

## EDITOR'S PROFILE of this issue

*from a historical perspective ...*

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

August, 1971:

Cover: Preparations are under way for WESCON in San Francisco. 32 technical sessions are being held at the Civic Auditorium.

p. 7: Don Hoefler, of *Electronic News*, chairs a session. He had just referred to our valley as "Silicon Valley" in a January article, and the name seems to have stuck.



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.

April, 2025

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



# grid-bulletin

JOINT PUBLICATION/SAN FRANCISCO & LOS ANGELES, IEEE



ESS/SO

ONE



## Cover Story

Unlike most enterprises, WESCON aims to present a new graphic identity each year. The reason: Every WESCON is 450 miles away from last year's version — in San Francisco one year, Los Angeles the next. And the show and convention content is different, too. Technical programs and even product exhibits tend to zero in on the main technological and marketing thrusts of the "two Californias," north and south.

Almost no WESCON "literature" is re-usable, year-to-year, because all the ground-rules change — different city, different dates, different executive committee, and different approaches to presentation of a strong professional program and a timely systems show.

This year's WESCON in San Francisco with the Golden Gate Bridge design is the work of Roger F. Kennedy, a prominent Southern California Graphic designer who has helped create "the WESCON look" for more than 10 years in the theme art, brochures, and folders, programs and yearbooks. His 1970 design of WESCON's Industrial Design Yearbook won top national prizes for graphics and printing.

WESCON's graphic design problem for the next year is usually posed within a few weeks after the curtain falls on the current convention. Since it has to serve dozens of purposes, starting with letterhead in November and winding up with admission badges the following August, the design solution gets a prime priority. Shape, size, colors, type-faces, flexibility for all kinds of applications, and suitability to the professional and industrial purposes of WESCON are all considerations.

Many of the WESCON "customers" and suppliers get into the act eventually. The theme graphics, printed in reproducible format for one, two, and three colors, are distributed widely, and are used by exhibitors in advertising and direct-mail, by magazines in special editorial coverage, by WESCON contractors in their informational literature, and by many others.

But while the theme graphics serve to identify each year's activity, there is a "permanent" WESCON trademark as well. It's the familiar double-locked rings with the words "WESCON" and "IEEE" and "WEMA" printed in them. That's the registered symbol of WESCON and its co-sponsors.



# wescon

## in san francisco

*The San Francisco Section IEEE would like to welcome Region 6 membership to an outstanding WESCON show this year. I have been privileged to sit in on the planning sessions for this year's WESCON and am excited by the caliber of the exhibits and the content of the technical sessions. This year the entire show will be in San Francisco to make it more convenient.*

*WESCON is a unique show among the many that we can attend each year. It has united the manufacturers and our IEEE technical society into a partnership that gives each of us more than we could attain alone. WESCON 1971 is going to be a quality show demonstrating engineering products for engineers.*

*What a splendid way to keep up with the latest ideas in the electronic and computer science fields!*

*I hope we can say Hello in San Francisco in August.*

*Larry FitzSimmons*

*Chairman, S.F. Section, IEEE*

## grid-bulletin

WESCON ISSUE VOLUME 16 AUGUST, 1971

### Grid-Bulletin Staff

Ernesto Montano

Editor

### San Francisco Section Officers

L. G. Fitzsimmons  
*Chairman (Pacific Telephone)*

C. A. Eldon  
*Vice-Chairman (Consultant)*

D. W. Martin  
*Secretary (Vidar Corp.)*

E. D. Jackson  
*Treasurer (Pacific Telephone)*

Los Angeles Council Officers  
H. F. Sallinger, Jr.  
*Chairman (So. Cal. Edison Co.)*

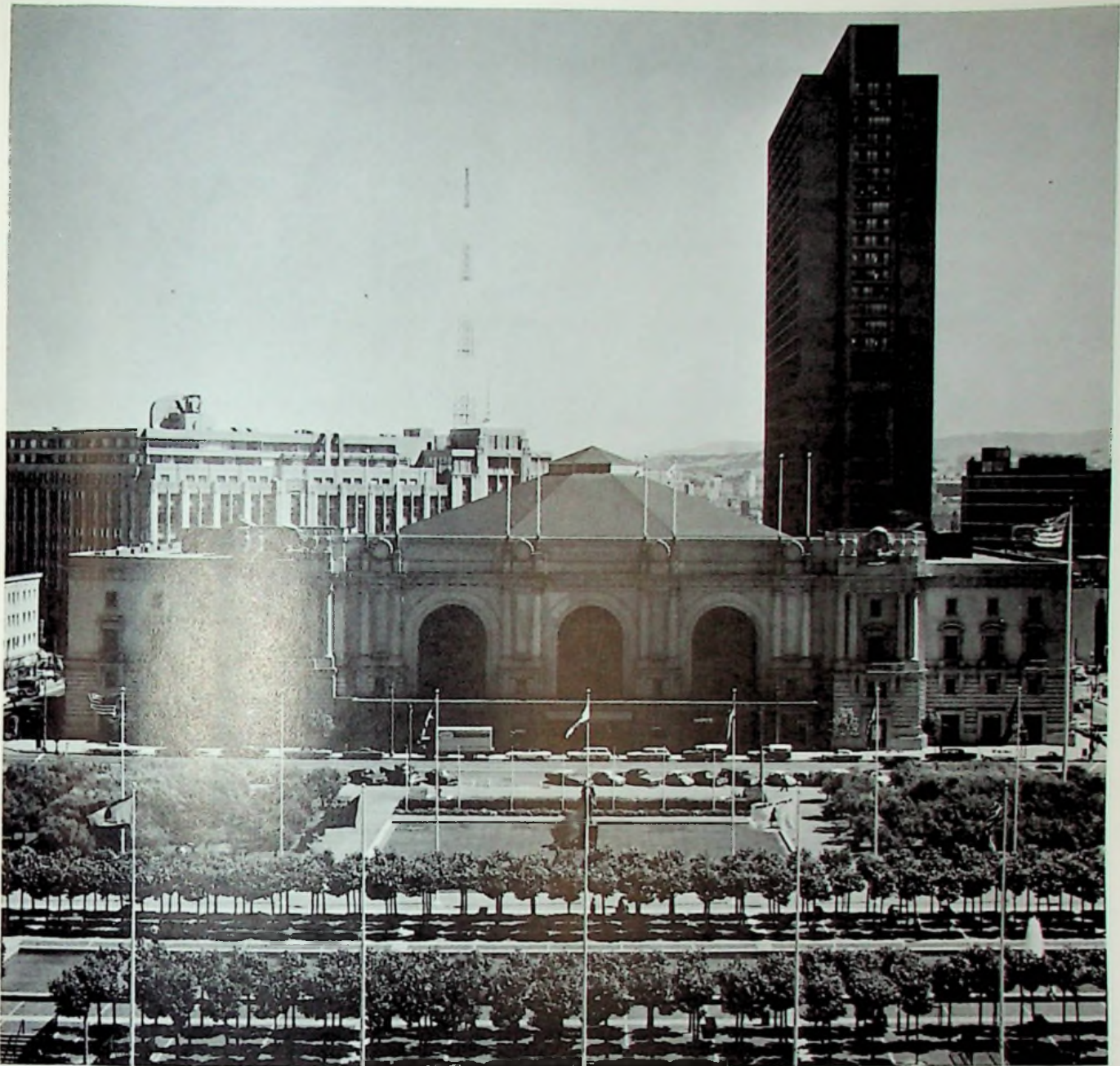
Robert A. Watkins  
*Vice-Chairman (Raytheon Co.)*

Gerhard Hollander  
*Secretary (Hollander & Assoc.)*

Ed Young  
*Treasurer (So. Cal. Edison Co.)*

Published Monthly. Grid-Bulletin office of publication: Suite 2210, 701 Welch Road, Palo Alto, California 94304 (415) 327-6622.

Second Class Postage Paid at Palo Alto, California, and at additional mailing offices.



*San Francisco Civic Auditorium will be the scene of all WESCON professional meetings and exhibits August 24 through 27. Auditorium is connected to Brooks Hall arena, which is under park in foreground. Multi-level parking facility is also under the park.*



**wescon**  
in San Francisco

A new convenience for visitors from the large industry "population" will be a continuous shuttlebus service and a "remote registration center" serving the San Francisco Peninsula. Visitors can park free at the Cabana Hyatt House Hotel, and register for WESCON and receive full credentials (including Inquiry Card), before boarding the express bus to the show and convention.

Special exhibit features will include an MOS/IC production line demonstration on the show floor, and categorization of product exhibits into seven interest categories — instrumentation, computers and peripheral equipment, solid-state fabrication equipment,



*The Garden Court of the Sheraton-Palace Hotel in San Francisco is one of the renowned restaurants of the world. Under its high stained-glass dome have dined presidents, princes, kings and dignitaries from all over the world. Many have called the Garden Court, "the most beautiful dining room in the world."*

electronic circuit packaging, communications and science systems, production and processing, and components and microelectronics.

A Science Film Theater of outstanding technical motion pictures will run daily in a third-floor theater in the auditorium building.

A Sponsors Luncheon is scheduled for Tuesday, August 24, and William F. Glavin, president of Xerox Data Systems, will deliver the keynote address. At the luncheon, Dr. Martin Packard (Varian Associates) will receive the IEEE Morris E. Leeds Award, Region 6 will present its 1971 Achieve-

ment award, and WEMA will name its Medal of Achievement winner.

On Wednesday, also at the Hilton, Eta Kappa Nu holds its Outstanding Engineering Student awards luncheon, and guests will hear an address by Dr. Uno Lamm, famed Swedish technologist, who has been called "the father of high-voltage DC power."

Marketing men will take part in the traditional WESCON Distributor-Manufacturer-Representative Conference, expanded this year from a one-day program to include an additional half-day workshop session on Sunday, August 22, a day ahead of the regular D-M-R program.

Feminine visitors to San Francisco will be hosted by the wives of Bay Area electronics engineers and executives in a "Cable Car Capers" program that includes a champagne reception in the skyscraper restaurant of the Bank of America building, Tuesday, and motorized cable car tours of the city on Wednesday and Thursday.

An All-industry reception on Tuesday, "Flower-Power at the Palace," will attract hundreds of visitors to the famed Sheraton-Palace Hotel on Market Street. Hundreds of flowers, contributed from the private gardens of the Bay Area, will decorate the ballroom.



## Ladies feted at WESCON

The ladies visiting WESCON are going to see the fabled sights of San Francisco from nearly every angle next month.

"Cable Car Capers," a program in which women of the Bay Area will entertain feminine guests for the week, will include a view from the top (of the spanking-new Bank of America skyscraper) and from the seats of motorized cable cars on scenic tours of the city.

From a headquarters hospitality suite in the San Francisco Hilton, with flower-favors dispensed from a real San Francisco flower cart, the committee will branch out to the spectacular penthouse restaurant at the bank building, for a champagne welcoming reception on Tuesday afternoon. There will be cable car tours two days — Wednesday morning and Thursday afternoon. Tuesday's festivities are timed so that ladies can join their husbands in plenty of time for the all-industry reception that evening at the Palace.

All of the "Cable Car Caper" events are free-of-charge to visiting WESCON ladies.

## DMR Conference

WESCON's Distributor-Manufacturer-Representative Conference, a consistent favorite among marketing men involved in product selling through distributors, adds a new facet to its program for 1971.

The core of the conference remains the same — a full day of 20-minute sessions by appointment among factory people, their sales reps, and their distributors. There's an early morning buffet breakfast, and a conference luncheon, too. That's the traditional kickoff event of WESCON week, on Monday, August 23, at the San Francisco Hilton.

On Sunday afternoon, however — that's August 22 — the same people will hang up their jackets and loosen their ties at the Hilton, and sit down to a free-swinging series of workshop tables, each one pointed at marketing problems and opportunities. There will be 10 tables or more, each

operating from 3 p.m. to 5 p.m., and combatants can move among the table topics at will. There will be moderators, but not fixed presentations. The idea is for uninhibited debate and discussion.

Starting at 4 p.m., a cash bar will operate, and at 5 p.m., there's an early-bird reception for D-M-R registrants.

Elvin Feige and V. N. Zachariah, co-chairmen of D-M-R, have worked out an almost unbeatable price package for D-M-R participants. A \$10 registration fee buys both WESCON and D-M-R registration, the conference breakfast, the conference luncheon, and two drinks at the Sunday reception. That's anti-inflation in action.

Advance registration forms for company participation are in the field now. Individuals can register in advance or at the Hilton either Sunday afternoon or Monday morning.

# Technical

WESCON will present a full 32-session program of professional meetings at Civic Auditorium in San Francisco, concurrent with the product exposition.

The sessions will run each morning and afternoon, August 24 through 27, in large, street-level halls in the auditorium. All rooms are air-conditioned.

A single WESCON registration of \$5 is good for admission to all four days of the program, all exhibits, and the Science Film Theater. Preprints of most sessions will be available at WESCON, at a price of \$2 for each session.

A technical program committee of professional engineers, headed by Ray L. Leadabrand (Stanford Research Institute) and Raymond D. Egan (Granger Associates), has organized a program designed for timeliness and application.

In one Wednesday session, manufacturing executives and technical society officers will form a panel on future directions for engineering careers. The panel will be moderated by John J. Guarrera, president of Guide Scientific Industries and chairman of IEEE Region Six, and will include Dr. James Mulligan, IEEE president, Dr. R. C. Mercure Jr., president of WEMA, Paul Robbins of NSPE, and Dr. Hugh Heffner, deputy director, U. S. Office of Science and Technology.

Following is a full listing of the professional program:



## SESSION 1: CHOOSING A MINICOMPUTER — THE USER'S VIEWPOINT

Tuesday, August 24, 10 am-12:30 pm  
Meeting Room 1

Session Organizer and Chairman: S. A. Erenburg, Electronic Design Magazine.

Panelists and Topics:

1. *Application Dependency*. H. N. Yagoda, Computran Systems Corp.
2. *Software*. Gary Hornbuckle, Applicon Inc.
3. *Interface and Peripherals*. R. C. Larkin, U.S. Army Electronics Command.
4. *Purchasing The Mini*. F. Milstead, Unitech.
5. *Selection Strategies*. R. T. Ollivier, Sierra Data Systems.



## SESSION 2: TRENDS IN VACUUM DEPOSITION TECHNOLOGY

Tuesday, August 24, 10 am-12:30 pm  
Meeting Room 2

Session Organizer and Chairman: S. T. Porter, Varian Associates.

(Paper titles to be announced)

1. James C. Blair, Texas Instruments.
2. R. W. Wilson, Motorola Semiconductor.
3. Dr. Richard W. Hager, Alphadyne Inc.
4. Dr. John Coburn, IBM Corp.



## SESSION 3: AUTOMATED TESTING OF MOS INTEGRATED CIRCUITS

Tuesday, August 24, 10 am-12:30 pm  
Meeting Room 3

Session Organizer and Chairman: F. Van Veen, Teradyne Inc.

1. *An Innovative Approach to MOS Production Line Testing*. F. M. Young, Teradyne.
2. *Designing MOS for Maximum Testability*. A. E. Pound, American Micro-Systems.
3. *MOS Test Instrumentation*. W. Routh, Fairchild Systems.
4. *Subject to be announced*. Durrell Hillis, Motorola Semiconductor.



## SESSION 4: RECOGNIZING AND GEARING UP FOR NEW ELECTRONIC MARKETS

Tuesday, August 24, 10 am-12:30 pm  
Meeting Room 4

Session Organizer and Chairman: Dr. C. J. Breitwieser, Cubic Corp.

1. *Case Histories of Aerospace Companies Who Have Successfully Transitioned from Military to Non-Military Business*. M. Self, Business Week.
2. *Adjusting Internally to Best Serve New Markets*. Dr. C. J. Breitwieser, Cubic Corp.
3. *Your Present Work Force: Retractable or Replaceable?* P. E. Putney, Korn/Ferry Int.
4. *Financing the Entrepreneur in New Electronic Markets*. T. J. Davis, Jr., Mayfield Fund.



## SESSION 5: PERIPHERALS FOR MINICOMPUTERS

Tuesday, August 24, 2-4:30 pm  
Meeting Room 1

Session Organizer and Chairman: George King, Electromechanical Design Magazine

1. *Application of Minicomputer Peripherals*. Grant Saviers, Digital Equipment Corp.
2. *A Minicomputer Manufacturer's Look at Peripherals*. Tenny Lode, Electronic Processors Inc.
3. *The Minicomputer as a Peripheral*. Richard Drew, Computer Automation Inc.
4. *Minisystems for the User*. A. L. Mende, Investors Advisory Group.



## SESSION 6: DIRECT DETECTION LASER COMMUNICATIONS

Tuesday, August 24, 2-4:30 pm  
Meeting Room 2

Session Organizer and Chairman: Monte Ross, McDonnell Douglas Astronautics.

1. *Laser Modulation Formats for Space Communications*. Gary Lee and E. A. Paddon, McDonnell Douglas Astronautics.
2. *Acquisition and Angle Tracking of Laser Communications Links*. Art Kraemer, Sylvia Electro-Optics.
3. *Critical Component Technology for Space Laser Communications*. R. R. Rice, McDonnell Douglas Astronautics.
4. *High-Speed Electronics for Laser Communications*. Carl Ryan, Motorola.



## SESSION 7: (PANEL) ENGINEER'S ROLE IN ECONOMIC WORLD

Tuesday, August 24, 2-4:30 pm  
Meeting Room 3

Session Organizer and Chairman: John J. Guarrera, Director, IEEE Region 6, and president of Guide Scientific Industries.

Panelists:

- Dr. James Mulligan, president of IEEE.  
Dr. R. C. Mercure, Jr., president of WEMA  
(other panelists to be announced)



## SESSION 8: CURRENT TRENDS IN INDUCTORLESS FILTERS

Tuesday, August 24, 2-4:30 pm  
Meeting Room 4

Session Organizer and Chairman: S. K. Mitra, University of California, Davis.

1. *Pitfalls in State Variable Filter Design*. Y. J. Wong and B. K. Conant, Burr-Brown Research Corp.
2. *Design of Distributed Active-RC Filters*. L. P. Huelsman, University of Arizona.
3. *Coupled Resonator Crystal Filters*. D. F. Sheahan and C. E. Smith, GTE Lenkurt Inc.

# Program

4. *Surface Wave Signal Processing Filters*. Joseph Burnsweig, Aerospace Group, Hughes Aircraft Company.

5. *Practical Digital Filter Structures Using MOS/LSI*. S. White, NAR Microelectronics



## SESSION 9. EXPLORATION OF AVAILABLE COMPUTER PROGRAMS IN ELECTRONIC CIRCUIT DESIGN

Wednesday, August 25, 10 am-12:30 pm  
Meeting Room 1

Session Organizer: Ronald Rohrer, UC Berkeley, and Sof Tech, Inc.

Session Moderator: Dr. W. G. Howard Jr., Motorola.

1. *CIRC: DC, AC and Transient Simulation of Nonlinear Circuits*. Richard McNair, XDS.

2. *CIRCAL: On Line Interactive Simulation of Electronic Circuits*. Ronald Rohrer, Sof Tech.

3. *COD: Constrained Optimal Design System*. W. C. Cave, Optimal Systems Research.

4. *The OPTINET Design System*. Robert Hall, Dean Hall Associates.



## SESSION 10: THE FUTURE OF MEDICAL INFORMATION SYSTEMS

Wednesday, August 25, 10 am-12:30 pm  
Meeting Room 2

Session Organizer and Chairman: T. W. Neumann, Philco-Ford WDL.

*Health Care Delivery in the 70's—A Preview*. (Introduction by T. W. Neumann.)

1. *The Medical Information System: Practice and Prospects—A Hospital Director's View*. B. G. Lamson, M.D., UCLA.

2. *Medical Information System: Basic Theology for a Realistic Approach*. J. H. Grossman, M.D.

3. *Medical Data Input: A Critical Bottleneck*. Warner V. Slack, M.D., Beth Israel Hospital.

4. *Boundary Conditions: Key Legal, Ethical, and Traditional Medical Constraints on Medical Information Systems*. R. Gampell, M.D.



## SESSION 11: EMPLOYEE LOYALTY: A TWO-WAY STREET

Wednesday, August 25, 10 am-12:30 pm  
Meeting Room 3

Session Organizer and Chairman: Don Hoefler, Electronic News, San Francisco

1. *Employment Contracts: Who Is Protected?* John Larson, Brobeck, Phleger & Harrison.

2. *Employer Responsibility in a Down Market*. W. J. Bowles, Fairchild Camera & Inst.

3. *The Ups and Downs of Stock Options*. C. E. Sporck, National Semiconductor Corp.

4. *Putting Together the Benefits Package*. J. R. Yelverton, Wilkinson, Sedwick & Yelverton.

5. *Rewarding the Superior Performer*. J. F. Riley, Intersil Inc.



## SESSION 12: SYSTEMS CONSIDERATIONS AND NEW EQUIPMENT FOR MICROWAVE POINT-TO-POINT COMMUNICATION

Wednesday, August 25, 10 am-12:30 pm  
Meeting Room 4

Session Organizer and Chairman: D. O. Fairley, GTE Lenkurt Inc.

1. *A New 2 GHz Microwave System for Message and Video Transmission*. J. B. Murray, GTE Lenkurt.

2. *Integrated Circuits and Other Solid State Devices Improve Performance and Simplify Application of 2 GHz Microwave Systems*. E. A. Gilmore and M. W. Wilkens, Farinon Electric.

3. *Design of an 1800 Channel Heterodyne Radio System*. J. Heinemann, GTE Lenkurt.

4. *18 GHz Short Hop PSK Radio System Experiment*. J. Kenny, R. Slade, Bell Telephone.



## SESSION 13: NEEDS AND TRENDS IN MEDICAL ELECTRONICS IN THE 70'S

Wednesday, August 25, 2-4:30 pm  
Meeting Room 1

Session Organizer and Chairman: M. D. Schwartz, Cal-State, Long Beach.

1. *Medical Electronics in the 1970's*. M. D. Schwartz, Cal-State, Long Beach.

2. *Automated Multitest Laboratories—Current Needs and Future Potential*. M. F. Colten, M.D., Permanente Medical Group and Kaiser Foundation.

3. *Information Handling Needs for the Intensively Monitored Hospital Patient*. G. I. Hickey Jr., USC.

4. *Exercise Pulmonary Response Testing and Pulmonary Function Testing Using a Time-Shared Computer*. P. H. Griffith and W. L. Beaver, Varian Associates.

5. *Engineering Productivity in the Delivery of Health Care Services*. P. A. DeLangis, Verite Scientific Inc.



## SESSION 14: PRESENT AND FUTURE OF AUTOMATIC TEST LANGUAGES

Wednesday, August 25, 2-4:30 pm  
Meeting Room 2

Session Organizer and Chairman: R. A. Grimm, Hewlett-Packard

1. *Programming Languages for Component Testing*. Milton Collins, Teradyne.

2. *The Dialect Concept in ATE Language Design*. Michael Ellis, PRD Electronics.

3. *ATLAS—Abbreviated Test Language for Avionics Equipment*. T. A. Ellison, United Air Lines.

4. *Instrumentation Languages for Production and Engineering*. William Ray, Hewlett-Packard Microwave Div.



## SESSION 15: NETWORKS, EQUIPMENTS, AND STANDARDS: THE CHALLENGE OF THE DATA COMMUNICATIONS EXPLOSION

Wednesday, August 25, 2-4:30 pm  
Meeting Room 3

Session Organizer and Chairman: Sheldon Edelman, Electronic Engineer Magazine

1. *An OEM Views the Data-Communications Revolution*. R. F. Dean, IBM Corp.

2. *The Challenge of Interactive Computer Networks Today*. M. P. Beere, Tymshare Inc.

3. *A Common-Carrier Network for Point-to-Point Switched Data Transmission*. D. E. Gourley, Data Transmission Co.

4. *Data-Communications Networks: The Need for Standards*. Kelley Griffith, F.C.C.



## SESSION 16: TURNAROUND '71, STRATEGY FOR THE 70'S

Wednesday, August 25, 2-4:30 pm  
Meeting Room 4

Session Organizer and Chairman: F. J. Burge, Precision Monolithics.

1. *What it Took to Come Out of Chapter XI*. H. D. Tenney, Kinetic Technology.

2. *The Modern Day 49er*. Robert McGrath, Dynamic Associates.

3. *Technological Innovation, Emphasis on Improved Performance*. M. B. Rudin, Precision Monolithics.

4. *Two Plus Two Equals Five*. George Didinger, Intellex.



## SESSION 17: INSTRUMENTATION FOR AUTOMATIC DYNAMIC TEST SYSTEMS

Thursday, August 26, 10 am-12:30 pm  
Meeting Room 1

Session Organizer and Chairman: H. W. Mette, Systron Donner Datapulse Division

1. *Automatic Stimuli Generation*. R. J. Johnson, Datapulse.

2. *Computerized Waveform Measurements*. Dave McCracken, Tektronix.

3. *Remote Controlled Digital Measurement Instrumentation*. F. Kreiss, Systron Donner.

4. *Automatic Test Equipment and Its Interface with a Computer or Controller*. G. K. Mercola, Sagetec Corp.



## SESSION 18: AUTOMATIC MANUFACTURING

Thursday, August 26, 10 am-12:30 pm  
Meeting Room 2

Session Organizer and Chairman: Irwin Stern, Circuits Manufacturing Magazine.

Continued on page 14

**SPECIAL EVENTS TICKET ORDER FORM**

- Sponsors luncheon, San Francisco Hilton, August 24 \_\_\_\_\_ at \$6.50, total \_\_\_\_\_
- All-Industry Reception, Sheraton-Palace, August 24 \_\_\_\_\_ at \$6.00, total \_\_\_\_\_
- Eta Kappa Nu Awards Luncheon, S.F. Hilton, Aug. 25 \_\_\_\_\_ at \$6.00, total \_\_\_\_\_
- SPECIAL ADVANCE REGISTRATION PACKAGE OFFER

Wescon Four-day Registration	\$ 5.00	} <b>Special Advance "Package Offer" \$17.50</b> (You save \$2.00 with this special offer)
Sponsors Luncheon	\$ 6.50	
All-Industry Reception	\$ 6.00	
Any one Full Session Preprint	\$ 2.00	
Total Value	\$19.50	

Mail to: Wescon Ticket Bureau, 3600 Wilshire, Suite 1920, Los Angeles, Ca 90010

Dear Sir: Please fill my order, as indicated above. Mail credentials and/or tickets to: Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Check in the amount of \$ \_\_\_\_\_ enclosed.  
(Mail orders filled until Aug. 16. After that date, they will be held in Will-Call at Brooks Hall.)

**HOTEL/MOTEL RESERVATION FORM**

Mail to: Wescon Housing Bureau, Fox Plaza, San Francisco, Calif. 94102

Please make the following hotel reservation:

Hotel: (First choice) \_\_\_\_\_ (Second choice) \_\_\_\_\_

Arrival Date: \_\_\_\_\_ Time \_\_\_\_\_  Single  Double

Departure Date: \_\_\_\_\_ Time \_\_\_\_\_

Room occupants \_\_\_\_\_

Mail confirmation to: Name \_\_\_\_\_  
Company \_\_\_\_\_

Reservations will be confirmed directly by the hotel. Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

HOTELS	ADDRESS	SINGLE	DOUBLE
* Airport Marina	1380 Bayshore	18 00	22 00
* Bellevue	Geary & Taylor		20 00-22 00
* Cabana Hyatt House (Palo Alto)	4290 El Camino Real	20 00-30 00	25 00-40 00
Californian	405 Taylor St.		20 00
Canterbury	750 Sutter St.	14 50-23 00	18 50-27 00
* Carlton	1075 Sutter St.	8 50-10 50	10 50-12 50
* Cartwright	524 Sutter St.		15 00
* Chancellor	433 Powell St.	14 00	16 00
Civic Manor Hotel	825 Polk St.		16 00
Cliff	Geary & Taylor		
* Commodore	825 Sutter St.	20 00	20 00-30 00
Continental Lodge	2550 Van Ness	20 75-24 75	22 75-26 75
Del Webb's Townhouse	8th & Market	22 00-29 00	25 00-30 00
* De Ville Motel	2599 Lombard	22 50	24 50-26 50
Fairmont	Mason & California	22 00-49 00	30 00-57 00
* Handlery Motor Inn	260 O'Farrell St.		28 00-33 00
S. F. Hilton	333 Mason St.	21 00-37 00	27 00-44 00
* Hilton Inn	S. F. Int'l Airport	20 00-26 00	25 00-31 00
Holiday Inn (Civic Center)	50 - 8th St.		26 00
Holiday Inn (Financial Dist.)	750 Kearny		30 00
Holiday Inn (Fisherman's Wharf)	13 00 Columbus	23 00-26 00	
Huntington	1075 Calif. St.		26 00-38 00
Jack Tar	Geary & Van Ness	21 00-33 00	26 00
* Lombard Plaza Motel	2026 Lombard		26 00
Mark Hopkins	999 Calif. St.	22 00-37 00	30 00-45 00
Miyako	1625 Post St.	22 00-27 00	
* Knob Hill Motel	1630 Pacific Ave.		18 00-24 00
Oasis Motel	900 Franklin	14 00-16 00	18 00-22 00
* Richelieu	Van Ness & Geary	12 00-18 00	14 00-20 00
Royal Inn/Airport	275 S. Airport Blvd.	16 00-25 00	20 00-25 00
Royal Inn of San Francisco	655 Ellis	20 00-22 00	22 00-24 00
St Francis	Union Square	22 00-35 00	28 00-41 00
San Franciscan	1231 Market St.	17 00-21 00	20 00-26 00
San Francisco Downtown Travelodge	790 Ellis		19 00
Sheraton Palace	Mkt. & New Mntg.	18 00-27 00	24 00-33 00
Sir Francis Drake	Powell & Sutter	21 00-26 00	26 00-31 00
Thunderbolt	101 Bayshore	16 00-20 00	18 00-22 00
Travelodge at the Wharf	250 Beach St.	22 00-29 00	24 00-29 00
* Villa Roma	1212 Columbus		28 00-34 00

\*Deposit required. Do not send deposit with this form—instructions will accompany confirmation.

# Aid for the Aerospace Unemployed

The U.S. Government, Department of Labor, through selected H.R.D. Offices, of the State of California (Employment Office) has initiated a program of employment assistance to Engineers, Scientists and Technicians, now referred to as the E.S.T. Program.

Eligible persons are limited to unemployed or under-employed Engineers, Scientists and Technicians who have worked for Defense or Aerospace industry, or an industry 40 percent of whose income has come from Defense or Aerospace, for twelve of the past twenty-four months, or have had such attachment twenty-four months out of the past five years.

To be eligible, individuals must either LIVE IN, or have WORKED for Defense or Aerospace in the target area, i.e., the Counties of Los Angeles, Orange, San Diego and Santa Clara.

There are three principal components to the program. The first is grants for job search, which gives up to a total of \$500.00 (for one or more searches) to qualified individuals, to go look for jobs in areas outside normal areas of commute. The second provides a relocation allowance. The third is an On-the-Job Training program (with some institutional possible) which will pay employers one-third salary (up to \$2,000.00) for twenty weeks of on-the-job training. Jobs developed must pay at least \$8,000.00 per annum, exclusive of fringe benefits. To be eligible to participate, individuals should register with the E.S.T. Unit at one of the H.R.D. Offices

**HUMAN RESOURCES DEVELOPMENT OFFICES ARE:**

- San Jose No. 508  
297 West Hedding, San Jose  
(408) 287-7505
- Palo Alto No. 565  
449 Sherman Avenue, Palo Alto  
(415) 326-6590
- San Diego No. 575  
1354 Front Street, San Diego  
(714) 234-4341
- Santa Ana No. 577  
2823 South Bristol, Santa Ana  
(714) 546-0540
- Santa Monica No. 561  
828 Broadway, Santa Monica  
(213) 451-9811
- Van Nuys No. 554  
14400 Sherman Way, Van Nuys  
(213) 781-1350

# Automobile Insurance

**for  
california engineers  
and scientists**

*20th Century*



**INSURANCE COMPANY**

We Invite You —

to investigate our exclusive program for Engineers and Scientists.

LOW COST and CREDIBILITY in one Package

We feel our policyholders are the best testament to this assertion . . . MORE THAN 98% OF 20th CENTURY POLICYHOLDERS RENEW THEIR POLICIES MONTH IN AND MONTH OUT.

## —CREDIBILITY—

### **Direct From the Company to You Service**

All contacts are on a direct to the company basis.

In this way additional savings are shared with you by eliminating costly middleman expenses.

If you need service of any kind you call the company's home office in Los Angeles collect. Specialized personnel will serve you in all departments.

### **Dependable, Expedient Claim Service**

The claims department "Hot Line" is open 24 hours a day, seven days every week, for your convenience. A Collect call from anywhere will give you instant on the Spot Service by more than 1200 claims representatives throughout the United States and Canada.

Unlike most other companies, 20th Century does not require that you suffer the inconvenience of obtaining several estimates for repairs for your car; neither do you have to drive to a "claims office" for an estimate or settlement. You may take your damaged automobile to the garage of your choice and we will then expedite the repairs for you.

Just how well this specialized direct to you service and claims handling works is attested by one of the highest Policy renewal records in the Auto Insurance Industry.

### **Non-Assessable Policy, Broad Coverage**

Country wide and Canadian protection is furnished under the non-assessable Broad-Form Family Automobile Insurance Policy which complies with the Financial Responsibility Laws of all the States, and Provinces of Canada.

Your 20th Century Automobile Policy includes the most up to date, complete and liberal coverage available . . . Included are Medical Protection, Extended coverage if you borrow another automobile; protects anyone driving your car with your permission; Pays Legal Costs and Bail Bond expense; Transportation expenses incurred if your car is stolen; \$200.00 for loss of wearing apparel and luggage caused by collision, fire or theft.

# — LOW COST —

Since 1957, 20th Century, a capital stock company, licensed and supervised by the Department of Insurance, State of California, has provided highest quality auto insurance protection to selected professional and occupational groups proved to represent careful drivers.

One such group is composed of Professional Engineers and Scientists only, and statistically compared to all other Driver Groups insured by 20th Century has an outstanding record of fewer accidents, fewer claim costs and responsible behavior behind the wheel of an automobile.

20th Century therefore offers Engineers and Scientists an exclusive program with rates that are lower than for any other group!

We feel it will be well worth your time and effort to complete and return the enclosed inquiry form . . . The total savings in the years ahead can be appreciable.

Your quotation and detailed information about 20th Century's outstanding record will be returned to you by mail . . . **No salesman will call on you.**

## COMPLETE AND MAIL THIS CARD FOR RATES



Please send rate quotations available only to engineers and scientists.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

University or College \_\_\_\_\_ Degree \_\_\_\_\_

### CAR INFORMATION:

Cars	Year	Make	Model	Body Style	Horse Power	Used for Business other than to and from work	Currently Insured?	Expiration Date
First								
Second								
Third								

### DRIVER INFORMATION:

Names of All Drivers including self	Relationship	Age	Driver is principal user of car No.	Driver is occasional user of car No.	No. of at fault accidents over \$100 damage last 3 years	No. of moving violations last 3 years

West Covina No. 563  
933 Glendora Ave., West Covina  
(213) 961-7011

Long Beach No. 555  
1313 Pine, Long Beach  
(213) 599-5781

Hollywood  
6725 Santa Monica Blvd., Hollywood  
(213) 461-9161

Los Angeles  
161 West Venice Blvd., Los Angeles  
(213) 744-2121

Reply Card No. 1

## Japan Anyone?

Cherry blossoms in Japan will be possible for IEEE members next spring for \$340 round-trip from the West Coast according to the plans of G-33. A recent change in the government ruling on charter flights has allowed the magnetics technical group to include all of IEEE in their affinity group for the proposed West Coast charter flight taking G-33 members to the 1972 Internag Conference in Kyoto, Japan. The flight which is expected to depart on April 8 and to return on April 29 can now be made available to any member of the IEEE or affiliates of IEEE and their families. Further information on the flight can be obtained from: Professor F. J. Friedlaender, Electrical Engineering Department, Purdue University, West Lafayette, Indiana 47907.

Reply Card No. 2

## UCLA Filter Design Course

A two-day Short Course in Modern Active & Passive Filter Design is being offered at UCLA on October 8 and 9, 1971. The course will be given by Professors Gabor Temes and H. J. Orchard, both members of the Electrical Sciences and Engineering Department at UCLA.

The course, first of series of two-day courses given on Friday and Saturday, is available at a reduced fee of \$80. The material covered will include a review of key methods in the synthesis and solution of modern filter design problems and the development of computer algorithms for filter circuits.

For further information and a descriptive brochure, write P.O. Box 24902, Continuing Education in Engineering and Science, University Extension, UCLA, Los Angeles, Calif. 90024. Telephone (213) 825-3344 or 825-1295. Reply Card No. 3

## WESCON Board Members



Robert M. Ward  
*Chairman of the Board*



Stanley F. Kiesel  
*Chairman, Exe Committee*



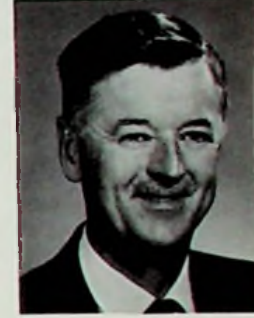
Fred J. MacKenzie  
*Convention Director*



Alfred P. Oliverio  
*Show Director*



Charles C. Olsefsky  
*Member of the Board*



Edward T. Clare  
*Member of the Board*



Charles M. Edwards  
*Member of the Board*



J. Rudy Hummes  
*Member of the Board*



Don Larson  
*WESCON General Manager*

### grid-bulletin WESCON Issue

Please send me additional information on the numbers I have circled below:

1 2 3 4 5 6 7 8

NAME \_\_\_\_\_

TITLE/POSITION \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

Please, only list your name and home address for receiving information on employment opportunities.

HOME ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE No. \_\_\_\_\_

FOR INFORMATION WRITE TO: Institute of Electrical and Electronics Engineers, 701 Welch Road, Suite 2210, Palo Alto, California 94304.

Continued from page 7

1. *Automatic Testing*. W. C. Sequin, Honeywell Information Systems.
2. *Automatic Interconnection of Chip to Circuit*. Richard Faulke, Mech-El Industries Inc.
3. *Automatic Packaging of ICs*. Milton Stoll, Research Instrument Co.
4. *Additive Printed Circuit Technology*. George Messner, Photocircuits.



**SESSION 19: TOMORROW'S PROGRAMMABLE CALCULATORS**

Thursday, August 26, 10 am-12:30 pm  
Meeting Room 3

Session Organizer and Chairman: Rudolf Panholzer, Naval Postgraduate School

1. *What Will Be the Design of Tomorrow's Programmable Calculator*. Robert Watson, Hewlett-Packard.
2. *What Will Tomorrow's Programmable Calculator Do?* Ned Chang, Wang Laboratories.
3. *How Will Tomorrow's Programmable Calculator Fit Into Systems?* Francis Michel and Jay Minor, Tektronics.
4. *Who Will Use Tomorrow's Programmable Calculator?* H. Pinault, Monroe International.



**SESSION 20: BEAM-LEAD TECHNOLOGY: HERE AND NOW**

Thursday, August 26, 10 am-12:30 pm  
Meeting Room 4

Session Organizer and Chairman: L. K. Keys, Magnavox Co.

Session Co-Chairman: Stanley Stuhlbarg, Raytheon Co.

1. *Beam-Lead Devices, Availability and Applicability*. F. J. Francis and L. K. Keys, Magnavox Co.
2. *Reliability of Beam-Lead Devices*. Jorge Acosta and Hans Legal, Raytheon.
3. *Beam-Lead Processing for Complementary MOS*. L. W. Murray and Ben Richards, RCA/Electronic Components.
4. *Advanced Bonding, Testing, and Repair of Beam-Lead Devices*. L. Cunningham, Texas Instruments.



**SESSION 21: COMMERCIAL APPLICATIONS OF AUTOMATIC TEST EQUIPMENT**

Thursday, August 26, 2-4:30 pm  
Meeting Room 1

Session Organizer and Chairman: Fred Li-guori, Naval Air Engineering Center.

1. *Commercial ATE Revisited*. D. S. Kline, Hewlett-Packard Auto, Measurement Div.
2. *Automatic Test Equipment Design*. P. W. La Clair and J. Katsikas, Librascope Div., Singer-General Precision.
3. *AVMOTS—A New ATE Family*. L. H. Bohl, Avco Systems Division.

4. *Automated Test of Jet Engine Accessories*. O. T. Carver, RCA.



**SESSION 22: COMPUTER-AIDED MANUFACTURING**

Thursday, August 26, 2-4:30 pm  
Meeting Room 2

Session Organizer and Chairman: T. P. Rigoli, EDN/EEE.

1. *How Not to Approach Computer-Aided Manufacturing*. C. E. Coffee, San Francisco.
2. *CAM Software: Inputs Required—and Outputs Produced*. P. R. LaBahn, Standard Logic Inc.
3. *Economic Advantages of Integrating Standard DIP Hardware with Flexible Software*. Donald Miller, Scanbe Manufacturing.
4. *New Vistas for CAM*. W. Fordiani, EECO.



**SESSION 23: COMPUTER-AIDED DESIGN OF HIGH FREQUENCY CIRCUITS**

Thursday, August 26, 2-4:30 pm  
Meeting Room 3

Session Organizer: Les Besser, Fairchild.  
Session Chairman: Alan B. Grebene, Exar-Integrated Systems

1. *The Computer-Aided Design of an L-Band Phase Shifter*. T. W. Houston, Texas Instruments.
2. *A Medium Power VHF Amplifier with PNP-NPN Complementary Symmetry Transistors*. Les Besser, Fairchild.
3. *Hybrid Integrated Wide-Band Linear Power Amplifiers for S and C Band*. A. Presser, H. Huang, R. Paglione, and H. Johnson, RCA Advanced Technology.
4. *Performance and Reliability of Transistors in Power MIC's*. George Luettgenau and R. E. Heijmanowski, TRW.



**SESSION 24: OPTOELECTRONICS**

Thursday, August 26, 2-4:30 pm  
Meeting Room 4

Session Organizer and Chairman: L. Palmer, Centralab Semiconductor.

1. *Optoelectronics Measurements*. Al Seck, Centralab Semiconductor.
2. *Light Emitting Diode Reliability*. Lin Wetterau and Walter Gill, Texas Instruments.
3. *Optical Character Recognition—A Status Report*. Duane Baxter, IBM Systems Development.
4. *Optical Memories*. Bruce Ballard, Optical Memory Systems.



**SESSION 25: HYBRID MANUFACTURING**

Friday, August 27, 10 am-12:30 pm  
Meeting Room 1

Session Organizer and Chairman: Irwin Stern, Circuits Manufacturing Magazine

1. *Thin Film Advances*. R. Ponce de Leon, Sloan Micro-electronics.

# ANALOG RECORDERS

# OEM RACK PORTABLE

Value Priced  
from  
**\$450**

- one second timer/marker
- one thru eight channel
- full attenuator ranges
- multiple chart speeds
- event markers
- inkless thermal recording
- true rectilinear coordinates
- internal calibration
- paper take-up

340 Fordham Rd., Wilmington, Mass. 01887 (617) 658-5500 TWX 710-347-6938

Reply Card No. 4

2. *Incorporation of Computer Controlled Laser Resistor Trimming in a Thick Film Facility*. Robert Marcum, Centralab Electronics.
3. *Advances in Interconnection Techniques*. Richard Fritz, Radiant Energy Systems.
4. *Advances in Thick Film Materials*. Dr. Sidney Stein, Electroscience Laboratories.



**SESSION 26: MICROWAVE SOLID-STATE DEVICES**

Friday, August 27, 10 am-12:30 pm  
Meeting Room 2

Session Organizer and Chairman: R. W. Soshea, HP Associates, Palo Alto, Calif.

1. *IMPATT Diodes: Technology and Applications*. A. M. Cowley, Hewlett-Packard.
2. *Review of Gunn Effect Devices*. F. Fank, Varian Associates.
3. *Transistors for the Era of Microwave Communication*. Sanehiko Kakihana, Hewlett-Packard.
4. *Microwave Acoustic Devices for High Data Rate Processing*. D. B. Armstrong, Litton Electron Tube Division.



**SESSION 27: MOBILE RADIO IN THE 70s. SPECTRUM UTILIZATION AND VEHICLE LOCATING**

Friday, August 27, 10 am-12:30 pm  
Meeting Room 3

Session Organizers and Chairmen: D. Cox and D. Reudink, Bell Telephone Labs.

1. *Modelling the Urban Propagation Medium*. G. L. Turin, University of California.
2. *The Accuracy of Vehicle Location by Trilateration in a Heavily Built Up Urban Area*. H. Staras and S. N. Honickman, RCA Lab.
3. *Some Effects of Rayleigh Fading and Diversity on FM Co-Channel Interference*. R. E. Langseth, Bell Labs.
4. *Dynamic Channel Assignment in Multi-Channel Mobile Communications Systems*. D. C. Cox and D. O. Reudink, Bell Labs.



**SESSION 28: ION-IMPLANTATION TECHNOLOGY FOR MICROELECTRONICS**

Friday, August 27, 10 am-12:30 pm  
Meeting Room 4

Session Organizer and Chairman: J. A. Marley, Signetics Corp.

1. *Ion-Implanted Complementary MOS Technology*. L. O. Bauer, P. J. Coppen and H. G. Dill, Hughes Aircraft.
2. *Precision Ladder Networks Using Ion-Implanted Resistors*. H. H. Stellrecht, Signetics; D. S. Perloff, J. T. Kerr, Corning R&D Lab.
3. *Applications of Ion-Implanted Depletion Loads to MOS Large Scale Integration*. Gordon Hoffman, Mostek Corp.
4. *Particle Accelerators for Ion-Implantation*. J. N. Cecil and N. A. Bostrom, Accelerator Inc.



**SESSION 29: MICROPOWER MICROELECTRONICS**

Friday, August 27, 2-4:30 pm  
Meeting Room 1

Session Organizer and Chairman: A. G. Thiele, Motorola Semiconductor.

1. *Micropower Active Filters for VHF Applications*. W. W. Gaertner, F. K. Weinert, Gaert-

ner Research; L. Kleinberg, NASA Goddard.

2. *Integrated Circuits for Medical Applications*. J. D. Meindl, P. H. Hudson, and D. M. DiPietro, Stanford University.
3. *Low-power Digital Frequency Synthesis Application Demonstrates Unique CMOS Performance Characteristics*. R. E. Funk, RCA Solid State Division.
4. *Silicon-gate in Micropower Digital Systems*. J. W. Fotz, Motorola Semiconductor.



**SESSION 30: COMPUTER-AIDED TRANSLATION USING TIME-SHARED SYSTEMS**

Friday, August 27, 2-4:30 pm  
Meeting Room 2

Session Organizer and Chairman: R. E. Puckett, University of Kentucky.

1. *Computer Braille Translation at the Atlanta Public Schools*. M. P. Boyles, Atlanta Public Schools, and R. E. Lagrone, IBM/FSD.
2. *An Automated Braille Translation System*. R. L. Haynes, American Printing House for the Blind.
3. *The Development of a Computer Grade 2 Braille Translation Algorithm*. Dr. Lois C. Leffler, Argonne National Laboratory.
4. *Enhancement of Grade 2 Braille Translation*. E. L. Steele and R. E. Puckett, University of Kentucky.



**SESSION 31: ELECTROOPTIC MEMORY, IMAGE STORAGE AND DISPLAY DEVICES**

Friday, August 27, 2-4:30 pm  
Meeting Room 3

Session Organizer: C. E. Land, Sandia Lab.

- Session Chairman: J. C. Crawford, Sandia.
1. *Electrooptic Ceramic Materials*. Gene H. Haertling, Sandia.
  2. *Ceramic Electrooptic Properties and Devices*. P. D. Thacher and C. E. Land, Sandia.
  3. *Electrooptic Devices Using Strain-Biased PLZT Ferroelectric Ceramics*. J. R. Maldonado, Bell Telephone Laboratories.
  4. *The Application of Ferroelectric Materials in Optical Memories*. G. W. Taylor, RCA Lab.



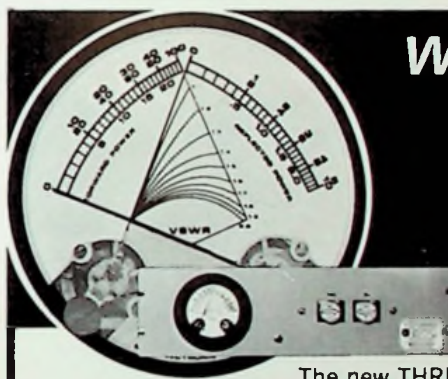
**SESSION 32: AIR POLLUTION CONTROL: WHERE WE ARE, WHERE WE ARE GOING**

Friday, August 27, 2-4:30 pm  
Meeting Room 4

Session Organizer: Dr. Julia T. Apter, Presbyterian-St. Luke's Hospital.

Session Chairman: C. H. Wells, Systems Control, Inc.

1. *Needs in Air Pollution Instrumentation*. Dr. Rene Bertrand, ESSO Research and Engineering, and Dr. A. H. Ellison, Environmental Control Agency.
2. *Measurement and Control of Regional Air Quality*. Dr. Milton Feldstein, Bay Area Air Pollution Control District.
3. *Correlation Spectroscopy and Its Applications To Remote Sensing of Ambient Air Quality*. Dr. Anders Jepsen, Environmental Measurements Inc.
4. *Investigations on the Application of Microwave Spectroscopy to Air Pollution Monitoring*. John Hearn, Hewlett-Packard.
5. *Development, Verification, and Application of Regional Air Pollution Models*. Dr. C. H. Wells, Systems Control Inc.



**We've got it ALL together:  
VSWR and RF Power both ways on ONE meter face!**

The new THRULINE® model 3122 Dual Wattmeter-VSWR Monitor displays all three measurements at once on a single meter face: Forward and reflected power are indicated by individual pointers and VSWR is monitored on a third scale from the intersection of the two pointers.

Unlike most VSWR meters, the economical model 3122 does not require *any* full scale deflection adjustments, or switching for VSWR readings: The entire set of three transmission parameters is read out simultaneously during normal RF operations or maintenance adjustments. Elements determine power and frequency ranges.

**SPECIFICATIONS**

FORWARD POWER: 10-5000W ±5%, 2-1000MHz  
REFLECTED POWER: 1-500W ±5%, 2-1000MHz  
VSWR TO PT. OF MEASUREMENT: 1.035 max.  
MONITORS LOAD VSWR FROM 1.0 TO 2.0

**MODEL 3122 PRICE (WITH N/F Conn): \$200**  
PLUG-IN ELEMENTS (Choose 2) \$30-50 ea.



**ELECTRONIC CORPORATION**

Cleveland (Solon) Ohio 44139 • 30303 Aurora Road  
Ph. 216-248-1200 • TWX 216-248-6458 • Cable BIRDELEC

Local Phone: North (415) 568-1110/South (805) 646-7255

Reply Card No. 5

# COMMITTEE



Larry G. FitzSimmons, *Co-Chairman*  
All-Industry Reception



Ray L. Conlisk, *Co-Chairman*  
All-Industry Reception



Eugene L. Rogers, *Chairman*  
Attendance Committee



V. N. Zachariah, *Co-Chairman*  
DMR Conference



Elvin Feige, *Co-Chairman*  
DMR Conference



Rudolf F. Wagner, *Chairman*  
Exhibits Committee



Ralph Show, *Vice-Chairman*  
Exhibits Committee



John C. Beckett, *Co-Chairman*  
Host Committee



Emmet G. Cameron, *Co-Chairman*  
Host Committee



Roy Twitty, *Co-Chairman*  
Public Relations Committee



Ross Snyder, *Co-Chairman*  
Public Relations Committee



Peter Deitz, *Chairman*  
Registration Committee

# CHAIRMEN



Mrs. John B. Damonte, *Chairman*  
Women's Activities Committee



Mrs. Hugh Kennedy, *Vice-Chairman*  
Women's Activities Committee



Dick Ham, *Chairman*  
Science Film Theater



Frank E. LaFetra, *Chairman*  
Session Coordinators Committee



Edward D. Littman, *Vice-Chairman*  
Session Coordinators Committee



David B. Kirby, *Chairman*  
Sponsors Luncheon Committee



Ray L. Leadabrand, *Chairman*  
Technical Program Committee



Raymond D. Egan, *Vice-Chairman*  
Technical Program Committee



William Weber, *Chairman*  
Visitor Services Committee



Einar Ingebretsen, *Vice-Chairman*  
Visitor Services Committee



Stuart G. Whittelsey, *Vice-Chairman*  
Registration Committee



Scott P. Davis, *Vice-Chairman*  
Registration Committee

**this little 5.2-inch  
battery stands  
bigger than life**

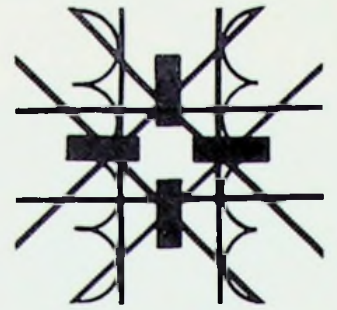


**Globe rechargeable  
gel/cell<sup>®</sup>**

Gel/Cell batteries come in sixteen different sizes. Inside your product, they stand up bigger than life. Gel/Cell with the exclusive gelled electrolyte operates and recharges in any position, through hundreds of complete charge/discharge cycles. The electrolyte is completely sealed in the high-impact polystyrene case. It won't leak out and won't affect battery operation — even if the battery is upside down. Write for complete details, including ratings, specifications and battery sizes. Gel/Cell Marketing, Globe-Union Inc., Battery Division, 5757 North Green Bay Avenue, Milwaukee, Wisconsin 53201.



**GLOBE BATTERY**  
DIVISION OF GLOBE-UNION INC.



**MAGNETICS FOR THE  
SEVENTIES**

The Los Angeles G-33 Magnetics Group of IEEE announces its third year of "Magnetics For the '70's." Again the program is geared to germane topics of the day with supplemental tours and special events. Watch for further details in the Bulletin and monthly meeting notices. The monthly meeting subjects are as follows:

September 22: Progressive Memory Magnetics — with facility tour.

October 20: Mechanical considerations in hardware packaging.

November 17: Late Developments in Magnetic Technology.

December 15: Student Panel Discussion.

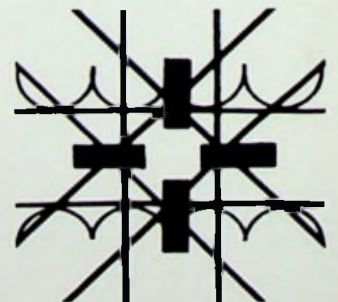
January 19: Economic Considerations in Foreign vs. Domestic Materials.

February 16: Inverter Considerations in Variable Frequency Control — as Applied to Propulsion of Land Vehicles.

March 15: Linear Motor Theory and Design.

April 19: Magnetic Cushion and Low Frequency Magnetic Field Communications.

May 19: Banquet and Address on "Home-oriented Magnetics" — present and future. Additional tours will be announced. For further information call: Lloyd Thornblad at (213) 321-3311.



Reply Card No. 7

# Award Winners



**WESCON KEYNOTER**  
*William F. Glavin, president of Xerox Data Systems, will deliver Wescon keynote address at the traditional Sponsors Luncheon in San Francisco on opening day, August 24.*



**WILLIAM R. HEWLETT**, president and chief executive officer of the Hewlett-Packard Company, has been selected to receive the 1971 WEMA Medal of Achievement. Presentation will be made August 24 at the WESCON Sponsors' Luncheon.



**DR. UNO LAMM**, Swedish scientist called "the father of high-voltage DC power," will be principal speaker at Eta Kappa Nu awards luncheon August 25 at San Francisco Hilton Hotel.



**DR. MARTIN PACKARD**, Varian Associates corporate vice president, will receive the IEEE Morris E. Leeds Award for research at WESCON Sponsors Luncheon August 24 in San Francisco.

**DR. VERN R. JOHNSON**, associate professor of electrical engineering, University of Arizona, Tucson, is the IEEE Region Six Achievement Award Winner. He will receive the award at WESCON for his contributions to engineering education in the area of microwave acoustics and achievements in high school student career guidance.

Tag-Along is a revolutionary new x-ray unit from Bendix. So revolutionary, in fact, it's a truly portable x-ray. Tag-Along weighs in at just under 13 pounds and measures a mere 4½" x 5" x 15". This means it can go easily from one job to another.

Let's talk about quality control applications. Tag-Along can streamline and economize a wide range of inspection jobs. In process, postprocess and final inspection, too. Procedures like checking mechanical structures. Electrical components. Sealed units. Mating, pinning and meshing of parts. How powerful is Tag-Along's metal penetrating power? It'll pierce as much as ¾"-thick aluminum to produce clear, sharp images.

Cost? As promised below, under \$2800.\*

Tag-Along. The truly portable x-ray.

For details, write: The Bendix Corporation, X-ray Department, 3300 Plymouth Road, Ann Arbor, Michigan 48107.



**Tag-Along X-ray.**  
**Under 13 pounds.**  
**Under \$2800\*.**

\*Manufacturer's Suggested Retail Price

Reply Card No. 8

GRID BULLETIN - 19



# wescon

in San Francisco