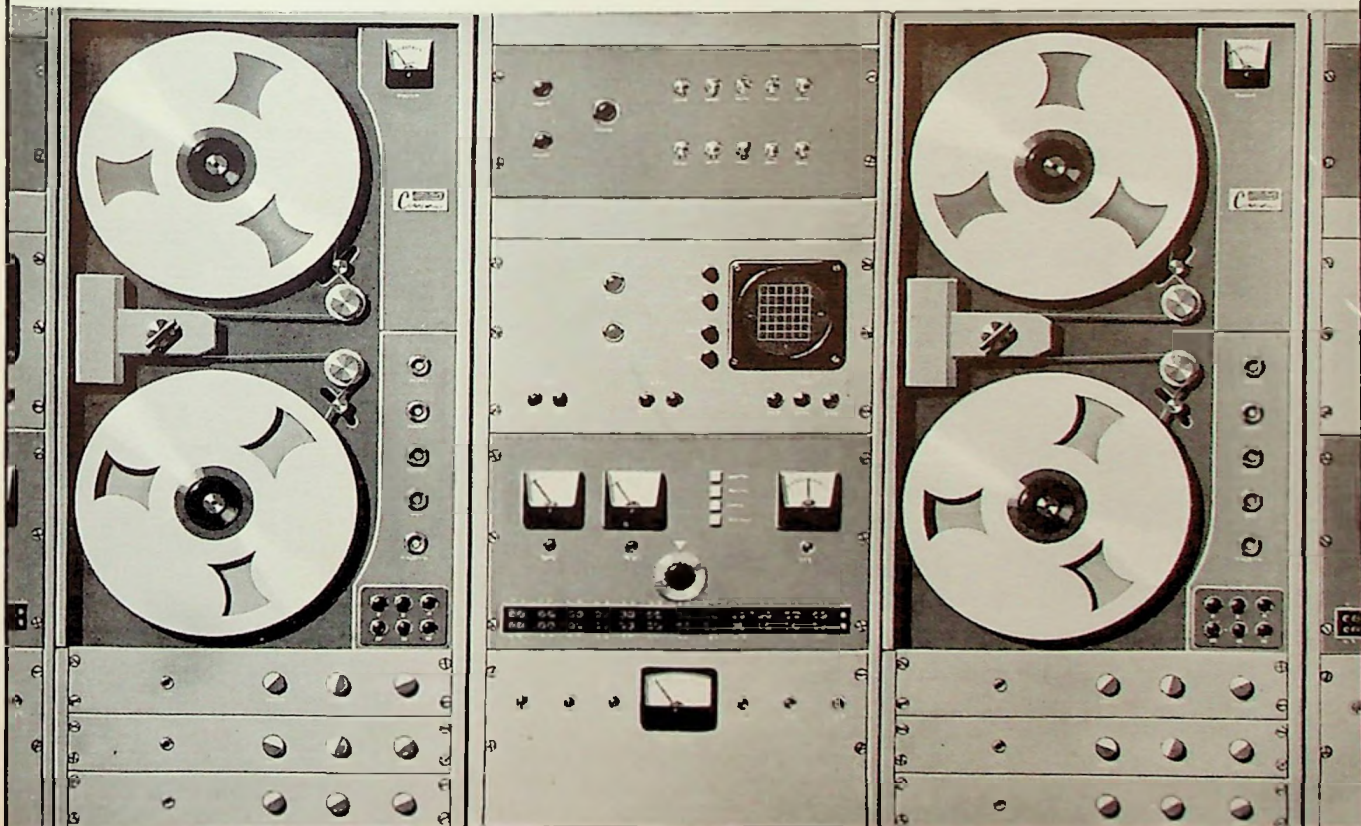
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Lindgren



Isberg

meeting ahead

### SPEED CONTROL

James Lindgren, president of Lind Instruments, will discuss electro-mechanical speed control at the October meeting of the Space Electronics and Telemetry chapter.

Formerly with Applied Science Corp., Princeton, N.J., Mr. Lindgren has directed all the activities of Lind Industries since 1958. Yearly billings are in excess of \$150 K.

The talk will cover the comparative advantages and disadvantages of the various methods of electro-mechanical speed control as related to performance criteria.

Four broad groupings will be considered. They are the zener diode reference types, the inverter and brushless DC motor types, the digital and stepping motor type, and the closed loop or servo type. The characteristics of the motors used with these controls will be detailed to allow for additional comparisons. Reliability analysis data will be presented on the closed loop regulator, showing an unusual inverse relationship of reliability/complexity.

meeting ahead

### MOBILE EMC

William Nye, district sales manager of the communications products department of General Electric, will speak to the Electromagnetic Compatibility chapter October meeting on the EMC aspects of mobile communications. In addition to problems from the over-all system point of view, practical solutions to ignition interference and the prevention of intermodulation products will be discussed. The talk will be highlighted by a short film presenting the need and problems associated with this type of communication.

A graduate of West Virginia University, Mr. Nye has been employed by General Electric Co. in the areas of engineering and sales of two-way radio. His presentation will emphasize the need for adequate design control to achieve the desired compatibility of operation.

meeting ahead

### COMTECH IN MULTIVERSITY

R. A. Isberg, communications engineer, University of California, will discuss communications in the multiversity at the October meeting of the Communications Technology chapter.

The varied activities of nine UC campuses are served by more than 18,000 telephones and a private line system comprising over 9,000 circuit miles. Since the system will more than double by 1970, Centrex systems are being installed to maintain a high-grade service and control costs. Mobile communications, microwave systems, data transmission, and closed-circuit television also have great application and growth potential.

The speaker is a former chairman of the San Francisco Section of IRE and the Professional Group on Communication Systems.

wema news

### SELLING TO UNCLE

Graeme Bannerman, deputy secretary of Defense (Procurement), will address the S.F. Council of WEMA at a Palo Alto Hills Country Club dinner meeting on Thursday, October 15. Subject: "Current Procurement Trends." For reservations, call 324-4497.

meeting ahead

### DYNAMICS OF SERVO DESIGN

Edwin A. Sweo, engineering consultant, will discuss the effect of structural dynamics on electro-mechanical servo design at the October meeting of the Automatic Control chapter.

The speaker has had extensive experience as a designer of control systems. This work has been concerned with stabilized and tracking radar systems, ground-based antenna systems, flight simulators, and dynamic test equipment. He will summarize the present design procedure, which is based on lumped parameter models of the servo structure and drive.

Mr. Sweo received his B.S. from University of Portland and his M.S. from Stanford. He was employed by Dalmo Victor before becoming a consultant to the industry.



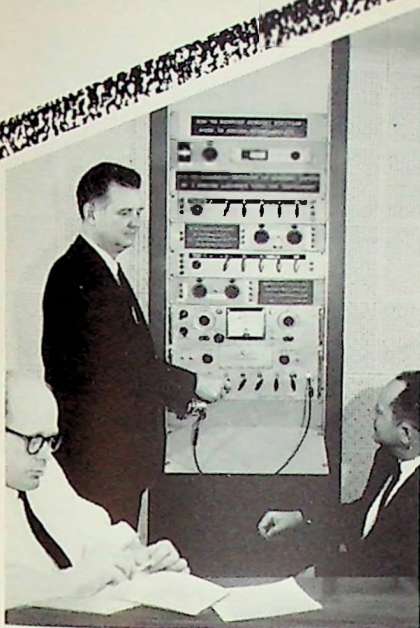
Nye



Sweo

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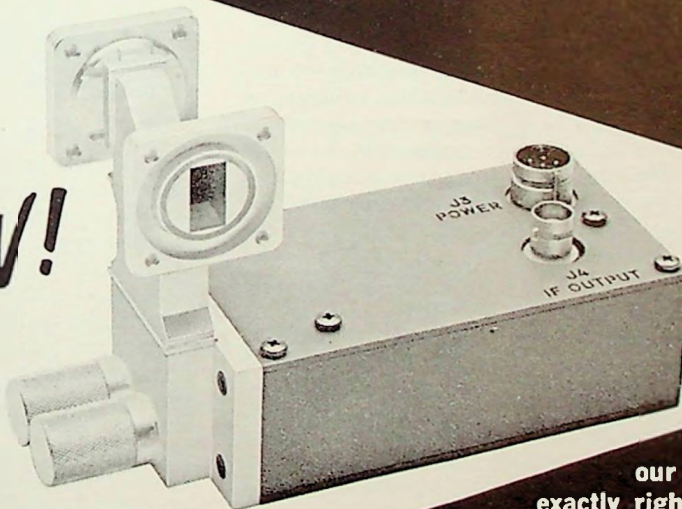
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1  $\mu$ v to antenna coupler provides usable output for strip chart recording and visual monitoring.

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**Input Impedance:**  
High impedance or 50 Ohms.

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### Phase Output:

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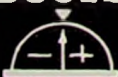
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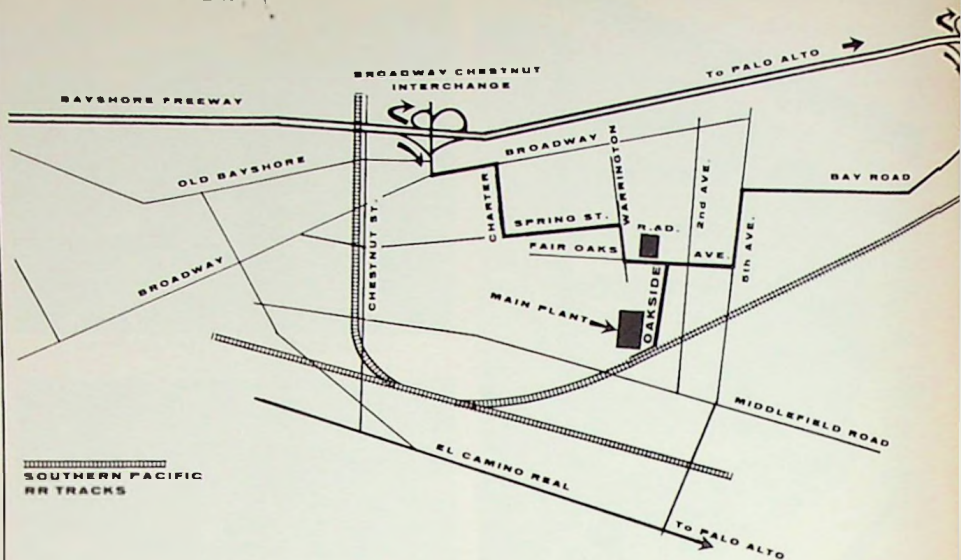
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RAYCHEM CORPORATION



*meeting ahead*

### RAYCHEM TOUR PLANNED BY SCVSS

The Santa Clara Valley Subsection will tour the manufacturing facilities of Raychem Corporation, Redwood City, at 8 p.m. on Wednesday, October 21.

The company, located at Oakside and Northside, has led in the develop-

*meeting ahead*

### CONTRA COSTA PLANT

L. M. Koskela, steam production engineer, and R. C. Willius, power production engineer, will give details of the on-line digital computer installation at PG&E's Contra Costa power plant at the October meeting of the East Bay Subsection. The addition of a computer working on-line represents a step in power generation to assist the operator and improve power plant operations. In addition, the speakers will discuss the initial operating experience from date of operation to the present. A tour of the facility will follow a question period.

Mr. Koskela, a graduate of University of California, recently completed a two-month training course at the manufacturer's plant. For the past year he has been following the check-out of computer hardware and is presently working closely with the manufacturer's programmers to debug and correct programs.

Mr. Willius, a graduate of Oregon State University, was recently assigned to Contra Costa after several years at the Pittsburg plant. He has followed the installation of the Prodac 510 and assisted in checking out all associated computer programs.

ment of irradiated insulations in the form of hook-up wire, cable, coaxial cable, heat shrinkable sleeveings, molded parts, and other devices.

Marvin Sheets of General Electric, San Jose, is coordinating the tour, and Jerry Mehan of Raychem will be host.

### MORE NUCLEAR

development at the October meeting of the Power chapter.

The speaker will review projects throughout the world and discuss favorable factors, problems, capital costs, fuel costs, evaluating nuclear vs. fossil, fossil competition, and the outlook for nuclear development in the U.S.

Mr. Lalor spent 11 years in the U.S. Navy, including ten years aboard atomic subs. He was aboard the U.S.S. Nautilus when it made its first voyage under the North Pole in 1958. He was discharged with the rank of lieutenant commander in 1960.

He then joined the Atomic Power Equipment Dept. as sales engineer for overseas power reactor sales. In 1962 he was appointed manager, government atomic power application, for GE in Washington, D.C. He assumed his present position in 1963, and is responsible for nuclear power plant sales in the central and western U.S.

### section notes

#### REGULAR TUESDAY LUNCHEON

A special luncheon table is reserved every Tuesday at the San Francisco Engineers Club for members of IEEE.

**COMPUTER CONF., OCT. 27-29**

Upwards of 4,000 persons, representing a cross-section of the nation's professional and industrial concerns with computers, are expected in San Francisco the week of October 26 for the 1964 Fall Joint Computer Conference.

Sponsored by the American Federation of Information Processing Societies (which includes professional groups and trade associations involved with computer technology), the 1964 Fall JCC will occupy most of the newly renovated facilities of the San Francisco Civic Auditorium and adjacent Brooks Hall—the latter to house a trade exhibition featuring 200 booth displays.

Opening October 27, the three-day conference will range broadly through research, development, and manufacturing activities, involving a large segment of the nation's engineering capability and applications of computers in industry, commerce, and defense.

The headquarters hotel will be the Jack Tar on Van Ness Avenue, where registration will commence Monday,



*Chairman Tanaka*

October 26, between 6 and 10 p.m. Registration will continue at the Jack Tar Tuesday, October 27, between 7:30 and 10:30 a.m. Similar hours will be in force at the Civic Auditorium during the following two days.

The registration fee for members of IEEE will be \$10, covering admission to the technical sessions and exhibits. The non-member fee will be \$20 and the student fee \$3.

The opening session of the conference on Tuesday, October 27, at Civic Auditorium will be addressed by Dr. Richard I. Tanaka of the research branch of Lockheed Missiles and Space Co., Palo Alto, general chairman of the conference, and Dr. Edwin L. Harder of Westinghouse Electric Co., chairman of the governing board of AFIPS, New York. Presiding will be

*(Continued on page 12)*

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## **SENIOR COMPUTER CONSULTANTS**

Background experience should include high-speed circuitry design, memory development, digital logic design and programming techniques. These men will actively participate in advanced computer design using sophisticated techniques, establish guide lines for evaluation of engineering performance and systems study.

## **SENIOR LOGIC CIRCUITRY DESIGNERS**

Experience should include design and development of high-speed digital circuitry for large-scale equipment. These positions involve the analysis and design of highly efficient state of the art hardware.

## **MEMORY SYSTEMS DESIGNERS**

These men should be versed in the design and development of fast access core memory devices and associated circuitry. They will advance the state of the art in new techniques in memory development and assist systems engineers in outlining capabilities for new memories.

## **DIAGNOSTIC PROGRAMMERS**

These men will be experienced in and will work in the fields of development of diagnostic programs for factory check-out and field maintenance of digital computers and peripheral hardware. They also will be involved in the development of advanced diagnostic design plans and maintenance philosophy for sophisticated computer systems.

## **SAN FRANCISCO INTERVIEWS**

Call Mr. L. R. Nuss at the Fairmont Hotel, San Francisco, telephone 421-2102, after 5 p.m. Monday, October 26.

Interviews will be held from 9 a.m. to 9 p.m. Tuesday, Wednesday and Thursday, October 27, 28 and 29.

If unable to arrange a personal interview, send your resume in confidence to E. M. Moldt, Collins Radio Company, Cedar Rapids, Iowa.

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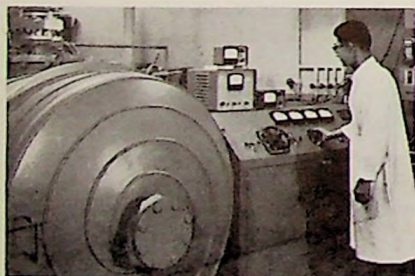
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David R. Brown of Stanford Research Institute, chairman of the technical program.

The keynote address will be delivered by Brig. Gen. David Samoff, chairman of the board of Radio Corporation of America, a pioneer in radio-wireless communications and an early champion of computer developments.

The conference luncheon on Wednesday, October 28, at the Jack Tar will feature a speech by Gerard Piel, publisher of Scientific American and an accomplished author-lecturer on subjects of far-reaching impact on scientific developments throughout the world.

Two special evening panel sessions have been planned, both at the Jack Tar at 8 p.m. The Tuesday evening session on "Training for the Computer Field" will be led by Ned Chapin of Menlo Park, Calif., data processing consultant. The Wednesday evening session on "Input and Output Graphics" will be moderated by Donn B. Parker of Control Data Corp., Palo Alto, Calif.

In the early evening of opening day a large cocktail party at the Jack Tar will introduce a festive note to the conference. Along with the delicacies and other refreshments there will be light entertainment for some 1,000 people expected to attend.

Ladies in San Francisco with their husbands or as conference participants will enjoy a special program of events celebrating the cultural and scenic attractions of San Francisco and its Bay area. Three trips have been planned by a hostess committee headed by Miss Donna Proctor and Mrs. Robert P. Howey of San Francisco, who are connected with IBM Corp. in the Golden Gate city.

An innovation to the program this year is an experimental offering on very-high-speed computer systems to be presented by leading manufacturers. Teams of technical, management, and sales people will make the presentations at half-day sessions running the full three days of the conference.

Also as part of the technical program, there will be "workshops" on technical items of special interest. Discussion groups will meet during the evening to recap and extend the material presented during the regular sessions, meeting with session chairmen and authors.

Other activities include a Computer Science Theatre, offering 60 or more films on computers and their applications, chosen from among recent pro-



D. R. Brown

## group inputs

### INDUSTRIAL GROUP OFFICIAL

An IEEE Industry and General Applications Group was recently authorized by the IEEE Executive Committee. An interim administrative committee meeting at headquarters followed, making detailed plans to activate the group on January 1, 1965. Details on a new publication and the amount of the group fee will be available shortly.

The San Francisco Industrial chapter, an unofficial discussion group since the merger, will form the nucleus of the new official chapter, under the direction of Alex Tseng, chairman. Application forms will be available from the chairman or the section office.

A Basic Science and New Technologies Group has been proposed and discussed by the IEEE Executive Committee. Its scope and future are now in the hands of an ad hoc task force. A San Francisco chapter, when authorized, could be formed around the former Science and Electronics Division, now inactive.

## section inputs

### LEAD ONE IN

Plan to bring the benefits of IEEE membership to at least one of your engineering colleagues during the 1964-65 program year. Obtain an application blank from your company or area representative or the section office and help him complete it. Act now so that his application can be fully processed in the weeks ahead and he can receive all publications and benefits during 1965.

ductions by companies and other organized interests. Albert C. Porter of the California Public Utilities Commission, San Francisco, is chairman of this activity running all three days of the conference.

*section notes*

**REGULAR EXCOM**

The Section Executive Committee normally meets on the last Wednesday of the month at 7:30 p.m. in the section office. Subsection chairmen and the group coordinator, E. H. Hulse (HI 7-1100, Ext. 8034), are members and attend regularly. Chapter chairmen are urged to keep Mr. Hulse informed of chapter problems which should be brought to the attention of the Executive Committee. Chairmen of chapters and standing committees or members at large may bring business before the EXCOM at any regular meeting by calling the Section Office prior to the closing of the agenda on the Friday preceding a meeting.

*section notes*

**BULLETIN BOARD NOTICES**

Carrying the meeting calendar information that appears in Grid, but mailed early in the month, bulletin board notices are printed and distributed regularly by the section office to nearly 400 members who have agreed to post them on the 687 bulletin boards of their firms or organizations. If you would like to be added to the mailing list, call or write the section office, indicating how many copies you would like to post each month in locations where they will attract the attention of members who have missed the Grid.

*section inputs*

**CHANGE OF ADDRESS**

If you plan to change your address, notify headquarters and the section office at least three weeks in advance of the effective date.

*student news*

**NEW COUNSELORS**

Prof. John M. Bouldry, department of electrical engineering, U.S. Naval Postgraduate School, Monterey, has assumed the duties of IEEE student branch counselor for 1964-65.

Prof. John C. Eidson, Stanford Electronics Lab, will serve as counselor for the Stanford Student Branch.



Bouldry



Eidson



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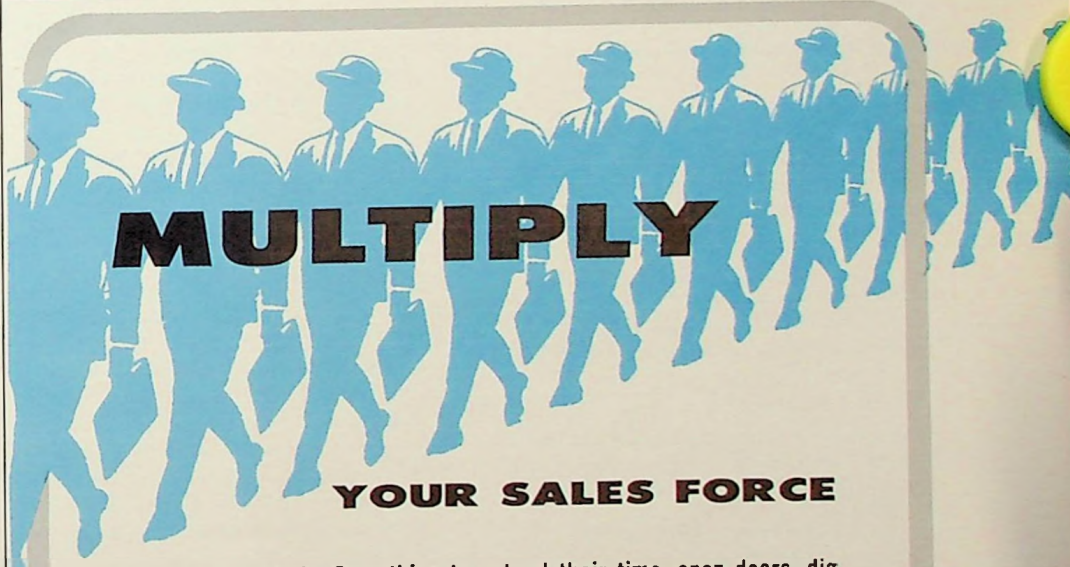
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**IT IS REPORTED:**

Major Marshall J. Treado, USMC, has been named the outstanding member of the U.S. Naval Postgraduate School at Monterey.

Hubert J. Taylor has joined the western operation of Sylvania Electronic Systems as manager of market planning and research.

Energy Systems, Inc., Palo Alto, has been selected to compile the laser measurements handbook for RADC under a \$39,339 contract.

Lane L. Wolman has been named manager of engineering for Ampex Corporation's computer products division, Culver City.

David B. Kennedy has been named manager of NASA ground systems sales for Philco Corporation's WDL division.

National Electronics, Inc., a subsidiary of Eitel-McCullough, Inc., San Carlos, has opened a new sales engineering office in Town & Country Village, Palo Alto.

Thomas H. Morrin has been appointed vice president for engineering sciences at Stanford Research Institute; Dr. Don R. Scheuch as executive director for electronics and radio sciences; Dr. R. C. Amara as executive director for systems sciences; and Dr. Jerre D. Noe as executive director for engineering sciences and industrial development.

Edwin S. Oxner, formerly a member of the technical staff of Fairchild Semiconductor research and development laboratory in Palo Alto, has joined the staff of MELABS as a senior engineer.



Morrin



Oxner

Harrison Johnston, formerly marketing manager for Lynch Communications Systems, San Francisco, has been named to the newly created position of director of market development at Granger Associates.

John Bowker heads an advance development team to study new product concepts in electronics for John Fluke Mfg. Co., Seattle.

Sylvania Electric Products, Inc., has received a \$1.1 million USAF award for further development of electronic security systems to help guard various Minuteman intercontinental ballistic missile launch sites throughout the U.S.

James R. Reid has joined Applied Technology, Inc., Palo Alto, as staff engineer for the marketing department.



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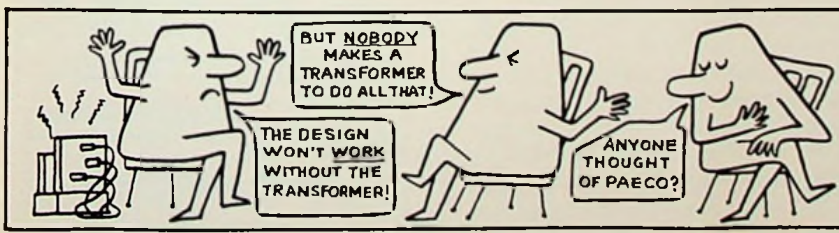
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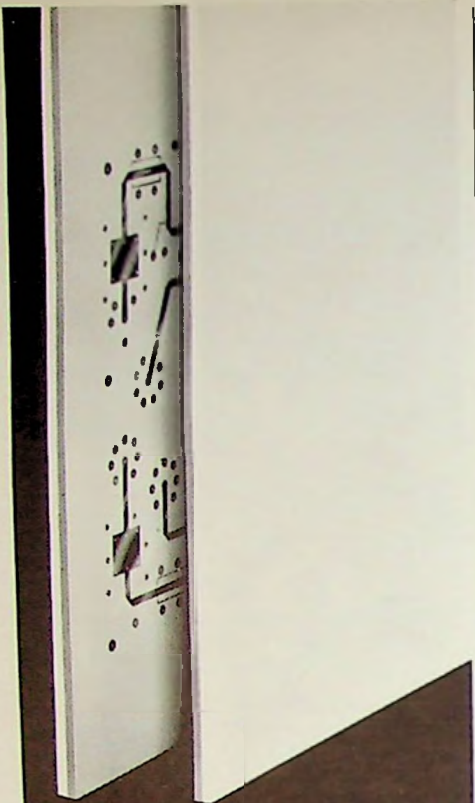
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### MORE CHAIRS

five new or changed group chapters compared to the 1962 directory. These changes are indications of a healthy, growing condition whether they result from mergers or the formation of new chapters within the section.

Some of us may now be "fed up" with mergers, but this process, on a local chapter/division level, has resulted in at least one of the name changes in the directory: Communication Technology. This chapter is now the combined membership of the AIEE Communications Division and the IRE P.C. Communications Systems. In the spring of 1964, the two were formally merged by the election of a single set of officers by the members of both. An attempt was made to reach all members of both organizations, as well as other interested parties, before and during the actual merger. Some were no doubt inadvertently missed who have an interest in the area of communications—these persons are the ones who are now strongly urged to make themselves known and to participate in chapter activities.

Good chapters, programs, and engineers are all enriched by the mutual exchange that is a natural part of these activities. The name Communications Technology is new; the subject, the people, and the benefits to members are not new!

OWEN E. THOMPSON, Chairman  
Communications Technology

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**Provides increments** as small as 1 cps in the range from 10 kc to 50 mc...as small as 10 cps from 50 to 500 mc. Stability throughout the total range is 1 part in  $10^7$ . Even higher stability is obtainable by driving the system with a higher precision 1 mc oscillator.

**Direct frequency display** is provided by Nixie readout, with digital dial-in of fre-

quency. Output may be set to 0 dbm and adjusted 0 to -130 db with a continuously variable calibrated attenuator. Internal amplitude modulation to 50% at 400 or 1000 cps is available by means of front-panel control, and there is provision for external AM modulation to 10 kc. Non-harmonically related spurious signals are at least 60 db down.

**Measures frequency** from 10 kc to 1 Gc. This range is extendable to 10 Gc by means of an accessory harmonic generator-mixer assembly.

**For complete details** and applications assistance, contact your nearest **Gertsch** representative, or the address below, requesting Bulletin SSG-1.

### SPECIFICATIONS

<b>FREQUENCY</b>	
Range . . . . .	10 kc to 500 mc
Stability . . . . .	1 part in $10^7$
Resolution . . . . .	1 cps—10 kc to 50 mc 10 cps—50 mc to 500 mc
Display . . . . .	Digital (Nixie)
Adjust . . . . .	Digital
<b>AMPLITUDE</b>	
Output Level . . . . .	0 db (50 ohm)
Attenuation Range . . . . .	0 to -130 db
Accuracy . . . . .	$\pm 2$ db into 50 $\Omega$ load
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Frequency . . . . .	400 or 1000 cps Internal to 10 kc External
Range . . . . .	0 to 50%
PRICE: \$12,500.00	

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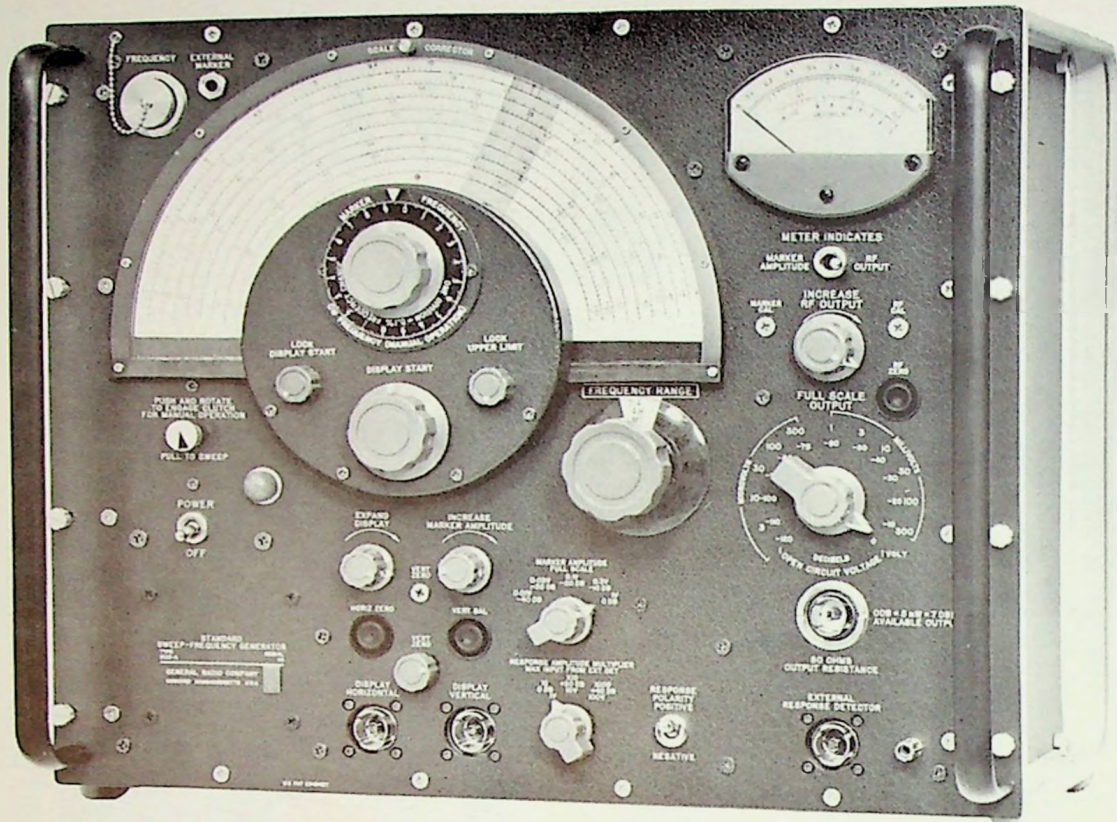


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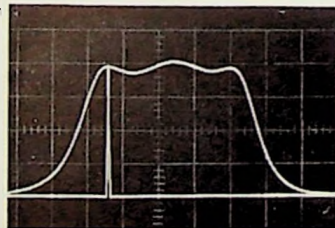


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### SPECIFICATIONS

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**Stability:** Drift is less than  $\pm 0.1\%$  over 5-hour period after warmup. Frequency dial accuracy is within  $\pm 0.5\%$ .

**Marker:** Adjustable from 3 mv to 1v, multiplier extends range to 100v. Resolution is better than  $\pm 0.1\%$  of indicated frequency.

**RF Output:** 0.3  $\mu$ v to 1v behind 50 ohms. Output flat to within  $\pm 1\%$  up to 100 Mc and within  $\pm 3\%$  up to 230 Mc.

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