

EDITOR'S PROFILE of this issue

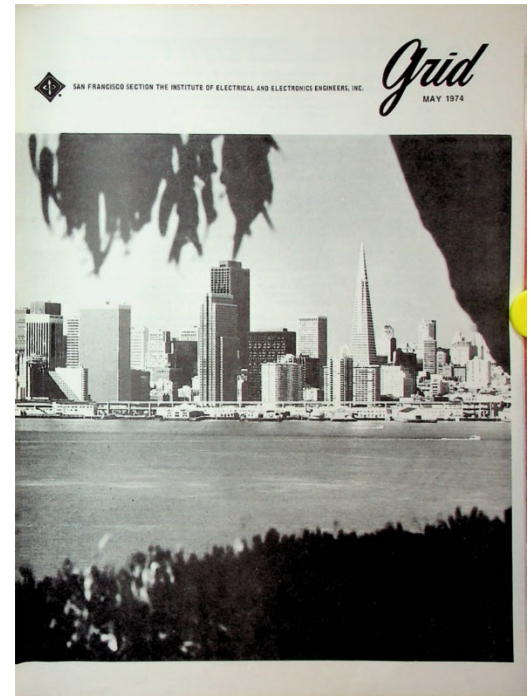
from a historical perspective ...

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

May, 1974:

Cover: A view of San Francisco from the Bay.

Page 5: A faceoff is planned between two new programmable calculators: the HP-65 and the Beta-325



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

https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

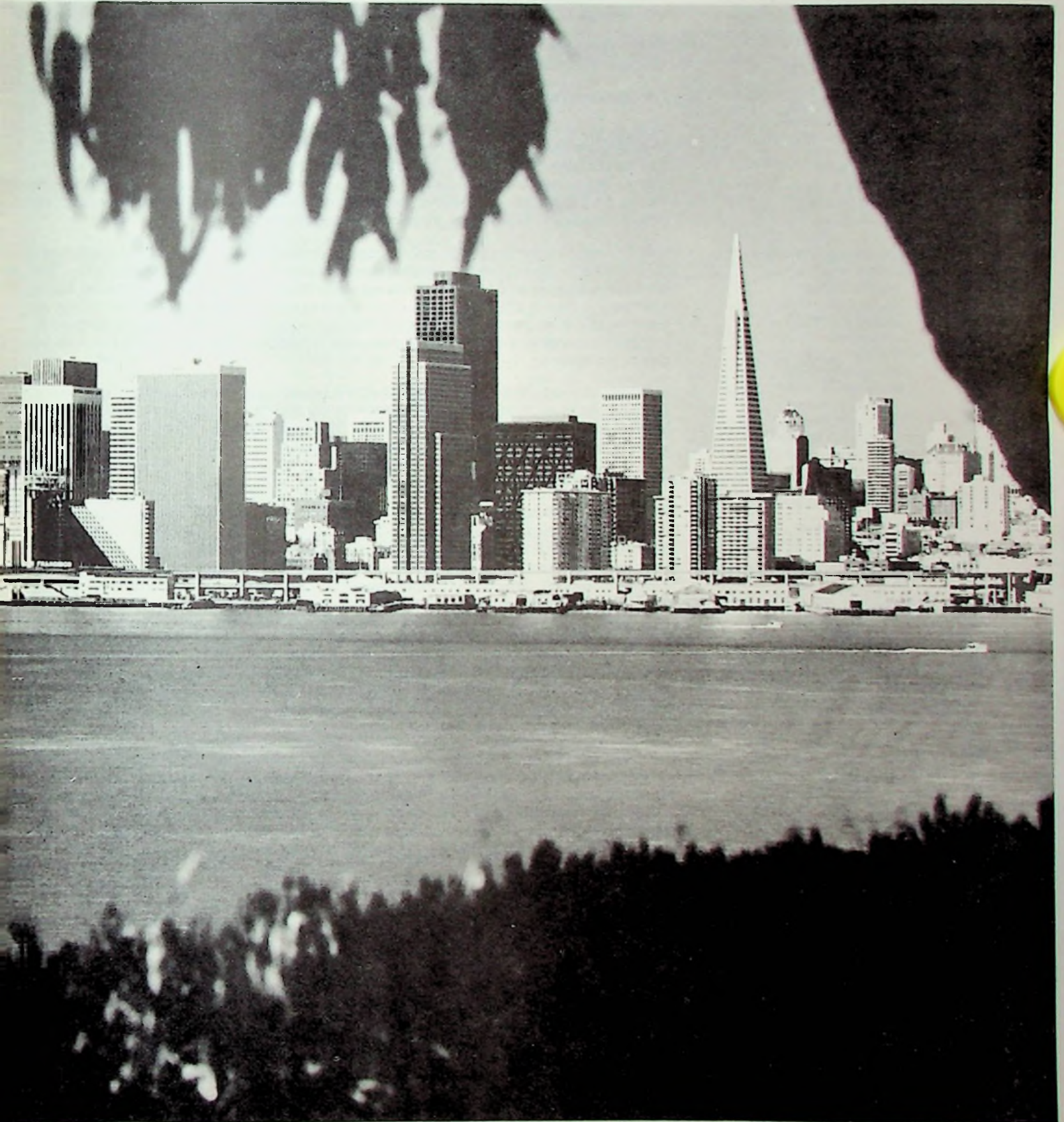
At time of scanning, the bound volumes are held by Paul Wesling. April, 2025 Contact p.wesling@ieee.org



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

Grid

MAY 1974





volume 20
number 8

MAY 1974

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

EDITORIAL BOARD

Dalton W. Martin, Vidar Corp.
E.D. Jackson, PTT Corp.
R.J. Whittier, Intel Corp.
R.W. Anderson, Hewlett-Packard Corp.

EDITOR

E.W. Morris
4050 Valente Court
Lafayette, California 94549
(415) 283-8260

Address all mail except address change to
San Francisco Section Office, IEEE
Suite 2210, 701 Welch Road
Palo Alto, California 94304
Telephone: (415) 327-6622
Jean Helmke, Office Manager
1973-74 San Francisco Section Officers
Chairman: Dalton W. Martin
Vice Chairman: E.D. Jackson
Secretary: R.J. Whittier
Treasurer: R.W. Anderson
Members send address change promptly to
IEEE, 345 East 47th St., New York, N.Y. 10017
Telephone: (212) 752-6800

Second Class Postage paid at Palo Alto, California

SUBSCRIPTIONS:
\$4.00 per annum



**NOTICE - NEXT ISSUE OF GRID
SEPTEMBER**

This May issue of the GRID will be the last until September. Deadline for September issue is July 30, at the office.



EMPLOYMENT OPPORTUNITIES

The section office in Palo Alto has been acting as a referral service for IEEE members seeking employment, and for employers seeking qualified applicants. Jean Helmke reports that requests from local employers now greatly exceeds the number of resumes and applications on file. If interested, drop in at the section office, address on page 2, and look over the file of employment offers.

PROFESSIONAL ACTIVITY COMMITTEE NEWS

IEEE Employment Referral Service

As described in the April GRID, PAC has established an Employment-Referral Service for IEEE members, on a trial basis.

Members seeking employment should contact Mrs. Jean Helmke, Office Manager, San Francisco Section Office, IEEE, Suite 2210, 701 Welch Road, Palo Alto, CA 94304, telephone (415) 327-6622.

Employers with job openings are encouraged to send all pertinent information to the above office.

All members are encouraged to bring the availability of this referral service to the attention of their personnel departments.

Pension Legislation

Most of you will probably have learned the good news from the media. At the end of February, the House passed a pension-reform bill containing the provisions that IEEE has been lobbying and fighting for. The bill will now go to a joint Senate-House committee. The committee will reconcile the differences between the House bill and the Senate bill passed last September. Because both bills are very similar there is an excellent chance that all pertinent provisions will be left intact.

One provision of the legislation will be very important to the 12% of the IEEE membership that is working for an employer that does not offer any pension plan. This provision will allow an employee to invest up to 20% or \$1500 of his annual salary, whichever is less, in a qualified pension fund and to defer taxes until retirement. This tax break results in an effective increase of 25% or more of the individual's retirement investment depending on his income-tax bracket. In addition, the earnings of the fund will also be tax deferred.

As reported in this space previously, PAC had sent a position statement on pension legislation to each of the 13 congressmen in the Bay Area. Half of them responded. Most of their responses were sympathetic. Most significantly, however, all of them voted for the bill and the amendments important to us.

Career Patterns of Electrical Engineers

PAC is considering to investigate the career patterns of EE graduates. Joe Wakabayashi is directing a preliminary study to determine the magnitude of the effort required to produce meaningful quantitative results. The objectives of the project would be to find answers to questions such as: how well does the demand for EE graduates match the supply?, how many EEs change into other fields?, how many change into managerial positions?, what happens to the engineers that are laid off?, etc.

Projects of relatively large scope, such as the one just described, are now becoming possible because the United States Activity Committee (USAC) has recently made available funds to cover expenses incurred in carrying out approved projects. The funds are part of the USAC budget established with the five dollars by which the membership dues were increased to finance professional activities.

USAC is a committee that has been set up to organize professional activities on the national level. The committee concerns itself with professional activities such as manpower planning, ethics in employment, employment services, professional opportunities for women, surveys, career development, technological forecasting, intersociety energy policy, PAC coordination, government relations, pension planning, public relations liaison, and consumer standards. A more complete description of the activities of USAC and its history is given in the February issue of the IEEE Professional News.

* * * * *

Members who would like to join the PAC roster or who would like to contribute to a particular project can contact the undersigned, telephone: (415) 364-6756, or the Palo Alto Office.

Hermann F. Schmid, Chairman
Public Relations Sub-Committee
PAC, San Francisco Section

MEETING CALENDAR

AEROSPACE & ELECTRONIC SYSTEMS/ENGINEERING MANAGEMENT/ELECTRO-MAGNETIC COMPATIBILITY MAY 30

Story on Page 6

JOINT SOCIAL MEETING - wine tasting and barbecue steak dinner. Open to members and guests, but limited to 225 persons.

MAY 30, Thursday 6:30 PM, Paul Masson's Mountain Winery, Saratoga (see map with story). Price per person is \$8.50. Make check payable to SF Chapter AES and mail to Roger G Winslow, 19455 Melinda Circle, Saratoga 95070, by May 23rd. Your tickets will be mailed to you at your home.

ANTENNAS & PROPAGATION MAY 8

Story on Page 4

NORTHERN CALIFORNIA SYMPOSIUM ON ANTENNAS and PROPAGATION.

MAY 8, Wednesday, 1:30 to 4:30 PM, Lockheed Auditorium, Bldg 202, 3251 Hanover St., Palo Alto. No dinner. Registration fee \$1.00

COMMUNICATIONS SOCIETY MAY 14

Story on Page 4

TOUR OF PHILCO-FORD CORP. DEVELOPMENT TEST FACILITY AND SATELLITE TRACKING ANTENNA. Jess Diggs, Philco-Ford WDL, Palo Alto.

MAY 14, Tuesday, 6:30 PM, sharp for dinner in the University Room at Rickey's Hyatt House, 4219 El Camino Real, Palo Alto. For the tour, meet between 7:45 and 8:00 PM at the employment lobby, Bldg. 1, Philco-Ford, 3939 Fabian Way, Palo Alto. Reservations: Lee Stephens (415) 961-3535 x 213 by May 13th.

COMPUTER SOCIETY MAY 15

Story on Page 4

10,000 LINE PER MINUTE COMPUTER PRINTER USING PLAIN PAPER. James Sutherland.

MAY 15, Wednesday, 8:00 PM, University of Santa Clara Daly Science Hall, Room 207. Dinner: 6:15 PM, University Faculty Club on campus. Reservations: Pat Rubin, (415) 965-6349 by May 14th.

EAST BAY SUBSECTION MAY 20

Story on Page 4

TOUR - JUDSON STEEL ELECTRIC ARC FURNACE FACILITY.

MAY 20, Monday, 7:30 PM, Judson Steel Corp., 4200 Eastshore Highway, Emeryville. No dinner. No reservations required.

ELECTRON DEVICES MAY 21

Story on Page 6

PANEL DISCUSSION: PRESENT AND FUTURE IN PHOTOMASK EQUIPMENT. Moderator: Jim Day, Texas Instruments, Inc.

MAY 21, Tuesday, 8:00 PM, The Bold Knight, 769 N. Mathilda Ave., Sunnyvale. Cocktails at 6, dinner at 7 PM. Reservations: Section office (415) 327-6622.

ELECTROMAGNETIC COMPATIBILITY/MICROWAVE THEORY & TECHNIQUES MAY 20

Story on Page 7

JOINT MEETING: HEAVY TRANSPORTABLE SATELLITE COMMUNICATIONS GROUND TERMINAL OPERATIONS AND EMC. Jess Diggs and Sam Shankle, Philco-Ford, Palo Alto.

MAY 20, Monday, 8:00 PM, Philco-Ford, 3939 Fabian Way, Palo Alto. Cocktails at 5:30 and dinner at 6:30 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Clay Doggett (415) 326-4350 x 5897 or Don Messner (408) 732-0880 by May 17th.

ENGINEERING IN MEDICINE & BIOLOGY MAY 14

Story on Page 8

ACTIVE BIOLOGICAL FIBER AS AN ELECTRICAL SOURCE. Dr. Robert Plonsey, Pres., GEMB Adcom, IEEE.

MAY 14, Tuesday, 8:00 PM, Stanford Medical Center, Room M 104. Dinner: 6:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Miss Karin Carlson (408) 739-8880 x 322 by noon May 14th.

GOLDEN GATE SUBSECTION MAY 16

Story on Page 4

BELL SYSTEM DATAPHONE® DIGITAL SERVICE. Carl B. Felten, Pacific Telephone.

MAY 16, 12 noon, PG&E Cafeteria. Luncheon meeting. Reservations: Art Wells (415) 467-1880 by May 14th.

INDUSTRIAL ELECTRONICS & CONTROL INSTRUMENTATION /INSTRUMENTATION MEASUREMENT MAY 15

Story on Page 7

COMPUTER CONTROLLED INSTRUMENT CALIBRATION. Don Lawrence, R&D Engineering Group Manager, Hewlett-Packard Co.

MAY 15, Wednesday, 8:00 PM, HP Service Center, 333 Logue Ave., Mt. View. Center is located one block NW of Mt. View-Alviso Road off Middlefield Ave. entrance on side of building. No dinner.

INDUSTRY APPLICATION SOCIETY MAY 28

Story on Page 7

ELECTRICAL SYSTEMS FOR HIGH RISE OFFICE BUILDINGS. Charles Shalley, Partner, The Engineering Enterprise.

MAY 28, Tuesday, 7:30 PM, Four Seas Restaurant, 731 Grant Ave., San Francisco. Cocktails at 6, dinner at 6:30 PM. Reservations: Ted Bubb (415) 981-6440 or Wes Fennér (415) 894-4022 by May 27th.

INFORMATION THEORY MAY 20

Story on Page 5

A DETERMINISTIC APPROACH TO VARIABLE-STEP DELTA MODULATION. Peter A. Franaszek, Visiting Professor at Stanford University.

MAY 20, Monday, 8:30 PM, Conference Room B, Bldg. 1, SRI, 333 Ravenswood Ave., Menlo Park. Dinner: 6:15 PM, The Cellar, 4926 El Camino Real, Los Altos. Reservations: D. Wilson (415) 966-2595 or 966-3286 by May 20th.

MAGNETICS MAY 23

Story on Page 7

PANEL DISCUSSION: REVIEW OF THE 1974 INTERNATIONAL MAGNETICS CONFERENCE. John Newman, Moderator. ELECTION MEETING!

MAY 23, Thursday, 8:00 PM, Hewlett-Packard Auditorium, 5301 Stevens Creek Blvd., Santa Clara. No dinner.

POWER ENGINEERING SOCIETY MAY 14

Story on Page 7

FIELD TRIP - MT. SUTRO TOWER ANTENNA COMPLEX. Limited to 40 persons. Harry Jacobs, Director of Engineering, Sutro Tower, Inc.

MAY 14, Tuesday, 6:00 PM, Car pool from Beale St., side of PG&E, San Francisco. No dinner. Reservations: Molly Milan (415) 445-2227 by May 13th.

RELIABILITY MAY 15

Story on Page 5

PANEL AND DEMONSTRATION OF HP-65 vs. COMPUCORP BETA 326: THE PROGRAMMABLE HAND CALCULATORS ARE HERE!

MAY 15, Wednesday, 8:00 PM, Stanford University Physics Lecture Hall - PH 101. Dinner: 6:30 PM, preceded by "Happy Hour" at 6:00, at Stanford View Restaurant, 1921 El Camino Real, Palo Alto. Reservations: Section office (415) 327-6622 by May 13th.

SANTA CLARA VALLEY SUBSECTION MAY 15

Story on Page 6

WINE TASTING AND DINNER FOR IEEE MEMBERS AND GUESTS.

MAY 15, Wednesday, 6:30 PM for wine tasting and 7:30 for dinner (See map with story). \$7.50 per person including wine. Reservations required: P.H. Simpson (408) 291-2114 by May 8th.

SYSTEMS MAN & CYBERNETICS MAY 8

Story on Page 8

NEW INSTITUTIONS AND PROFESSIONAL TRAINING NEEDED FOR CIVILIAN TECHNOLOGY POLICY. Prof. William Linville, Stanford University.

MAY 8, Wednesday, 8:00 PM, Conference Room B, Bldg. 1, SRI, 333 Ravenswood Ave., Menlo Park. Dinner: 6:15 PM, Red Cottage, 1706 El Camino Real, Menlo Park. Reservations: Section office (415) 327-6622.

SYSTEMS, MAN & CYBERNETICS JUNE 12

Story on Page 8

ESP: EFFECTS OF UNFAMILIAR MODELS IN SCIENCE: James Fadiman, Stanford University Lecturer.

JUNE 12, Wednesday, 8:00 PM, SRI, Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: 6:15 PM, Red Cottage, 1706 El Camino Real, Menlo Park. Reservations: Section office (415) 327-6622.

JUNE 7 SF Section, 3 Subsection and all 21 Group/Society Chapters

Story on Page 5

ANNUAL SECTION DINNER MEETING

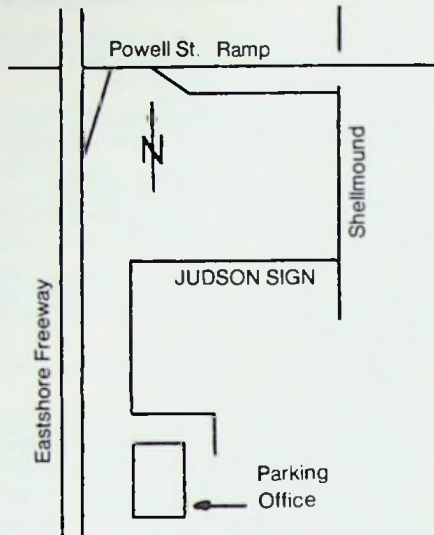
The entire San Francisco Section joins together for the Annual Dinner-dance meeting. Special Feature: "Energy and Engineers, Their Wives, Children and Childrens' Children". Will H. Camtois, Westinghouse Electric Corp., Pittsburgh, Pa.

JUNE 7, Friday, The Engineers Club of San Francisco, 160 Sansome St., corner of Pine St., S.F. (Hongkong Bank Building). Cocktails at 6:30, dinner at 8:00 and dancing till midnight. "Jack London Broil" dinner including wine, tax and tip. Cost per person is \$12.50. For tickets and reservations call the Section office (415) 327-6622. Tables can be arranged.

EBSS TO VISIT NORTHERN CALIFORNIA'S LARGEST ELECTRIC ARC FURNACE

The East Bay Subsection will tour the Judson Steel Corporation's electric arc furnace and rolling mill facility on May 20 at 7:30 p.m. Judson Steel is the oldest steel plant on the West Coast yet their electric arc furnace is one of the most modern. The tour will illustrate an outstanding example of the efficient use of electrical energy to recycle all kinds of scrap steel. The raw material is supplied by over 300 independent scrap dealers from all over Northern California.

The huge 14 foot diameter "Whiting" hydro arc furnace processes 50 tons of scrap in one melt. The "ultra high power" furnace draws an average of 30,000 amps through each of three 16" diameter by 18 foot long graphite electrodes. Average electric load during a melt is 12,000 kW yet a ton of ingot is produced for less than 500 kilowatt-hours. The end product consists of high quality reinforcing bar in various sizes. Highlights of the tour will include an actual melt (this is an awesome sight), a pour (at 2950 F) and the rolling mill in operation.



The tour will start at 7:30 p.m. at the office area parking lot located at 4200 Eastshore Highway in Emeryville. Directions from the Powell Street Offramp of the Eastshore Freeway are shown in the sketch.

APS -- MAY 8 SYMPOSIUM

Northern California Symposium on Antennas and Propagation, Wed. 8 May 1974, 1:30-4:30 PM, LMSC Auditorium, Bldg. 202, 3251 Hanover, Palo Alto, will feature the following papers:

"Computer Programs for Multiflare, Finned and Corrugated Horns" - H.W. Bilenko, Philco-Ford.

"The Bowtie Vee Antenna -- A Broadband Expandable Structure" - R.H. Grace, Philco-Ford.

"Determination of In-Situ Electrical Parameters for a Multi-Layered Medium" - R.J. Lytle, E.F. Laine, D.L. Lager, J.T. Okada, Lawrence Livermore Laboratory.

"Comparison of Sommerfeld and Ray-Optics Approaches for an Electrically Long, Single-Wire Antenna Close to the Ground" - R.J. Lytle, D.L. Lager, E.F. Laine, E.K. Miller, F.J. Deadrick, Lawrence Livermore Laboratory.

"Are Mutually Incoherent Signals Statistically Independent?" - J.R. Huynen, Lockheed.

"Shape Beam Patterns" - A.E. Smoll, Philco-Ford.

"The Effect of Tolerances on the Isolation of Frequency Reuse Antennas" - H.S. Lu, Philco-Ford.

Registration fee: \$1.00

GRID - 4

COM - PANEL DISCUSSION SATELLITE TRACKING STATIONS

The Air Force operates a worldwide network of satellite tracking stations. When new computer programs or equipment modifications are desired at the remote tracking stations, only a minimal interruption in station operation time for these software or hardware updates can be tolerated. To accomplish this objective, all proposed modifications to existing programs or equipment are first "debugged" at an exact replica of the tracking stations which is operated "off line." This testing ground is Philco-Ford's Development Test Facility (DTF).

A description of the satellite control facility; the role of the DTF; and the types of communications and data links for the entire system will be presented by Mr. Jess Diggs, Supervisor of Philco-Ford Corporations' DTF Operation and Maintenance Section. Following the description will be a tour of the DTF area and the 60' diameter tracking antenna adjacent to it.

Because of security regulations, all attendees are asked to meet in the main employment lobby of Philco-Ford Bldg. 1, 3939 Fabian Way, Palo Alto, between 7:45 and 8 PM.

See CALENDAR for Program Arrangements

GGSS - BELL SYSTEM DATAPHONE ® DIGITAL SERVICE

Mr. Carl B. Felien of Pacific Telephone will describe the Bell System's newest data communications service - DATA-PHONE ® Digital Service. Among the features he will discuss are the Digital Data System transmission plan, Data Under Voice (also known as DUV), and the responsive DDS maintenance features.

Mr. Felien is currently assigned to the Engineering Department of Pacific Telephone Headquarters in San Francisco. He is the Company Wideband Data Specialist and is involved with DDS plans in California. He is a BSEE graduate of Los Angeles State University.

® Registered Service Mark of AT&T Company

Election of Chapter officers will also be held.

C - 10,000 LINE PER MINUTE COMPUTER PRINTER USING PLAIN PAPER



A uniquely new type of nonimpact printer has been developed which exhibits a quantum jump in the hardware characteristics that are the quest of computer users: faster, less expensive, more versatile, and more reliable than most currently available equipment. Prototypes of this new printer have printed alphanumeric characters at speeds greater than 10,000 lines per minute, using ordinary fanfold computer paper, at a lower cost per page than existing high speed line printers. This new unit is a printer/plotter capable of printing an unlimited variety of electronically stored dot-matrix character fonts or plotting dot-pattern graphics at 100-dot-per-inch (4 dots/mm). Both the technology and its applications will be discussed.

James Sutherland received both his BSEE and MBA from Stanford University. He was the founding engineering manager of ElectroPrint where the printer was developed. Previous to spending the last four years in printer development he was responsible for minicomputer development at Data Technology Corporation.

MAY 1974

By

**Charles A. Eldon, Chairman
Nominations Committee**

ANNUAL DINNER DANCE



SAN FRANCISCO ENGINEERS' CLUB

FRIDAY JUNE 7, 1974

All three Subsections and 21 Group /Society Chapters join with the Section for a delightful evening in San Francisco on Friday, June 7th. It promises to be the social highlight of a successful Section year.

The location is the beautiful 17th floor dining room of the S.F. Engineers Club. You will enjoy a delicious "Jack London Broil" dinner, with wine included, and then dance to the "Nick Jordan Trio". During the cocktail hour and dinner, the musicians will offer pleasing harmonies while strolling through the dining room. The cost is \$12.50 per person, and thanks to the SF Engineers Club, you

can't come close to such a grand event for twice the cost!

An additional special feature of this meeting will be a talk by Mr. Will H. Camtois of Pittsburgh, Pa., on the subject, "Energy and Engineers, Their Wives, Children and Childrens' Children. Mr. Camtois has a degree of Engineer from Stanford University and consultant for the Westinghouse Electric Corp. He has given talks on this subject to IEEE meetings throughout the USA. He is singularly qualified to use the word "children" in his title because he has 10 of them! Don't miss this provocative, informative and entertaining talk!

**R - HP-65 VS. COMPUCORP
BETA 326**

The programmable hand-held calculators are here! The battle of the programmable hand held calculators has begun. There are now two viable contenders. What are the advantages, weaknesses, usefulness to engineers, calculator reliability, problems of each of these sophisticated machines.

The HP-65 is the same size as the popular HP-35, HP-45 and H-80. It has many hard wired functions plus magnetic card programming functions. Computer Design's new Compucorp Beta 325, although larger, is the world's most powerful hand-held programmable calculator. This calculator mates with cassette memory that can store up to 9,000 data values and 100,000 program steps.

Now you can see and compare these calculators first hand and dig deep into the realities of what this technology can do for you, at the May 15th meeting of the Reliability Chapter.

**IT - A DETERMINISTIC APPROACH
TO VARIABLE-STEP DELTA
MODULATION**

A study is described of delta modulators where the quantizing parameter delta is a function of a finite number of previously emitted bits. Sufficient conditions are obtained for bounding the steady-state quantization error by the current value of delta under the assumption that input signals are limited both in amplitude and frequency. Results of the analysis are compared with those obtained from a stochastic approximation program.

Peter A. Franaszek received the Sc.B degree from Brown University, and the M.A. and Ph.D. degrees from Princeton. He first worked at Bell Telephone Laboratories. In 1968, he joined the IBM Research Division, where he is a member of the Computer Science Department. During the current academic year he is on sabbatical leave from IBM as a Consulting Associate Professor of Computer Science and Electrical Engineering at Stanford University.

You may have noticed that there was only one nominee each for Secretary, Vice Chairman and Chairman on the recent ballot. You may *not* have recalled that these nominees (as in most years) were elected to the next lower spot on the ballot last year. Only the Treasurer position -- the bottom of our organizational heirarchy, has two new nominees each year; although there are spaces for "write-in" candidates for each position. Each candidate for Treasurer is asked to make a commitment to serve the Section for four years, on the assumption that once elected, he will be nominated in subsequent years to move up through the other offices. There is, however, no obligation by the Section: if the Treasurer should prove incompetent or incompatible, someone new would be nominated for Secretary in the next year.

From time to time this precedent is reviewed and explained. Each year it is re-considered by the Section Nominations Committee; because it is not automatic, but simply a matter of precedent --- a precedent followed within most of the Sub-Sections and Group Chapters of our Section (and most others).

The reasons for this precedent are purely practical:

- 1 - It takes time for a volunteer to become acquainted with the quite complex policies, procedures, and problems of the Section, and to become acquainted with the people he is representing.
- 2 - Yet the policy of the Section wisely prohibits any second terms.

One risk of this procedure is that apathy might permit an ineffective or unreliable officer to stay on EXCOM for four years. Another is that some members get an impression that a clique is in control. Both of these risks are reduced to the extent that members become active: they discover that elected positions in IEEE are strictly a service to the society, not a power base, and that most of the volunteers are sufficiently jealous of the time they contribute that they insist on effectiveness.

The *real* problem, instead, is that there are always too few members able or willing to contribute. There are always many more things to do than people to do them.

Do I hear anyone volunteering?



**AES - EM - EMC JOINT SOCIAL MEETING
WINE TASTING AND BARBEQUE DINNER THURSDAY MAY 30, 1974**

Members, wives and their guests are invited to attend this 1974 joint social event at the beautiful and historic Paul Masson Mountain Vineyard and Winery in Santa Cruz mountains, high above Saratoga. Wine-tasting will begin at 6:30 p.m. and the barbeque dinner, catered by Mayberg's of San Jose will start at 7:30 p.m. The menu will include a New York steak, a variety of salads, baked potato, beef bratwurst, dessert and coffee. Wine, compliments of Paul Masson, will be served with dinner.

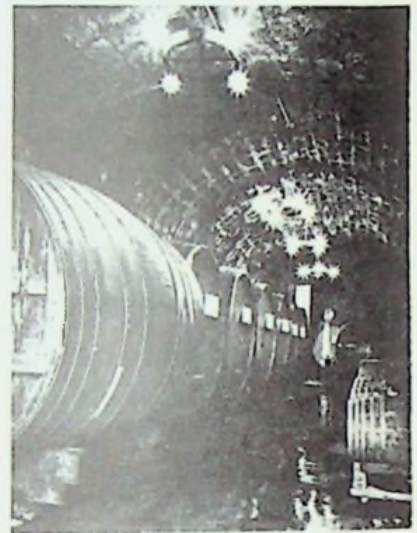
Dinner tickets are \$8.50 per person. Order tickets by sending checks, made out to Aerospace & Electronic Systems Society, San Francisco Section, to Roger G. Winslow, 19455 Melinda Circle, Saratoga, Calif. 95070. Please include names of members and guests. Dinner tickets will be mailed to your home and must be presented for admittance to the Winery. The deadline date for ticket orders is May 23, 1974. Attendance is limited to 225 persons. See map for travel directions.



SCVSS WINE TASTING AND DINNER

The Santa Clara Valley Subsection will hold their annual social meeting at the Novitiate Winery in Los Gatos for IEEE members and their guests.

This will be an opportunity to meet the new subsections officers and renew old acquaintances. The wine tasting will start at 6:30 p.m., dinner at 7:30 p.m. The price of the dinner, \$7.50, includes the dinner wine. Advance reservations are required, call Phillip Simpson 291-2114 by May 8.



1. From Highway 17 to Santa Cruz, turnoff at East Los Gatos Rd to Los Gatos, San Jose Rd.
2. Turn right and continue on Los Gatos, San Jose Rd. which becomes Main St.
3. Take left turn onto College Ave., continue up College Ave to NOVITIATE WINERY.
4. Enter NOVITIATE property and continue up hill to parking area at winery.
5. From Santa Cruz via Highway 17, take Los Gatos off-ramp and proceed to Main St. Turn right on Main St. to College Ave. then turn right on College. Follow directions 3 & 4 above.

1974 USNC/URSI-IEEE MEETING
October 14-17, 1974
University of Colorado, Boulder, Colo.

Call for Papers

IEEE G/S involved include: Geoscience Electronics, Information Theory, Instrumentation and Measurement, Antennas and Propagation, Circuits and Systems, Microwave Theory and Techniques.

Abstracts and two copies due July 19, 1974 to Dr. C. Gordon Little, Secy. USNC/URSI, Wave Propagation Lab., Nat'l. Oceanographic and Atmospheric Adm. Boulder, Colo. 80302.

Information: Richard Y. Dow, NAS, 2101 Constitution Ave., Washington, D.C. 20418

**ED - PANEL DISCUSSION
PHOTOMASK**

The Electron Devices Chapter will present a panel discussion on "Present and Future in Photomask Equipment" on May 21st. The moderator will be Jim Day of Texas Instruments. Panel speakers are Carl Johannsmeier, Kasper Instruments, Henry Tancredi, Kulika & Soffa, Sam Herrel, Cobilt, Peter Muller, Perkin-Elmer, and Bill Lizesay, Radiant Energy Systems.

The panel members will present and discuss technical approaches to the solutions of photomask alignment and exposure problems, characteristics of existing and future integrated circuit manufacture.

UC-DAVIS EXTENSION

Digital Processing of Signals
June 13-15, 1974

Three day short course, sponsored by UC-Davis Extension, and Sacramento Section of IEEE. Information, contact: University Extension, UCD, Davis, Calif. 95616, telephone (916) 752-3093

UC - DAVIS EXTENSION

Solar Energy for Heating and Cooling Buildings. State-of-the-art. Room 1066, Bainer Hall, UCD; Saturday, 8:30 a.m. to 4:30 p.m. June 15. Fee \$35. Enrollment requested by June 7.

**1974 NUCLEAR SCIENCE SYMPOSIUM
and
14th Scintillation and
Semiconductor Counter Symposium**

December 11-13, 1974 - Washington, D.C.

Call for Papers - Due June 2, 1974

Authors should submit 10 copies each of a 50 word abstract and a 500 word summary by above date. For further information, contact either:

G.L. Miller
ID-462, Bell Telephone Laboratories
Murray Hill, N.J. 07974
Telephone (201) 582-6721

or
H.A. Thomas
Gulf Energy and Environmental Systems
P.O. Box 608, San Diego, CA 92112
Telephone (714) 453-1000



POWER SYSTEM CONTROL

California Polytechnic State University
May 16-17, 1974
Professional Workshop

Fee: \$125. Special rate to sponsors of Electric Power Institute. For information: Dr. Saul Goldberg, Director, Electric Power Institute, Calif. Polytechnic State Univ., San Luis Obispo, CA 93407. Telephone: (805) 546-2315

IAS - ELECTRICAL SYSTEMS FOR HIGH RISE OFFICE BUILDINGS



Mr. Charles H. Shalley, Partner in the consulting electrical engineering firm, The Engineering Enterprise, Berkeley, will present an illustrated discussion of electrical systems in high rise office buildings. He will emphasize current design trends, code and inspection decisions, new products and systems, and show some selected projects completed in the Bay area.

Specific topics to be discussed will include:

Inspection authority decisions; NEC Code; Implications of Life Safety Code; Branch Circuit Distribution Methods; High and low voltage distribution; UPS and other special power systems; Power consumption and energy conservation; Lighting design trends; Communication and control systems; Security systems; System operation and maintenance.

Mr. Shalley has a BSIE degree from Georgia Institute of Technology, and is a registered electrical engineer in California, Georgia, Nevada and Michigan. He is a member of IES and NSPE.

For meeting details see Calendar.

MAG - REPORT ON INTERNATIONAL CONFERENCE

Technical papers requested at the International Magnetics Conference in Toronto, Canada, May 14-17, 1974, will be reviewed on May 23rd at the Magnetics Chapter meeting to be held at Hewlett-Packard Co. auditorium in Santa Clara. The review panel will be composed of members of the SF Section Magnetics Chapter who attended the conference. John Newman, Chairman of the Chapter will be the moderator.

Subjects of interest will include permanent magnetex, magnetic recording techniques and theory, unconventional recording and materials, progress in magnetic bubble memories, magneto-optics, and memory systems.

IECI-IM COMPUTER CONTROLLED INSTRUMENT CALIBRATION

As instruments become more complex, the problem of maintaining calibration and MBS traceability is placing a heavier and more demanding workload on the calibration laboratories. At the same time, older instruments must still be considered since economics prevents eliminating them at too rapid a rate.

To help improve cal-lab throughput, automation in the form of computer controlled Instrument Calibration Systems have begun to appear on the market. Mr. Lawrence will discuss some of the considerations in the design and development of one such system and the steps taken to provide improved utility of the system, which is capable of providing faster turn-around in the calibration of oscilloscopes, electronic meters, counters, and signal sources. Finally, an instrument calibration will be demonstrated on an operating system.

Don Lawrence, an R&D engineering group manager, has been with the Automatic Measurement Division of Hewlett-Packard since he obtained his BS from San Jose State University in January, 1965. He also has an MBA from the University of Santa Clara. His previous responsibilities at Hewlett-Packard have included management of the Data Acquisition Systems custom engineering group, and management of the systems manufacturing assembly and test activity.

The meeting will be held on Wednesday, May 15 at 8:00 PM at the Hewlett-Packard Service Center, 333 Logue Ave., Mountain View. The Center is 1 block NW of the Mt. View-Alviso Road off Middlefield Ave. Entrance is on the side of the building.

Elections will be held at this meeting.

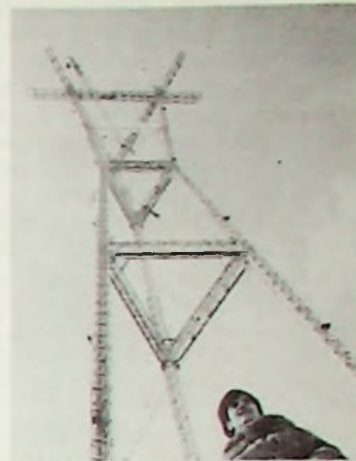
THE COVER STORY

San Francisco plays host to many IEEE General Meetings, Technical Conferences, Symposiums and Committee Meetings.

Those of us who live and work here like to think of the San Francisco Bay Area as a source of continuous renewal of inspiration. The Committees work hard to insure that the visitors' attendance not only will be profitable, but also enjoyable, and that they will take home a renewed feeling of vitality and remembrance of the beauty of the area.

(Photo courtesy San Francisco Visitor's Bureau).

PES TO VISIT SUTRO TOWER



Independence Day, 1973 marked a super-special day for Bay area television. On that day all television signals radiated from the same point, Mt. Sutro. By aiming their antennas toward the new friendly giant, many could enjoy improved reception on all available UHF and VHF T.V. Channels as well as the FM radio stations on the Tower.

On Tuesday evening, May 14, the Power Engineering Society will tour the Tower complex under the direction of Mr. Harry Jacobs, Director of Engineering, Sutro Tower, Inc. The facility is limited to 40, so it'll be first-reservation-first-on-the tour. We'll all meet in front of the PG&E building at 77 Beale Street prior to 6:00 PM to pool rides to the Tower. The caravan leaves at 6:00 PM. We should be back by 8:00 PM. Call Molly Milan at 445-2227 for reservations.

EMC - MTT JOINT MEETING TRANSPORTABLE SATELLITE COMMUNICATIONS GROUND TERMINAL OPERATIONS AND EMC

Jess Diggs, Supervisor, DTF Operations and Maintenance, will give a presentation on the capabilities, operation, and maintenance of the Heavy Transportable (H/T) Satellite Communication Ground Terminal located at Philco-Ford's Western Development Labs in Palo Alto. Sam Shankle, Supervisor WDL's Electromagnetic Compatibility Facilities, will discuss the EMC tests performed on the H/T Terminal and associated mobil Communications Subsystem. A guided tour of the H/T Terminal will follow the presentations.

SMC - ESP: EFFECTS OF UNFAMILIAR MODELS IN SCIENCE

How does a parapsychological researcher working with student volunteers or a vaunted "psychic" individual design an experimental program? What kinds of conceptual structures is he trying to validate, quantify, extend, or full in? What strategies does he pursue to gain new information about extra-sensory modes of perception, psychokinetic action, or communication? How much of his energy and program is devoted to trying to verify other people's reported findings? How much simply to trying to establish or maintain credibility? How is research in this field related in style, technique and content to research in the physical sciences and in behavioristic psychology?

The SMC chapter will have as its speaker at the June 12 meeting James Fadiman, a Lecturer in the Design Division of Mechanical Engineering at Stanford University with a Ph.D. in Psychology. President of the Association for Transpersonal Psychology, Dr. Fadiman has conducted research in altered states of consciousness for the past decade. An Editor for Prentice-Hall, he recently edited a book called "Exploring Madness."

EMB - ACTIVE BIOLOGICAL FIBER AS AN ELECTRICAL SOURCE

A quantitative description of intra- and extra-cellular fields of a single circular cylindrical fiber resulting from the propagation of an action potential will be presented. Several formulations are noted; one formula which permits identification of free-space source and sink relationships, will be examined in some detail. The physical models which this formula gives rise to will be described and developed. Desirable approximations are considered and the conditions of their validity is discussed. A convolution integral formulation to field patterns (from their sources) will be presented. Application to models of CARDIAC activation will be discussed.

This lecture will be presented by Dr. Robert Plonsey, President, GEMB ADCOM.

MICROWAVE OVEN SAFETY

Microwave ovens are not categorically a health hazard. This is the position of the IEEE Committee on Man and Radiation (COMAR). While agreeing with the need for an emission standard on all microwave ovens, the committee disputes the notion that a microwave appliance cannot be considered acceptable unless there is no detectable leakage.

SEMINAR-COST ESTIMATING FOR THE ELECTRONICS INDUSTRY

Foothill College Campus - May 7 and 14, 1974, Tuesdays 7:00 p.m. to 9:30 p.m.
District Board Room, 12305 El Monte Road, Los Altos, just off Highway 280.

Fee: \$20 at meeting. \$15 for early pre-registration. Make checks payable to:
R.J. O'Neill Enterprises, P.O. Box 1747 Los Gatos, CA 95030
Registration limited to 50 persons.

Speakers from industry include:
Jim Franklin, Supervisor of Manufacturing Cost Analysis, Memorex
Max Chandler, Materials Manager, Iomec
Robert O'Neill, Principal, R.J. O'Neill Enterprises

Subjects Covered:
Facility Variables
Engineering Variables
Learning Curve Applications
Hourly Rate Considerations
Burden Considerations
Computer Aided Time Standards
Comparison of Estimating Systems and Techniques
Pre-Determined Standards

'74 ASSC

Automatic Support Systems Symposium for Advanced Maintainability

Call for Papers

October 29-31, 1974 San Diego
Abstract and biography due June 1, 1974, Authors will be notified by June 15, 1974, Complete papers due September 1, 1974
Information: Dick Reyburn, Program Chairman, P.O. Box 81127, Mail Zone 7-09, San Diego 92138--Phone (714) 279-7301 x 3171.

UC - SANTA BARBARA EXTENSION

The Competitive Edge: Marketing as a Profit-Making Function for the Technical Product and Service Firm. Three day workshop, May 22-24, Santa Barbara Inn. Jerry Frank, President of IMA, will lead seminar.

Fee \$275 includes attendance, lunches, May 22 social hour, and complete syllabus. Enrollment deadline May 7. Limited class.

Information contact UCSB Extension, Santa Barbara 93106. Telephone (805) 961-3677 or call IMA, Inc. (213) 783-4461.

SMC - NEW INSTITUTIONS AND PROFESSIONAL TRAINING NEEDED FOR CIVILIAN TECHNOLOGY POLICY

Where is Systems Engineering going from here? Many new initiatives in civilian technology such as computer-based education, telecommunications policy, public service delivery, and energy management involve a broad range of technical, economic, and political issues. These issues often must be treated in an integrated way and not as isolated concerns. Many of the procedures and institutions which were very effective in dealing with military and business operations research must be modified and broadened to be relevant in problems dealing with civilian technology.

In his talk at the May 8 SMC meeting, Professor William Linvill, founder and Chairman of the Department of Engineering-Economic Systems at Stanford University, will explore processes for addressing such problems as those described above, and he will consider the implications of needed professional training for Systems Engineers who will be addressing such problems in their careers. Dr. Linvill, who received his Sc.D in Electrical Engineering from MIT in 1949, came to Stanford as a Professor in E.E. in 1960 and has worked extensively in sampled-data systems and electric power systems.

IEEE 1974 ANNUAL CONFERENCE Nuclear and Space Radiation Effects

July 15-18, 1974 Fort Collins, Colorado

Sponsored by the IEEE Nuclear and Plasma Sciences Society in cooperation with Colorado State University. For information, contact:

Edward A. Burke, General Chairman
AFCRL IQR/Stop 30
L.G. Hanscom Field
Bedford, Mass. 01730
(617) 861-4051

SEMINAR-CALIF INVENTORS COUNCIL

Wednesday May 15, 9:30 a.m. to 4:00 p.m. at San Mateo County Fairgrounds, 2495 South Delaware Avenue, San Mateo.

Subject: Where to Look for Money to Back Your Invention.

Fee: \$12 for CIC members; \$15 for nonmembers, which includes lunch.

To register, and for further information: California Inventors Council, P.O. Box 376, Main Office Station, San Francisco 94101